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This section of the FEDERAL REGISTER contains regulatory documents having general applicability and legal effect, most of which are keyed to and codified in the Code of Federal Regulations, which is published under 50 titles pursuant to 44 U.S.C. 1510.

The Code of Federal Regulations is sold by the Superintendent of Documents. Prices of new books are listed in the first FEDERAL REGISTER issue of each week.

DEPARTMENT OF AGRICULTURE

Agricultural Marketing Service

7 CFR Part 205

[Document Number AMS–NOP–14–0012; NOP–14–03]

National Organic Program: Notice of Final Guidance on Substances Used in Post-Harvest Handling of Organic Products

AGENCY: Agricultural Marketing Service, USDA.

ACTION: Notice of availability of final guidance.

SUMMARY: The National Organic Program (NOP) is announcing the availability of a final guidance document intended for use by accredited certifying agents, and certified and exempt organic operations. The guidance document is entitled: Substances Used in Post-Harvest Handling of Organic Products (NOP 5023). This guidance document is intended to inform the public of NOP's current thinking on this topic.

DATES: The final guidance document announced by this document is effective on January 19, 2016.

FOR FURTHER INFORMATION CONTACT: Paul Lewis, Ph.D., Standards Division, National Organic Program, USDA–AMS–NOP, 1400 Independence Ave. SW., Room 2642–S., Ag Stop 0268, Washington, DC 20250–0268. Telephone: (202) 720–3252, Email: Paul.Lewis@ams.usda.gov; Telephone: (202) 260–9294.

SUPPLEMENTARY INFORMATION:

I. Background

On April 25, 2014, the National Organic Program (NOP) published in the **Federal Register** a notice of availability with request for public comment on a draft guidance document addressing the permitted substances that may be used

in post-harvest handling of organic products (79 FR 22886). The NOP selected the topic for the guidance document announced through this notice in response to questions raised by certifiers and organic operations. These stakeholders requested that the NOP clarify the requirements and limitations regarding the substances permitted in post-harvest handling. The NOP also discussed and received feedback on this topic at a training session for certifiers in Portland, Oregon, in February 2011. The draft NOP guidance can be viewed on the NOP Web site at <http://www.ams.usda.gov/rules-regulations/organic/>. The 60-day comment period closed on June 24, 2014.

NOP received 10 comments on the draft guidance document. Based upon the comments received, the NOP revised and is publishing a final guidance document on Substances Used in Post-Harvest Handling of Organic Products (NOP 5023). The guidance document includes an appendix (NOP 5023–1) where the NOP provides a complete discussion of the comments received and the rationale behind any changes made to the guidance documents.

This final guidance clarifies the USDA organic regulations regarding substances used in post-harvest handling activities such as washing, packing and storage of organic products. There is no discrete section of the National List of Allowed and Prohibited Substances (National List) (7 CFRs 205.600 through 205.607) designated for substances used in these post-harvest handling activities. Instead, the substances allowed for use in post-harvest handling appear in different sections of the National List (*e.g.*, section 205.601 for crop production, section 205.605 for processing), or are nonsynthetic substances, and are therefore not included on the National List for crop production. This has led to confusion about the point at which crop production for unprocessed commodities ends, when processing starts, and which substances may be used for post-harvest activities that may occur on farm or in a processing facility.

This final guidance provides information to all USDA-accredited certifying agents (certifiers) and certified and exempt organic operations about substances that may be used in post-harvest handling of organic products. More specifically, this final guidance

clarifies: (1) What substances may be used for post-harvest handling; (2) the difference between “post-harvest handling of raw agricultural commodities” and “further processing”; and (3) the regulatory requirements for facility pest management. This guidance also defines post-harvest substances and post-harvest handling.

This final guidance is available from the NOP through “The Program Handbook: Guidance and Instructions for Accredited Certifying Agents (ACAs) and Certified Operations”. This Handbook provides those who own, manage, or certify organic operations with guidance and instructions that can assist them in complying with the USDA organic regulations. The current edition of the Program Handbook is available online at <http://www.ams.usda.gov/rules-regulations/organic/handbook>.

II. Significance of Guidance

This final guidance document is being issued in accordance with the Office of Management and Budget (OMB) Bulletin on Agency Good Guidance Practices (GGPs) (January 25, 2007, 72 FR 3432–3440).

The purpose of GGPs is to ensure that program guidance documents are developed with adequate public participation, are readily available to the public, and are not applied as binding requirements. This final guidance represents NOP's current thinking on the topic. It does not create or confer any rights for, or on, any person and does not operate to bind the NOP or the public. Guidance documents are intended to provide a uniform method for operations to comply that can reduce the burden of developing their own methods and simplify audits and inspections. Alternative approaches that can demonstrate compliance with the Organic Foods Production Act (OFPA), as amended (7 U.S.C. 6501–6522), and its implementing regulations are also acceptable. As with any alternative compliance approach, NOP strongly encourages industry to discuss alternative approaches with NOP before implementing them to avoid unnecessary or wasteful expenditures of resources and to ensure the proposed alternative approach complies with the Act and its implementing regulations.

III. Electronic Access

Persons with access to Internet may obtain the final guidance at the USDA Agricultural Marketing Service Web site at <http://www.ams.usda.gov/rules-regulations/organic>. Requests for hard copies of the draft guidance documents can be obtained by submitting a written request to the person listed in the **ADDRESSES** section of this Notice.

Authority: 7 U.S.C. 6501–6522.

Dated: January 11, 2016.

Erin Morris,

Associate Administrator, Agricultural Marketing Service.

[FR Doc. 2016–00678 Filed 1–14–16; 8:45 am]

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DEPARTMENT OF HOMELAND SECURITY

8 CFR Parts 204, 214, 248, and 274a

[CIS No. 2515–11; DHS Docket No. USCIS–2012–0005]

RIN 1615–AC00

Enhancing Opportunities for H–1B1, CW–1, and E–3 Nonimmigrants and EB–1 Immigrants

AGENCY: U.S. Citizenship and Immigration Services, Department of Homeland Security.

ACTION: Final rule.

SUMMARY: In this final rule, the Department of Homeland Security (DHS) is revising its regulations affecting: highly skilled workers in the nonimmigrant classifications for specialty occupation from Chile, Singapore (H–1B1), and Australia (E–3); the immigrant classification for employment-based first preference (EB–1) outstanding professors and researchers; and nonimmigrant workers in the Commonwealth of the Northern Mariana Islands (CNMI)-Only Transitional Worker (CW–1) classification. DHS anticipates that these changes to the regulations will benefit these highly skilled workers and CW–1 nonimmigrant workers by removing unnecessary hurdles that place such workers at a disadvantage when compared to similarly situated workers in other visa classifications.

DATES: This final rule is effective February 16, 2016.

FOR FURTHER INFORMATION CONTACT: Paola Rodriguez Hale, Adjudications Officer (Policy), Office of Policy and Strategy, U.S. Citizenship and Immigration Services, Department of Homeland Security, 20 Massachusetts Avenue NW., Washington, DC 20529–

2141. Contact telephone number is (202) 272–8377.

SUPPLEMENTARY INFORMATION: DHS is revising its regulations affecting: (1) Highly skilled workers in the nonimmigrant classifications for specialty occupation from Chile, Singapore (H–1B1), and Australia (E–3); (2) the immigrant classification for employment-based first preference (EB–1) outstanding professors and researchers; and (3) nonimmigrant workers in the Commonwealth of the Northern Mariana Islands (CNMI)-Only Transitional Worker (CW–1) classification.

Specifically, in this final rule, DHS is amending its regulations to include H–1B1 and principal E–3 classifications in the list of classes of foreign nationals authorized for employment incident to status with a specific employer, and to clarify that H–1B1 and principal E–3 nonimmigrants are allowed to work without having to separately apply to DHS for employment authorization.

DHS is also amending the regulations to provide H–1B1 and principal E–3 nonimmigrants with authorization for continued employment with the same employer if the employer has timely filed for an extension of the nonimmigrant's stay. DHS is providing this same authorization for continued employment for CW–1 nonimmigrants if a petitioner has timely filed a Petition for a CNMI-Only Nonimmigrant Transitional Worker, Form I–129CW, or successor form requesting an extension of stay.

In addition, DHS is updating the regulations describing the filing procedures for extensions of stay and change of status requests to include the principal E–3 and H–1B1 nonimmigrant classifications. These changes will harmonize and align the regulations for principal E–3, H–1B1, and CW–1 nonimmigrant classifications with the existing regulations for other, similarly situated nonimmigrant classifications.

Finally, DHS is expanding the current list of initial evidence for EB–1 outstanding professors and researchers to allow petitioners to submit evidence comparable to the other forms of evidence already listed in 8 CFR 204.5(i)(3)(i). This will harmonize the regulations for EB–1 outstanding professors and researchers with certain employment-based immigrant categories that already allow for submission of comparable evidence.

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I. Executive Summary

A. Purpose of the Regulatory Action

DHS is amending its regulations in several ways to improve the programs serving the principal E–3, H–1B1, and CW–1 nonimmigrant classifications and the EB–1 immigrant classification for outstanding professors and researchers. These changes will harmonize the regulations governing these classifications with regulations governing similar visa classifications and remove unnecessary hurdles that have placed principal E–3, H–1B1, CW–1 and certain EB–1 workers at a disadvantage when compared to similarly situated workers in other visa classifications. DHS believes this rule also best achieves our goal of addressing unwarranted disparities involving continued employment authorization among and within particular nonimmigrant classifications.

B. Legal Authorities

Sections 103(a) and 214(a)(1) of the Immigration and Nationality Act (INA),

8 U.S.C. 1103(a) and 8 U.S.C. 1184(a)(1), authorize the Secretary of Homeland Security (Secretary) to administer and enforce the immigration and nationality laws and to establish by regulation the time and conditions of admission of nonimmigrants. *See also* section 451 of the Homeland Security Act of 2002, Public Law 107–296, 116 Stat. 2135, (6 U.S.C. 271) (describing responsibilities with respect to immigration services and adjudications). Further, section 274A(h)(3)(B) of the INA, 8 U.S.C. 1324a(h)(3)(B), recognizes the Secretary's authority to extend employment authorization to individuals who are not citizens or nationals of the United States. Finally, title VII of the Consolidated Natural Resources Act of 2008 (CNRA) extends U.S. immigration laws to the CNMI and authorized the CW nonimmigrant classification. Public Law 110–229, 122 Stat. 754, 853 (2008) (revising 48 U.S.C. 1806).

C. Summary of the Major Provisions of the Regulatory Action

On May 12, 2014, DHS published a proposed rule to amend regulations governing filing procedures and work authorization for principal E–3 and H–

1B1 nonimmigrants (8 CFR 214.1(c)(1) and 8 CFR 248.3(a) with respect to filing procedures and 8 CFR 274a.12(b)(9) and 8 CFR 274a.12(b)(25) with respect to work authorization), continued work authorization for principal E–3, H–1B1, and CW nonimmigrants (8 CFR 274a.12(b)(20)), and evidentiary requirements for EB–1 outstanding professors and researchers (8 CFR 204.5(i)(3)(ii)). By proposing this rule, DHS intended to remove current regulatory obstacles that may cause unnecessary disruptions to petitioning employers' productivity. DHS also intended to remove obstacles for these workers to remain in or enter the United States and to treat them in the same way as others under similar classifications are treated. *See Enhancing Opportunities for H–1B1, CW–1, and E–3 Nonimmigrants and EB–1 Immigrants*, 79 FR 26870 (May 12, 2014). After careful consideration of public comments, DHS is adopting the proposed regulatory amendments without change.

D. Cost and Benefits

This final rule will not impose any additional costs on employers, workers, or any governmental entity. Changing

the employment authorization regulations for H–1B1 and principal E–3 nonimmigrants will make those regulations consistent with the regulations of other similarly situated nonimmigrant worker classifications, which will provide qualitative benefits. In this final rule, DHS also amends its regulations to authorize continued employment for up to 240 days for H–1B1, principal E–3, and CW–1 nonimmigrant workers whose status has expired, provided that the petitioner timely filed the requests for extensions of stay with U.S. Citizenship and Immigration Services (USCIS). Such amendment will minimize the potential for employment disruptions for U.S. employers of H–1B1, principal E–3, and CW–1 nonimmigrant workers. Finally, this final rule may assist U.S. employers that recruit EB–1 outstanding professors and researchers by expanding the range of evidence that they may provide to support their petitions. A summary of the costs and benefits of the changes made by this rule is presented in Table 1.

TABLE 1—SUMMARY OF COSTS AND BENEFITS

Costs	Change	Benefits and avoided costs
E–3, H–1B1, and CW–1 Nonimmigrants		
None	Continued employment up to 240 days for an H–1B1, principal E–3 or CW–1 nonimmigrant workers while a timely filed request to extend stay is pending. Clarify that principal E–3 and H–1B1 nonimmigrants are work authorized incident to status, and specify current filing procedures for requesting change of status or extension of stay..	Avoided cost of lost productivity for U.S. employers of principal E–3, H–1B1, and CW–1 nonimmigrant workers and avoided lost wages by the nonimmigrant workers. Not quantified. Will provide equity for principal E–3 and H–1B1 nonimmigrants relative to other employment-based nonimmigrants listed in 8 CFR 274a.12 (b)(20), and provide equity for CW–1 nonimmigrants whose extension request is filed by the same employer relative to other CW–1 nonimmigrants who change employers. Qualitative benefit. Ensures the regulations are consistent with statutory authority, and codifies current practice. Qualitative benefit.
EB–1 Outstanding Professors and Researchers		
	Allow for the submission of comparable evidence to that listed in 8 CFR 204.5(i)(3)(i)(A)–(F) to establish that the EB–1 outstanding professor or researcher is recognized internationally as outstanding in his or her academic field.	May help U.S. employers recruit EB–1 outstanding professors and researchers. Not quantified. Will provide equity for EB–1 outstanding professors and researchers relative to certain employment-based immigrants listed in 8 CFR 204.5. Qualitative benefit.

II. Background

A. Current Framework

The Immigration Act of 1990 (IMMACT90), among other things, reorganized immigrant classifications and also created new employment-based immigrant classifications. *See* Public

Law 101–649, 104 Stat. 4978. The new employment-based immigration provisions were intended to cultivate a more competitive economy by encouraging skilled individuals to immigrate to the United States to meet

our economic needs.¹ Those

¹ *See Statement by President upon Signing of the Immigration Act of 1990*, 1990 U.S.C.A.N 6801–1 (Nov. 29, 1990), available at <http://www.presidency.ucsb.edu/ws/index.php?pid=19117#ixzz1KvDIYZqI>; *see also* H.R. Rep. No. 101–723(I), at 6721 (1990) (“[I]mmigration can and should be incorporated into an overall

Continued

IMMACT90 provisions addressed the need of American businesses for highly skilled, specially trained personnel to fill increasingly sophisticated jobs for which domestic personnel could not be found. *See Employment-Based Immigrants*, 56 FR 30703 (July 5, 1991). Lawmakers estimated the need for highly skilled workers based on an increasing skills gap in the current and projected U.S. labor pools. *Id.*

American businesses continue to need highly skilled nonimmigrant and immigrant workers, and the U.S. legal immigration system can be improved by removing regulatory barriers to lawful employment of these workers through a system that reflects our diverse values and needs.² Attracting and retaining highly skilled workers is critical to sustaining our Nation's global competitiveness. By attracting the best and brightest from around the world, the United States can harness their talents, skills, and ideas to help the U.S. economy grow.³ Governments seeking to make the most of highly skilled nonimmigrants and immigrants face the challenge of identifying, attracting, and retaining those with the best prospects for success.⁴

B. Proposed Rule

On May 12, 2014, DHS published a proposed rule in the **Federal Register** at 79 FR 26870, proposing to:

- Clarify that principal E-3 and H-1B1 nonimmigrants are authorized to work for the specific employer listed in their petition without requiring separate approval for work authorization from USCIS (8 CFR 274a.12(b)(25) and 8 CFR 274a.12(b)(9));
- Authorize continued employment authorization for CW-1, principal E-3, and H-1B1 nonimmigrants with pending, timely filed extension of stay requests (8 CFR 274a.12(b)(20));
- Update the regulations describing the filing procedures for extension of stay and change of status requests to

include the principal E-3 and H-1B1 nonimmigrant classifications (8 CFR 214.1(c)(1) and 8 CFR 248.1(a)); and

- Allow a petitioner who wants to employ an EB-1 outstanding professor or researcher to submit evidence comparable to the evidence otherwise described in 8 CFR 204.5(i)(3)(i), which may demonstrate that the beneficiary is recognized internationally as an outstanding professor or researcher.

C. Final Rule

Consistent with the vision of attracting and retaining foreign workers, this final rule removes unnecessary obstacles for principal E-3 and H-1B1 highly skilled workers and CW-1 nonimmigrant workers to continue working in the United States, and for EB-1 outstanding professors and researchers to seek admission as immigrants. For example, under current regulations, H-1B1, CW-1, and principal E-3 nonimmigrants are not included in the regulations that authorize continued employment while a timely filed extension of stay request is pending. The regulations at 8 CFR 274a.12(b)(20) authorize foreign nationals in specific nonimmigrant classifications to continue employment with the same employer for a 240-day period beyond the authorized period specified on the Arrival-Departure Record, Form I-94, as long as a timely request for an extension of stay is filed. This means that these individuals can continue to work with the specific employer listed in their petition, even after their authorized stay expires, as long as their extension of stay request is still pending. Because Congress created the E-3, H-1B1, and CW-1 nonimmigrant classifications after 8 CFR 274a.12(b)(20) was effective, these nonimmigrant workers are not included in this provision and cannot continue to work with the same employer beyond the existing authorization while waiting for USCIS to adjudicate an extension of stay request. DHS is amending its regulations at 8 CFR 274a.12(b)(20) to give H-1B1, CW-1, and principal E-3 nonimmigrants the same treatment as other, similarly situated nonimmigrants, such as H-1B, E-1, and E-2 nonimmigrants.

Moreover, E-3 and H-1B1 nonimmigrants are not listed in the regulations describing the filing procedures for extension of stay and change of status requests. Although the form instructions for H-1B1 and principal E-3 extension of stay and change of status requests (Instructions for Petition for a Nonimmigrant Worker, Form I-129) were updated to include H-1B1 and principal E-3

nonimmigrants when these categories were first established, the regulations were not. In this final rule, DHS is amending the regulations to add H-1B1 and principal E-3 nonimmigrants to the list of nonimmigrants that may extend their stay or change their status in the United States.

In addition, current regulations do not designate H-1B1 nonimmigrants and principal E-3 as authorized to accept employment with a specific employer incident to status, although such nonimmigrants are so authorized by statute. *See* INA section 212(t)[1st], 8 U.S.C. 1182(t)[1st], (noting the statutory requirements an employer must fulfill to petition for an H-1B1 or E-3 nonimmigrant); *see also* INA sections 101(a)(15)(E)(iii), 8 U.S.C. 1101(a)(15)(E)(iii), 101(a)(15)(H)(1)(b)(1), 8 U.S.C. 1101(a)(15)(H)(1)(b)(1), and 214(g)(8)(C), 8 U.S.C. 1184(g)(8)(C) (requiring "intending employers" of certain H-1B1 nonimmigrants to file an attestation with the Secretary of Labor). The E-3 and H-1B1 nonimmigrant classifications were established by statute in 2005 and 2003, respectively. *See* REAL ID Act of 2005, Public Law 109-13, section 501, 119 Stat. 231; United States-Singapore Free Trade Agreement Implementation Act, Public Law 108-78, section 402, 117 Stat. 948 (2003); United States-Chile Free Trade Agreement Implementation Act, Public Law 108-77, sections 402-404, 117 Stat. 909 (2003). Since that time, the DHS employment authorization regulations at 8 CFR 274a.12 have not been updated to include principal E-3 and H-1B1 nonimmigrants as foreign nationals authorized to accept employment with a specific employer, incident to status, in the United States as designated by statute.

Finally, the language of the current EB-1 regulations for outstanding professors and researchers may not fully encompass other types of evidence that may be comparable, such as evidence that the professor or researcher has important patents or prestigious peer-reviewed funding grants. In this final rule, DHS is modifying the regulations describing permissible initial evidence for outstanding professors and researchers to allow a petitioner to submit evidence that is comparable to the currently accepted evidence listed in 8 CFR 204.5(i)(3)(i) to demonstrate that such beneficiaries are recognized internationally as outstanding in their academic areas. *See* INA section 203(b)(1)(B), 8 U.S.C. 1153(b)(1)(B). A petitioner may submit such evidence instead of, or in addition to, the currently accepted evidence described under 8 CFR 204.5(i)(3)(i), as long as the

strategy that promotes the creation of the type of workforce needed in an increasingly competitive global economy without adversely impacting on the wages and working conditions of American workers.").

² *See* White House, *Building a 21st Century Immigration System*, May 2011, at 3 and 9, available at http://www.whitehouse.gov/sites/default/files/rss_viewer/immigration_blueprint.pdf.

³ *See* White House, *Building a 21st Century Immigration System*, May 2011, at 1, available at http://www.whitehouse.gov/sites/default/files/rss_viewer/immigration_blueprint.pdf.

⁴ *See* Demetrios G. Papademetriou and Madeleine Sumption, *Attracting and Selecting from the Global Talent Pool, Policy Challenges*, Migration Policy Inst., Sept. 2013, at 4, available at <http://www.migrationpolicy.org/research/attracting-and-selecting-global-talent-pool-%E2%80%94-policy-challenges>.

petitioner establishes that the evidence is comparable to those listed under 8 CFR 204.5(i)(3)(i)(A)–(F) and the standards in 8 CFR 204.5(i)(3)(i) do not readily apply. This change provides greater flexibility for outstanding professors and researchers because the petitioner will no longer be limited to the list of initial evidence. Finally, these changes will further the goal of removing unnecessary obstacles for these workers to seek admission to the United States as an immigrant.

In preparing this final rule, DHS considered all the public comments received and all other materials contained in the docket. This final rule adopts the regulatory amendments set forth in the proposed rule without substantive change. The rationale for the proposed rule and the reasoning provided in its background section remain valid with respect to these regulatory amendments. Section II.B above and this section each describe the changes that are the focus of this rulemaking. This final rule does not address a number of comments that DHS considered beyond the scope of this rulemaking because the comments requested changes to the regulations that DHS had not proposed and that commenters could not have reasonably anticipated that DHS would make. Such comments include suggestions for expanding premium processing services and for providing expedited processing for certain family-based petitions, travel while an application for an adjustment of status is pending, re-entry permits, translations, grace periods, specific comments in reference to another DHS rulemaking⁵, numerical per-country limits, obligations to hire U.S. citizens first, or questions on a variety of CNMI-specific topics (for example, changes to CW-1 validity periods, CW-1 reentry permits, the reduction of CW-1 nonimmigrant workers, changes to USCIS processing of petitions for CW-1 workers, and suggestions for waivers of occupational certifications). Although DHS has carefully reviewed each of these comments, DHS considers these comments to be out-of-scope for the reasons stated, and will not take further action on these comments in connection with this specific rulemaking proceeding. All comments and other docket material are available for viewing at the Federal Docket Management System (FDMS) at <http://www.regulations.gov>, docket number USCIS-2012-0005.

⁵ These comments were forwarded to the appropriate docket and considered, as appropriate, in drafting the relevant regulation.

III. Public Comments on the Proposed Rule

A. Summary of Public Comments

In response to the proposed rule, DHS received 38 comments during the 60-day public comment period. Commenters included individuals, employers, workers, attorneys, nonprofit organizations, and one business organization.

While opinions on the proposed rule varied, a clear majority of the commenters supported the proposed changes in the rule. Specifically, supporters of the proposed rule welcomed the proposed employment authorization changes for principal E-3, H-1B1, and CW-1 nonimmigrants; the proposed update to the regulations clarifying the application requirements for E-3 and H-1B1 nonimmigrants requesting changes of status or extensions of stay; and the comparable evidence provision for EB-1 outstanding professors and researchers. Several commenters supported the comparable evidence provision and suggested additional evidence for DHS to consider when evaluating eligibility for EB-1 outstanding professors and researchers. Overall, the commenters supported DHS's efforts to harmonize the regulations to benefit highly skilled workers and CW-1 nonimmigrant workers and to remove unnecessary hurdles that place such workers at a disadvantage when compared to similarly situated workers.

Some commenters stated general opposition to the proposed rule, but did not offer any specific alternatives or suggestions relating to the proposals outlined in this rulemaking. Another commenter stated that the changes proposed with respect to EB-1 outstanding professors and researchers would be insufficient, and proposed a "point based system" instead.

DHS has reviewed all of the public comments received in response to the proposed rule, and responds to the issues raised by the comments below. The DHS responses are organized by subject area.

B. General Comments

1. Support

Multiple commenters provided general support for all the proposed changes in rule. One supporter stated that the proposed regulatory amendments will benefit many nonimmigrants. Another supporter indicated that the proposed changes will add to the much-needed math, science, and technology pool of workers in the United States. One commenter

noted the need for regulatory action in order to attract and retain workers, and supported the ongoing efforts to harmonize the rules that are applicable to similarly situated visa categories and bring them in line with actual agency practice. This same commenter added that the proposed changes will provide uniformity and predictability for U.S. employers and their employees and will enhance compliance at virtually no cost to DHS. Another commenter also underscored the importance of removing unnecessary regulatory barriers to improve the ability of U.S. higher education institutions to attract and retain talented and sought-after professionals. Some commenters supported the changes, but did not discuss perceived benefits. One commenter requested DHS to finalize the rule quickly.

2. Oppose

One commenter expressed general opposition to this rulemaking, but did not cite any specific provision or offer any specific alternatives or suggestions relating to the proposals outlined in this rulemaking. Another commenter opposed having temporary worker programs, in general, but did not offer any specific alternatives that would fall within the scope of this rule. DHS has not changed the final rule in response to these comments.

C. Employment Authorization for E-3 and H-1B1 Nonimmigrants

1. Employment Authorization Incident to Status With a Specific Employer

Three commenters supported the proposal to add the H-1B1 and principal E-3 classifications to the list of nonimmigrants authorized to work incident to status with a specific employer. They stated that the proposed change reflects the current practice, which allows work authorization based on approval of the [nonimmigrant] classification, but does not require a separate application for employment authorization. Therefore, the proposed change will produce consistency between current practice and regulatory language.

One commenter recommended that DHS amend the regulations to list B-1 nonimmigrant household employees in 8 CFR 274a.12(b) as authorized for employment with a specific employer incident to status. The commenter also recommended that DHS amend 8 CFR 274a.12(a) to include spouses of L-1, E-1, and E-2 nonimmigrants in the categories of individuals who are authorized for employment incident to status. DHS has determined that

expansion of employment authorization beyond the classifications identified in the proposed rule is not appropriate at this time, and it has therefore not included such an expansion in this final rule. DHS did not provide notice to the public or invite public comment on proposals to make changes to current employment authorization policies and procedures affecting these classes of nonimmigrants. For these reasons, DHS is not including the recommended expansion of 8 CFR 274a.12(a) or 8 CFR 274a.12(b) for these particular nonimmigrants in this final rule.

DHS appreciates commenters' support for the proposal to add the H-1B1 and principal E-3 classifications to the list of nonimmigrants authorized to work incident to status with a specific employer. The INA describes the employment of E-3 and H-1B1 nonimmigrants with a specific, petitioning employer as the very basis for their presence in the United States. See INA section 101(a)(15)(E)(iii), 8 U.S.C. 1101(a)(15)(E)(iii); INA section 101(a)(15)(H)(i)(b1), 8 U.S.C. 1101(a)(15)(H)(i)(b1). Similarly situated nonimmigrants, such as H-1B nonimmigrants, are classified in the regulations as employment authorized incident to status with a specific employer. See, e.g., 8 CFR 274a.12(b)(9). However, after statutory enactment of the E-3 and H-1B1 nonimmigrant categories, the provisions in 8 CFR 274a.12(b) were not updated to include principal E-3 and H-1B1 nonimmigrants. Therefore, in this final rule, DHS will update its regulations and adopt, without change, the proposed provision adding principal E-3 and H-1B1 nonimmigrants to the list of nonimmigrants authorized to work for the specific employer listed in their petition. Specifically, DHS is adding a new provision at 8 CFR 274a.12(b)(25) to include principal E-3 nonimmigrants in the list of foreign nationals who are employment authorized incident to status with a specific employer. DHS is also amending 8 CFR 274a.12(b)(9) to include the H-1B1 nonimmigrant classification as employment authorized incident to status with a specific employer.

2. Continued Employment Authorization While a Timely Extension of Stay Request Is Pending

DHS received multiple comments regarding the provision authorizing the continued employment of principal E-3 and H-1B1 nonimmigrants. Most of these comments supported the provision to authorize the continued employment for E-3 and H-1B1 nonimmigrants with timely filed,

pending extension of stay requests. One commenter explained that while employers file extension requests several months prior to the expiration of the workers' nonimmigrant status, unexpected processing delays can prevent the extension requests from being approved before such status expires. In turn, the nonimmigrant employees must stop working, causing serious disruptions to both the employers and their nonimmigrant workers. The commenters further stated that the current lack of continued work authorization results in lost wages to employees and loss in productivity to employers. The commenters noted that the continued employment authorization period, which may last up to 240 days, will protect against such interruptions by ensuring that U.S. employers who employ individuals in the E-3 and H-1B1 nonimmigrant classifications experience as little disruption as possible in the employment of their workers. These commenters therefore welcomed the proposed continued employment authorization because it will minimize disruption to employers and thereby promote economic growth. These commenters also supported the continued employment authorization proposal because it would harmonize the regulations applicable to E-3 and H-1B1 nonimmigrants with regulations applicable to similarly situated nonimmigrants. For example, one of these commenters noted that this change would allow colleges and universities to treat their similarly situated employees in a fair and consistent manner. One of these commenters also stated that the proposed change would substantially aid in attracting and retaining these workers.

Additionally, one commenter supported the proposed E-3 continued work authorization because comparable eligibility for continued work authorization for H-1B nonimmigrants has been extremely helpful in allowing the commenter's current tenure-track H-1B faculty, researchers, and staff to continue employment while USCIS is processing H-1B extension requests, and would permit similarly situated E-3 employees the same benefit. DHS appreciates the support from the public for this proposed provision. The potential gap in work authorization from unanticipated processing delays can burden both employers and employees alike. DHS also believes it is important to provide employers of H-1B1 and E-3 nonimmigrants the benefits that accrue from the predictability that

currently is available to employers of nonimmigrants in similar employment-based nonimmigrant classifications, who file timely requests for extensions of stay with the same employers. Therefore, DHS has determined that it will adopt this provision without change, thereby automatically extending employment authorization to principal E-3 and H-1B1 nonimmigrants with timely filed, pending extension of stay requests.

One commenter recommended expanding the 240-day rule to cover Q-1 nonimmigrants. The commenter stated that, as with other nonimmigrant classifications, government error can delay approval, leading to serious business disruptions to the employer and adverse consequences to the workers through no fault of their own.

DHS has determined that expansion of continued employment authorization beyond the classifications identified in the proposed rule is not appropriate at this time, and it has therefore not included such an expansion in this final rule. This suggestion is outside the scope of this rulemaking, which did not make any proposals or invite public comment with respect to Q-1 nonimmigrants. Therefore, in this final rule, DHS will update its regulations at 8 CFR 274a.12(b)(20) and adopt, without change, the proposed provision to authorize continued employment authorization for principal E-3 and H-1B1 nonimmigrants with pending, timely filed extension of stay requests.

D. Employment Authorization for CW-1 Nonimmigrants While a Timely Filed Extension of Stay Request Is Pending

Six commenters supported the provision for automatic employment authorization for CW-1 nonimmigrant workers with timely filed, pending extension of stay requests. One commenter explained that while employers file extension requests several months prior to the expiration of the workers' nonimmigrant status, unexpected processing delays can prevent the extension requests from being timely approved and cause serious disruptions to employers and nonimmigrants. Another commenter remarked that current adjudication delays for CW-1 nonimmigrant workers are burdensome on the beneficiaries and on the local economy, and therefore urged DHS to adopt the proposed continued work authorization provision for CW-1 nonimmigrant workers. Commenters commonly stated that the potential lack of work authorization due to a processing delay results in serious disruption to both an employer's business and to the employee's life. The

commenters noted that the 240-day continued employment authorization would protect against such interruptions by ensuring that U.S. employers of CW-1 nonimmigrants experience minimal disruption in the continued employment of their workers. One commenter stated that this proposed change would alleviate fear among employers and workers of interruptions in employment resulting from a lack of continued work authorization. Finally, one commenter stated that the proposed change would provide equity for CW-1 nonimmigrants by ensuring that they are afforded the same treatment as other similarly situated individuals.

DHS appreciates the support from the public for this proposed provision. The disruption of employment can create a burden for both employers and employees. As a matter of equity, it is also important to ensure that CW-1 nonimmigrants who are waiting for USCIS to adjudicate their extension of stay requests with the same employer also benefit from the continued employment authorization available to other CW-1 nonimmigrants who change employers or an employee under the previous CNMI immigration system. Current regulations for the continued employment of CW-1 nonimmigrant workers are also inconsistent. Specifically, the regulations currently only provide continued work authorization for CW-1 nonimmigrant workers seeking to change to a new employer, including a change in employer resulting from early termination, and not to CW-1 nonimmigrants seeking an extension of stay with the same employer. 8 CFR 214.2(w)(7). This disparity may serve as an incentive for CW-1 nonimmigrant workers to change employers just to maintain continued employment authorization, which will inconvenience the CW-1 nonimmigrant worker's current employer who might lose the worker to another employer.

One commenter strongly supported this proposed change and noted that various employers previously sought to have a continuing work authorization provision included in the initial CW regulations without success. The commenter stated that the DHS response to this request then was that such provision was not authorized by the CNRA.⁶

DHS notes that the interim rule amending 8 CFR 214.2(w) to create the

CW classification published on October 27, 2009, and provided a 30-day comment period.⁷ On December 9, 2009, DHS published a notice in the **Federal Register** reopening and extending the public comment period for an additional 30 days.⁸ The commenter did not indicate whether the commenter submitted the suggestion for the continued employment authorization provision in response to either of those comment periods. However, DHS did receive post-publication correspondence requesting continued employment authorization for workers with pending extensions.⁹ DHS responded to these post publication correspondence by stating that CW-1 nonimmigrants do not have continuing employment authorization while an extension of stay petition is pending. In that correspondence, DHS noted that it was not in the position to provide such authorization without a change to the applicable regulations.¹⁰ Although DHS believes that its implementing CW regulations are consistent with congressional intent, it subsequently proposed improvements to the regulations to permit continued employment authorization during an extension of stay request through this notice and rulemaking, pursuant to its authority under the INA and the CNRA to implement such regulations.¹¹

One of the commenters also supported the proposed change because it will help both employers and employees in the CNMI by providing employers with more time to file extension requests and by allowing employees to remain in lawful work-authorized status while awaiting the adjudication of the extension requests filed on their behalf. DHS appreciates

the support for the continued work authorization provision for CW-1 nonimmigrants. The regulatory changes aim to provide both the employer and employee with continued employment when an employer files a timely request for an extension of stay for the CW-1 nonimmigrant worker. However, this new provision does not change the filing requirements or allot more time for employers to file extension requests. Under 8 CFR 214.2 (w)(12)(ii), an employer may file up to 6 months before it actually needs the employee's services, and this rulemaking does not change this filing requirement. Instead, this rulemaking provides a mechanism that automatically extends employment authorization, for a period of up to 240 days, while the employer's timely filed, extension of stay request remains pending.

One commenter proposed allowing an employee who transfers to another employer to continue to work pending the adjudication of the new petition with the prospective employer. DHS's proposed rule did not suggest continued work authorization for CW-1 nonimmigrant workers seeking a change of employment because DHS regulations already allow continued work authorization for changes of employment so long as certain requirements are met. As described above, under 8 CFR 214.2(w)(7), a CW-1 nonimmigrant worker may work for a prospective new employer after the prospective employer files a non-frivolous Petition for a CNMI-Only Nonimmigrant Transitional Worker, Form I-129CW, for new employment. The employer must file the petition for new employment to classify the alien as a CW-1 nonimmigrant, before the CW-1 nonimmigrant worker's authorized period of stay expires. The CW-1 nonimmigrant worker must not have worked without authorization in the United States since being admitted. If the petitioner and CW-1 nonimmigrant worker meet these conditions, then employment authorization will continue until DHS adjudicates the new petition.

One commenter proposed allowing a terminated employee to continue to work without interruption, subject to certain conditions. DHS's proposed rule did not suggest continued work authorization for terminated CW-1 nonimmigrant workers because USCIS regulations already allow for continued work authorization for terminated CW-1 nonimmigrant workers under certain circumstances. Under 8 CFR 214.2(w)(7)(v), a terminated CW-1 nonimmigrant worker who has not otherwise violated the terms and conditions of his or her status may work

⁷ See *Commonwealth of the Northern Mariana Islands Transitional Worker Classification*, 74 FR 55094 (Oct. 27, 2009).

⁸ See *Commonwealth of the Northern Mariana Islands Transitional Worker Classification; Reopening the Public Comment Period*, 74 FR 64997 (Dec. 9, 2009).

⁹ See Joint Letter to Alejandro Mayorkas, USCIS Director, from the Saipan Chamber of Commerce, the Hotel Association of the Northern Mariana Islands and the Society for Human Resource Management CNMI (Dec. 20, 2012).

¹⁰ See Letter from Alejandro Mayorkas, USCIS Director, to the Saipan Chamber of Commerce (March 7, 2013).

¹¹ See Section 102 of the Homeland Security Act of 2002, Public Law 107-296, 116 Stat. 2135, 6 U.S.C. 112, and INA 103(a), 8 U.S.C. 1103(a) (authorizes the Secretary to administer and enforce the immigration and nationality laws); INA 214(a), 8 U.S.C. 1184(a) (authorizes the admission of nonimmigrants under such conditions as the Secretary may prescribe by regulation); INA 274A(h)(3)(B) (recognizes the Secretary's authority to extend employment to individuals who are not citizens or nationals of the United States); Public Law 110-229, 122 Stat. 754, 853 (2008) (extending U.S. immigration laws to the CNMI).

⁶ See Public Law 110-229, 122 Stat. 754, 853 (2008). Title VII of the CNRA (codified, in relevant part, at 48 U.S.C. 1806(d)) extends U.S. immigration laws to the CNMI.

for a prospective new employer after the prospective employer files a non-frivolous Petition for a CNMI-Only Nonimmigrant Transitional Worker, Form I-129CW, for new employment. However, the new employer must file the Petition for a Nonimmigrant Worker, Form I-129CW, within a 30-day period after the date of termination. Employment authorization then continues until DHS adjudicates the new petition.

While the commenters supported the continued employment authorization for CW-1 nonimmigrant workers, they also offered specific suggestions regarding various aspects of the CW-1 transitional worker program. One commenter remarked that the continued work authorization provision merely provides a temporary solution to meet the needs of the local investors, and that a permanent immigration status is necessary. The commenter encouraged the immediate passage of U.S. Senate bill S. 744 as a permanent solution to this CNMI foreign worker situation. Another commenter suggested that foreign workers in the CNMI should be provided with a “better” immigration status. The rulemaking focused on continued employment authorization for certain CW-1s with timely filed extension of stay requests. The CW program as a whole was not a subject of this rulemaking. These comments are outside the scope of this rulemaking.

DHS has determined that it will adopt this provision without change, thereby automatically extending employment authorization to CW-1 nonimmigrants who have timely filed, pending extension of stay requests for the same employer. Specifically, DHS will add the CW-1 nonimmigrant classification to the list of employment-authorized nonimmigrant classifications, at 8 CFR 274a.12(b)(20), that receive an automatic extension of employment authorization of up to 240 days while the employer’s timely filed extension of stay requests remain pending. This will ensure that the CW nonimmigrants are permitted continued employment authorization based on both pending change of employers requests and pending extension of stay requests.

E. Application Requirement for E-3 and H-1B1 Nonimmigrants Requesting Changes of Status or Extensions of Stay

DHS only received one comment on the proposal to add principal E-3 and H-1B1 nonimmigrants to the list of nonimmigrant classifications that must file a petition with USCIS to request an extension of stay or change of status. The commenter stated that the proposed changes, if adopted, will go far to enable

initial and uninterrupted continued employment of H-1B1 and E-3 nonimmigrants. The commenter added that the changes create equity for these nonimmigrant categories as compared to other similar nonimmigrant categories for specialty workers. For reasons previously stated, DHS will adopt this provision without change. Specifically, DHS will amend 8 CFR 214.1(c)(1) and 8 CFR 248.3(a) to add the E-3 and H-1B1 nonimmigrant classifications to the list of nonimmigrant classifications that must file a petition with USCIS to request an extension of stay or change of status. This updates the regulations so they conform to the filing procedures described in the form instructions.

F. Comparable Evidence for EB-1 Outstanding Professors and Researchers

DHS received a number of comments on the proposal to expand the current list of initial evidence for EB-1 outstanding professors and researchers to allow petitioners to submit evidence comparable to the other forms of evidence already listed in 8 CFR 204.5(i)(3)(i).

1. Support

Most of the commenters on the EB-1 comparable evidence provision supported it, for a variety of reasons. They cited the perceived positive effects on the United States, the need for harmonization of the regulations, and the need to submit evidence to allow beneficiaries to fully document their accomplishments. DHS notes that the same commenters remarked on more than one aspect of the comparable evidence provision.

Specifically, commenters remarked that the change would positively affect the United States in a variety of ways. Two commenters noted that the comparable evidence provision would expand the number of individuals eligible for this classification and would benefit the United States as a whole. Some commenters noted that the comparable evidence provision will improve the ability of U.S. employers, especially higher education employers, to attract, recruit, and retain talented foreign professors, researchers, and scholars. One of these commenters added that this regulatory change will improve the capability to recruit and retain talented individuals which conduct the research that allows U.S. businesses to develop and sell products. This improved capability to recruit these individuals will help the U.S. economy’s growth. Another commenter added that refining the EB-1 outstanding professors and researchers evidentiary list would benefit the

United States by boosting research, innovation, and development.

DHS appreciates the commenters’ support for the comparable evidence provision based on the perceived positive effects on United States’ competitiveness and the Nation’s economy. DHS agrees with the commenters that the proposed comparable evidence provision may also help U.S. employers recruit EB-1 outstanding professors and researchers.

A number of commenters supported expansion of the current list of evidentiary criteria for EB-1 outstanding professors and researchers to allow the submission of comparable evidence because it would harmonize the EB-1 outstanding professor and researcher regulations with those of other comparable employment-based immigrant classifications, eliminating unwarranted disparities with respect to these policies. Commenters emphasized that the proposed comparable evidence provision in turn would bring the criteria for proving eligibility for the outstanding professors and researchers classification in line with those that have long been permitted for other preference categories such as EB-1 aliens of extraordinary ability and EB-2 aliens of exceptional ability. These commenters stated that the proposed change is a logical extension of the existing regulatory provision listing the evidentiary criteria for EB-1 outstanding professors and researchers, especially since the similarly situated EB-1 extraordinary ability classification, which requires satisfaction of a higher evidentiary threshold, allows for consideration of comparable evidence.¹²

DHS appreciates commenters’ support for the comparable evidence provision based on the harmonization of the comparable regulations. DHS agrees that by allowing for the submission of comparable evidence, DHS will bring the evidentiary standards of the EB-1 outstanding professor and researcher category in line with those currently available to individuals qualifying under both the EB-1 extraordinary ability and EB-2 exceptional ability categories. This change in turn will provide equity for EB-1 outstanding professors and researchers with other

¹² The regulatory text stating when comparable evidence may be submitted uses the term “standards” when referring to the list of evidence that may be submitted to establish eligibility. *See, e.g.,* 8 CFR 204.5(h)(4) and 8 CFR 204.5(k)(3)(iii). Commenters, however, commonly used the term “criteria” or “criterion” when referring to the “comparable evidence” provisions and when responding to DHS’s proposal to allow petitioners to submit evidence comparable to the other forms of evidence already listed in 8 CFR 204.5(i)(3)(i).

similarly situated individuals. This change better enables petitioners to hire outstanding professors and researchers by providing a set of standards that are flexible enough to comprehensively encompass all evidence that may demonstrate their satisfaction of the statutory standard. DHS notes that although it is expanding the types of evidence that a petitioner may submit to establish eligibility, this rulemaking does not change the petitioner's burden to establish eligibility under the preponderance of the evidence standard of proof.

A number of commenters supported expanding the criteria for EB-1 outstanding professors and researchers because doing so would remove evidentiary limitations and allow employers to present full documentation of an employee's qualifications. One of these commenters added that the language in the proposed rule was well drafted and broad enough to include all evidence that may prove outstanding achievement. Under current regulation, petitioners need to fit evidence into specific evidentiary categories. For example, petitioners have submitted funding grants as documentation of major awards under 8 CFR 204.5(i)(3)(i)(A). In other instances, petitioners may have omitted relevant evidence that could have helped to demonstrate the beneficiary is recognized internationally as outstanding, such as high salary and affiliation with prestigious institutions, because they did not believe it would fit into any of the regulatory evidentiary category. Commenters noted that the proposed change adds necessary flexibility; for instance, this change will now potentially allow for the submission of important patents, grant funding and other such achievements that may not neatly fall into the previously existing evidentiary categories. Two of these commenters also commended DHS for recognizing that the types of evidence relevant to the determination of eligibility for this classification have changed greatly since these evidentiary criteria were first created, and will continue to evolve over time due to the changing needs of American businesses.

One of the commenters that supported the comparable evidence provision also expressed concern regarding how USCIS considers comparable evidence. The commenter reported that recent decisions in other employment-based categories suggest that adjudicators allow comparable evidence only when none of the listed criteria apply. The commenter added that comparable evidence should be presumed

acceptable, regardless of whether any of the otherwise enumerated criteria apply, as long as the evidence is relevant to the merits of the case. This commenter urged DHS to clarify this approach here, as well as with certain employment-based classifications where comparable evidence is currently in use.

DHS appreciates the commenter's concern regarding adjudicative trends in how USCIS considers comparable evidence. DHS regulations provide that petitions in the EB-1 extraordinary ability and EB-2 exceptional ability classifications must establish that one or more permissible standards are not readily applicable to the beneficiary's occupation in order to rely on the comparable evidence provision respective to those standards. *See* 8 CFR 204.5(h)(4), (k)(3)(iii). Accordingly, if any single evidentiary standard is inapplicable to the beneficiary's occupation, the petitioner may submit alternative, but comparable, evidence even though other standards may be applicable to the beneficiary's occupation.

For EB-1 outstanding professors and researchers, DHS confirms that a petitioner will be able to submit comparable evidence instead of, or in addition to, evidence targeted at the standards currently listed in 8 CFR 204.5(i)(3)(i) to demonstrate that the beneficiary is internationally recognized as outstanding if the currently listed standards do not readily apply. The intent of this provision is to allow petitioners, in cases where evidence of the beneficiary's achievements do not fit neatly into the enumerated list, to submit alternate, but qualitatively comparable, evidence. Under this provision, a petitioner may submit evidence falling within the standards listed under 8 CFR 204.5(i)(3)(i), and may also use the comparable evidence provision to submit additional types of comparable evidence that is not listed, or that may not be fully encompassed, in 8 CFR 204.5(i)(3)(i). DHS notes that a petitioner's characterization of existing standards as "not readily applying" to the submitted evidence will be considered in the totality of the circumstances, but USCIS ultimately will determine which standard is satisfied, if any, by any form of submitted evidence.

As noted in the proposed rule, limiting submission of comparable evidence for outstanding professors and researchers only to instances in which the standards do not readily apply "to the alien's occupation" would not adequately serve the goal of this regulatory change because unlike the standards for EB-1 aliens of

extraordinary ability and EB-2 aliens of exceptional ability, the standards for EB-1 outstanding professors and researchers are tailored to only these two occupations.¹³ Thus, a petitioner for an outstanding professor or researcher does not need to establish that a particular standard is not readily applicable "to the beneficiary's occupation" before they can rely on comparable evidence. A petitioner for an outstanding professor or researcher instead needs to establish that the evidentiary standards listed in 8 CFR 204.5(i)(3)(i) do not readily apply to the evidence that the petitioner proposes to submit before the petitioner can rely on the comparable evidence provision.

After establishing that the evidentiary standards listed in 8 CFR 204.5(i)(3)(i) does not readily apply to the evidence he or she is submitting, the petitioner may then submit alternative, but qualitatively comparable evidence for those standards. The existing evidentiary standards listed in 8 CFR 204.5(i)(3)(i) serve as a roadmap for determining, among other things, the quantity and types of evidence that should be submitted in order for such evidence to be considered "comparable."

Given the overwhelming support and strong justification for the comparable evidence provision as proposed, DHS will adopt it and amend 8 CFR 204.5(i)(3) to include a comparable evidence provision.

2. Oppose

Two commenters opposed the comparable evidence provision for outstanding professors and researchers. One commenter indicated that they opposed it because it will expand the number of eligible foreign nationals competing for high-tech jobs. The commenter stated that many engineers, computer professionals and scientists are unemployed or under-employed and asserted that the proposed change

¹³ In the proposed rule, DHS explained that the aliens of extraordinary ability and aliens of exceptional ability classifications encompass a broad range of occupations (sciences, arts, education, business, or athletics for extraordinary ability aliens; and the sciences, arts, or business for exceptional ability aliens). *See* 79 FR 26870, 26880 (citing INA section 203(b)(1)(A), (2)(A)). Employers filing petitions under such classifications may submit comparable evidence if they can establish that the standards listed in the regulation do not directly apply to the beneficiary's occupation. *See* 8 CFR 204.5(h)(4), (k)(3)(iii). In contrast, the outstanding professor or researcher classification involves only two overarching types of occupations, and generally, the current evidentiary standards readily apply to both. Therefore, the variance between the regulatory text of comparable evidence provision for EB-1 outstanding professors and researchers and that provision for the other two categories is necessary.

would lead to two negative effects on U.S. workers: (1) The change will depress the wages of U.S. citizens; and (2) it will increase a sense of job instability and in turn deter workers from speaking up for fear of retaliation.

While the commenter did not submit data to support the wage and instability concerns, DHS takes these comments seriously. DHS appreciates this viewpoint and has carefully considered the potential for any negative effects on the labor market as a result of this rulemaking. Congress imposed a numerical limitation for the number of EB-1 visas available annually. The annual cap on EB-1 visas generally is set by statute at 40,000, plus any visas left over from the fourth and fifth employment based preference categories (special immigrants and immigrant investors) described in section 203(b)(4) and (5) of the INA, 8 U.S.C. 1153(b)(4) and (5). In FY 14, USCIS received 3,549 petitions for EB-1 outstanding professors and researchers. DHS notes that this provision does not expand the visa numerical limitation beyond that set forth by Congress. Rather, DHS is simply expanding the list of evidentiary standards so that those who may be meritorious of classification under INA 203(b)(1)(B) can more readily demonstrate their eligibility, consistent with similar classifications. This provision provides greater flexibility for petitioners on what evidence they may submit to show that the beneficiary is recognized internationally as outstanding in the academic field specified in the petition. It does not change any of the remaining petitioning requirements (such as the job offer) or expand the types of individuals who can qualify for the EB-1 classification beyond those individuals authorized under the statute. Instead, this change better enables petitioners to hire outstanding professors and researchers by providing a set of standards that are flexible enough to encompass any evidence that may demonstrate that they are recognized internationally as outstanding.

Another commenter expressed concern regarding existing fraud and abuse in the H-1B and EB-1 programs, stating that the government should first focus on ways to prevent such abuse “before passing any law to ease the process” for these individuals. The commenter did not provide any data on the nature or extent of such fraud and abuse, and did not otherwise identify a connection between the proposed rule’s provisions and past instances of fraud and abuse. DHS takes concerns regarding fraud and abuse very seriously and has measures in place to detect and

combat fraud. Strict consequences are already in place for immigration-related fraud and criminal activities, including inadmissibility to the United States, mandatory detention, ineligibility for naturalization, and removability. *See, e.g.,* INA sections 101(f), 212(a)(2) & (a)(6), 236(c), 237(a)(1)(G) & (a)(2), 318; 8 U.S.C. 1101(f), 1182(a)(2) & (a)(6), 1226(c), 1227(a)(1)(G) & (a)(2), 1429.

Additionally, the USCIS Fraud Detection and National Security Directorate (FDNS) currently combats fraud and abuse, including in the H-1B and EB-1 programs, by developing and maintaining efficient and effective anti-fraud and screening programs, leading information sharing and collaboration activities, and supporting law enforcement and intelligence communities. FDNS’s primary mission is to determine whether individuals or organizations filing for immigration benefits pose a threat to national security, public safety, or the integrity of the nation’s legal immigration system. FDNS’s objective is to enhance USCIS’s effectiveness and efficiency in detecting and removing known and suspected fraud from the application process, thus promoting the efficient processing of legitimate applications and petitions. FDNS officers resolve background check information and other concerns that surface during the processing of immigration benefit applications and petitions. Resolution often requires communication with law enforcement or intelligence agencies to make sure that the information is relevant to the applicant or petitioner at hand and, if so, whether the information would have an impact on eligibility for the benefit. FDNS officers also perform checks of USCIS databases and public information, as well as other administrative inquiries, to verify information provided on, and in support of, applications and petitions. FDNS uses the Fraud Detection and National Security Data System (FDNS-DS) to identify fraud and track potential patterns.

USCIS has formed a partnership with U.S. Immigration and Customs Enforcement (ICE), in which FDNS pursues administrative inquiries into most application and petition fraud, while ICE conducts criminal investigations into major fraud conspiracies. Individuals with information regarding fraud and abuse in the immigration benefits system are encouraged to contact FDNS at FDNS@dhs.gov or by mail at 111 Massachusetts Ave. NW., Ste. 7002, Mail Stop 2280, Washington, DC 20529-2280. DHS believes that these collective measures

provide adequate safeguards to ensure that fraud and abuse does not occur, and that this rulemaking is unlikely to result in a significant additional risk of fraud and abuse, because there is a lack of a connection between the proposed rule’s provisions and past instances of fraud and abuse. Accordingly, DHS has not made any changes in response to these comments.

3. Suggestions for Other Evidence

Six commenters suggested additional categories of evidence that DHS should consider accepting as comparable evidence or initial evidence. One commenter suggested that DHS accept the number of years of experience working in a research field and an offer of employment by a research organization or institute of higher education as comparable evidence to the various criteria *See* 8 CFR 204.5(i)(3). The commenter noted that certain researchers face hurdles in publishing groundbreaking results and are therefore unable to obtain the scholarly authorship, recognition, or requisite awards to meet this criterion. The commenter suggested that permitting this evidence would help these researchers meet the eligibility requirements for this classification.

One commenter suggested that DHS give priority to U.S. doctoral degree holders applying as outstanding researchers or professors who already have a tenure-track faculty position. The commenter explained that these individuals teach and conduct research in narrowly focused fields and are therefore not heavily cited. As a result, they are not usually eligible for EB-1 positions because they cannot meet the existing criterion involving “published material in professional publications written by others” about the professor or researcher’s work. *See* 8 CFR 204.5(i)(3)(i)(C). The commenter stated that allowing more evidence to fit the criterion will help individuals in this type of scenario.

In general, three commenters suggested that DHS consider a U.S. earned doctoral degree as evidence to qualify for the EB-1 classification. Their comments varied in detail and scope. One commenter stated that DHS should grant the EB-1 classification to individuals who obtained their doctoral degrees from U.S. schools. This commenter did not provide any details or context to clarify this suggestion. Another commenter suggested that DHS should allow individuals with U.S. doctoral degrees in science, technology, engineering and mathematics (STEM) with a related job [offer] to qualify for the EB-1 category. DHS is unable to

determine whether these commenters suggested an automatic grant of the classification based on a U.S. earned doctoral degree or if the commenter suggested that the classification be limited only to U.S. earned doctoral degree holders.

One of these commenters suggested that DHS expand the list of initial evidence to include a STEM doctoral degree issued by a U.S. accredited university, and that DHS could publish a list of U.S. accredited universities to make the criteria more transparent. The commenter explained that a petitioner could satisfy the proposed criteria by submitting an “attested copy”¹⁴ of the STEM degree certificate and an unopened transcript from the university, to mirror the current criteria set forth for EB–2 petitions. The commenter added that this suggestion would provide a pathway for U.S. trained doctoral degree holders to stay in the United States, allowing the United States to retain technical excellence and continue its leadership in technology. The commenter also suggested that DHS could set parameters for eligibility criteria based on salary, and that a petitioner could satisfy this requirement by submitting occupational employment statistics from the Bureau of Labor Statistics (BLS). The commenter suggested that eligible EB–1 workers should have wages that are greater than the 75th percentile of the BLS wage figures for their occupation, such that beneficiaries making greater than \$100,000 a year would satisfy the criteria, a requirement the commenter believes would mirror the current criteria set forth for EB–1, Aliens of Extraordinary Ability.¹⁵ The commenter believes this suggestion would alleviate any concerns regarding financial exploitation of the immigrant worker

and the protection of domestic workers’ wage rights.

DHS carefully considered the commenters’ suggestions for initial and additional evidence for the EB–1 outstanding professors and researchers classification. DHS believes that the evidence suggested in the comments above regarding minimum number of years of experience and minimum education requirements generally would not be beneficial in an analysis of whether an individual is internationally recognized as outstanding in his or her academic field. The purpose of the proposed comparable evidence provision is to allow petitioners to present evidence that, although not on the enumerated list, may still serve to demonstrate that the professor or researcher is internationally recognized as outstanding. DHS appreciates that to achieve this goal, the standards listed in 8 CFR 204.5(i)(3)(i) need to have some measure of flexibility so they may continue to evolve over time in response to U.S. business needs and/or the changing nature of certain work environments or practices. It is not clear, however, whether the commenters’ suggestions regarding minimum number of years of experience, minimum education requirements, and salary requirements are intended to limit or expand the current evidentiary criteria for EB–1 outstanding professors or researchers. If they were intended to limit the criteria, then the commenters’ suggestions would have the effect of narrowing the eligibility criteria by requiring very specific evidence that is possessed by a specific subset of the potential population of outstanding professors and researchers. In direct contrast, the intended purpose of the comparable evidence provision is to provide flexibility for this population. If the commenter’s suggestions, however, were intended to expand the type of evidence that may be considered, that suggestion is consistent with the purpose of the comparable evidence provision as it provides needed flexibility to establish eligibility. Therefore, DHS declines to adopt these suggestions as amendments to the standards listed in 8 CFR 204.5(i)(3)(i) in favor of a broad comparable evidence provision.¹⁶

One commenter expressed concern that adding the proposed comparable

evidence provision will not improve the probability that an outstanding professor and researcher will qualify for the classification. The commenter explained that adjudicators analyze this classification under a two-part analysis, and therefore meeting the criteria is not enough to prove eligibility. Instead, the commenter suggested that DHS impose a point-based system as an alternative, transparent method for evaluating whether these individuals are eligible for the classification. The commenter added that this would eliminate any subjectivity in the process and allow a researcher or petitioner to predict whether he or she meets or does not meet the criteria.

DHS disagrees with the commenter’s assertion that the proposed comparable evidence provision will not benefit petitioners and these specific foreign workers. The stated purpose of the proposed comparable evidence provision is to allow petitioners to submit additional types of evidence and to fully document the beneficiary’s international recognition as an outstanding professor or researcher in order to demonstrate eligibility for the requested classification. However, this proposal does not change the eligibility standard for this classification. The petitioner must still demonstrate, by a preponderance of the evidence, that the beneficiary is recognized internationally as outstanding in the specific academic area.

The commenter correctly asserted that adjudicators analyze this classification using a two-part approach. The USCIS policy memo, *Evaluation of Evidentiary Criteria in Certain I-140 Petitions*, provides instructions to adjudicators regarding application of a two-step analysis for purposes of adjudicating extraordinary ability, outstanding professor and researcher, and exceptional ability Form I-140 petitions.¹⁷ The commenter stated that given this two-step analysis, a beneficiary may satisfy at least two of the outstanding professor and researcher regulatory standards but fail to prove eligibility. DHS believes that whether or not a beneficiary ultimately may prove eligibility by providing evidence satisfying at least two of the listed regulatory criteria is not a material question in considering whether to add this comparable evidence provision. Instead, by allowing submission and

¹⁴ The commenter references the evidentiary requirements for the EB–2, Members of Professions Holding Advanced Degrees or Aliens of Exceptional Ability. The relevant provision at 8 CFR 204.5(k)(3)(i)(A) requires an “official academic record showing that the alien has a United States advanced degree or a foreign equivalent degree.” Therefore, in this context, DHS infers that “attested copy” is a reference to “an official academic record.”

¹⁵ The commenter references the evidentiary requirements for the EB–1, Aliens of Extraordinary Ability. The relevant provision at 8 CFR 204.5(h)(3)(ix) requires “evidence that the alien has commanded a high salary or other high remuneration for services, in relation to others in the field.” In contrast, the evidentiary requirements for the EB–1, Outstanding Professors and Researchers, at 8 CFR 204.5(i)(3) does not contain a high salary criterion. DHS may consider any evidence submitted in the totality of the circumstances to determine whether an individual is internationally recognized as an outstanding professor or researcher.

¹⁶ Although DHS will not amend the regulations to add these very specific suggestions, please note that the comparable evidence provision is sufficiently broad to permit consideration of the evidence described in the comments, so long as the previously described requirements of the provision are satisfied.

¹⁷ See USCIS Policy Memorandum, “Evaluation of Evidence Submitted with Certain Form I-140 Petitions; Revisions to the Adjudicator’s Field Manual (AFM) Chapter 22.2, AFM Update AD11–14” (Dec. 22, 2010), available at <http://www.uscis.gov/USCIS/Laws/Memoranda/i-140-evidence-pm-6002-005-1.pdf>.

consideration of comparable evidence, which does not exist under current regulation, this rule promises to offer petitioners a more meaningful opportunity to establish a beneficiary's eligibility. Thus, although DHS recognizes that satisfaction of the newly added provision will not guarantee approval for the classification, if petitioners submit evidence that indeed is comparable and points to international recognition for being outstanding in the field, that evidence may improve the probability that the petition will be approved under the existing framework.

DHS appreciates the suggestion for an alternative framework for analysis of the EB-1 outstanding professors and researchers classification, but DHS declines to adopt the suggested point-based system as it would require a much broader reshaping of the current immigration system. This suggestion would require a wholesale rulemaking for all the other classifications, which is beyond the scope of this rulemaking.

DHS declines to adopt the suggestions for initial evidence, additional evidence, and an alternative framework. As previously noted, DHS is tailoring this regulation to provide EB-1 outstanding professors and researchers with a comparable evidence provision that mirrors the other employment-based immigrant categories that already allow for submission of comparable evidence.

G. Miscellaneous Comments

One commenter requested clarification as to whether the changes proposed in this rule would affect processing times for family immigration. The commenter did not state which aspects of the proposed changes he or she believes could impact family immigration processing times. While there is always a possibility that changes to one USCIS business process may trigger unanticipated downstream effects on other USCIS business processes, DHS does not anticipate that changes made by this rule will have a direct impact on family based immigration processing times.

Another commenter supported DHS's replacement of the more narrow term "employer" with the more general term "petitioner" in reference to who may file a request to change or extend status under 8 CFR 214.1(c)(1) and 248.3(a). The commenter explained that the term "employer" does not adequately

describe the array of individuals and entities that may file petitions under 8 CFR 214.2 and the term "petitioner" is a much more accurate descriptor. DHS agrees that the term "petitioner" is a more accurate depiction of the individual who may file in a variety of scenarios. Additionally, this change will generally eliminate inconsistency between the change of status and extension of stay provisions and the classification-specific provisions in 8 CFR 214.2. This change will eliminate any confusion that the current inconsistency between these provisions may have caused. DHS will adopt this provision without change.

IV. Statutory and Regulatory Requirements

A. Executive Orders 12866 and 13563

Executive Orders 12866 and 13563 direct agencies to assess the costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, reducing costs, harmonizing rules, and promoting flexibility. This rule has not been designated a "significant regulatory action," under section 3(f) of Executive Order 12866. Accordingly, the rule has not been reviewed by the Office of Management and Budget (OMB).

This analysis updates the estimated costs and benefits discussed in the proposed rule. This final rule will not impose any additional compliance costs on employers, individuals, or government entities, and will not require additional funding for the Federal Government. However, DHS notes that there could be additional familiarization costs as employers read the final rule in the **Federal Register** to understand the benefits that this rule will provide. Also, USCIS may spend a de minimis amount of time updating training materials, but USCIS does not expect to hire additional personnel as a result of this rule. The final rule will make certain changes to the regulations governing the E-3, H-1B1, and CW-1 nonimmigrant worker classifications. Specifically, DHS will amend the regulation to allow principal E-3, H-

1B1, and CW-1 nonimmigrant workers up to 240 days of continued work authorization beyond the expiration date noted on their Arrival Departure Record, Form I-94, provided that their extension of stay request is timely filed. Employers or petitioners are already required to submit an extension of stay for such nonimmigrant classifications in order to extend their status beyond the expiration date noted on their Arrival Departure Record, Form I-94. Permitting continued employment while the extension of stay request is pending with USCIS places principal E-3, H-1B1, and CW-1 nonimmigrant workers on par with other, similarly situated nonimmigrants. The provisions will not result in any additional compliance costs, burdens, or procedures for the U.S. employer or the workers.

Additionally, DHS will allow petitioners of EB-1 outstanding professors and researchers to submit comparable evidence, instead of or in addition to the evidence listed in 8 CFR 204.5(i)(3)(i), to demonstrate that the professor or researcher is recognized internationally as outstanding in his or her academic field. Allowing comparable evidence for EB-1 outstanding professors and researchers will match the evidentiary requirements with those of similarly situated employment-based immigrant classifications.

DHS notes that the above-referenced changes are part of DHS's Retrospective Review Plan for Existing Regulations under Executive Order 13563.¹⁸ During the development of DHS's Retrospective Review Plan for Existing Regulations in 2011, DHS received one comment in response to the 2011 publication.¹⁹ DHS received more comments again in response to the 2014 publication. These public comments requested specific changes to the DHS regulations that govern continued work authorization for principal E-3 and H-1B1 nonimmigrants when an extension of status petition is timely filed, and requested that DHS expand the types of evidence allowable in support of immigrant petitions for outstanding researchers or professors. This rule responds to these comments according to the retrospective review principles of Executive Order 13563.

The costs and benefits of the final rule are summarized in Table 2.

¹⁸ See U.S. Department of Homeland Security Retrospective Review of Existing Regulations—Progress Report (Feb. 2015), available at <http://www.dhs.gov/publication/february-2015-retrospective-review-plan-report> for the latest

published update on DHS actions with respect to Retrospective Review.

¹⁹ See Letter from Marlene M. Johnson, Executive Director and CEO of NAFSA: Association of

International Educators, to Ivan K. Fong, General Counsel, DHS (Apr. 13, 2011), available at <http://www.nafsa.org/uploadedFiles/DHSregreviewcommentApr122011%20public.pdf>.

TABLE 2—SUMMARY OF COSTS AND BENEFITS

Costs	Change	Benefits and Avoided Costs
Minimal costs associated with reading the rule to understand the benefits that will accrue to employers and workers. This rule does not impose any additional compliance costs.	E3, H-1B1, and CW-1 Nonimmigrants	
	Continued employment authorization of up to 240 days for an H-1B1, principal E-3, or CW-1 nonimmigrant worker while a timely filed extension of stay petition is pending.	Avoided cost of lost productivity for U.S. employers of principal E-3, H-1B1, and CW-1 nonimmigrant workers. Not quantified. Would provide equity for principal E-3 and H-1B1 nonimmigrants relative to other employment-based nonimmigrants listed in 8 CFR 274a.12.(b)(20) and provides equity for CW-1 nonimmigrant workers whose extension is filed by the same employer, similar to other CW-1 nonimmigrant workers who change employers. Qualitative benefit.
	Clarify that principal E-3 and H-1B1 nonimmigrants are work authorized incident to status, and specify current filing procedures for requesting change of status or extension of stay.	Ensures the regulations are consistent with statutory authority and codifies current practice.
	EB-1 Outstanding Professor and Researcher Classification	
	Allow the use of comparable evidence to that listed in 8 CFR 204.5(i)(3)(i)(A)–(F) to establish that the EB-1 professor or researcher is recognized internationally as outstanding in his or her academic field.	May help U.S. employers recruit EB-1 outstanding professors and researchers for U.S. employers. Not quantified. Would provide equity for EB-1 outstanding professors and researchers relative to certain employment-based immigrants listed in 8 CFR 204.5. Qualitative benefit.

A summary of the classification types affected by this final rule is shown in Table 3.

TABLE 3—SUMMARY OF AFFECTED VISA TYPES

Visa type	Beneficiary restrictions	Immigration status	Maximum duration of stay	Annual limitations
E-3	Nationals of Australia ..	Nonimmigrant (temporary employment).	2 years, potentially indefinite extensions.	10,500 ²⁰ .
H-1B1	Nationals of Chile or Singapore.	Nonimmigrant (temporary employment).	1 year, potentially indefinite extensions.	1,400 for Chilean nationals; 5,400 for Singaporean nationals.
CW-1	Limited to workers in the CNMI during the transition to U.S. Federal immigration regulations.	Nonimmigrant (temporary employment during transition period).	1 year, extensions available through December 31, 2019.	Maximum of 12,999 in fiscal year (FY) 2016.
EB-1 outstanding professor and researcher.	Professors and researchers (any nationality) who are recognized internationally as outstanding in their academic area.	Immigrant (permanent residence and employment).	None	Apportioned from the approximate 40,040 generally available annually to first preference employment-based immigrant visas.

1. E-3 and H-1B1 Nonimmigrant Workers

Under current regulations, if employers of E-3 or H-1B1

²⁰ In accordance with INA section 214(g)(11)(C), this limit only applies to principal E-3s and does

nonimmigrants want to ensure continued employment authorization throughout the period that the extension request is pending, they generally must file a petition requesting the extension

not extend to spouses or children of the principal alien.

of the individual employee's stay well before the initial authorized period of stay expires. The Petition for a Nonimmigrant Worker, Form I-129, is used to request extensions of stay for these nonimmigrant workers. Currently, the petitioner may file a request for

extension of stay as early as 6 months before the authorized period of stay expires. As of December 31, 2014, the average processing time for USCIS to adjudicate these extension requests is 2 months.²¹ However, if the principal E-3 or H-1B1 nonimmigrant worker's authorized period of stay expires before USCIS grants the extension request, the worker cannot continue to work while his or her extension request remains pending.

In this rule, DHS amends its regulations to permit principal E-3 and H-1B1 nonimmigrants to continue their employment with the same employer for up to 240 days after their authorized period of stay expires (as specified on their Arrival-Departure Record, Form I-94) while requests for extension of stay on their behalf are pending. To obtain

authorization to continue employment for up to 240 days, employers or petitioners must timely file the Petition for Nonimmigrant Worker, Form I-129. Since employers are already required to file the Petition for Nonimmigrant Worker, Form I-129, in order to request an extension of stay on behalf of the nonimmigrant worker, there are no additional filing requirements or costs for employers or petitioners to comply with in this final rule. DHS notes there are minimal familiarization costs to employers associated with reading the rule in the **Federal Register** to understand the benefits of the rule. The benefits of the final rule will be to provide equity for principal E-3 and H-1B1 nonimmigrants relative to other employment-based nonimmigrants listed in 8 CFR 274a.12.(b)(20).

Additionally, this provision may allow employers of principal E-3 and H-1B1 nonimmigrant workers to avoid the cost of lost productivity that results from interruptions of work while an extension of stay request is pending.

Table 4 shows that USCIS received a total of 5,294 extension of stay requests for H-1B1 and principal E-3 nonimmigrant workers in the FYs from 2010 through 2014 (an average of 1,059 requests per year). USCIS approved 4,026 extensions of stay requests in the same period (an average of 805 per year). Extension of stay requests received and petition approvals are not meant for direct comparison because USCIS may receive a petition in one year but make a decision on it in another year.

TABLE 4—PETITION FOR NONIMMIGRANT WORKER, FORM I-129 FILED FOR AN EXTENSION OF STATUS FOR E-3 AND H-1B1 NONIMMIGRANTS

FY	Petitions received			Petitions approved		
	H-1B1	E-3	Total	H-1B1	E-3	Total
2010	444	624	1,068	185	571	756
2011	438	555	993	220	410	630
2012	489	563	1,052	180	380	560
2013	417	590	1,007	411	622	1,033
2014	441	733	1,174	447	600	1,047
Total	2,229	3,065	5,294	1,443	2,583	4,026

Source: Data provided by USCIS Office of Performance and Quality (OPQ), January 2015.

USCIS does not have an estimate of either: (a) the number of cases where principal E-3 and H-1B1 nonimmigrants are unable to continue employment with their employer because their employer's timely petition for an extension of stay was not adjudicated before their authorized period of stay expired, or (b) how long principal E-3 and H-1B1 nonimmigrants were unable to work when their employer's timely petition for an extension of stay was not adjudicated before their authorized period of stay expired.²² Because of this data limitation, we are unable to quantify the total aggregate estimated benefits of this provision of the rule. The rule, however, will benefit U.S. employers to the extent that this rule allows U.S. employers to avoid interruptions in productivity that could result if the timely extension of stay is not adjudicated before the authorized

period of stay expires, as noted on the nonimmigrant worker's Arrival-Departure Record, Form I-94. Unfortunately, DHS did not receive statistics or data from impacted stakeholders that permit us to quantitatively estimate the benefits of this rule.

In addition, DHS is amending the regulations to codify current practices. Specifically, DHS is amending 8 CFR 274a.12(b) to clarify in the regulations that the principal E-3 and H-1B1 nonimmigrant classifications are employment authorized incident to status with a specific employer. DHS is also amending 8 CFR 214.1(c)(1) and 8 CFR 248.3(a) to add the principal E-3 and H-1B1 nonimmigrant classifications to the list of nonimmigrant classifications that must file a petition with USCIS to make an extension of stay or change of status request. Again, both of these regulatory

clarifications are consistent with current practice.

2. CW-1 Nonimmigrant Workers

This provision of the final rule will apply to the CW-1 classification, which is issued solely to nonimmigrant workers in the CNMI. The CW-1 nonimmigrant visa classification was created to allow certain workers who are otherwise ineligible for any other nonimmigrant visa classification under the INA to work in the CNMI during the transition period to the U.S. Federal immigration system. This transition period was set to end on December 31, 2014. On June 3, 2014, the U.S. Secretary of Labor exercised statutory responsibility and authority by extending the CW transitional worker program for an additional 5 years, through December 31, 2019.²³

CW-1 nonimmigrant workers may be initially admitted to the CNMI for a

²¹ See *USCIS Processing Time Information*, available at <https://egov.uscis.gov/cris/processTimesDisplayInit.do>. The USCIS California Service Center and Vermont Service Center adjudicate Petition for a Nonimmigrant Worker, Form I-129, extension of stay requests for E and H-1B nonimmigrants.

²² USCIS acknowledges that in part 3 of the Petition for a Nonimmigrant Worker, Form I-129, information is collected about the beneficiary that is currently in the United States. While this information is collected and considered for the purposes of adjudicating the petition, this information is not captured in a database.

²³ See Secretary of Labor Extends the Transition Period of the Commonwealth of the Northern Mariana Islands-Only Transitional Worker Program, 79 FR 31988 (June 3, 2014).

period of 1 year, and USCIS may grant extensions in 1-year increments until the end of the transition period. The CW-1 nonimmigrant visa classification is valid only in the CNMI and does not require any certification from the DOL.

DHS has determined that current regulations contain an inconsistency. While current regulations provide continued work authorization for CW-1 nonimmigrant workers while petitions for a change of employers are pending and for certain beneficiaries of initial CW transitional worker petitions filed on or before November 27, 2011, continued work authorization is not currently provided for CW-1 nonimmigrant workers requesting extensions of stay with the same employer. This inconsistency in the regulations may create an incentive for CW-1 nonimmigrant workers to change employers, as they would have the advantage of uninterrupted work authorization.

DHS is revising the regulations to allow for equitable treatment of CW-1 nonimmigrant workers who remain with the same employer by extending continued employment authorization for up to 240 days while a timely filed, pending request for an extension of stay with the same employer is being adjudicated. As with the similar proposal in this rule regarding H-1B1 and principal E-3 nonimmigrants, current employers of CW-1 nonimmigrant workers may also avoid productivity losses that could occur if a CW-1 nonimmigrant worker cannot continue employment while the timely filed extension request is pending.

The CW-1 nonimmigrant classification is temporary. DHS has established numerical limitations on the number of CW-1 nonimmigrant classifications that may be granted (see Table 5). The numerical limitations apply to both initial petitions and extension of stay requests, including change of employer petitions, in a given FY. DHS has set the numerical limitation for CW-1 nonimmigrant workers at 12,999 for FY 2016.²⁴

TABLE 5—NUMERICAL LIMITATIONS OF CW-1 CLASSIFICATIONS

FY	Numerical Limit
2011	22,417
2012	22,416
2013	15,000
2014	14,000
2015	13,999
2016	12,999

DHS set the numerical limit of CW-1 nonimmigrant workers at 14,000 for FY 2014 and petitioning employers filed initial petitions for 1,133 beneficiaries; extension of stay requests from the same employer for 8,952 beneficiaries; and extension of stay requests from new employers for an additional 1,298 beneficiaries.²⁵ The population affected by this provision of the final rule will be those CW-1 nonimmigrant workers whose subsequent extensions of stay requests are filed by the same employer. Accordingly, if this proposal were in place in FY 2014, all of the 8,952 CW-1 nonimmigrant workers with extension of stay requests with the same employer would have received the continued 240-day employment authorization, if necessary, generally putting these workers on par with CW-1 nonimmigrant workers with extension of stay requests for new employers.

This provision will not impose any additional costs on any petitioning employer or for CW-1 nonimmigrant workers. The benefits of this final rule will be that DHS will treat CW-1 nonimmigrant workers whose extension of stay request is timely filed by the same employer similar relative to other CW-1 nonimmigrant workers whose request is timely filed by a new employer. Additionally, this provision will mitigate any potential distortion in the labor market for employers of CW-1 nonimmigrant workers created by the differing provisions for retained workers versus provisions for workers changing employers and prevent a potential loss of productivity for current employers. Under current law, these benefits would be limited in duration, as the transition period in which CW-1 nonimmigrant worker classifications are issued is now scheduled to end on December 31, 2019. Unfortunately, USCIS does not have data to permit a quantitative estimation of the benefits²⁶ of this provision.

²⁵ Source: USCIS Office of Performance and Quality, January, 2015.

²⁶ The aggregate value of benefits would depend on several non-quantifiable factors including: the number of CW-1 workers prompted to change employment because of the automatic extension versus those changing for reasons of promotion and advancement or termination by their previous employer.

Additionally, DHS did not receive data or additional information from impacted stakeholders that would permit DHS to quantitatively estimate the benefits of this rule as it relates to CW-1 nonimmigrant workers in the CNMI. DHS believes, however, that the inconsistent treatment of employment authorization for CW-1 nonimmigrant workers could have created hardships to the CNMI labor force.²⁷

3. EB-1 Outstanding Professors and Researchers

For the EB-1 outstanding professor and researcher immigrant classification, under current regulations, a petitioner must submit initial evidence to demonstrate that the beneficiary is recognized internationally as outstanding in his or her specific academic field. The type of evidence that is required is outlined in 8 CFR 204.5(i)(3).

To demonstrate that the EB-1 professor or researcher is recognized internationally as outstanding in his or her academic field, DHS, through this rulemaking, is allowing petitioners to substitute comparable evidence (examples might include award of important patents and prestigious, peer-reviewed funding or grants) for the evidence listed in 8 CFR 204.5(i)(3)(i)(A)–(F). See 8 CFR 204.5(i)(3)(ii). The other requirements remain unchanged. DHS made this change in response to stakeholder concerns that the current evidentiary list is dated and may not allow the beneficiary to present the full documentation of their achievements.²⁸

By allowing for comparable evidence, DHS will harmonize the evidentiary requirements of the EB-1 outstanding professor and researcher category with those currently available to the EB-1 extraordinary ability category as well as the EB-2 category for a person of exceptional ability.

This provision of the final rule will not create additional costs for any petitioning employer or for the EB-1 outstanding professor and researcher classification. The benefits of this provision are qualitative, as it will treat EB-1 outstanding professors and researchers the same as certain other individuals who seek similar

²⁷ See Joint letter to the Director, USCIS, from the Saipan Chamber of Commerce, the Hotel Association of the Northern Mariana Islands and the Society for Human Resource Management CNMI (Dec. 20, 2012).

²⁸ See Letter from Marlene M. Johnson, Executive Director and CEO of NAFSA: Association of International Educators, to Ivan K. Fong, General Counsel, DHS (Apr. 13, 2011), available at <http://www.nafsa.org/uploadedFiles/DHSregreviewcommentApr122011%20public.pdf>.

²⁴ See Commonwealth of the Northern Mariana Islands (CNMI)-Only Transitional Worker Numerical Limitation for Fiscal Year 2016, 80 FR 63911 (Oct. 22, 2015). On June 3, 2014, the Secretary of Labor exercised statutory responsibility and authority by extending the CW transitional worker program for an additional 5 years, through December 31, 2019. See Secretary of Labor Extends the Transition Period of the Commonwealth of the Northern Mariana Islands-Only Transitional Worker Program, 79 FR 31988 (June 3, 2014).

Source: FYs 2011 and 2012, 8 CFR 214(w)(viii). FY 2013, *Federal Register* volume 77, no. 231, page 71287. FY 2014, *Federal Register* volume 78, no. 186, page 58867. FY 2015, *Federal Register* volume 79, no. 188, page 58241. FY 2016, *Federal Register* volume 80, no. 204, page 63911.

employment-based immigrant status under 8 CFR 204.5. Because of the expanded types of evidence that could be used to support an EB-1 petition for outstanding professors and researchers, qualified U.S. employers may find it easier to recruit EB-1 outstanding professors and researchers due to this provision. Recruitment may provide EB-1 outstanding professors or researchers with additional

opportunities to contribute to his or her employer and field, furthering his or her international recognition.

As shown in Table 6, over the past 10 FY(s), USCIS approved an average of 93.23 percent of EB-1 petitions for outstanding professors and researchers under the current evidentiary standards. USCIS does not have data to indicate which, if any, of the 2,379 petitions that were not approved from FY 2005

through FY 2014 would have been approved under the proposed evidentiary standards. Furthermore, we are not able to estimate whether the proposed evidentiary standards would alter the demand for EB-1 outstanding professors and researchers by U.S. employers. Because of this data limitation, the further quantification of this benefit is not possible.

TABLE 6—IMMIGRANT PETITION FOR ALIEN WORKER (I-140) WITH OUTSTANDING PROFESSOR OR RESEARCHER PREFERENCE RECEIPTS AND COMPLETIONS, FY 2005–2014

FY	Receipts ²⁹	Approved ³⁰	Denied	Percent approved
2005	3,089	5,455	391	93.31
2006	3,111	3,139	165	95.01
2007	3,560	2,540	300	89.44
2008	2,648	2,223	187	92.24
2009	3,209	3,991	309	92.81
2010	3,522	3,199	332	90.60
2011	3,187	3,090	218	93.41
2012	3,112	3,223	194	94.32
2013	3,350	3,180	147	95.58
2014	3,549	3,357	136	95.58
Total	32,337	33,397	2,379	10-Yr Avg: 93.23%

Source: Data provided by USCIS Office of Performance and Quality (OPQ), January 2015.

DHS welcomed public comments from impacted stakeholders, such as employers or prospective employers of an EB-1 outstanding professor or researcher, providing information or data that would enable DHS to calculate the resulting benefits of this provision. DHS did not receive any data on this request that would allow DHS to calculate quantitative benefits of this regulatory change. As indicated earlier in the preamble, DHS did receive comments suggesting that this change will benefit both U.S. employers that are petitioning for outstanding professors and researchers, and the individuals seeking immigration status under this classification.

B. Regulatory Flexibility Act

The Regulatory Flexibility Act of 1980 (RFA), 5 U.S.C. 601–612, as amended by the Small Business Regulatory Enforcement Fairness Act of 1996, Public Law 104–121 (March 29, 1996), requires Federal agencies to consider the potential impact of regulations on small entities while they are developing the rules. The term “small entities” comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and

governmental jurisdictions with populations of less than 50,000. This final rule revises regulations to allow for additional flexibilities; harmonizes the conditions of employment of principal E-3, H-1B1, and CW-1 nonimmigrant workers with other, similarly situated nonimmigrant categories; and harmonizes the allowance of comparable evidence for EB-1 outstanding professors and researchers with evidentiary requirements of other similar employment-based immigrant categories. As discussed previously, DHS does not anticipate that the additional provisions will result in additional compliance costs for impacted U.S. employers, including any small entities, other than the minimal costs associated with reading and becoming familiar with benefits offered by the rule.

As discussed extensively in the regulatory assessment for Executive Orders 12866 and 13563 and elsewhere throughout the preamble, this final rule does not impose any additional compliance costs on U.S. employers. U.S. employers must continue filing extension of stay requests with DHS to extend the period of authorized stay of E-3, H-1B1, and CW-1 nonimmigrant employees, as is currently required. This final rule, however, will allow for a continued period of authorized employment for the nonimmigrant worker who is the beneficiary of this petition, provided that the petition is

timely filed. This will provide increased flexibilities for the U.S. petitioning employers without imposing any additional costs or compliance procedures.

Based on the foregoing, DHS certifies that this rule will not have a significant economic impact on a substantial number of small entities.

C. Unfunded Mandates Reform Act of 1995

This final rule will not result in the expenditure by State, local and tribal governments, in the aggregate, or by the private sector, of \$100 million or more in any 1 year, and it will not significantly or uniquely affect small governments. Therefore, no actions were deemed necessary under the provisions of the Unfunded Mandates Reform Act of 1995.

D. Small Business Regulatory Enforcement Fairness Act of 1996

This final rule is not a major rule as defined by section 804 of the Small Business Regulatory Enforcement Act of 1996. This rule will not result in an annual effect on the economy of \$100 million or more; a major increase in costs or prices; or significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based companies to compete with foreign-based companies in domestic and export markets.

²⁹ Receipts are those filed within the FY indicated and include petitions from new arrivals and those that are seeking to adjust status.

³⁰ Approved and denied petitions may have been receipted in a previous FY.

E. Executive Order 13132

This rule will not have substantial direct effects on the States, on the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with section 6 of Executive Order 13132, it is determined that this rule does not have sufficient federalism implications to warrant the preparation of a federalism summary impact statement.

F. Executive Order 12988

This rule meets the applicable standards set forth in sections 3(a) and 3(b)(2) of Executive Order 12988.

G. Paperwork Reduction Act

Under the Paperwork Reduction Act (PRA) of 1995, Public Law 104–13, agencies are required to submit to the Office of Management and Budget (OMB), for review and approval, any reporting requirements inherent in a rule. See 44 U.S.C. 3506.

The information collection requirement contained in this rule, Immigrant Petition for Alien Worker, Form I–140, has been previously approved for use by OMB under the PRA. The OMB control number for the information collection is 1615–0015.

This final rule requires a revision to the Immigrant Petition for Alien Worker, Form I–140, instructions to expand the current list of evidentiary standards to include comparable evidence so that U.S. employers petitioning for an EB–1 outstanding professor or researcher may be aware that they may submit additional or alternative documentation demonstrating the beneficiary's achievements if the evidence otherwise described in 8 CFR 204.5(i)(3)(i) does not readily apply. Specifically, DHS is adding a new paragraph “b” under the “Initial Evidence” section of the form instructions, to specify that employers filing for an outstanding professor or researcher may submit comparable evidence to establish the foreign national's eligibility if the listed standards under 8 CFR 204.5(i)(3)(i) do not readily apply. DHS is also providing minor clarifying language updates to the form instructions to maintain parity among USCIS forms. DHS has submitted the revised information collection request (ICR) to OMB for review, and OMB has conducted a preliminary review under 5 CFR 1320.11.

DHS has considered the public comments received in response to EB–1 provision in the proposed rule,

Enhancing Opportunities for H–1B1, CW–1, and E–3 Nonimmigrants and EB–1 Immigrants, published in the **Federal Register** at 79 FR 26870 on May 12, 2014. DHS's responses to these comments appear under Part III.F of this final rule.

DHS did not receive comments related to the Immigrant Petition for Alien Workers, Form I–140, revisions. As a result, DHS will not submit any further changes to the information collection.

USCIS has submitted the supporting statement to OMB as part of its request for approval of this revised information collection instrument. There is no change in the estimated annual burden hours initially reported in the proposed rule. Based on a technical and procedural update required in the ICRs for all USCIS forms, USCIS has newly accounted for estimates for existing out-of-pocket costs that respondents may incur to obtain tax, financial, or business records, and/or other evidentiary documentation depending on the specific employment-based immigrant visa classifications requested on the Immigrant Petition for Alien Worker, Form I–140. This change in the ICR is a technical and procedural update and is not a result of any change related to this final rule.

Regulatory Amendments**List of Subjects***8 CFR Part 204*

Administrative practice and procedure, Immigration, Reporting and recordkeeping requirements.

8 CFR Part 214

Administrative practice and procedure, Aliens, Cultural exchange programs, Employment, Foreign officials, Health professions, Reporting and recordkeeping, Students.

8 CFR Part 248

Aliens, Reporting and recordkeeping requirements.

8 CFR Part 274a

Administrative practice and procedure, Aliens, Employment, Penalties, Reporting and recordkeeping requirements.

Accordingly, chapter I of title 8 of the Code of Federal Regulations is amended as follows:

PART 204—IMMIGRANT PETITIONS

■ 1. The authority citation for part 204 continues to read as follows:

Authority: 8 U.S.C. 1101, 1103, 1151, 1153, 1154, 1182, 1184, 1186a, 1255, 1641; 8 CFR part 2.

■ 2. Section 204.5 is amended by redesignating paragraphs (i)(3)(ii) and (iii) as paragraphs (i)(3)(iii) and (iv), respectively, and adding a new paragraph (i)(3)(ii) to read as follows:

§ 204.5 Petitions for employment-based immigrants.

* * * * *

(i) * * *

(3) * * *

(ii) If the standards in paragraph (i)(3)(i) of this section do not readily apply, the petitioner may submit comparable evidence to establish the beneficiary's eligibility.

* * * * *

PART 214—NONIMMIGRANT CLASSES

■ 3. The authority citation for part 214 is revised to read as follows:

Authority: 8 U.S.C. 1101, 1102, 1103, 1182, 1184, 1186a, 1187, 1221, 1281, 1282, 1301–1305 and 1372; sec. 643, Public Law 104–208, 110 Stat. 3009–708; Public Law 106–386, 114 Stat. 1477–1480; section 141 of the Compacts of Free Association with the Federated States of Micronesia and the Republic of the Marshall Islands, and with the Government of Palau, 48 U.S.C. 1901 note, and 1931 note, respectively; 8 CFR part 2.

■ 4. Section 214.1 is amended in paragraph (c)(1) by:

■ a. Revising the paragraph heading; and

■ b. Removing the first and second sentences, and adding one sentence in their place.

The revision and addition read as follows:

§ 214.1 Requirements for admission, extension, and maintenance of status.

* * * * *

(c) * * *

(1) *Extension of stay for certain employment-based nonimmigrant workers.* A petitioner seeking the services of an E–1, E–2, E–3, H–1B, H–1B1, H–2A, H–2B, H–3, L–1, O–1, O–2, P–1, P–2, P–3, Q–1, R–1, or TN nonimmigrant beyond the period previously granted, must apply for an extension of stay on the form designated by USCIS, with the fee prescribed in 8 CFR 103.7(b)(1), with the initial evidence specified in § 214.2, and in accordance with the form instructions.

* * *

* * * * *

PART 248—CHANGE OF NONIMMIGRANT CLASSIFICATION

■ 5. The authority citation for part 248 continues to read as follows:

Authority: 8 U.S.C. 1101, 1103, 1184, 1258; 8 CFR part 2.

■ 6. Section 248.3 is amended by revising the section heading and paragraph (a) to read as follows:

§ 248.3 Petition and application.

* * * * *

(a) *Requests by petitioners.* A petitioner must submit a request for a change of status to E-1, E-2, E-3, H-1C, H-1B, H-1B1, H-2A, H-2B, H-3, L-1, O-1, O-2, P-1, P-2, P-3, Q-1, R-1, or TN nonimmigrant.

* * * * *

PART 274a—CONTROL OF EMPLOYMENT OF ALIENS

■ 7. The authority citation for part 274a continues to read as follows:

Authority: 8 U.S.C. 1101, 1103, 1324a; 48 U.S.C. 1806; 8 CFR part 2.

■ 8. Section 274a.12 is amended by:

■ a. Revising the first sentence of paragraph (b)(9);

■ b. Revising the first sentence of paragraph (b)(20);

■ c. Removing the word “or” at the end of paragraph (b)(23);

■ d. Removing the period at the end of paragraph (b)(24) and adding in its place “; or”; and

■ e. Adding paragraph (b)(25).

The revisions and addition read as follows:

§ 274a.12 Classes of aliens authorized to accept employment.

* * * * *

(b) * * *

(9) A temporary worker or trainee (H-1, H-2A, H-2B, or H-3), pursuant to § 214.2(h) of this chapter, or a nonimmigrant specialty occupation worker pursuant to section 101(a)(15)(H)(i)(b1) of the Act. * * *

* * * * *

(20) A nonimmigrant alien within the class of aliens described in paragraphs (b)(2), (b)(5), (b)(8), (b)(9), (b)(10), (b)(11), (b)(12), (b)(13), (b)(14), (b)(16), (b)(19), (b)(23) and (b)(25) of this section whose status has expired but on whose behalf an application for an extension of stay was timely filed pursuant to § 214.2 or § 214.6 of this chapter. * * *

* * * * *

(25) A nonimmigrant treaty alien in a specialty occupation (E-3) pursuant to section 101(a)(15)(E)(iii) of the Act.

* * * * *

Jeh Charles Johnson,

Secretary of Homeland Security.

[FR Doc. 2016-00478 Filed 1-13-16; 11:15 am]

BILLING CODE 9111-97-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

Docket No. FAA-2015-6753; Airspace
Docket No. 15-ANM-29

Amendment of Class D Airspace;
Denver, CO

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This action amends the city designation of the Class D airspace at Broomfield, CO, changing the designation to Denver, CO, and the airport name to Rocky Mountain Metropolitan Airport. The name and associated city location of the airport are updated to coincide with the FAA's aeronautical database. This does not affect the charted boundaries or operating requirements of the airspace.

DATES: Effective 0901 UTC, March 31, 2016. The Director of the Federal Register approves this incorporation by reference action under Title 1, Code of Federal Regulations, part 51, subject to the annual revision of FAA Order 7400.9 and publication of conforming amendments.

ADDRESSES: FAA Order 7400.9Z, Airspace Designations and Reporting Points, and subsequent amendments can be viewed online at http://www.faa.gov/air_traffic/publications/. For further information, you can contact the Airspace Policy Group, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone: 202-267-8783. The Order is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of FAA Order 7400.9Z at NARA, call 202-741-6030, or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

FAA Order 7400.9, Airspace Designations and Reporting Points, is published yearly and effective on September 15.

FOR FURTHER INFORMATION CONTACT: Steve Haga, Federal Aviation Administration, Operations Support Group, Western Service Center, 1601 Lind Avenue SW., Renton, WA 98057; telephone (425) 203-4563.

SUPPLEMENTARY INFORMATION:

Authority for This Rulemaking

The FAA's authority to issue rules regarding aviation safety is found in Title 49 of the United States Code.

Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority. This rulemaking is promulgated under the authority described in Subtitle VII, Part A, Subpart I, Section 40103. Under that section, the FAA is charged with prescribing regulations to assign the use of airspace necessary to ensure the safety of aircraft and the efficient use of airspace. This regulation is within the scope of that authority as it amends Class D airspace at Denver, CO.

Availability and Summary of Documents for Incorporation by Reference

This document amends FAA Order 7400.9Z, Airspace Designations and Reporting Points, dated August 6, 2015, and effective September 15, 2015. FAA Order 7400.9Z is publicly available as listed in the **ADDRESSES** section of this document. FAA Order 7400.9Z lists Class A, B, C, D, and E airspace areas, air traffic service routes, and reporting points.

The Rule

This amendment to Title 14, Code of Federal Regulations (14 CFR) part 71 modifies the legal description of the Class D airspace at Denver, CO, by updating the name and associated city designation of the airport to coincide with the FAA's aeronautical database. Jefferson County Airport is renamed Rocky Mountain Metropolitan Airport and the city designation is corrected from Broomfield, CO, to Denver, CO. This does not affect the boundaries or operating requirements of the airspace.

Class D airspace designations are published in paragraph 5000 of FAA Order 7400.9Z dated August 6, 2015, and effective September 15, 2015, which is incorporated by reference in 14 CFR part 71.1. The Class D airspace designations listed in this document will be published subsequently in the Order.

This is an administrative change amending the airport name and city location to be in concert with the FAA's aeronautical database, and does not affect the boundaries, or operating requirements of the airspace, therefore, notice and public procedure under 5 U.S.C. 553(b) are unnecessary.

Regulatory Notices and Analyses

The FAA has determined that this regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current, is non-controversial and

unlikely to result in adverse or negative comments. It, therefore: (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. Since this is a routine matter that only affects air traffic procedures and air navigation, it is certified that this rule, when promulgated, does not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

Environmental Review

The FAA has determined that this action qualifies for categorical exclusion under the National Environmental Policy Act in accordance with FAA Order 1050.1F, "Environmental Impacts: Policies and Procedures," paragraph 5–6.5a. This airspace action is not expected to cause any potentially significant environmental impacts, and no extraordinary circumstances exist that warrant preparation of an environmental assessment.

Lists of Subjects in 14 CFR Part 71

Airspace, Incorporation by reference, Navigation (air).

Adoption of the Amendment

In consideration of the foregoing, the Federal Aviation Administration amends 14 CFR part 71 as follows:

PART 71—DESIGNATION OF CLASS A, B, C, D, AND E AIRSPACE AREAS; AIR TRAFFIC SERVICE ROUTES; AND REPORTING POINTS

- 1. The authority citation for Part 71 continues to read as follows:

Authority: 49 U.S.C. 106(f), 106(g); 40103, 40113, 40120; E.O. 10854, 24 FR 9565, 3 CFR, 1959–1963 Comp., p. 389.

§ 71.1 [Amended]

- 2. The incorporation by reference in 14 CFR 71.1 of FAA Order 7400.9Z, Airspace Designations and Reporting Points, dated August 6, 2015, effective September 15, 2015, is amended as follows:

Paragraph 5000: Class D Airspace.

* * * * *

ANM CO D Denver, CO [Amended]

Rocky Mountain Metropolitan Airport, CO (Lat. 39°54'32" N., Long. 105°07'02" W.)

That airspace extending upward from the surface to, but not including, 8,000 feet MSL, within a 5-mile radius of Rocky Mountain Metropolitan Airport. This Class D airspace

area is effective during the specific dates and times established in advance by a Notice to Airmen. The effective date and time will thereafter be continuously published in the Airport/Facility Directory.

Issued in Seattle, Washington, on December 28, 2015.

Tracey Johnson,

Manager, Operations Support Group, Western Service Center.

[FR Doc. 2016–00305 Filed 1–14–16; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF HOMELAND SECURITY

U.S. Customs and Border Protection

DEPARTMENT OF THE TREASURY

19 CFR Parts 10, 24, 162, 163, and 178

[USCBP–2015–0007; CBP Dec. 16–1]

RIN 1515–AD59

United States-Australia Free Trade Agreement

AGENCIES: U.S. Customs and Border Protection, Department of Homeland Security; Department of the Treasury.

ACTION: Final rule.

SUMMARY: This document adopts as a final rule, with one change, interim amendments to the U.S. Customs and Border Protection (CBP) regulations that were published in the **Federal Register** on February 10, 2015, as CBP Dec. 15–03, to implement the preferential tariff treatment and other customs-related provisions of the United States-Australia Free Trade Agreement.

DATES: Effective February 16, 2016.

FOR FURTHER INFORMATION CONTACT: Textile Operational Aspects: Anita Harris, Textile Operations Branch, Office of International Trade, (202) 863–6241.

Other Operational Aspects: Seth Mazze, Trade Policy and Programs, Office of International Trade, (202) 863–6567.

Legal Aspects: Yuliya Gulis, Regulations and Rulings, Office of International Trade, (202) 325–0042.

SUPPLEMENTARY INFORMATION:

Background

On May 18, 2004, the United States and Australia (the "Parties") signed the United States-Australia Free Trade Agreement ("AFTA" or "Agreement"). On August 3, 2004, the President signed into law the United States-Australian Free Trade Agreement Implementation Act (the "Act"), Public Law 108–286,

118 Stat. 919 (19 U.S.C. 3805 note), which approved and made statutory changes to implement the AFTA. On December 20, 2004, the President signed Proclamation 7857 to implement the AFTA. The Proclamation, which was published in the **Federal Register** on December 23, 2004 (69 FR 77133), modified the Harmonized Tariff Schedule of the United States ("HTSUS") as set forth in Annexes I and II of Publication 3722 of the U.S. International Trade Commission.

On February 10, 2015, CBP published CBP Dec. 15–03 in the **Federal Register** (80 FR 7303) setting forth interim amendments to implement the preferential tariff treatment and other customs-related provisions of the AFTA and the Act. The majority of the AFTA implementing regulations set forth in CBP Dec. 15–03 and adopted, with one change, as final in this document have been included within new Subpart L of Part 10 of the CBP regulations (19 CFR part 10). In those cases in which AFTA implementation is more appropriate in the context of an existing regulatory provision, however, the AFTA regulatory text has been incorporated into an existing part within the CBP regulations. CBP Dec. 15–03 also sets forth a number of cross-references and other consequential changes to existing regulatory provisions to clarify the relationship between those existing provisions and the new AFTA implementing regulations. Please refer to that document for further background information.

Although the interim regulatory amendments were promulgated without prior public notice and comment procedures and took effect on February 10, 2015, CBP Dec. 15–03 provided for the submission of public comments which would be considered before adoption of the interim regulations as a final rule. The prescribed public comment closed on April 13, 2015. CBP received one comment on CBP Dec. 15–03.

Discussion of Comments

One response was received to the solicitation of comments on the interim rule set forth in CBP Dec. 15–03. The comment is discussed below.

Comment

One commenter questioned whether the AFTA requires that Australian exporters be consulted before the interim regulations take effect.

CBP Response

The changes proposed in the interim regulations took effect on the date of publication of the interim regulations.

As indicated above, CBP Dec. 15–03 provided for the submission of public comments which would be considered before adoption of the interim regulations as a final rule. All interested parties, including Australian exporters, were given the opportunity to submit public comments. No such public comments were received from or submitted by any party in response to CBP Dec. 15–03 that objected to the changes in the interim rules being included in a final rule.

Other Amendment

This document clarifies 19 CFR 10.725(c) by removing the parenthetical cross reference to §§ 10.746 and 10.747 and, instead, stating that the importer's actions must be “pursuant to” those CBP regulations.

Conclusion

After further review of the matter, including consideration of the above-mentioned comment submitted in response to CBP's solicitation of public comment, CBP has determined to adopt as final, with a clarification, the interim rule published in the **Federal Register** (80 FR 7303) on February 10, 2015.

Executive Order 12866

This document is not a regulation subject to the provisions of Executive Order 12866 of September 30, 1993 (58 FR 51735, October 1993), because it pertains to a foreign affairs function of the United States and implements an international agreement, as described above, and therefore is specifically exempted by section 3(d)(2) of Executive Order 12866.

Regulatory Flexibility Act

CBP Dec. 15–03 was issued as an interim rule rather than a notice of proposed rulemaking because CBP had determined that the interim regulations involve a foreign affairs function of the United States pursuant to section 553(a)(1) of the Administrative Procedure Act (APA). As no notice of proposed rulemaking was required, the provisions of the Regulatory Flexibility Act, as amended (5 U.S.C. 601 *et seq.*), do not apply. Accordingly, this final rule is not subject to the regulatory analysis requirements or other requirements of 5 U.S.C. 603 and 604.

Paperwork Reduction Act

The collections of information contained in these regulations have previously been reviewed and approved by the Office of Management and Budget (OMB) in accordance with the requirements of the Paperwork Reduction Act (44 U.S.C. 3507) under

control number 1651–0117, which covers many of the free trade agreement requirements that CBP administers, and 1651–0076, which covers general recordkeeping requirements. The collections of information in these regulations are in §§ 10.723, 10.724, and 10.727 of title 19 of the Code of Federal Regulations (19 CFR 10.723, 10.724, and 10.727). This information is required in connection with general recordkeeping requirements (§ 10.727), as well as claims for preferential tariff treatment under the AFTA and the Act and will be used by CBP to determine eligibility for tariff preference under the AFTA and the Act. The likely respondents are business organizations including importers, exporters and manufacturers.

The estimated total annual reporting burden associated with the collection of information in this final rule is 4,000 hours. Under the Paperwork Reduction Act, an agency may not conduct or sponsor and a person is not required to respond to a collection of information, unless it displays a valid OMB control number.

Signing Authority

This document is being issued in accordance with § 0.1(a)(1) of the CBP regulations (19 CFR 0.1(a)(1)) pertaining to the authority of the Secretary of the Treasury (or his/her delegate) to approve regulations related to certain CBP revenue functions.

List of Subjects

19 CFR Part 10

Alterations, Bonds, Customs duties and inspection, Exports, Imports, Preference programs, Repairs, Reporting and recordkeeping requirements, Trade agreements.

19 CFR Part 24

Accounting, Customs duties and inspection, Financial and accounting procedures, Reporting and recordkeeping requirements, Trade agreements, User fees.

19 CFR Part 162

Administrative practice and procedure, Customs duties and inspection, Penalties, Trade agreements.

19 CFR Part 163

Administrative practice and procedure, Customs duties and inspection, Exports, Imports, Reporting and recordkeeping requirements, Trade agreements.

19 CFR Part 178

Administrative practice and procedure, Exports, Imports, Reporting and recordkeeping requirements.

Amendment to the CBP Regulations

For the reasons stated above, the interim rule amending Parts 10, 24, 162, 163, and 178 of the CBP regulations (19 CFR parts 10, 24, 162, 163, and 178), which was published at 80 FR 7303 on February 10, 2015, is adopted as a final rule with the following change:

PART 10—ARTICLES CONDITIONALLY FREE, SUBJECT TO A REDUCED RATE, ETC.

■ 1. The general authority citation for part 10, and the specific authority citation for Subpart L, continue to read as follows:

Authority: 19 U.S.C. 66, 1202 (General Note 3(i), Harmonized Tariff Schedule of the United States), 1321, 1481, 1484, 1498, 1508, 1623, 1624, 3314.

* * * * *

Sections 10.721 through 10.748 also issued under 19 U.S.C. 1202 (General Note 28, HTSUS) and Pub. L. 108–286, 118 Stat. 919 (19 U.S.C. 3805 note).

* * * * *

§ 10.725 [Amended]

■ 2. In § 10.725, paragraph (c) is amended by removing the language, “(see §§ 10.746 and 10.747 of this subpart)” and adding in its place the language, “pursuant to §§ 10.746 and 10.747 of this subpart”.

R. Gil Kerlikowske,
Commissioner.

Approved: January 11, 2016.

Timothy E. Skud,
Deputy Assistant Secretary of the Treasury.

[FR Doc. 2016–00628 Filed 1–14–16; 8:45 am]

BILLING CODE 9111–14–P

DEPARTMENT OF HOMELAND SECURITY

U.S. Customs and Border Protection

DEPARTMENT OF THE TREASURY

19 CFR Part 12

[CBP Dec. 16–02]

RIN 1515–AE07

Extension of Import Restrictions Imposed on Archaeological Material Originating in Italy and Representing the Pre-Classical, Classical, and Imperial Roman Periods

AGENCY: Customs and Border Protection, Department of Homeland Security; Department of the Treasury.

ACTION: Final rule.

SUMMARY: This document amends Customs and Border Protection (CBP)

regulations to reflect the extension of import restrictions on certain categories of archaeological material originating in Italy and representing the pre-Classical, Classical, and Imperial Roman periods of its cultural heritage, ranging in date from approximately the 9th century B.C. through approximately the 4th century A.D. The restrictions, which were originally imposed by Treasury Decision (T.D.) 01–06 and extended by CBP Decision (CBP Dec.) 06–01 and CBP Dec. 11–03 are due to expire on January 19, 2016. The Assistant Secretary for Educational and Cultural Affairs, United States Department of State, has determined that factors continue to warrant the imposition of import restrictions and no cause for suspension exists. Accordingly, these import restrictions will remain in effect for an additional five years, and the CBP regulations are being amended to reflect this extension until January 19, 2021. These restrictions are being extended pursuant to determinations of the United States Department of State made under the terms of the Convention on Cultural Property Implementation Act that implemented the United Nations Educational, Scientific and Cultural Organization (UNESCO) Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property. CBP Dec. 11–03 contains the Designated List of archaeological material originating in Italy and representing the pre-Classical, Classical, and Imperial Roman periods to which the restrictions apply.

DATES: *Effective Date:* January 19, 2016.

FOR FURTHER INFORMATION CONTACT: For legal aspects, Lisa L. Burley, Chief, Cargo Security, Carriers and Restricted Merchandise Branch, Regulations and Rulings, Office of International Trade, (202) 325–0215. For operational aspects, William R. Scopa, Branch Chief, Partner Government Agency Branch, Trade Policy and Programs, Office of International Trade, (202) 863–6554, William.R.Scopa@cbp.dhs.gov.

SUPPLEMENTARY INFORMATION:

Background

Pursuant to the provisions of the 1970 United Nations Educational, Scientific and Cultural Organization (UNESCO) Convention, implemented by the Convention on Cultural Property Implementation Act (Pub. L. 97–446, 19 U.S.C. 2601 *et seq.*), the United States entered into a bilateral agreement with Italy on January 19, 2001, concerning the imposition of import restrictions on archaeological material originating in Italy and representing the pre-Classical, Classical, and Imperial Roman periods.

On January 23, 2001, the former U.S. Customs Service (now U.S. Customs and Border Protection (CBP)) published T.D. 01–06 in the **Federal Register** (66 FR 7399), which amended 19 CFR 12.104g(a) to indicate the imposition of these restrictions and included a list designating the types of archaeological material covered by the restrictions.

Import restrictions listed in 19 CFR 12.104g(a) are “effective for no more than five years beginning on the date on which the agreement enters into force with respect to the United States. This period can be extended for additional periods not to exceed five years if it is determined that the factors which justified the initial agreement still pertain and no cause for suspension of the agreement exists” (19 CFR 12.104g(a)).

Since the initial notice was published on January 23, 2001, the import restrictions were extended twice. First, on January 19, 2006, CBP published CBP Dec. 06–01 in the **Federal Register** (71 FR 3000) which amended 19 CFR 12.104g(a) to reflect the extension for an additional period of five years. Subsequently, on January 19, 2011, CBP published CBP Dec. 11–03 in the **Federal Register** (76 FR 3012) to extend the import restriction for an additional five-year period to January 19, 2016. CBP Dec. 11–03 also reflects an amendment to the Designated List to include the subcategory “Coins of Italian Types” as part of the category entitled “Metal,” pursuant to 19 U.S.C. 2604.

On December 23, 2014, the Department of State received a request by the Government of the Republic of Italy to extend the Agreement. Subsequently, the Department of State proposed to extend the Agreement. After considering the views and recommendations of the Cultural Property Advisory Committee, the Assistant Secretary for Educational and Cultural Affairs, United States Department of State, determined that the cultural heritage of Italy continues to be in jeopardy from pillage of archaeological material representing the pre-Classical, Classical, and Imperial Roman periods and made the necessary determinations to extend the import restrictions for an additional five years. Diplomatic notes have been exchanged, reflecting the extension of those restrictions for an additional five-year period. Accordingly, CBP is amending 19 CFR 12.104g(a) to reflect this extension of the import restrictions.

The Designated List of Pre-Classical, Classical and Imperial Roman Period Archaeological Material from Italy covered by these import restrictions is

set forth in CBP Dec. 11–03. The Designated List and accompanying image database may also be found at the following Internet Web site address: <http://eca.state.gov/cultural-heritage-center/cultural-property-protection/bilateral-agreements/italy>.

The restrictions on the importation of these archaeological materials from the Republic of Italy are to continue in effect for an additional five years. Importation of such material continues to be restricted unless the conditions set forth in 19 U.S.C. 2606 and 19 CFR 12.104c are met.

Inapplicability of Notice and Delayed Effective Date

This amendment involves a foreign affairs function of the United States and is, therefore, being made without notice or public procedure (5 U.S.C. 553(a)(1)). In addition, CBP has determined that such notice or public procedure would be impracticable and contrary to the public interest because the action being taken is essential to avoid interruption of the application of the existing import restrictions (5 U.S.C. 553(b)(3)). For the same reasons, a delayed effective date is not required under 5 U.S.C. 553(d)(3).

Regulatory Flexibility Act

Because no notice of proposed rulemaking is required, the provisions of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) do not apply.

Executive Order 12866

It has been determined that this rule is not a significant regulatory action under Executive Order 12866.

Signing Authority

This regulation is being issued in accordance with 19 CFR 0.1(a)(1).

List of Subjects in 19 CFR Part 12

Cultural property, Customs duties and inspection, Imports, Prohibited merchandise.

Amendment to CBP Regulations

For the reasons set forth above, part 12 of Title 19 of the Code of Federal Regulations (19 CFR part 12), is amended as set forth below:

PART 12—SPECIAL CLASSES OF MERCHANDISE

■ 1. The general authority citation for part 12 and the specific authority citation for § 12.104g continue to read as follows:

Authority: 5 U.S.C. 301; 19 U.S.C. 66, 1202 (General Note 3(i), Harmonized Tariff Schedule of the United States (HTSUS)), 1624;

* * * * *

Sections 12.104 through 12.104i also issued under 19 U.S.C. 2612;

* * * * *

§ 12.104g [Amended]

■ 2. In § 12.104g, paragraph (a), the table is amended in the entry for Italy by removing the reference to “CBP Dec. 11–03” and adding in its place “CBP Dec. 16–02”.

R. Gil Kerlikowske,
Commissioner, U.S. Customs and Border Protection.

Approved: January 12, 2016.

Timothy E. Skud,
Deputy Assistant Secretary of the Treasury.

[FR Doc. 2016–00735 Filed 1–14–16; 8:45 am]

BILLING CODE 9111–14–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

26 CFR Part 1

[TD 9745]

RIN 1545–BL43

Minimum Value of Eligible Employer-Sponsored Plans and Other Rules Regarding the Health Insurance Premium Tax Credit; Correction

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Final regulations; correcting amendment.

SUMMARY: This document contains corrections to final regulations (TD 9745) that were published in the **Federal Register** on Friday, December 18, 2015 (80 FR 78971). The final regulations are on the health insurance premium tax credit enacted by the Patient Protection and Affordable Care Act and the Health Care and Education Reconciliation Act of 2010, as amended by the Medicare and Medicaid Extenders Act of 2010, the Comprehensive 1099 Taxpayer Protection and Repayment of Exchange Subsidy Overpayments Act of 2011, and the Department of Defense and Full Year Continuing Appropriations Act, 2011.

DATES: This correction is effective *January 15, 2016* and applicable December 18, 2015.

FOR FURTHER INFORMATION CONTACT: Shareen Pflanz at (202) 317–4718 (not a toll-free number).

SUPPLEMENTARY INFORMATION:

Background

The final regulations (TD 9745) that are the subject of this correction are

under section 36B of the Internal Revenue Code.

Need for Correction

As published, the final regulations (TD 9745) contains an error that may prove to be misleading and is in need of clarification.

List of Subjects in 26 CFR Part 1

Income taxes, Reporting and recordkeeping requirements.

Correction of Publication

Accordingly, 26 CFR part 1 is corrected by making the following correcting amendment:

PART 1—INCOME TAXES

■ **Paragraph 1.** The authority citation for part 1 continues to read in part as follows:

Authority: 26 U.S.C. 7805 * * *

■ **Par. 2.** Section 1.36B–3 is amended by revising paragraph (d)(2)(i)(A) to read as follows:

§ 1.36B–3 Computing the premium assistance credit amount.

* * * * *

(d) * * *

(2) * * *

(i) * * *

(A) The enrollment premiums for the month (reduced by any amounts that were refunded); or

* * * * *

Martin V. Franks,

Chief, Publications and Regulations Branch, Legal Processing Division, Associate Chief Counsel, (Procedure and Administration).

[FR Doc. 2016–00701 Filed 1–14–16; 8:45 am]

BILLING CODE 4830–01–P

PENSION BENEFIT GUARANTY CORPORATION

29 CFR Part 4022

Benefits Payable in Terminated Single-Employer Plans; Interest Assumptions for Paying Benefits

AGENCY: Pension Benefit Guaranty Corporation.

ACTION: Final rule.

SUMMARY: This final rule amends the Pension Benefit Guaranty Corporation’s regulation on Benefits Payable in Terminated Single-Employer Plans to prescribe interest assumptions under the regulation for valuation dates in February 2016. The interest assumptions are used for paying benefits under terminating single-employer plans covered by the pension

insurance system administered by PBGC.

DATES: Effective February 1, 2016.

FOR FURTHER INFORMATION CONTACT:

Catherine B. Klion (*Klion.Catherine@pbgc.gov*), Assistant General Counsel for Regulatory Affairs, Pension Benefit Guaranty Corporation, 1200 K Street NW., Washington, DC 20005, 202–326–4024. (TTY/TDD users may call the Federal relay service toll-free at 1–800–877–8339 and ask to be connected to 202–326–4024.)

SUPPLEMENTARY INFORMATION: PBGC’s regulation on Benefits Payable in Terminated Single-Employer Plans (29 CFR part 4022) prescribes actuarial assumptions—including interest assumptions—for paying plan benefits under terminating single-employer plans covered by title IV of the Employee Retirement Income Security Act of 1974. The interest assumptions in the regulation are also published on PBGC’s Web site (*http://www.pbgc.gov*).

PBGC uses the interest assumptions in Appendix B to Part 4022 to determine whether a benefit is payable as a lump sum and to determine the amount to pay. Appendix C to Part 4022 contains interest assumptions for private-sector pension practitioners to refer to if they wish to use lump-sum interest rates determined using PBGC’s historical methodology. Currently, the rates in Appendices B and C of the benefit payment regulation are the same.

The interest assumptions are intended to reflect current conditions in the financial and annuity markets. Assumptions under the benefit payments regulation are updated monthly. This final rule updates the benefit payments interest assumptions for February 2016.¹

The February 2016 interest assumptions under the benefit payments regulation will be 1.25 percent for the period during which a benefit is in pay status and 4.00 percent during any years preceding the benefit’s placement in pay status. In comparison with the interest assumptions in effect for January 2016, these interest assumptions are unchanged.

PBGC has determined that notice and public comment on this amendment are impracticable and contrary to the public interest. This finding is based on the need to determine and issue new interest assumptions promptly so that

¹ Appendix B to PBGC’s regulation on Allocation of Assets in Single-Employer Plans (29 CFR part 4044) prescribes interest assumptions for valuing benefits under terminating covered single-employer plans for purposes of allocation of assets under ERISA section 4044. Those assumptions are updated quarterly.

the assumptions can reflect current market conditions as accurately as possible.

Because of the need to provide immediate guidance for the payment of benefits under plans with valuation dates during February 2016, PBGC finds that good cause exists for making the assumptions set forth in this amendment effective less than 30 days after publication.

PBGC has determined that this action is not a "significant regulatory action" under the criteria set forth in Executive Order 12866.

Because no general notice of proposed rulemaking is required for this amendment, the Regulatory Flexibility Act of 1980 does not apply. See 5 U.S.C. 601(2).

List of Subjects in 29 CFR Part 4022

Employee benefit plans, Pension insurance, Pensions, Reporting and recordkeeping requirements.

In consideration of the foregoing, 29 CFR part 4022 is amended as follows:

PART 4022—BENEFITS PAYABLE IN TERMINATED SINGLE-EMPLOYER PLANS

■ 1. The authority citation for part 4022 continues to read as follows:

Authority: 29 U.S.C. 1302, 1322, 1322b, 1341(c)(3)(D), and 1344.

■ 2. In appendix B to part 4022, Rate Set 268, as set forth below, is added to the table.

Appendix B to Part 4022—Lump Sum Interest Rates For PBGC Payments

* * * * *

Rate set	For plans with a valuation date		Immediate annuity rate (percent)	Deferred annuities (percent)				
	On or after	Before		i_1	i_2	i_3	n_1	n_2
*	*		*	*	*		*	*
268	2-1-16	3-1-16	1.25	4.00	4.00	4.00	7	8

■ 3. In appendix C to part 4022, Rate Set 268, as set forth below, is added to the table.

Appendix C to Part 4022—Lump Sum Interest Rates For Private-Sector Payments

* * * * *

Rate set	For plans with a valuation date		Immediate annuity rate (percent)	Deferred annuities (percent)				
	On or after	Before		i_1	i_2	i_3	n_1	n_2
*	*		*	*	*		*	*
268	2-1-16	3-1-16	1.25	4.00	4.00	4.00	7	8

Issued in Washington, DC, on this 11th day of January 2016.

Philip R. Hertz,

Deputy General Counsel, Pension Benefit Guaranty Corporation.

[FR Doc. 2016-00725 Filed 1-14-16; 8:45 am]

BILLING CODE 7709-02-P

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

33 CFR Part 117

[Docket No. USCG-2016-0021]

Drawbridge Operation Regulation; Lake Washington Ship Canal, Seattle, WA

AGENCY: Coast Guard, DHS.

ACTION: Notice of deviation from drawbridge regulation.

SUMMARY: The Coast Guard has issued a temporary deviation from the operating

schedule that governs the Montlake Bridge across the Lake Washington Ship Canal, mile 5.2, at Seattle, WA. The deviation is necessary to allow the bridge to operate in single leaf mode during day light hours, and a full closure (both bascule leaves in the closed-to-navigation position) during night time hours while work crews replace bridge decking. This deviation allows a single leaf opening with a one hour advance notice during the day, and remains in the closed-to-navigation position at night.

DATES: This deviation is effective from 6 a.m. on February 27, 2016 to 6 p.m. on February 28, 2016.

ADDRESSES: The docket for this deviation, [USCG-2016-0021] is available at <http://www.regulations.gov>. Type the docket number in the "SEARCH" box and click "SEARCH." Click on Open Docket Folder on the line associated with this deviation.

FOR FURTHER INFORMATION CONTACT: If you have questions on this temporary

deviation, call or email Mr. Steven Fischer, Bridge Administrator, Thirteenth Coast Guard District; telephone 206-220-7282, email d13-pf-d13bridges@uscg.mil.

SUPPLEMENTARY INFORMATION:

Washington Department of Transportation has requested a temporary deviation from the operating schedule for the Montlake Bridge across the Lake Washington Ship Canal, at mile 5.2, at Seattle, WA. The deviation is necessary to accommodate work crews conducting timely bridge deck repairs.

The Montlake Bridge in the closed position provides 30 feet of vertical clearance throughout the navigation channel, and 46 feet of vertical clearance throughout the center 60 feet of the bridge; vertical clearance references to the Mean Water Level of Lake Washington. When half the span is open with a single leaf, 46 feet of vertical clearance will be reduced

throughout the center to 30 feet of the bridge.

To facilitate this event, the north half of the bridge span, or single leaf, will open with at least a one hour advance notice provided to the bridge operator from 6 a.m. to 6 p.m. on February 27, 2016. From 6 p.m. on February 27, 2016 to 5 a.m. on February 28, 2016, the Montlake Bridge span will remain in the closed-to-navigation position, or full closure. Then, from 5 a.m. to 6 p.m. on February 28, 2016, the north half of the bridge span will open with at least a one hour advance notice to the bridge operator. The normal operating schedule for the Montlake Bridge operates in accordance with 33 CFR 117.1051(e).

The deviation period is from 6 a.m. on February 27, 2016 to 6 p.m. on February 27, 2016 (north single leaf opening if a one hour notice is given); from 6 p.m. on February 27, 2016 to 5 a.m. on February 28, 2016 (remain in the closed-to-navigation position); from 5 a.m. on February 28, 2016 to 6 p.m. on February 28, 2016 (north single leaf opening if a one hour notice is given).

Waterway usage on the Lake Washington Ship Canal ranges from commercial tug and barge to small pleasure craft. Vessels able to pass through the bridge in the closed-to-navigation position may do so at any time. The bridge will be able to open for emergency vessels in route to a call when an hour notice is given to the bridge operator, and a single leaf opening will be provided. The Lake Washington Ship Canal has no immediate alternate route for vessels to pass. The Coast Guard will also inform the users of the waterways through our Local and Broadcast Notices to Mariners of the change in operating schedule for the bridge so that vessels can arrange their transits to minimize any impact caused by the temporary deviation.

In accordance with 33 CFR 117.35(e), the drawbridge must return to its regular operating schedule immediately at the end of the designated time period. This deviation from the operating regulations is authorized under 33 CFR 117.35.

Dated: January 11, 2016.

Steven M Fischer,

Bridge Administrator, Thirteenth Coast Guard District.

[FR Doc. 2016-00654 Filed 1-14-16; 8:45 am]

BILLING CODE 9110-04-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 52 and 70

[EPA-R07-OAR-2015-0790; FRL-9941-03-Region 7]

Approval of Missouri's Air Quality Implementation Plans; Reporting Emission Data, Emission Fees and Process Information

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct final rule.

SUMMARY: Environmental Protection Agency (EPA) is taking direct final action to approve revisions to the Operating Permits Program for the State of Missouri submitted on March 16, 2015. These revisions update the emissions fee for permitted sources as set by Missouri Statute from \$40 to \$48 per ton of air pollution emitted annually, effective January 1, 2016.

DATES: This direct final rule will be effective March 15, 2016, without further notice, unless EPA receives adverse comment by February 16, 2016. If EPA receives adverse comment, we will publish a timely withdrawal of the direct final rule in the **Federal Register** informing the public that the rule will not take effect.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-R07-OAR-2015-0790, to <http://www.regulations.gov>. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from Regulations.gov. EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.* on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www2.epa.gov/dockets/commenting-epa-dockets>.

FOR FURTHER INFORMATION CONTACT:

Stephen Krabbe, Environmental Protection Agency, Air Planning and

Development Branch, 11201 Renner Boulevard, Lenexa, Kansas 66219 at 913-551-7991 or by email at krabbe.stephen@epa.gov.

SUPPLEMENTARY INFORMATION:

Throughout this document “we,” “us,” or “our” refer to EPA. This section provides additional information by addressing the following:

- I. What is being addressed in this document?
- II. Have the requirements for approval of a SIP revision been met?
- III. What action is EPA taking?

I. What is being addressed in this document?

EPA is taking direct final action to approve the Operating Permits Program revision submitted by the state of Missouri for 10 CSR 10-6.110, “Reporting Emission Data, Emission Fees, and Process Information,” on March 16, 2015. Section (3)(A) revised the emission fees section, which is approved under the Operating Permits Program only, and updates the emissions fee for permitted sources as set by Missouri Statute from \$40 to \$48 per ton of air pollution emitted annually, effective January 1, 2016, as set by Missouri statute.

II. Have the requirements for approval of an operating permits program been met?

The state submission has met the public notice requirements for SIP submissions in accordance with 40 CFR 51.102. The submission also satisfied the completeness criteria of 40 CFR part 51, appendix V. In addition, the revision meets the substantive SIP requirements of the Clean Air Act (CAA), including section 110 and implementing regulations.

III. What action is EPA taking?

We are publishing this direct final rule without a prior proposed rule because we view this as a noncontroversial action and anticipate no adverse comment. However, in the “Proposed Rules” section of this **Federal Register**, we are publishing a separate document that will serve as the proposed rule to this Operating Permits Fee revision if adverse comments are received on this direct final rule. We will not institute a second comment period on this action. Any parties interested in commenting must do so at this time. For further information about commenting on this rule, see the **ADDRESSES** section of this document. If EPA receives adverse comment, we will publish a timely withdrawal in the **Federal Register** informing the public that this direct final rule will not take

effect. We will address all public comments in any subsequent final rule based on the proposed rule.

Incorporation by Reference

In this action, EPA is finalizing regulatory text that includes incorporation by reference. In accordance with requirements of 1 CFR 51.5, the EPA is finalizing the incorporation by reference of the Missouri amendments to 40 CFR part 52 set forth below. EPA has made, and will continue to make, these documents generally available electronically through www.regulations.gov and at the appropriate EPA office (see the **ADDRESSES** section of this preamble for more information).

Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the CAA. Accordingly, this action merely approves state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this action:

- Is not a significant regulatory action subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4);
- Does not have Federalism implications as specified in Executive

Order 13132 (64 FR 43255, August 10, 1999);

- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the CAA; and
- Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

The action is not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the rule does not have tribal implications and will not impose substantial direct costs on tribal governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this action and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a "major rule" as defined by 5 U.S.C. 804(2).

Under section 307(b)(1) of the CAA, petitions for judicial review of this action must be filed in the United States

Court of Appeals for the appropriate circuit by March 15, 2016. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2).)

List of Subjects

40 CFR Part 52

Environmental protection, Air pollution control, Carbon monoxide, Incorporation by reference, Intergovernmental relations, Lead, Nitrogen dioxide, Ozone, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides, Volatile organic compounds.

40 CFR Part 70

Environmental protection, Administrative practice and procedure, Air pollution control, Intergovernmental relations, Operating permits, Reporting and recordkeeping requirements.

Dated: December 23, 2015.

Mark Hague,

Regional Administrator, Region 7.

For the reasons stated in the preamble, the EPA amends 40 CFR parts 52 and 70 as set forth below:

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

- 1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

Subpart AA—Missouri

- 2. Amend § 52.1320(c) by revising the entry for 10-6.110 to read as follows:

§ 52.1320 Identification of Plan.

* * * * *

(c) * * *

EPA-APPROVED MISSOURI REGULATIONS

Missouri citation	Title	State effective date	EPA approval date	Explanation
Missouri Department of Natural Resources				

EPA-APPROVED MISSOURI REGULATIONS—Continued

Missouri citation	Title	State effective date	EPA approval date	Explanation
*	*	*	*	*
Chapter 6—Air Quality Standards, Definitions, Sampling and Reference Methods, and Air Pollution Control Regulations for the State of Missouri				
*	*	*	*	*
10–6.110	Reporting Emission Data, Emission Fees, and Process Information.	11/20/14	1/15/16 [<i>Insert Federal Register citation</i>].	Section (3)(A), Emissions Fees, has been updated from \$40 to \$48 per ton of air pollution emitted annually, effective January 1, 2016.
*	*	*	*	*

* * * * *

PART 70—STATE OPERATING PERMIT PROGRAMS

■ 3. The authority citation for part 70 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

■ 4. Appendix A to part 70 is amended by adding new paragraph (ee) under Missouri to read as follows:

Appendix A to Part 70—Approval Status of State and Local Operating Permits Programs

* * * * *

Missouri

* * * * *

(ee) The Missouri Department of Natural Resources submitted revisions to Missouri rule 10 CSR 10–6.110, “Reporting Emission Data, Emission Fees, and Process Information” on March 16, 2015. The state effective date is November 20, 2014. This revision is effective March 15, 2016.

* * * * *

[FR Doc. 2016–00191 Filed 1–14–16; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES**Administration for Children and Families****45 CFR Parts 262, 264, and 265**

RIN 0970—AC56

Temporary Assistance for Needy Families (TANF) Program, State Reporting On Policies and Practices To Prevent Use of TANF Funds in Electronic Benefit Transfer Transactions in Specified Locations

AGENCY: Office of Family Assistance (OFA), Administration for Children and

Families (ACF), Department of Health and Human Services (HHS).

ACTION: Final rule.

SUMMARY: This final rule makes regulatory changes to the Temporary Assistance for Needy Families (TANF) regulations to require states, subject to penalty, to maintain policies and practices that prevent TANF funded assistance from being used in any electronic benefit transfer transaction in any liquor store; any casino, gambling casino, or gaming establishment; or any retail establishment that provides adult-oriented entertainment in which performers disrobe or perform in an unclothed state for entertainment. This rule implements provisions of Section 4004 of the Middle Class Tax Relief and Job Creation Act of 2012.

DATES: *Effective Date:* Provisions of this final rule become effective January 15, 2016.

Compliance Date: For states, the District of Columbia, and territories (hereafter referred to as states), HHS will determine compliance with provisions in this final rule through review and approval of reports that states submit annually. Initial reports describing the policies and practices states implemented were due on February 22, 2014. All states submitted reports by this deadline. Hereafter, states will submit reports describing the policies and practices required by 45 CFR 264.60 and Section 4004 of the Middle Class Tax Relief and Job Creation Act of 2012 in the Annual Report on TANF and maintenance-of-effort (MOE) Programs in accordance with 45 CFR 265.9(b)(10). As provided at 45 CFR 265.10, this report is due by November 14 of each fiscal year, which is the same time as the fourth quarter TANF data report, as provided in 45 CFR 265.4.

FOR FURTHER INFORMATION CONTACT:

Rebecca Shwalb, Office of Family Assistance, 202–260–3305 (not a toll-free call). Deaf and hearing impaired individuals may call the Federal Dual Party Relay Service at 1–800–877–8339 between 8:00 a.m. and 7:00 p.m. Eastern Time.

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I. Background

Authorized by title IV–A of the Social Security Act, TANF is a block grant that provides states, territories, and tribes federal funds to design and operate a program to accomplish the purposes of TANF. The purposes are to: (1) Assist needy families so that children can be cared for in their own homes or in the homes of relatives; (2) reduce the dependency of needy parents by promoting job preparation, work, and marriage; (3) prevent out-of-wedlock pregnancies; and (4) encourage the formation and maintenance of two-parent families. In addition to federal TANF block grant funds, each state must spend a certain minimum amount of non-federal funds to help eligible families in ways that further a TANF purpose. This is referred to as maintenance-of-effort (MOE).

In general, federal TANF and state MOE funds may be expended on benefits and services targeted to needy families, and activities that aim to prevent and reduce out-of-wedlock pregnancies or encourage the formation and maintenance of two-parent families, as well as administrative expenses. In particular, federal TANF and state MOE funds may be expended on “assistance,” defined at 45 CFR 260.31(a)(1) as including cash payments, vouchers, and other forms of benefits designed to meet a family’s ongoing basic needs (*i.e.*, food, clothing, shelter, utilities, household goods, personal care items, and general incidental expenses). Assistance also includes supportive services such as transportation and child care provided to families who are not employed (see 45 CFR 260.31(a)(3)). TANF funds also can be used for a wide range of benefits and services that do not fall within the definition of assistance; such expenditures are considered “non-assistance.” This rule pertains only to assistance expenditures.

Based on the most recent information provided to us by states, there are currently four means that states use to provide assistance payments to eligible low-income families with children: Paper checks, Electronic Funds Transfers (EFT), Electronic Benefit Transfer (EBT) cards, and Electronic Payment Cards (EPC). Most states have replaced paper checks with one or more of the other three delivery methods in order to provide benefits in a timelier manner, reduce theft and fraud, and eliminate the need for recipients to pay check-cashing fees. Some states automatically transfer assistance payments directly into a recipient’s own private bank account through EFT. However, this option is not available if

a recipient does not have access to or qualify for a checking account. Most states load the amount of assistance on EBT cards or EPCs, both of which allow recipients to use a debit-like card to access their benefits through automated teller machines (ATMs) and point-of-sale (POS) devices. EPCs differ from government EBT cards in that they are network-branded (*e.g.*, Visa or MasterCard) prepaid cards that recipients may use virtually anywhere the brand’s logo is displayed. EBT cards may be used in fewer locations, as retailers and ATMs must be authorized to accept EBT cards.

Among its provisions, the Middle Class Tax Relief and Job Creation Act of 2012, Public Law (Pub. L.) 112–96, requires states to maintain policies and practices to prevent TANF assistance from being used in any EBT transaction (as defined at 42 U.S.C. 608(a)(12)(B)(iii)) in any liquor store; any casino, gambling casino, or gambling establishment; or any retail establishment which provides adult-oriented entertainment in which performers disrobe or perform in an unclothed state for entertainment.

The legislation at Section 4004(b) also imposes a new reporting requirement as well as a new penalty. Each state is required to report annually to the Department of Health and Human Services (HHS) on its implementation of policies and practices related to restricting recipients from using their TANF assistance in EBT transactions at the prohibited locations. HHS will reduce a state’s block grant by not more than five percent of the state family assistance grant in fiscal year (FY) 2014 and annually thereafter if the state fails to comply with this reporting requirement or if, based on the information that the state reports, HHS finds that the state has not implemented and maintained the required policies and practices. The statute provides the Secretary of HHS the authority to reduce the amount of the penalty based on the degree of noncompliance of the state.

Finally, states are required under Section 4004(c) of Public Law 112–96 to include in their state TANF plans a statement outlining how they intend to implement policies and procedures to prevent access to assistance through EFTs at casinos, liquor stores, and establishments providing adult-oriented entertainment. The state plan also must include an explanation of how the state will ensure that (1) recipients of the assistance have adequate access to their cash assistance, and (2) recipients of assistance have access to using or withdrawing assistance with minimal fees or charges, including an

opportunity to access assistance with no fee or charges; are provided information on applicable fees and surcharges that apply to electronic fund transactions involving the assistance; and that such information is made publicly available. This rule does not regulate the state plan provisions at Section 4004(c) of Public Law 112–96, but it incorporates the statutory state plan language under the Middle Class Job Creation and Tax Relief Act of 2012. Following publication of the final rule, HHS plans to issue additional guidance regarding the adequate access provision.

II. Notice of Proposed Rulemaking

HHS published a notice of proposed rulemaking (NPRM) (79 FR 7127) on February 6, 2014, to regulate the TANF provisions in Section 4004(a) and (b) of Public Law 112–96. The proposed rule added new penalties for failure to report or adequately demonstrate implementation of the requirements outlined in Public Law 112–96, defined terms relevant to the new requirements, specified when the penalty takes effect, and identified how HHS will determine whether a state warrants a penalty. It also provided details regarding what types of policies and practices HHS would accept as complying with the statutory requirements. In addition to general comments, the NPRM sought input from commenters regarding two specific issues: TANF assistance deposited directly in recipients’ bank accounts and accessed with a personal debit card, and internet transactions.

HHS received a total of 28 comments, including comments from six states, seven membership and research/advocacy organizations, and three EBT industry organizations. The remaining commenters were members of the public. We include a detailed summary of comments as well as HHS’s responses to comments in Section V of this final rule. Public comments on the proposed rule are available for review on www.regulations.gov.

III. Overview of Final Rule

The final rule amends the TANF program regulations in the following three ways: (1) It adds a requirement to implement policies and practices to prevent TANF assistance from being used in any electronic benefit transfer transaction in any: liquor store; any casino, gambling casino or gaming establishment; and any retail establishment which provides adult-oriented entertainment in which performers disrobe or perform in an unclothed state for entertainment, (2) it adds a requirement to report on policies and practices in an annual report, and

(3) it adds a penalty for failure to report on implementation and maintenance of these policies and practices. In response to comments on the proposed rule, we have made changes in the final rule where appropriate to address policy and other concerns raised by commenters, as well as to incorporate suggested clarifications and improvements. In this section, we provide an overview of the final rule and generally describe major changes in response to comments. A more detailed summary of comments in each area and reason for changes is included in the section-by-section discussion of comments later in this final rule.

(1) When incorporating the requirement at 45 CFR 264.60 to implement policies and practices to prevent TANF assistance from being used in any electronic benefit transfer transaction in any liquor store; any casino, gambling casino or gaming establishment; and any retail establishment which provides adult-oriented entertainment in which performers disrobe or perform in an unclothed state for entertainment, we mirror the statutory language at Section 4004(a) of Public Law 112–96. The preambles to the NPRM and the final rule provide details on the types of policies and practices HHS would accept as complying with the statutory requirements, and identify those that do not. In doing so, we identify that different approaches may be acceptable depending on the method of delivery (EBT, EPC, or direct deposit). We also correct an error we made in the NPRM suggesting that bank identification number (BIN) blocking was a potential approach to preventing TANF assistance from being used in POS terminals in the specified locations. Finally, we reiterate that states have a responsibility to develop appropriate policies for preventing TANF cash assistance administered by state programs from being used at any of the three types of businesses, including those located on tribal land. In general, we have provided flexibility in meeting the statutory and regulatory requirements so that states may develop cost-effective implementation strategies that fit within the existing structures of state operations.

We also have added the relevant accompanying definitions to the TANF regulations at 45 CFR 264.0. Regarding the definitions of the three types of establishments, we have made some changes to those we proposed in the NPRM. For example, we are striking from our definition of “retail establishment which provides adult-oriented entertainment in which

performers disrobe or perform in an unclothed state for entertainment,” the language, “such an establishment that prohibits the entrance of minors under the age specified by state law.” Commenters noted that local ordinances, rather than state law, apply to such establishments, and can vary considerably from jurisdiction to jurisdiction. Since we are no longer expanding upon the statutory definition, we have deleted the definition of “retail establishment which provides adult-oriented entertainment in which performers disrobe or perform in an unclothed state for entertainment” from § 264.0. Rather, we encourage states to exercise the flexibility provided by the statute to build on the required restrictions with respect to these establishments, consistent with state and local policies. Furthermore, in response to comments suggesting we quantify the term “primarily” in the definitions for “casino, gambling casino, or gaming establishment” and “liquor store,” we will defer to states’ reasonable interpretation of the law. Additionally, we interpret Congress’s use of “liquor” to refer to alcoholic beverages broadly, rather than a narrow definition that excludes alcoholic beverages such as beer and wine.

We are clarifying that the broad definition of “electronic benefit transfer transaction” includes transactions using or accessing TANF funds in private bank accounts because those funds may be accessed by a TANF recipient in a manner that the statutory definition specifies, *i.e.*, through use of a credit or debit card, ATM, point-of-sale terminal, or an online system for the withdrawal of funds or the processing of a payment. We subsequently discuss, see the discussion of § 264.60, examples of policies and practices that HHS considers acceptable with regard to personal accounts and debit cards. We reiterate that the language used demonstrates that Congress intended to apply the requirements in Public Law 112–96 to EPCs. At the same time, we agree with all commenters that Congress did not intend to apply the requirements to internet transactions, pointing to language in the statute such as “establishment,” “store,” “located in a place,” and “transactions in.”

(2) In order to add the requirement to report on relevant policies and practices to the TANF regulations, we are amending 45 CFR parts 262, 264, and 265. The regulations at 45 CFR 262.3 and 264.61 tie the reporting requirement to the penalty specified at 45 CFR 262.1(a)(16). We reiterate that we are requiring an annual EBT report in order to determine whether states have

maintained the required policies and practices in each fiscal year following FY 2014. One commenter suggested that the statute does not provide authority for annual reporting, maintaining that the statute obligates HHS to impose a penalty only if a state fails to submit one required report; that state would be subject to a penalty for FY 2014 (for its failure to report by February 22, 2014) and each fiscal year until it submits a report. We disagree with this interpretation and do not believe that it comports with the statute.

In response to suggestions for ways to ease the reporting burdens, we have incorporated this reporting requirement in the Annual Report on TANF and MOE Programs under 45 CFR 265.9(b)(10), rather than requiring the submission of a separate EBT report. Accordingly, we are amending the regulation at 45 CFR 265.9(b).

We continue to require that the reports address specific areas that will allow us to determine whether states have implemented policies and practices that comply with the statutory requirements. The NPRM identified these areas as follows: Identifying locations; methods to prevent use of TANF assistance via EBT transactions in restricted locations; monitoring; and enforcement of compliance. With this final rule, we are providing clearer descriptions of the type of information we are requesting. For example, we have amended the request for information on “monitoring,” to “ongoing monitoring to ensure policies are being carried out as intended,” and instead of “enforcement of compliance,” this component should read “responding to findings of non-compliance or program ineffectiveness.” This way, we do not imply that specific practices, such as monitoring of transaction reports, are required. At the same time, we would like reports to describe how states will review and evaluate the policies and practices implemented, and correct for non-compliance and ineffectiveness. In sum, in 45 CFR 265.9(b)(10), the four areas we are requiring states to address in their reports are: (1) Procedures for preventing the use of TANF assistance via electronic benefit transfer transactions in any liquor store; any casino, gambling casino, or gaming establishment; and any retail establishment which provides adult-oriented entertainment in which performers disrobe or perform in an unclothed state for entertainment; (2) how the state identifies the locations specified in the statute; (3) procedures for ongoing monitoring to ensure policies are being carried out as intended; and (4) how the state

responds to findings of non-compliance or program ineffectiveness. Finally, we have reduced the burden hour estimate described in the Paperwork Reduction Act section of this final rule, as initial reports have been submitted and subsequent reports should not be as time-consuming.

(3) We are amending 45 CFR 262.1 and 264.61 to add the penalty for failure to report or demonstrate implementation and maintenance of these policies and practices. At 45 CFR 262.62, we specify that this penalty will be imposed for FY 2014 and each succeeding fiscal year in which a state fails to submit a report that demonstrates it has implemented and maintained the relevant policies and practices. Even though one commenter suggested that this approach exceeds our statutory authority, we maintain that the statute allows HHS to impose a penalty in “each succeeding fiscal year in which the State does not demonstrate that such State has implemented and maintained such policies and practices.” Furthermore, in response to commenters’ recommendations, we have added language to the regulation related to reducing the penalty based on the degree of noncompliance. We also clarify in the regulations that states are not held responsible for individuals’ fraudulent activities, as provided by the statute.

IV. Statutory Authority

This final rule is being issued under the authority granted to the Secretary of Health and Human Services (HHS) by the Middle Class Tax Relief and Job Creation Act of 2012 (Pub. L. 112–96), Section 408 of the Social Security Act (42 U.S.C. 608), Section 409 of the Social Security Act (42 U.S.C. 609), and Section 1102 of the Social Security Act (42 U.S.C. 1302), which authorizes the Secretary to make and publish such rules and regulations, not inconsistent with the Act, as may be necessary to the efficient administration of functions under the Act.

The statute at 42 U.S.C. 617 limits the authority of the federal government to regulate state conduct or enforce the TANF provisions of the Social Security Act, except as expressly provided. We have interpreted this provision to allow us to regulate where Congress has charged HHS with enforcing certain TANF provisions by assessing penalties. Because the legislation includes a TANF penalty, HHS has the authority to regulate in this instance.

V. Section-by-Section Discussion of Comments and Regulatory Provisions

Part 262—Accountability Provisions—General

The final rule in part 262 adds new penalties for failure to report or adequately implement the new requirements outlined in Public Law 112–96, specifies when a penalty takes effect, and identifies the reporting form that HHS will use to determine whether a state warrants a penalty.

Section 262.1 What penalties apply to States?

Sec. 4004(b) of Public Law 112–96 at Sec. 409(a)(16) of the Social Security Act (the Act) creates a new TANF penalty. As provided in the statute, the penalty will be imposed if a state fails to report to HHS its implementation of the policies and practices to prevent assistance provided under the state program funded under this part from being used in any electronic benefit transfer transaction in: (i) Any liquor store; (ii) any casino, gambling casino, or gaming establishment; or (iii) any retail establishment which provides adult-oriented entertainment in which performers disrobe or perform in an unclothed state for entertainment. Furthermore, HHS may impose a penalty if it determines, based on the information provided in a state report, that the state has not demonstrated that it has implemented and maintained such policies and practices. This penalty may be imposed for FY 2014 and each succeeding fiscal year in which a state does not demonstrate that it has implemented and maintained such policies and practices. If HHS determines that the state should be subject to a penalty, it will reduce the state family assistance grant in the succeeding fiscal year by five percent, or a lesser amount based on the degree of noncompliance. States should note that the regulations at 45 CFR 262.4 through 262.7, concerning the processes for appealing a penalty, presenting a reasonable cause justification, and submitting a corrective compliance plan, apply to the new penalty added to 45 CFR 262.1.

Accordingly, this final rule adds paragraph (i) to § 262.1(a)(16) to provide that a penalty of not more than five percent of the adjusted State Family Assistance Grant (SFAG) will be applied for failure to report annually as part of the Annual Report on TANF and MOE Programs under 45 CFR 265.9(b)(10), on the state’s implementation of policies and practices related to these prohibited EBT transactions. The final rule also adds paragraph (a)(16)(ii) to provide that

a penalty likewise will be applied for FY 2014 and each succeeding fiscal year if the state does not demonstrate that it has implemented and maintained such policies and practices. Note that if a state fails to submit a report for a fiscal year and, when it ultimately submits a report, also fails to demonstrate its implementation of policies and practices, the combined penalty will not exceed five percent of its adjusted SFAG. Conforming changes have been made at § 262.1(c)(2) to add reference to the penalties in paragraphs (a)(16)(i) and (ii).

Comment: A few commenters remarked on the penalty calculation, suggesting that the rule mirror the statute’s allowance for the Secretary to reduce penalties based on the degree of noncompliance and clarify that states are not responsible for fraudulent activity by any individual receiving TANF assistance in an attempt to circumvent the policies and practices required by section 608(a)(12). Further, commenters were concerned that the proposed rule does not adequately explain how the “degree of noncompliance” will be determined or how it would be translated into the penalty amount.

Response: While we included language related to reducing the penalty based on the degree of noncompliance and clarifying that states are not held responsible for individuals’ fraudulent activities in the preamble of the NPRM, we agree that this language should also be added to the regulation. We have added language in §§ 262.1(a)(16) and 264.61 to address the statutory provisions. At the same time, we note that while states are not held responsible for an individual’s fraudulent activities, reoccurring fraudulent activity could be an indication of deficiencies in a state’s policies and practices and should be addressed.

When determining “degree of noncompliance” with respect to reports submitted after the deadline, the Secretary may take into account factors such as the length of time a report was late and any extenuating circumstances that may have caused late reporting. When determining “degree of noncompliance” with respect to inadequate policies and practices, the Secretary may consider the steps taken to develop policies to comply with the requirements (even if not fully implemented), whether there are procedures related to identifying some or all of the types of locations specified in the statute, whether procedures take into account transactions at both ATMs and POS terminals, and whether the

state provides information for some or all of the components required in the annual report (described later in this preamble).

Comment: One individual commented that imposing a penalty will be counterproductive because financial sanctions may inhibit a state's ability to implement EBT policies and practices, suggesting we increase the compliant states' block grants, provided that they consult and provide technical assistance to non-compliant states.

Response: The statute requires a penalty for failure to meet the requirements of the statute; however, before we impose a financial penalty, states may request reasonable cause or submit a corrective compliance plan in response to a penalty, as provided at sections 409(b) and (c) of the Social Security Act. We do not have the authority to increase compliant states' block grants.

Section 262.2 When do the TANF penalty provisions apply?

The final rule amends § 262.2 to add new paragraph (e) indicating that the penalty for failure to report on how the state is implementing and maintaining policies and practices to prevent assistance from being used in electronic benefit transfer transactions in specified locations will be imposed for FY 2014 and each succeeding fiscal year in which the state does not demonstrate it has implemented and maintained the policies and practices in accordance with 45 CFR 264.60.

Comment: One state commented that the statute does not require an annual reporting requirement. Rather, the commenter argued the statute required HHS to impose a penalty on an annual basis on states that had not submitted a report by February 22, 2014, and each subsequent year it had still not submitted a report. In other words, if a state submitted its initial report that describes the policies it implemented and how it will maintain them, it had met the requirements of the law and can no longer be subject to a penalty. On the other hand, a state that did not submit the initial report by February 22, 2014, would be subject to a penalty for FY 2014, as well as each fiscal year until it submits a report.

Response: We do not agree with this interpretation and do not believe that the statutory requirements, particularly the requirement that states demonstrate that they are implementing and maintaining the relevant policies and practices, can be met through a one-time report. The statute provides that HHS shall impose a penalty in "each succeeding fiscal year in which the

State does not demonstrate that such State has implemented and maintained such policies and practices." Through these reports, we must assess whether states are implementing and maintaining EBT policies and practices to determine whether or not we should impose a penalty.

Section 262.3 How will we determine if a State is subject to a penalty?

This final rule amends § 262.3 by adding a new paragraph (g) to specify that in order to determine if a state is subject to a penalty under 45 CFR 262(a)(16)(i) and (ii), HHS will use the submission of the initial report that was due by February 22, 2014, and beginning in FY 2015, the Annual Report on TANF and MOE Programs under 45 CFR 265.9(b)(10). We are amending the Annual Report on TANF and MOE Programs under 45 CFR 265.9(b) in order to include reporting for electronic benefit transfer transaction policies and practices. The Annual Report on TANF and MOE Programs at 45 CFR 265.9(b) is due at the same time as the fourth quarter TANF data report, within 45 days following the end of the fourth quarter. Note that this reporting requirement is distinct from the provisions of Public Law 112–96 related to additional state plan requirements (see Sec. 4004(c)).

Comment: We received a number of comments raising concerns about a separate annual electronic benefit transfer transaction report requirement. They argued this requirement places an undue reporting burden on states and contradicts the intent of the statute. One commenter believed that because the statute requires states to describe their EBT policies and practices in the state plan, they will already be providing consistent reports on implementation, and should not be required to submit an additional report. A number of states recommended we use the state plan or the Annual Report on TANF and MOE programs as the reporting mechanism.

Response: We agree that the Annual Report is an effective reporting mechanism and will ease the reporting burden on states. As described below, with this final rule, we are amending § 265.9(b) of the TANF regulations to add to the annual report a section for states to describe their policies and practices related to electronic benefit transfer transactions.

Part 264—Other Accountability Provisions

Subpart A—What specific rules apply for other program penalties?

The final part 264 explains in further detail what HHS expects of states when implementing the new requirements of Public Law 112–96 by specifying the policies and practices required, providing relevant definitions, and addressing consequences if a state fails to meet the requirement.

Section 264.0 What definitions apply to this part?

In order to clarify the types of locations where states are required to prohibit the use of TANF assistance via electronic benefit transfer transactions and to ensure that the policies and practices are applied consistently between states, we are amending § 264.0(b) to define the terms included in Section 4004 of Public Law 112–96. The following is a discussion of the definitions of the terms in alphabetical order.

Casino, Gambling Casino, or Gaming Establishment: As we mentioned in the NPRM, the statute provides exclusions to the phrase "casino, gambling casino, or gaming establishment," but does not provide a further definition. One such exclusion refers to establishments that offer casino, gambling, or gaming activities incidental to the principal purpose of the business. With this exclusion in mind, we proposed to interpret the statutory reference to "casino, gambling casino, or gaming establishment" to mean an establishment with a primary purpose of accommodating the wagering of money. Based on the statutory definition provided, this does not include a grocery store which also offers, or is located within the same building or complex as a, casino, gambling, or gaming activities, or any other establishments where such activities are incidental to the principal purpose of the business. We are not making any changes to this proposed definition in this final rule.

Comment: Generally, commenters agreed with our definition, but also provided suggestions to address specific concerns. For example, one state and one advocacy organization stated the definition does not address co-joined businesses such as a hotel, grocery store, or restaurant connected to or within the casino. In order to clarify the definition and ensure that it could not be interpreted broadly, one commenter recommended that we add language that prohibits the entrance of minors under the age specified by state law, similar to

that in the proposed definition of “Retail establishment which provides adult-oriented entertainment in which performers disrobe or perform in an unclothed state for entertainment.”

Response: We disagree that language that related to prohibiting the entrance of minors under the age specified by state law is necessary, and we do not believe it solves the problem the commenters identified. The law addresses co-joined businesses by excluding from the definition a grocery store which also offers, or is located within the same building or complex as a casino, gambling, or gaming activities. We defer to a state’s reasonable interpretation of the statute, to determine what other types of establishments that the statute excludes from the definition of “casino, gambling casino, or gaming establishment,” including co-joined businesses.

Comment: One state is concerned with the phrase, “an establishment with a primary purpose of accommodating the wagering of money.” The regulatory definition does not quantify what “primarily” means. Because this is one area where regulations could provide consistency between states, it recommends establishing criteria states can apply in making this determination.

Response: We defer to states’ reasonable interpretations on this part of the definition. States may have different approaches of determining whether a business satisfies this standard, and we do not find it necessary to draw a line, or to impose uniformity here, while we provide flexibility in other areas.

Electronic Benefit Transfer Transactions: The final rule will incorporate the statutory definition of “electronic benefit transfer transaction,” which is “the use of a credit or debit card service at an automated teller machine, point-of-sales terminal, or access to an online system for the withdrawal of funds or the processing of a payment for merchandise or service.”

Comment: Our NPRM noted the broad nature of this language and that questions had been raised about whether it includes TANF assistance deposited directly by a state into a recipient’s bank account (*i.e.*, via EFT) and accessed with a personal debit card. We requested comments related to whether states and banks have, or reasonably could have, the capacity to apply the EBT transaction restrictions to assistance funds deposited in private bank accounts and to monitor whether recipients use such funds in a prohibited manner. We received many comments responding to this request, all of which were in agreement that the requirements should not be applied to

personal debit cards, supporting their recommendations with information pertaining to the following: (1) Infeasibility, (2) negative consequences that would result from applying the requirements to personal debit cards, and (3) Congressional intent.

Although one commenter acknowledged that it may be theoretically possible for a deposit account to consist of a sub-account for TANF funds and a subaccount for all other funds, all agreed that implementing such a requirement would be practically infeasible. If implemented, the banks would face requirements to identify customers who receive cash benefits, determine the dollars in a checking or savings account that are “TANF” dollars versus wages or other income from the state, such as child support. Requiring the entire United States banking system to develop the appropriate capabilities (TANF funds recipients could have deposit accounts at any of the nearly 7,000 banks and thousands more credit unions in the U.S.) would result in an extraordinary burden and high costs. While one commenter stated that the banks would need to develop the ability to monitor where funds are used, as there is no current mechanism for a state to monitor the use of such funds, another stated that current bank infrastructure could not support identification of individual retailers. Commenters emphasized that the capacity and infrastructure to apply the requirements to personal bank accounts/debit cards simply do not exist at this point, and the costs that would need to be devoted to this effort would not outweigh the benefit.

A few commenters maintained that because states could not actually implement procedures in order to comply with this requirement, they would have to discontinue the option of direct deposit. One commenter maintained that even if states provided the option of direct deposit, the difficulties with applying the statutory requirement to TANF assistance in personal bank accounts would provide disincentives for banks to work with TANF customers. Commenters argued these would be unfortunate consequences of this legislation because there are many benefits of being “banked” (*e.g.*, the ability to avoid unnecessary fees for accessing benefits and paying bills, promoting savings and financial management, permitting TANF recipients to build a credit history, etc.). Commenters emphasized that diminishing the ability of TANF recipients to establish and maintain bank accounts conflicts with the broader

TANF goals of promoting work and self-sufficiency, and that HHS should be encouraging states to provide benefits through direct deposit, not discouraging it.

Finally, a number of commenters maintained that Congress did not intend to include transactions with personal debit cards within the definition of “electronic benefit transfer transaction” in Public Law 112–96, and that only accounts established by a government agency were intended to fall within Congress’s definition of EBT systems.

Ultimately, all commenters recommended that the restrictions not extend to TANF funds deposited into private bank accounts. One advocacy group recommended that if, in the future, there is sufficient evidence that TANF assistance recipients’ use of bank accounts to purchase prohibited goods and services threatens the integrity of the TANF program, any new expansion of the current restrictions should be added only within the context of a full TANF reauthorization.

Response: HHS considered all of the comments received. The broad statutory definition of “electronic benefit transfer transaction,” applies to TANF funds deposited in private bank accounts because the funds can be accessed using a credit or debit card, ATM, point-of-sale terminal, or an online system for the withdrawal of funds or the processing of a payment. However, HHS recognizes that TANF recipients may have private bank accounts that include TANF funds as well as income from other sources, including earnings from employment, refundable tax credits for working families, and child support. Because there is currently no feasible way to distinguish TANF funds from other sources in a private bank account, states are responsible for implementing policies and practices that apply to transactions using or accessing TANF funds directly deposited in private bank accounts, only in cases where TANF is the sole source of funds in those accounts. Further, given the current state of technology, we have concluded that there is no feasible enforcement mechanism for funds in private bank accounts, and therefore the state may meet the requirements of this regulation by providing notice to recipients that they cannot access TANF funds from private bank accounts at a prohibited location.

Comment: One state maintained that the definition of “electronic benefit transfer transaction” should not include EPCs, which the state described as “non-government issued, payee owned, pre-paid debit card loaded via ‘electronic funds transfer.’” The

commenter maintained that only accounts established by a government agency were intended to fall within Congress's definition of EBT systems.

Response: HHS disagrees with the state's reading of the statute, given the definition of "electronic benefit transfer transaction" is so broad, as discussed above.

Comment: We received many comments regarding whether or not internet transactions should be included in the definition of "electronic benefits transfer transaction." All commenters agreed that the regulations should not extend to internet transactions, particularly at this time. A few commenters noted that language in the statute, such as "establishment," "store," "located in a place," and "transaction in," suggests that the intent of Congress was to prevent TANF benefits from being used at certain physical locations. One commenter stated that the term "online system" in the definition of "electronic benefit transfer transaction" is vague because one may interpret it as payments made in near real time, such as the use of debit cards for purchases at a merchant location, or as the purchase of goods and services over the internet. The commenter argued most consumers understand "online system" to include purchases of goods and services via the internet, but suggests that we clarify this in the regulation. Another commenter argued that Congress intended to create an enforceable approach by limiting transactions to physical locations. While this comment did not object on principal to regulating internet transactions, it, along with responses from other commentators, explained that the logistics of applying this restriction to internet transactions would be unfeasible. Some comments suggested that the restrictions should apply if and when states can feasibly monitor such transactions and/or when data shows that online TANF assistance spending on prohibited goods and services becomes a major problem.

Response: We agree the terms "establishment," "store," "located in a place," and "transaction in" point to Congress's intent to apply the requirements only to physical locations and not internet transactions. Therefore, the regulations do not apply to web-based transactions. If the technology allows, a state has the flexibility to restrict internet transactions with EBT cards, but federal law does not require it.

Liquor Store: The final rule will incorporate the statutory definition of "liquor store," which is "any retail establishment which sells exclusively or

primarily intoxicating liquor. Such term does not include a grocery store which sells both intoxicating liquor and groceries including staple foods (within the meaning of section 3(r) of the Food and Nutrition Act of 2008 (7 U.S.C. 2012(r)))."

Comment: Five commenters commented on the definition of "liquor store," with most supporting the approach of mirroring the definition in the statute. We also received a few recommendations for clarifying the definition. For example, one state highlighted the fact that the regulatory definition does not quantify what "primarily" means, and that this is one area where regulations could provide consistency between states by establishing certain criteria states can apply in making this determination.

Response: Regarding the recommendation to quantify what "primarily" means, just as in the definition of "casino, gambling casino, or gaming establishment," we defer to states' reasonable interpretations on this part of the definition. States may have different ways of determining whether a business satisfies this standard, and we do not find it necessary to draw a line, or to impose uniformity here, while we provide flexibility in other areas.

Comment: A few commenters pointed out that "liquor" has a very specific definition that sets it apart from other types of alcoholic beverages such as beer and wine. The commenters maintained that since the term "liquor" is used instead of "alcohol," places that sell beer and wine only do not fall under this definition. They recommended that states should be given the flexibility to implement the definition in a way that best suits their state and local laws and population.

Response: We disagree and continue to interpret Congress's use of "liquor" to refer to alcohol broadly, including beer and wine, so that the term "liquor store" is inclusive of locations that serve primarily alcoholic beverages.

Retail Establishment which Provides Adult-Oriented Entertainment in which Performers Disrobe or Perform in an Unclothed State for Entertainment: In the NPRM we proposed to clarify the intended locations to which restrictions apply, by adding "such an establishment that prohibits the entrance of minors under the age specified by state law" to the statutory definition. However, after considering the comments received and for the reasons discussed in the response below, we have decided against adding this language to the statutory definition. Since we are no longer expanding upon the statutory definition, we are not

including this term in the list of definitions at 45 CFR 264.0 of the final regulation.

Comment: Seven commenters commented on the proposed definition of "retail establishment which provides adult-oriented entertainment in which performers disrobe or perform in an unclothed state for entertainment." Only one commenter believed that it accurately described the types of locations where Congress intended to restrict access, and provided states with sufficient clarity to implement these provisions. All other commenters expressed concern about the statement we proposed to add to the statutory definition. They believed the proposed regulation expands the scope of prohibited establishments as it might be read to include book stores or establishments that serve liquor by the drink, and maintained that the statutory wording is clear and should be retained. Some comments also noted that not all states have a state law establishing entrance restrictions based on age with respect to places that provide entertainment where performers disrobe or perform in an unclothed state. In many states, local ordinances rather than state law apply to such establishments, and can vary considerably from jurisdiction to jurisdiction.

Response: While we disagree that the addition of "such an establishment that prohibits the entrance of minors under the age specified by state law" expands the scope of prohibited establishments, we understand it can be problematic given the variation among states regarding whether state laws or local ordinances apply to these types of establishments. We are therefore removing this language and encourage states to exercise the flexibility provided by the statute to build on the required restrictions, with respect to any of these types of establishments, consistent with state and local policies. The term "retail establishment which provides adult-oriented entertainment in which performers disrobe or perform in an unclothed state for entertainment" itself is descriptive and specific, so we have decided it is not necessary to add a definition at § 264.0.

Comment: One commenter noted that we interpreted the statutory definition as applying beyond live entertainment, specifically to theaters and cinemas where state law prohibits entrance to minors under the age specified by state law. This commenter recommended that the restriction be limited to establishments that provide live entertainment.

Response: We disagree that the statute applies only to establishments that provide live adult entertainment. We see no reason to exclude stores and theaters that exclusively or primarily sell or feature adult-oriented videos and movies.

Section 264.60 What policies and practices must a State implement to prevent assistance from being used in electronic benefit transfer transaction in locations prohibited by the Social Security Act?

This final rule adds § 264.60 under subpart A, which requires states to implement policies and practices to prevent assistance (defined at § 260.31(a)) provided with federal TANF or state TANF MOE funds from being used in any electronic benefit transfer transaction in any: (a) Liquor store; (b) casino, gambling casino or gaming establishment; or (c) retail establishment which provides adult-oriented entertainment in which performers disrobe or perform in an unclothed state for entertainment. The NPRM often used the phrase “policies and procedures” in the discussion of this section. The final rule revises the language, instead referring to “policies and practices,” in order to mirror the statutory language. As we proposed in the NPRM, HHS will accept any reasonable approaches that further these goals and comply with the statutory and regulatory requirements. States’ policies and practices must prohibit the use of TANF funds at the specified locations, while ensuring reasonable access to cash assistance, as directed by Congress.

Comment: We received several comments from states supporting our statements in the NPRM that states would have “flexibility in determining appropriate policies and practices” and that we would accept “any reasonable approaches” states use to implement the transaction restrictions. For example, one commenter commented that we should not use our authority within this law to restrict state flexibility without a compelling reason, and that we should make reasonable choices that help promote employment and economic self-sufficiency (to the extent that the ambiguity in the statutory language allows). Additionally, a few commenters argued that as technology evolves rapidly, regulations should allow room for approaches that have not been developed at this time. On the other hand, a few commenters stated that we should “provide more of a standard so that there is more consistency in the calculation and then the implementation of the penalties.” One advised that an over-arching framework

for implementing the restrictions in the law should be shaped by the goals of TANF, and that we should avoid overly-broad interpretations of the law that would undercut rather than further the Congressional intent to bolster public confidence in TANF’s program integrity. Another suggested that the proposed rule needs to be more stringent.

Response: We believe that, given the various types of systems states use to deliver TANF assistance, it is important to provide states flexibility to implement policy and practices that comply with these statutory and regulatory requirements. Our intention is to inform states of their options while ensuring they fulfill the provisions of the law. These options include: Requiring that third-party processor agreements include language related to the TANF prohibitions; requiring retailers to meet certain eligibility criteria in order to accept EBT cards or EPCs; reviewing and revising state licensing requirements for casinos, liquor stores, and adult entertainment venues to include conditions for license issuance related to restricting TANF benefit use; amending or creating new educational materials for cardholders and retailers; pre-screening retailers prior to authorizing them to accept EBT cards; engaging EBT vendors to determine possible procedures for identifying electronic benefit transfer transactions with TANF assistance at prohibited locations; requiring cardholders to agree in writing not to use TANF assistance at prohibited locations as a condition of receipt; engaging relevant business owners, for example through the appropriate state licensing agencies, and instructing retailers to refuse EBT cards or EPCs at their locations; requiring that relevant business owners or ATM owners post a notification that EBT cards or EPCs may not be used for purchases or cash withdrawal at prohibited locations. While states may impose sanctions, assign a protective payee, or impose a conciliation process for individuals found in violation, the statute does not require that states do so.

In their initial reports, a few states described procedures that involve informing recipients and/or owners of the restricted businesses of the rules (e.g., via letter, flyer, or brochure; posting information on TANF and regulatory agencies’ Web sites; displaying posters that detail the EBT restrictions in relevant establishments or local welfare offices), without taking additional actions that aim to ensure the relevant parties are complying with the policy. Absent final rules, ACF accepted such approaches as complying with the

statutory requirements. However, with the publication of this final rule, we clarify that notification approaches are only sufficient in situations where further action is not feasible, such as in the case of TANF funds accessed from private bank accounts or TANF funds used in other states. Where possible, we expect states to implement procedures that enforce policies, and take corrective actions when instances of non-compliance or ineffectiveness are identified.

Comment: One state pointed out that § 264.60 leaves out the key words “as necessary” following the phrase, “states are required to implement policies and practices.” Another state suggested replacing the word “use” with “access” in the proposed § 264.60 heading and elsewhere in the narrative to carry a clearer meaning.

Response: We agree that the words “as necessary” should be added to the regulation in order to be consistent with the statute. Regarding the proposed language change from “use” to “access,” the statute itself refers to “use in electronic benefit transfer transaction.” We think the best approach is to track the statutory language as much as possible. Therefore, we maintain the current text.

Comment: A few commenters expressed concern with approaches that focus on penalizing individuals rather than preventing transactions in the first place, as they do not further public support for the program and place too much of the burden for compliance on recipients. Yet another commenter stated that we should not encourage states to have vendors post public signs because they unfairly stigmatize and shame public benefits recipients. These commenters suggested that we indicate to states that if a non-systemic approach to preventing TANF EBT use at prohibited locations (e.g., centralized electronic blocking of prohibited transactions) is not reasonably effective, then compliance actions will require a more systemic approach to prevention. They also argued that we should stress that prevention rather than severity of penalties furthers the goal of the legislation.

Response: We appreciate this suggestion, and while we encourage comprehensive policies and practices that involve more than one method of preventing TANF EBT use at prohibited locations (e.g., notices to merchants coupled with monitoring of transaction records), we do not prescribe one specific approach or set of approaches. The intent of the law is to prevent transactions in the designated locations, and there is good reason to believe that

prevention cannot be achieved by placing the entire burden on the individual. At the same time, given the broad discretion that states have under TANF, we do not believe that there is a basis for us to require any specific approach so long as a state's approach is reasonable.

We do encourage states to periodically evaluate the effectiveness of their policies and practices, and adapt or revise them as necessary. In doing so, they maintain the flexibility afforded by the regulation to implement either systemic or non-systemic approaches. We have suggested a number of options for how states may structure policies. We require states to describe how they plan to correct for non-compliance and ineffectiveness in the annual report.

Comment: Two commenters stated that bank identification number (BIN) blocking at the point of sale cannot be done systematically as of now, though they do point out it is possible at ATMs. One of these commenters also suggested that we require that a TANF agency or its EBT vendor notify relevant merchants that they must contact the third party processor (that routes electronic transactions through the commercial debit and credit networks) with which they have a processing agreement and request that the third party processor disable or remove EBT access from their (the relevant merchant's) account. Further, the commenter suggested that we require merchants to have their processors send the merchant category code in the authorization message when an EBT card is swiped at the point of sale, and the TANF agency or its EBT vendor could then make a decision to approve or decline the transaction based on the merchant category code. Yet another commenter suggested that it would be easiest for states to require that all existing ATMs be reprogrammed and merchants would then have to apply to determine if they could be authorized to use EBT funds.

Response: We apologize for our error in stating that a state may systematically prevent transactions via BIN blocking at the point of sale. Additionally, we appreciate these commenters' suggestions for ways states may comply with the statute, but note that, as we explained above, we do not prescribe any one approach for states to implement. Again, states may develop approaches that are cost effective and fit within the existing structure of state operations, yet at the same time meet the requirements of the law.

Comment: One state recommended that we identify and address the

differences between EBT and EPC when discussing the options for complying with the requirements, in particular with respect to the four components of reports. Specifically, HHS should acknowledge that EPC and EBT cards are subject to different federal laws and regulations, as well as industry and network standards depending on the type of card, then discuss options and any unique limitations or issues for policies and procedures related to each type of card within each component.

Response: We understand the unique challenges associated with EPCs, and we have been mindful of limitations as we have reviewed state reports. For example, we are aware that banking and privacy laws prevent states from receiving transaction information that would allow them to track the places where individuals redeem their benefits (with very limited exceptions). The Privacy Act of 1974 (at 5 U.S.C. 552a) protects individuals' information maintained by federal agencies and the federal Right to Financial Privacy Act (at 12 U.S.C. 3401) protects personal and financial information of bank customers from disclosure to governmental agencies by banks and their agents. We are mindful of the limitations and will take them into consideration as we review state reports. States that use EPCs described in their initial reports policies and practices including: Blocking certain merchant category classification codes so as to prohibit the usage of the cards in businesses meeting the definition within the law; conducting outreach to businesses to educate impacted vendors and retailers on the prohibition; ensuring recipients are aware of the prohibition by informing applicants and re-applicants through notification; and assigning a protective payee to cases where it comes to the attention of the county eligibility worker or the TANF program administrator that an adult member of the household has demonstrated inappropriate use of funds. Regarding monitoring procedures, in its initial EBT transaction report submitted by the February 22, 2014 deadline, one state described a process for sending an electronic file to IRS approximately once a month for all new and current recipients in order to identify any gambling winnings claimed on tax returns; this information is used as a lead to determine possible fraud. Another state's EBT transaction report explained that the state TANF program receives a monthly Program Market Segment Report from the financial institution that issues the state's EPCs. The Program Market Segment Report

displays merchant category codes, the cardholder count that completed a transaction at each type of business, the number of transactions completed, the percent of the total transactions by merchant category code, and the transaction amount by merchant category code. This information allows the state to monitor card and transaction activity.

Comment: One state commented that states that have commingled funds in EBT accounts, such as child support funds, should not be required to restrict access to non-TANF programs. One state suggested that regulations should allow flexibility in this area and allow states to define policies and practices that restrict TANF but allow access for the other cash program benefits comingled with the TANF funds in the EBT accounts.

Response: We agree that states have flexibility to define policies and practices that restrict TANF but allow access to the other cash program benefits that may be on a benefit card. We emphasize that the statutory restriction here solely applies to TANF assistance, not to child support funds or to other family benefits or resources other than TANF assistance.

Comment: A few commenters expressed concern that certain terms in the NPRM indicated we would not support state flexibility, namely "consistently applied," "required to block," and "adequately implement." The commenters suggested that using such terms may lead states to feel compelled to adopt specific suggestions. A few commenters requested that we not include a specific list of four required reporting components (which are identifying locations; methods to prevent use of TANF assistance via EBT transactions in restricted locations; monitoring; and enforcement of compliance) in regulations, as doing so limits flexibility.

Response: It was not our intention to limit state flexibility or be overly prescriptive, but rather to ensure that we receive complete reports describing the procedures states have chosen to implement to comply with the statutory requirements. We maintain that for states to demonstrate that they are implementing the required policies and practices, their implementation strategies must address all four components identified. At the same time, states have flexibility within each category with respect to the specific policies and practices they choose to implement. For further information on this topic, see the discussion related to § 265.9 below, which explains our actions in relation to this issue. As

stated there, we are revising the text of the four components, but not eliminating the requirement.

Comment: We received a few comments responding to suggestions presented in the NPRM for how states can identify locations specified in the law. In particular, one state seems to believe that we proposed requiring states to maintain a list of the establishments subject to the restrictions, and for state TANF agencies to provide a separate and additional notification to impacted merchants. The state recommended that we allow states to comply with the requirements of Public Law 112–96 by requiring the appropriate state licensing agency to notify the entities that license businesses that are subject to the prohibitions, through broader public notice of the requirements for such locations to restrict access, by conducting periodic targeted reviews of EBT transactions, by following up on suspect locations, and by establishing appropriate penalties for the venues violating the restrictions. Additionally, one commenter warned against relying on internet searches, and suggested that states attempt to work through national associations of these businesses and their state affiliates.

Response: We did not intend to imply that we are requiring a particular method for identifying locations subject to the requirements. Similarly, we do not require states to maintain a list of affected businesses. We want states to describe their processes for how they identify locations subject to these requirements in their reports. However, because the method or combination of methods states use for identifying locations depends on the policies and practices they implement, states should have flexibility in deciding how best to do so. For example, if a state's policy involves monitoring transaction reports, "identifying locations" could mean developing criteria for being able to recognize on the transaction reports that a transaction occurred at one of the three types of locations (e.g., what words or data elements do reviewers look for?). A state that blocks access at certain locations should describe its procedures for determining which locations should be blocked. Other ways states may identify locations subject to the TANF statutory requirements include working with entities that license businesses or national associations of these businesses and their state affiliates, using merchant category codes, or having states apply for an authorization to accept a state's benefit card based on the percentage of their gross revenue that is derived from

the sale of alcoholic beverages, legalized games of chance, sexually oriented materials, coin-operated amusement machines, etc.

Comment: We received one comment in relation to preventing access to TANF cash assistance by state programs at any type of business specified in the law that is located on tribal land. This commenter believed we inappropriately overstepped tribal authority because we "extended" the requirements to tribal programs.

Response: We reiterate that we are not extending the requirements to tribal TANF programs. We agree that Congress did not apply these requirements to TANF assistance administered by a tribal TANF program. However, states do have a responsibility to develop appropriate policies for preventing TANF cash assistance administered by state programs from being used at any of the three types of businesses, including those located on tribal land, to the extent practicable. As we stated in the NPRM, we encourage states to work with tribes to try to prevent state TANF assistance from being used at the prohibited locations on sovereign tribal land. We would consider it sufficient for states to provide notice to recipients that the prohibition of use extends to tribal lands.

Comment: We received two comments related to whether a state should be responsible for restricting use of its TANF assistance in another state. Both maintained that it would be too challenging and costly for states to attempt to block transactions in businesses located in other states and recommended that we not require states to restrict transactions at locations outside their borders. At the same time, Illinois pointed out that this would not prevent states from reviewing and following up on cardholders' out-of-state spending of TANF benefits in the three restricted types of businesses.

Response: We did not include a discussion of this issue in the preamble of the NPRM, and think it is important to provide clarity in the final rule. States are responsible for restricting transactions using state-provided assistance at prohibited locations whether or not the transaction occurs within the state. We recognize the infeasibility of restricting transactions in other states; and, therefore, the agency would consider providing a notice to recipients to be sufficient implementation of a policy or practice with respect to out-of-state transactions.

Comment: We received a few comments regarding access and fees, raising concerns about protections for those living in isolated areas and noted

that the regulations do not provide any exceptions or guidelines about how states may ensure access to cash assistance. Further, they highlighted that the statute's requirement to ensure access to cash assistance and minimal fees may benefit recipients, as the yearly amount of surcharges associated with cash assistance withdrawals is extraordinarily high. To minimize fees, they suggested that states allow a certain number of free withdrawals per month or eliminate withdrawal surcharges. One commenter suggested that the regulations should require states to allow TANF recipients to choose between benefits via direct deposit or an EBT card. It also suggested that the regulations should specify the ways in which states may implement guaranteed, surcharge free transactions (e.g., free ATM balance inquiries and surcharge subsidies), and HHS should provide technical assistance to states about promising practices for guaranteeing access.

Response: We believe it is critical that states take steps to ensure access to cash assistance and minimize, or eliminate, fees for families who are working toward self-sufficiency. We strongly encourage states to develop strategies to ensure adequate access to benefits, such as guaranteeing a minimum number of free cash withdrawals per month or providing new options for cash assistance withdrawal in isolated areas. We will continue to work with states on an individual basis regarding these strategies.

Finally, we want to reiterate that while one of the new state plan requirements at Sec. 4004(c) of Public Law 112–96 conveys a clear emphasis that states ensure adequate access to cash assistance for recipients, this language does not provide states the option to avoid imposing a restriction at an ATM or POS terminal located in any of the three types of specified businesses in order to ensure adequate access. Rather, it conveys a responsibility for states to take corrective actions to increase locations where TANF recipients may access their cash assistance if they find that there are an insufficient number of access points in a geographic area.

Section 264.61 What happens if a state fails to report or demonstrate it has implemented and maintained the policies and practices required in § 264.60 of this subpart?

We are adding a § 264.61 to address the penalty associated with the new requirements. Under paragraph (a), HHS will impose a penalty of not more than five percent of a state's adjusted SFAG

for failure to submit annually a report demonstrating the state's implementation of policies and practices to prevent EBT use in the locations specified in Public Law 112–96. Under paragraph (b), HHS will impose a penalty of not more than five percent of a state's adjusted SFAG each fiscal year succeeding FY 2014 in which the state does not demonstrate it has implemented and maintained the required policies and practices. Note that we have revised the phrasing we used in the NPRM for the title of this section in order to clarify that the penalty will be imposed for a state's failure to demonstrate in the report its implementation and maintenance of policies and practices, rather than a failure to implement and maintain the policies and practices.

In order to meet this requirement, states' reports must fully explain the policies and practices that are being implemented and maintained. Note that if a state submits a late report and once submitted, also fails to demonstrate its implementation of policies and practices, the combined penalty will not exceed five percent of its adjusted SFAG. Any deficiencies that arise with respect to a state's reporting of its EBT policies and practices in the Annual Report (*i.e.*, for failure to submit a complete or timely report) will not trigger a separate penalty under 45 CFR 262.1(a)(3) or 265.8.

All penalties will be imposed in accordance with 45 CFR part 262, which provides states with procedures for appealing a penalty, and submitting a reasonable cause justification or corrective compliance plan.

Furthermore, Sec. 409(a)(16)(C) of the Act, as amended by Sec. 4004(b) of Public Law 112–96 provides HHS the discretion to reduce the penalty amount based on the degree of noncompliance of the state. Sec. 409(a)(16)(C) of the Act, as amended by Sec. 4004(b) of Public Law 112–96, also specifies that “Fraudulent activity by any individual in an attempt to circumvent the policies and practices required by Sec. 408(a)(12) shall not trigger a state penalty under subparagraph (A);” as such, HHS will not base any penalty on such information. We have added paragraphs (c) and (d) in this section of the regulation, incorporating these two provisions of the statute.

Please see discussion after 45 CFR 262.1 for comments and responses related to these penalty provisions.

Part 265—Data Collection and Reporting Requirements

Section 265.9—What information must the state file annually?

In response to comments expressing concern over the burden of having a separate annual report due on February 22 of each fiscal year, we are amending § 265.9, by adding paragraph (b)(10) to state that in accordance with §§ 264.60 and 264.61, a report of policies and practices to prevent assistance (defined at § 260.31(a)) provided with federal TANF or state TANF MOE funds from being used in any electronic benefit transfer transaction in any liquor store; any casino, gambling casino, or gaming establishment; and any retail establishment which provides adult-oriented entertainment in which performers disrobe or perform in an unclothed state for entertainment. In an effort to receive reports that demonstrate whether states have implemented and maintained the required policies and practices, we are revising the Annual Report on TANF and MOE Programs under 45 CFR 265.9(b). In doing so, we will require states to complete four sections, specifying: (1) Procedures for preventing the use of TANF assistance via electronic benefit transfer transactions in any liquor store; any casino, gambling casino, or gaming establishment; and any retail establishment which provides adult-oriented entertainment in which performers disrobe or perform in an unclothed state for entertainment; (2) how the state identifies the locations specified in the statute; (3) procedures for ongoing monitoring to ensure policies are being carried out as intended; and (4) how the state plans to respond to findings of non-compliance or program ineffectiveness. We believe that for states to demonstrate that they are implementing the required policies and practices, their implementation strategies must address all four components identified. At the same time, states have flexibility within each category with respect to the specific policies and practices they choose to implement.

Comment: We received several comments responding to the expectation that states establish and report annually on policies and practices in four specific areas identified in the NPRM, namely: (1) Identifying locations; (2) preventing the use of TANF assistance via EBT transactions; (3) monitoring; and (4) enforcement of compliance. While two commenters agreed with our proposed framework and believed it would support the integrity of the program, other commenters argued that following

this requirement would be labor intensive, cost prohibitive, and contrary to the philosophy of state flexibility in a block grant program. Some argued that states should have the flexibility to develop policies and practices best suited to them, which might not match the four stated areas. One state argued that requiring that reports address these four areas exceeded statutory authority and suggested that the four specific areas serve as suggestions for state policy rather than requirements. This commenter further suggested that we could require states to report on all four specified components, but allow states to determine whether to establish policies in these areas or not. If a state chose not to, it would assert that in the report. One commenter characterized these four specific components as requirements beyond those in the statute, and that they should not be made mandatory.

Response: We disagree with the suggestion that requiring this reporting exceeds statutory authority, as the statute provides us the authority to reduce a state's block grant if the “Secretary determines, *based on the information provided in State reports*, that any State has not implemented and maintained such policies and practices.” We are requiring the four areas in the reports, but are changing the descriptions of the third and fourth to be clearer about what these terms mean. Instead of “monitoring,” the third component should read “ongoing monitoring to ensure policies are being carried out as intended;” and instead of “enforcement of compliance,” the fourth component should read “plans to respond to findings of non-compliance and/or program ineffectiveness.” This way, we do not imply that specific practices, such as monitoring of transaction reports, are required. At the same time, reports must describe how states will review and evaluate the policies and practices implemented, and correct any particular aspects that are not leading to the intended results.

Comment: Two commenters argued that states should be required to publish their annual reports online, in order to make this information publicly available. Commenters also argued that we should encourage information sharing among states by establishing venues for the exchange of information about program costs and successes.

Response: We are not requiring states to publish their annual TANF and MOE reports online, but encourage states to do so. States also have many existing means to share information with each other, and we support states continuing to do so. ACF's Office of Family

Assistance will explore the feasibility of posting these reports on their Web site.

VI. Paperwork Reduction Act

This rule establishes new information collection requirements in §§ 262.3(g) and 265.9(b)(10) of the TANF regulations. This collection is subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (the PRA) (44 U.S.C. 3501–3520). We did not receive any public comments on the specific burden hour estimate identified in the

proposed rule. The information collection requirements, as described below, are identical to those contained in the proposed rule (OMB control number 0970–0437). However, now that the initial reporting due February 22, 2014, has passed, we have reduced the burden hour estimate by half. We also note that we will incorporate this reporting requirement into the Annual Report on TANF and MOE Programs under 45 CFR 265.9(b), and will obtain OMB approval for a standard form

before the next information collection is due. The annual report is due at the same time as the fourth quarter TANF data report, or within 45 days following the end of the fourth quarter.

As required by the Paperwork Reduction Act of 1995, codified at 44 U.S.C. 3507, ACF will submit a copy of these sections to the Office of Management and Budget (OMB) for review and they will not be effective until they have been approved and assigned a clearance number.

Requirement	Number of respondents	Yearly submissions	Average burden per respondent (hours)	Total burden hours
Annual reporting on policies and practices to prevent TANF assistance from being used in electronic benefit transfer transactions in liquor stores; casinos, gambling casinos, or gaming establishments; or any retail establishment which provides adult-oriented entertainment in which performers disrobe or perform in an unclothed state for entertainment	54	1	20	1,080

We estimate the costs of implementing these requirements will be approximately \$54,000 annually. We calculated this estimate by multiplying 1,080 hours by \$50 (average cost per hour).

VII. Regulatory Flexibility Act

The Secretary certifies under 5 U.S.C. 605(b), as enacted by the Regulatory Flexibility Act (Pub. L. 96–354), that this final regulation will not result in a significant impact on a substantial number of small entities. We note that any impact on businesses emanates from statutory mandate and the policies that states adopt in implementing the statutory requirement.

In order to address potential concerns of the types of establishments specified in the statute, as well as state EBT vendors, HHS has drafted the regulation in a manner that minimizes the impact on businesses, including small businesses, by providing states flexibility when implementing policies and practices that comply with the new requirements. In particular, states have the flexibility to implement approaches that do not place significant burden or impose large costs on their EBT vendors, small businesses, or any particular party. Therefore, any costs resulting from policies under which states require action by small entities, including small businesses, are the result of choices states make when implementing the statutory requirements.

The direct primary impact of this final regulation is on state governments. State governments are not considered small entities under the Act.

VIII. Regulatory Impact Analysis

Executive Orders 12866 and 13563 direct agencies to assess all costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. This rule meets the criteria for a significant regulatory action under E.O. 12866 and has been reviewed by OMB. For the reasons set forth below, ACF does not believe the impact of this regulatory action would be economically significant and that the annual cost would fall below the \$100 million threshold.

Costs. We received a few comments regarding the costs associated with the implementation of the regulation. Individual commentators raised general concerns about the regulation's cost/benefit ratio and the impact on TANF spending. A few commenters expressed concern that states will reallocate TANF money from direct services to resources for implementing this regulation.

Commenters also noted that the regulation's benefits do not outweigh its costs, as implementation costs are so large and the percentage of TANF cash assistance recipients using EBT cards on prohibited transactions is so small. One of these commenters noted that some states have considered ending EBT programs and reinstating paper checks

to exempt themselves from the regulatory requirements. They suggested increasing state flexibility in implementing the regulation by removing the four components that states must include in their implementation report listed in the proposed provision at 45 CFR 262.3(g).

We understand that this regulation will impose new costs on states. In response to this issue, we have provided flexibility in meeting the regulatory requirements so that states may develop cost-effective implementation strategies that fit within the existing structure of state operations. In general, the costs associated with implementation, and the parties that bear these costs, largely depend on the policies and practices a state chooses to in enact order to comply with the statutory requirements.

Nevertheless, regardless of the approach a state may take when implementing policies in order to comply with the statute and regulations, there will be, at a minimum, administrative costs for the state agency responsible for administering the TANF benefits. We recognize that states will spend funds on the following types of costs to implement the changes in order to complete the annual progress report to ACF:

- Costs to identify the prohibited locations;
- Costs to modify existing tracking of recipient use of electronic benefits and/or electronic banking;
- Costs to monitor recipient use of electronic benefit transfers;
- Costs to investigate and follow up on violations of electronic benefit transfers;
- Cost to process and respond to appeals.

With regard to the reporting requirement, based on our estimate described under the Paperwork Reduction Act section of this preamble, the total costs for all states to comply with this requirement would fall well below the \$100 million threshold. We will not remove the four components of the report, as commenters recommended. We do agree that the language in the components should be clarified (see discussion of regulation at § 265.9, above). It was not our intention to limit state flexibility or be overly prescriptive. The report components we have identified reflect general elements of all policies and practices that reflect full compliance with the statute, not specific policies and practices. As demonstrated by the initial reports states submitted in response to the statutory requirement, a majority of states have implemented sufficient policies and practices that take into account each of these components. Furthermore, by identifying these components in a standard form, we are ensuring that states take a comprehensive approach to composing their policies and practices, and that ACF receives complete reports describing the procedures states have chosen to implement.

Additionally, the statutory requirements and regulation provide potential benefits that coincide with the goal of financial responsibility. For example, the policies and practices that states implement may result in reductions in inappropriate expenditures of government funds, and emphasize to recipients that they should ensure assistance is spent only on basic needs. There may also be opportunities to educate recipients on financial management and on ways to minimize access fees.

Need for the Regulation: These regulations incorporate statutory changes to the TANF program enacted in the Middle Class Tax Relief and Job Creation Act of 2012 (Pub. L. 112–96). This regulation is limited to the penalty provisions of Section 4004 of Public Law 112–96. Because states have a range of systems for disbursement of assistance, and a number of questions have arisen regarding the applicability and requirements of the statutory language, HHS has published this regulation in order to clarify for states the information they should submit in order to avoid a penalty.

IX. Unfunded Mandates Reform Act of 1995

Section 202 of the Unfunded Mandates Reform Act of 1995 requires that a covered agency prepare a

budgetary impact statement before promulgating a rule that includes any federal mandate that may result in the expenditure by state, tribal, and local governments, in the aggregate, or by the private sector, of \$100 million or more in any one year. HHS has determined that this rule will not result in the expenditure by state, local, and tribal governments, in the aggregate, or by the private sector, of more than \$100 million in any one year.

For more detail regarding estimated costs, see the section containing the Regulatory Impact Analysis.

X. Congressional Review

This regulation is not a major rule as defined in the Congressional Review Act or CRA (5 U.S.C. Chapter 8). The CRA defines a major rule as one that has resulted or is likely to result in: (1) An annual effect on the economy of \$100 million or more; (2) a major increase in costs or prices for consumers, individual industries, federal, state, or local government agencies, or geographic regions; or (3) significant adverse effects on competition, employment, investment, productivity, or innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic and export markets. HHS has determined that this final rule does not meet any of these criteria. For more detail regarding estimated costs, see the section containing the Regulatory Impact Analysis.

XI. Executive Order 13132

Executive Order 13132, Federalism, prohibits an agency from publishing any rule that has federalism implications if the rule either imposes substantial direct compliance costs on state and local governments and is not required by statute, or the rule preempts state law, unless the agency meets the consultation and funding requirements of section 6 of the Executive Order. This final rule does not have federalism implications as defined in the Executive Order. Consistent with Executive Order 13132, HHS specifically requested comments from state and local government officials in the proposed rule regarding federalism implications; we did not receive any comments in response to this specific solicitation.

XII. Treasury and General Government Appropriations Act of 1999

Section 654 of the Treasury and General Government Appropriations Act of 1999 (Pub. L. 105–277) requires federal agencies to determine whether a regulation may negatively impact family well-being. The Department has

concluded that this final rule does not have a negative impact on family well-being, but rather that it will have positive benefits. The statutory requirements and regulations promote the goal of financial responsibility, helping to ensure that families are using their TANF assistance for basic needs. States also may incorporate within their policies and practices opportunities to educate recipients on budgeting, and their state plans must include an explanation of how the state will ensure that recipients have access to using or withdrawing assistance with minimal fees.

List of Subjects in 45 CFR Parts 262, 264, and 265

Administrative practice and procedures, Day care, Employment, Grant programs-social programs, Loan programs-social programs, Manpower training programs, Penalties, Public assistance programs, Reporting and recordkeeping requirements, Vocational education.

Dated: January 11, 2016.

Mark H. Greenberg,

Acting Assistant Secretary for Children, and Families.

Approved: January 11, 2016.

Sylvia M. Burwell,

Secretary.

For the reasons set forth in the preamble, parts 262, 264, and 265 of 45 CFR are amended as follows:

PART 262—ACCOUNTABILITY PROVISIONS-GENERAL

■ 1. The authority citation for 45 CFR part 262 is revised to read as follows:

Authority: 31 U.S.C. 7501 *et seq.*; 42 U.S.C. 606, 609, and 610; Sec. 7102, Pub. L. 109–171, 120 Stat. 135; Sec. 4004, Pub. L. 112–96, 126 Stat. 197.

■ 2. Amend § 262.1 by adding paragraph (a)(16) and revising paragraph (c)(2) to read as follows:

§ 262.1 What penalties apply to states?

(a) * * *

(16)(i) A penalty of not more than five percent of the adjusted SFAG (in accordance with § 264.61(a) of this chapter), for failure to report annually on the state's implementation and maintenance of policies and practices required in § 264.60 of this chapter.

(ii) A penalty of not more than five percent of the adjusted SFAG (in accordance with § 264.61(b) of this chapter), for FY 2014 and each succeeding fiscal year in which the state does not demonstrate that it has implemented and maintained policies

and practices required in § 264.60 of this chapter.

(iii) The penalty under paragraphs (a)(16)(i) and (ii) of this section may be reduced based on the degree of noncompliance of the state.

(iv) Fraudulent activity by any individual receiving TANF assistance in an attempt to circumvent the policies and practices required by § 264.60 of this chapter shall not trigger a state penalty under paragraphs (a)(16)(i) and (ii) of this section.

* * * * *

(c) * * *

(2) We will take the penalties specified in paragraphs (a)(3) through (6) and (8) through (16) of this section by reducing the SFAG payable for the fiscal year that immediately follows our final decision.

* * * * *

■ 3. Amend § 262.2 by adding paragraph (e) to read as follows:

§ 262.2 When do the TANF penalty provisions apply?

* * * * *

(e) In accordance with § 264.61(a) and (b) of this chapter, the penalty specified in § 262.1(a)(16) will be imposed for FY 2014 and each succeeding fiscal year.

■ 4. Amend § 262.3 by adding paragraph (g) as follows:

§ 262.3 How will we determine if a State is subject to a penalty?

* * * * *

(g) To determine if a State is subject to a penalty under § 262.1(a)(16), we will use the information provided in annual state reports at § 265.9(b)(10) of this chapter, in accordance with Section 409(a)(16) of the Social Security Act.

PART 264—OTHER ACCOUNTABILITY PROVISIONS

■ 5. The authority citation for 45 CFR part 264 is revised to read as follows:

Authority: 31 U.S.C. 7501 *et seq.*; 42 U.S.C. 608, 609, 654, 1302, 1308, and 1337.

■ 6. Amend § 264.0(b) by adding definitions for “Casino, gambling casino, or gaming establishment”; “Electronic benefit transfer transaction”; and “Liquor store” in alphabetical order to read as follows:

§ 264.0 What definitions apply to this part?

* * * * *

(b) * * *

Casino, gambling casino, or gaming establishment means an establishment with a primary purpose of accommodating the wagering of money. It does not include:

(i) A grocery store which sells groceries including staple foods and

which also offers, or is located within the same building or complex as, casino, gambling, or gaming activities; or

(ii) Any other establishment that offers casino, gambling, or gaming activities incidental to the principal purpose of the business.

* * * * *

Electronic benefit transfer transaction means the use of a credit or debit card service, automated teller machine, point-of-sale terminal, or access to an online system for the withdrawal of funds or the processing of a payment for merchandise or a service.

* * * * *

Liquor store means any retail establishment which sells exclusively or primarily intoxicating liquor. Such term does not include a grocery store which sells both intoxicating liquor and groceries including staple foods (within the meaning of Section 3(r) of the Food and Nutrition Act of 2008 (7 U.S.C. 2012(r))).

* * * * *

■ 7. Add §§ 264.60 and 264.61 to subpart A to read as follows:

§ 264.60 What policies and practices must a state implement to prevent assistance use in electronic benefit transfer transactions in locations prohibited by the Social Security Act?

Pursuant to Section 408(a)(12) of the Act, states are required to implement policies and practices, as necessary, to prevent assistance (defined at § 260.31(a) of this chapter) provided with federal TANF or state TANF MOE funds from being used in any electronic benefit transfer transaction in any: liquor store; casino, gambling casino or gaming establishment; or retail establishment which provides adult-oriented entertainment in which performers disrobe or perform in an unclothed state for entertainment.

§ 264.61 What happens if a state fails to report or demonstrate it has implemented and maintained the policies and practices required in § 264.60?

(a) Pursuant to Section 409(a)(16) of the Act and in accordance with 45 CFR part 262, a penalty of not more than five percent of the adjusted SFAG will be imposed for failure to report by February 22, 2014 and each succeeding fiscal year on the state's implementation of policies and practices required in § 264.60. The penalty will be imposed in the succeeding fiscal year, subject to § 262.4(g) of this chapter.

(b) Pursuant to Section 409(a)(16) of the Act and in accordance with 45 CFR part 262, a penalty of not more than five percent of the adjusted SFAG will be imposed for FY 2014 and each

succeeding fiscal year in which the state fails to demonstrate the state's implementation of policies and practices required in § 264.60. The penalty will be imposed in the succeeding fiscal year subject to § 262.4(g) of this chapter.

(c) A penalty applied under paragraphs (a) and (b) of this section may be reduced based on the degree of noncompliance of the state.

(d) Fraudulent activity by any individual in an attempt to circumvent the policies and practices required by § 264.60 shall not trigger a state penalty under paragraphs (a) and (b) of this section.

PART 265—DATA COLLECTION AND REPORTING REQUIREMENTS

■ 8. The authority citation for 45 CFR part 265 continues to read as follows:

Authority: 42 U.S.C. 603, 605, 607, 609, 611, and 613; Pub. L. 109–171.

■ 9. Amend § 265.9 by adding paragraphs (b)(10) and (11) to read as follows:

§ 265.9 What information must a State file annually?

* * * * *

(b) * * *

(10) A comprehensive description of the state's policies and practices to prevent assistance (defined at § 260.31(a) of this chapter) provided with federal TANF or state TANF MOE funds from being used in any electronic benefit transfer transaction in any: liquor store; casino, gambling casino or gaming establishment; or retail establishment which provides adult-oriented entertainment in which performers disrobe or perform in an unclothed state for entertainment. Reports must address:

(i) Procedures for preventing the use of TANF assistance via electronic benefit transfer transactions in any liquor store; any casino, gambling casino, or gaming establishment; and any retail establishment which provides adult-oriented entertainment in which performers disrobe or perform in an unclothed state for entertainment;

(ii) How the state identifies the locations specified in the statute;

(iii) Procedures for ongoing monitoring to ensure policies are being carried out as intended; and

(iv) How the state responds to findings of non-compliance or program ineffectiveness.

(11) The state's TANF Plan must describe how the state will:

(i) Implement policies and procedures as necessary to prevent access to assistance provided under the State

program funded under this part through any electronic fund transaction in an automated teller machine or point-of-sale device located in a place described in section 408(a)(12) of the Act, including a plan to ensure that recipients of the assistance have adequate access to their cash assistance; and

(ii) Ensure that recipients of assistance provided under the State program funded under this part have access to using or withdrawing assistance with minimal fees or charges, including an opportunity to access assistance with no fee or charges, and are provided information on applicable fees and surcharges that apply to electronic fund transactions involving the assistance, and that such information is made publicly available.

* * * * *

[FR Doc. 2016-00608 Filed 1-13-16; 8:45 am]

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FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 90

[PS Docket No. 13-229, FCC 15-103]

Amendment of the Commission's Rules To Facilitate the Use of Vehicular Repeater Units

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: This document implements certain changes to the rules governing six remote control and telemetry channels in the VHF band. We will allow the licensing and operation of vehicular repeater systems (VRS) and other mobile repeaters on these channels. In addition, we revise and update the technical rules for these channels to allow greater use of VRS systems while providing protection for incumbent telemetry users who rely on these frequencies for control of critical infrastructure systems.

DATES: Effective March 15, 2016, except for the addition of § 90.175(b)(4), containing new or modified information collection requirements that require approval by the Office of Management and Budget under the Paperwork Reduction Act of 1995, which will become effective after such approval, on the effective date specified in a notice that the Commission publishes in the **Federal Register** announcing such approval and effective date.

FOR FURTHER INFORMATION CONTACT: Roberto Mussenden, Policy and

Licensing Division, Public Safety and Homeland Security Bureau, (202) 418-1428. For additional information concerning the information collection requirements contained in this document, send an email to PRA@fcc.gov or contact Nicole Ongele, Office of Managing Director, Performance Evaluation and Records Management, 202-418-2991, or by email to Nicole.Ongele@fcc.gov.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's *Report and Order* in PS Docket No. 13-229, FCC 15-103, released on August 10, 2015 and *Clarification Order* in PS Docket No. 13-229, FCC 15-165, released on December 11, 2015. These documents are available for download at http://fjallfoss.fcc.gov/edocs_public/. The complete text of these documents are also available for inspection and copying during normal business hours in the FCC Reference Information Center, Portals II, 445 12th Street SW., Room CY-A257, Washington, DC 20554. To request materials in accessible formats for people with disabilities (Braille, large print, electronic files, audio format), send an email to FCC504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (TTY).

In 2013, the Commission's *Notice of Proposed Rulemaking (NPRM)* sought comment on whether to make additional spectrum available to support mobile repeater capability. The Commission declined to seek comment on VRS operations on nine channels in the 170-172 MHz band, but proposed to allow mobile repeater use on six telemetry channels in the 173 MHz band. In addition, the Commission sought comment on whether other spectrum bands or frequencies could also be used for public safety mobile repeater operations; whether to allow Industrial/Business use of mobile repeater stations on these channels; whether to impose bandwidth restrictions on these frequencies; whether frequency coordination could protect telemetry users from interference; whether to allow wide-area mobile repeater operations on these frequencies; and whether to allow VRS units to exceed the 2 watt power limit that applies to these channels.

In the *Report and Order* the Commission decides to allow all users of these channels—including telemetry licensees—to operate using 11.25 kHz bandwidth. In addition, we will make these six telemetry channels co-primary with adjacent channel land mobile operations and remove the restrictions on omni-directional antennas, fixed

station power limits and antenna heights for telemetry stations. The Commission also decides that the only way to accommodate both telemetry and VRS on these frequencies is through frequency coordination to both ensure geographic separation as well as minimizing the risk of commingling voice and data operations. However, since no party provided the Commission with a specific coordination protocol, it directs the coordinator community to develop a consensus protocol for VRS coordination. The Commission also decides to only allow area-wide or state-wide authorizations on a secondary basis. The Commission imposes loading requirements for licensees seeking to license mobile repeaters on these frequencies. The Commission allows VRS to operate with 5 watts ERP but declines to increase the 2-watt power limit for telemetry and remote control use. As a result of our decision to allow the licensing of VRS units on these frequencies, we dismiss as moot several requests for waiver filed during the pendency of this rulemaking. On December 11, 2015, the Commission released a *Clarification Order* to ensure that the Commission's rules aligned with the text of the *August Report and Order*.

Procedural Matters

A. Final Regulatory Flexibility Analysis

The Final Regulatory Flexibility Analysis required by section 604 of the Regulatory Flexibility Act, 5 U.S.C. 604, is included in Appendix B of the Report and Order.

B. Paperwork Reduction Act of 1995 Analysis

This document contains new information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. It will be submitted to the Office of Management and Budget (OMB) for review under 3507(d) of the PRA. OMB, the general public, and other Federal agencies will be invited to comment on the new information collection requirements contained in this proceeding. In addition, we note that pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, see 44 U.S.C. 3506(c)(4), we previously sought specific comment on how the Commission might further reduce the information collection burden for small business concerns with fewer than 25 employees.

The actions taken in the Report and Order in PS Docket No. 13-229 have been analyzed with respect to the Paperwork Reduction Act of 1995, Pub.

L. 104–13, and found to impose new or modified recordkeeping requirements or burdens on the public.

C. Congressional Review Act

The Commission will send a copy of this *Report and Order* to Congress and the Government Accountability Office pursuant to the Congressional Review Act, see 5 U.S.C. 801(a)(1)(A).

Final Regulatory Flexibility Analysis

As required by the Regulatory Flexibility Act (RFA), an Initial Regulatory Flexibility Analysis (IRFA) was incorporated into the *NPRM* of this proceeding. The Commission sought written public comment on the IRFA. The RFA requires that an agency prepare a regulatory flexibility analysis for notice-and-comment rulemaking proceedings, unless the agency certifies that “the rule will not, if promulgated, have a significant economic impact on a substantial number of small entities.” The RFA generally defines “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.” In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act. A “small business concern” is one which: (1) Is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA). The present Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.

A. Need for, and Objectives of, the Proposed Rules

In the *Report and Order*, we amend the Commission’s rules we amend the Commission’s Rules to allow the licensing and operation of vehicular repeater systems (VRS) and other mobile repeaters on six remote control and telemetry channels in the VHF band. The rule changes adopted are intended to promote flexible and efficient use of these channels. In order to achieve these objectives, we:

- Allow the use of mobile repeaters on the following six telemetry channels: 173.2375, 173.2625, 173.2875, 173.3125, 173.3375, and 173.3625 MHz.
- Allow the use of bandwidths up to 11.25 kHz on these channels.
- Require frequency coordination for applications seeking primary status on these frequencies.
- Limit applicants to a license a maximum of three channels on a primary basis

B. Summary of Significant Issues Raised by Public Comments in Response to the IRFA

There were no comments filed that specifically addressed the rules and policies proposed in the IRFA.

C. Description and Estimate of the Number of Small Entities to Which the Rules Will Apply

The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules, if adopted. The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.” In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act. A small business concern is one which: (1) Is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the SBA.

Public Safety Radio Licensees. As a general matter, Public Safety Radio Licensees include police, fire, local government, forestry conservation, highway maintenance, and emergency medical services. For the purpose of determining whether a Public Safety Radio Licensee is a small business as defined by the SBA, we use the broad census category, Wireless Telecommunications Carriers (except Satellite). This definition provides that a small entity is any such entity employing no more than 1,500 persons. For this category, census data for 2007 show that there were 11,163 establishments that operated for the entire year. Of this total, 10,791 establishments had employment of 999 or fewer employees and 372 had employment of 1000 employees or more. The Commission does not require Public Safety Radio Licensees to disclose information about number of employees, so the Commission does not have information that could be used to determine how many Public Safety Radio licensees constitute small entities under this definition. Nonetheless, the Commission estimates that the majority of Public Safety Radio Licensees are small entities.

Private Land Mobile Radio Licensees. The Private land mobile radio (PLMR) systems serve an essential role in a vast range of industrial, business, land transportation, and public safety activities. These radios are used by companies of all sizes operating in all U.S. business categories. Because of the

vast array of PLMR users, the Commission has not developed a small business size standard specifically applicable to PLMR users. The SBA rules, however, contain a definition for Wireless Telecommunications Carriers (except Satellite) which encompasses business entities engaged in *radiotelephone communications employing no more than 1,500 persons*. According to the Commission’s records, there are a total of 3,374 licenses in the frequencies range 173.225 MHz to 173.375 MHz, which is the range affected by this NPRM. Despite the lack of specific information, however, the Commission believes that a substantial number of PLMR licensees may be small entities.

Frequency Coordinators. Neither the Commission nor the SBA has developed a small business size standard specifically applicable to spectrum frequency coordinators. There are nine frequency coordinators certified by the Commission to coordinate frequencies allocated for public safety use. The Commission has not developed a small business size standard specifically applicable to frequency coordinators. The SBA rules, however, contain a definition for Wireless Telecommunications Carriers (except Satellite) which encompasses business entities engaged in *radiotelephone communications employing no more than 1,500 persons*. Under this category and size standard, we estimate that a majority of frequency coordinators can be considered small.

D. Description of Projected Reporting, Recordkeeping and Other Compliance Requirements

This *Report and Order* adopts a rule that will entail reporting, recordkeeping, and/or third-party consultation. Specifically, the *Report and Order* requires applicants for mobile repeater authorizations receive frequency coordination prior to filing a license application with the Commission. While the preparation of an application does not require the hiring of professionals, frequency coordinators do charge a fee for their services. Therefore, licensees will incur a one-time burden each time an application is filed with the Commission. The estimated burden and cost levels are described in more detail in the supporting statement for OMB 3060–1198, ICR Ref. No. 201404–30.

E. Steps Taken To Minimize Significant Economic Impact on Small Entities and Significant Alternatives Considered

The RFA requires an agency to describe any significant alternatives that it has considered in reaching its

approach, which may include the following four alternatives (among others): (1) The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.

The *Report and Order* adopts changes to the rules covering operation on six telemetry channels in the 173 MHz band. In formulating rule changes in the *Report and Order*, we strived to promote efficient use of spectrum.

The *Report and Order* requires applicants obtain frequency coordination prior to filing a license application with the Commission. Given the Commission's previous reliance on frequency coordination as a mechanism to minimize the occurrence of harmful interference, we did not consider other alternatives to frequency coordination. In addition, we note that there are no methods by which to reduce the burden of frequency coordination on smaller entities. The *Report and Order* concludes that the benefits of frequency coordination outweigh any potential economic burden associated with frequency coordination.

F. Federal Rules That May Duplicate, Overlap, or Conflict With the Proposed Rules

None.

G. Report to Congress

The Commission will send a copy of the *Report and Order*, including the FRFA, in a report to be sent to Congress pursuant to the Small Business Regulatory Enforcement Fairness Act of 1996. In addition, the Commission will send a copy of the *Report and Order*, including this FRFA, to the Chief

Counsel for Advocacy of the Small Business Administration.

Ordering Clauses

Accordingly, *it is ordered* that, pursuant to sections 1, 4(i), 303, 316, 332 and 337 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 154(i), 303, 316, 332 and 337, the Report and Order *is hereby adopted*.

It is further ordered that the amendments of the Commission's rules as set forth in Appendix B of the *Report and Order* are adopted, effective February 16, 2016, except for those rules and requirements in Section 90.175 containing new or modified information collection requirements that require approval by the Office of Management and Budget under the Paperwork Reduction Act of 1995, which *will become effective* after such approval, on the effective date specified in a notice that the Commission publishes in the **Federal Register** announcing such approval and effective date.

It is further ordered that, pursuant to Section 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), and Section 1.925(b)(3) of the Commission's rules, 47 CFR 1.925(b)(3), the Request for Waiver filed by the Washington Metropolitan Area Transit Authority on June 18, 2013, *is dismissed as moot*.

It is further ordered that, pursuant to Section 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), and Section 1.925(b)(3) of the Commission's rules, 47 CFR 1.925(b)(3), the Modification Application and associated Request for Waiver filed by Trinity County, California on January 31, 2014 *are dismissed*.

It is further ordered that, pursuant to Section 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), and Section 1.925(b)(3) of the Commission's rules, 47 CFR 1.925(b)(3), the Application and associated Request for Waiver filed by Williams County Sheriff's Department on December 26, 2013, *are dismissed*.

It is further ordered that, pursuant to Section 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), and Section 1.925(b)(3) of the Commission's rules, 47 CFR 1.925(b)(3), the Application and associated Request for Waiver filed by Panhandle Regional Planning Commission on August 5, 2013, *are dismissed*.

It is further ordered that the Commission *shall send* a copy of the *Report and Order* in a report to be sent to Congress and the General Accounting Office pursuant to the Congressional Review Act, 5 U.S.C. 801(a)(1)(A).

List of Subjects in 47 CFR Part 90

Radio.

Federal Communications Commission.

Sheryl Todd,

Deputy Secretary.

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR part 90 as follows:

PART 90—PRIVATE LAND MOBILE RADIO SERVICES

■ 1. The authority citation for part 90 continues to read as follows:

Authority: Sections 4(i), 11, 303(g), 303(r), and 332(c)(7) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 161, 303(g), 303(r), and 332(c)(7), and Title VI of the Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. 112–96, 126 Stat. 156.

■ 2. Amend § 90.20:

■ a. In the table in paragraph (c)(3) by revising the entries for 173.2375, 173.2625, 173.2875, 173.3125, 173.3375, and 173.3625; and

■ b. By adding paragraphs (d)(90) through (93).

The revisions and additions read as follows:

§ 90.20 Public Safety Pool.

* * * * *

(c) * * *

(3) * * *

PUBLIC SAFETY POOL FREQUENCY TABLE

Frequency or band	Class of station(s)	Limitations	Coordinator
* * * * *			
Megahertz			
* * * * *			
173.2375 .....	.....do	90, 91, 92, 93	PX.
173.2625 .....	.....do	90, 91, 92, 93	PX.
173.2875 .....	.....do	90, 91, 92, 93	PX.
173.3125 .....	.....do	90, 91, 92, 93	PX.
173.3375 .....	.....do	90, 91, 92, 93	PX.
173.3625 .....	.....do	90, 91, 92, 93	PX.

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
*	*	*	*
(d) * * *			
(90) The maximum effective radiated power (ERP) may not exceed 2 watts for mobile stations, and 5 watts for mobile repeater stations and hand-carried transmitters that communicate directly with mobile repeater stations.	of normal day-to-day operations either in terms of operation in a specific county or in the terms of maximum distance from a geographic center (latitude and longitude) and shall be subject to the frequency coordination requirements of § 90.175.	single licensee or by several users sharing a channel. Until a channel is loaded to capacity it will be available for assignment to other users in the same area.	
(91) This frequency is available on a shared basis both for remote control and telemetry operations and for mobile repeater operations. The authorized bandwidth may not exceed 11.25 kHz.	(93) Mobile repeaters operating on this frequency are subject to a channel loading requirement of 50 transmitter-receivers. Loading standards will be applied in terms of the number of units actually in use or to be placed in use within 8 months following authorization. A licensee will be required to show that an assigned frequency is at full capacity before it may be assigned a second or additional frequency. Channel capacity may be reached either by the requirements of a	* * * * *	
(92) This frequency is available on a shared basis with the Industrial/Business Pool for remote control and telemetry operations. Licensees seeking primary status for the use of this frequency for mobile repeater stations and hand-carried transmitters that communicate directly with mobile repeater stations must describe the area		■ 3. Amend § 90.35: ■ a. In the table in paragraph (b)(3) by revising the entries for 173.2375, 173.2625, 173.2875, 173.3125, 173.3375 and 173.3625; and ■ b. By adding paragraphs (c)(92) through (95). The revisions and additions read as follows: § 90.35 Industrial/Business Pool. * * * * * (b) * * * (3) * * *	

INDUSTRIAL BUSINESS POOL FREQUENCY TABLE

Frequency or band	Class of station(s)	Limitations	Coordinator
* * * * *			
Megahertz			
173.2375	Fixed or mobile	92, 93, 94, 95.	
173.2625	Fixed or mobile	92, 93, 94, 95.	
173.2875	Fixed or mobile	92, 93, 94, 95.	
173.3125	Fixed or mobile	92, 93, 94, 95.	
173.3375	Fixed or mobile	92, 93, 94, 95.	
173.3625	Fixed or mobile	92, 93, 94, 95.	
* * * * *			

(c) * * *

(92) This frequency is available on a shared basis both for remote control and telemetry operations and for mobile repeater operations. The authorized bandwidth may not exceed 11.25 kHz.

(93) This frequency is available on a shared basis with the Public Safety Pool for remote control and telemetry operations. In cases where § 90.35(c)(95) applies to this frequency, licensees seeking primary status for the use of this frequency for mobile repeater stations

and hand-carried transmitters that communicate directly with mobile repeater stations must describe the area of normal day-to-day operations either in terms of operation in a specific county or in the terms of maximum distance from a geographic center (latitude and longitude) and shall be subject to the frequency coordination requirements of § 90.175.

(94) Mobile repeaters operating on this frequency are subject to a channel loading requirement of 50 transmitter-

receivers. Loading standards will be applied in terms of the number of units actually in use or to be placed in use within 8 months following authorization. A licensee will be required to show that an assigned frequency pair is at full capacity before it may be assigned a second or additional frequency. Channel capacity may be reached either by the requirements of a single licensee or by several users sharing a channel. Until a channel is loaded to capacity it will be

available for assignment to other users in the same area.

(95) The maximum effective radiated power (ERP) may not exceed 2 watts for mobile stations, and 5 watts for mobile repeater stations and hand-carried transmitters that communicate directly with mobile repeater stations.

* * * * *

■ 4. Section 90.175 is amended by adding paragraph (b)(4) to read as follows:

§ 90.175 Frequency coordinator requirements.

* * * * *

(b) * * *

(4) For any application for mobile repeater station operations on frequencies denoted by both § 90.20(d)(90) and (92), or by both § 90.35(c)(93) and (95) the frequency coordinator responsible for the application must determine and disclose to the applicant the call signs and the service areas of all active co-channel incumbent remote control and telemetry stations inside the applicant's proposed area of operation by adding a special condition to the application, except when the applicant has obtained written concurrence from an affected incumbent licensee, or when the applicant and the incumbent licensee are the same entity.

* * * * *

[FR Doc. 2016-00220 Filed 1-14-16; 8:45 am]

BILLING CODE 6712-01-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 300

RIN 0648-BE71

International Fisheries; Pacific Tuna Fisheries; 2016 Commercial Pacific Bluefin Tuna Catch Limit in the Eastern Pacific Ocean

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Announcement of 2016 Commercial Pacific bluefin tuna catch limit.

SUMMARY: NMFS is announcing that the Pacific bluefin tuna catch limit applicable to U.S. commercial fishing vessels in the eastern Pacific Ocean (EPO) in 2016 is 425 metric tons (mt). This notice is necessary to inform fishery participants of the catch limit established in a final rule published on July 8, 2015.

DATES: The catch limit is effective February 14, 2016, through 11:59 p.m. local time December 31, 2016.

FOR FURTHER INFORMATION CONTACT: Celia Barroso, NMFS West Coast Region, 562-432-1850.

SUPPLEMENTARY INFORMATION: The United States is a member of the Inter-American Tropical Tuna Commission (IATTC), which was established under the Convention for the Establishment of an Inter-American Tropical Tuna Commission (Convention) signed in 1949. The Convention is an international agreement that, among other matters, serves as a framework for international conservation and management of highly migratory species of fish in the IATTC Convention Area.

Fishing for tuna in the EPO is managed, in part, under the Tuna Conventions Act of 1950 (Act), as amended. Under the Act, NMFS must publish regulations to carry out

recommendations of the IATTC. Regulations governing fishing by U.S. vessels in accordance with the Act appear at 50 CFR part 300, subpart C, and these regulations implement IATTC recommendations for the conservation and management of highly migratory fish resources in the EPO.

In 2014, the IATTC adopted Resolution C-14-06 (*Measures for the Conservation and Management of Pacific Bluefin Tuna in the Eastern Pacific Ocean, 2015-2016*), which establishes catch and trip limits of Pacific bluefin tuna applicable to U.S. commercial fishing vessels in 2015 and 2016. NMFS implemented this resolution by notice-and-comment rulemaking under the Act (80 FR 38986, July 8, 2015, and codified at 50 CFR 300.25). According to the regulations at 50 CFR 300.25(h)(2)(i), if 175 mt or less are caught in 2015, as determined by NMFS, then the 2016 catch limit is 425 mt.

NMFS, through landings data and other available information, has determined that U.S. commercial vessels in the EPO have caught less than 175 mt of PBF in 2015; preliminary estimates indicate total landings to be approximately 96 mt. In accordance with 50 CFR 300.25(h), this **Federal Register** notice announces that a 425 mt catch limit for Pacific bluefin tuna applies to U.S. commercial fishing vessels in the EPO through the end of the 2016 calendar year.

As a reminder, in accordance with 50 CFR 300.25(h), a trip limit of 25 mt per vessel applies. When NMFS anticipates that the total catch for the U.S. fleet has reached 375 mt, NMFS will impose a 2 mt trip limit until 425 mt have been caught and the fishery is closed.

Authority: 16 U.S.C. 951 *et seq.*

Dated: January 11, 2016.

Emily H. Menashes,
Acting Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 2016-00738 Filed 1-14-16; 8:45 am]

BILLING CODE 3510-22-P

Proposed Rules

Federal Register

Vol. 81, No. 10

Friday, January 15, 2016

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

DEPARTMENT OF ENERGY

10 CFR Part 431

[Docket Numbers EERE-2013-BT-STD-0007 and EERE-2013-BT-STD-0021]

RIN 1904-AC95 and 1904-AD11

Energy Conservation Program for Certain Industrial Equipment: Energy Conservation Standards for Small, Large, and Very Large Air-Cooled Commercial Package Air Conditioning and Heating Equipment and Commercial Warm Air Furnaces

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Supplemental notice of proposed rulemaking.

SUMMARY: The Energy Policy and Conservation Act of 1975, as amended (EPCA), prescribes energy conservation standards for various consumer products and certain commercial and industrial equipment, including small, large, and very large air-cooled commercial package air conditioning and heating equipment and commercial warm air furnaces. EPCA also requires that the U.S. Department of Energy (DOE) periodically review and consider amending its standards for specified categories of industrial equipment, including commercial heating and air-conditioning equipment, in order to determine whether more-stringent, amended standards would be technologically feasible and economically justified, and save a significant additional amount of energy. In this document, DOE proposes to amend the energy conservation standards for both small, large, and very large air-cooled commercial package air conditioning and heating equipment and commercial warm air furnaces identical to those set forth in a direct final rule published elsewhere in this **Federal Register**. If DOE receives an adverse comment and determines that such comment may provide a reasonable basis for withdrawing the

direct final rule, DOE will publish a document withdrawing the direct final rule and will proceed with this proposed rule.

DATES: DOE will accept comments, data, and information regarding the proposed standards no later than May 4, 2016.

Comments regarding the likely competitive impact of the proposed standard should be sent to the Department of Justice contact listed in the **ADDRESSES** section before February 16, 2016.

ADDRESSES: *Instructions:* Any comments submitted must identify the proposed rule for Energy Conservation Standards for small, large, and very large air-cooled commercial package air conditioning and heating equipment (CUACs and CUHPs) and commercial warm air furnaces (CWAfFs), and provide docket number EERE-2013-BT-STD-0007 and/or regulatory information number (RIN) 1904-AC95 for CUACs and CUHPs and EERE-2013-BT-STD-0021 and/or RIN 1904-AD11 for CWAfFs. Comments may be submitted using any of the following methods:

1. *Federal eRulemaking Portal:* www.regulations.gov. Follow the instructions for submitting comments.
2. *Email:* For CUACs and CUHPs: CommPkgACHP2013STD0007@ee.doe.gov. For CWAfFs: CommWarmAirFurn2013STD0021@ee.doe.gov. Include the docket number and/or RIN for each equipment category in the subject line of the message. Submit electronic comments in WordPerfect, Microsoft Word, PDF, or ASCII file format, and avoid the use of special characters or any form of encryption.
3. *Postal Mail:* Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Office, Mailstop EE-5B, 1000 Independence Avenue SW., Washington, DC 20585-0121. If possible, please submit all items on a compact disc (CD), in which case it is not necessary to include printed copies.
4. *Hand Delivery/Courier:* Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Office, 950 L'Enfant Plaza SW., Room 6094, Washington, DC 20024. Telephone: (202) 586-2945. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.

No telefacsimilies (faxes) will be accepted.

For detailed instructions on submitting comments and additional information on the rulemaking process, see section III of this document ("Public Participation").

Written comments regarding the burden-hour estimates or other aspects of the collection-of-information requirements contained in this proposed rule may be submitted to Office of Energy Efficiency and Renewable Energy through the methods listed above and by email to Chad_S_Whiteman@omb.eop.gov.

EPCA requires the Attorney General to provide DOE a written determination of whether the proposed standard is likely to lessen competition. The U.S. Department of Justice Antitrust Division invites input from market participants and other interested persons with views on the likely competitive impact of the proposed standard. Interested persons may contact the Division at energy_standards@atr.usdoj.gov before February 16, 2016. Please indicate in the "Subject" line of your email the title and Docket Number of this rulemaking notice.

Docket: The dockets, which include **Federal Register** notices, public meeting attendee lists and transcripts, comments, and other supporting documents/materials, is available for review at www.regulations.gov. All documents in the dockets are listed in the www.regulations.gov index. However, some documents listed in the index, such as those containing information that is exempt from public disclosure, may not be publicly available.

A link to the docket Web page for small, large, and very large air-cooled commercial package air conditioning and heating equipment can be found at: www.regulations.gov/#!docketDetail;D=EERE-2013-BT-STD-0007. A link to the docket Web page for commercial warm air furnaces can be found at: www.regulations.gov/#!docketDetail;D=EERE-2013-BT-STD-0021. The www.regulations.gov Web page will contain instructions on how to access all documents, including public comments, in the docket.

For further information on how to review the dockets, please contact Ms. Brenda Edwards at (202) 586-2945 or by email: Brenda.Edwards@ee.doe.gov.

FOR FURTHER INFORMATION CONTACT: Mr. John Cymbalsky, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies, EE-5B, 1000 Independence Avenue SW., Washington, DC 20585-0121. Telephone: (202) 286-1692. Email: John.Cymbalsky@ee.doe.gov.

SUPPLEMENTARY INFORMATION:

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I. Introduction and Authority

Title III, Part C¹ of the Energy Policy and Conservation Act of 1975 (“EPCA” or, in context, “the Act”), Public Law 94–163 (December 22, 1975), coupled with Title IV of the National Energy Conservation Policy Act, Public Law 95–619 (November 9, 1978), (collectively codified at 42 U.S.C. 6311–6317), established the Energy Conservation Program for Certain Industrial Equipment, which includes provisions covering the equipment addressed by this document.² In general, this program addresses the energy efficiency of certain types of commercial and industrial equipment. Relevant provisions of the Act specifically include definitions (42 U.S.C. 6311), energy conservation standards (42 U.S.C. 6313), test procedures (42 U.S.C. 6314), labeling provisions (42 U.S.C. 6315), and the authority to require information and reports from manufacturers (42 U.S.C. 6316).

Section 342(a) of EPCA, which was added as part of the Energy Policy Act of 1992, Public Law 102–486 (October 24, 1992) (“EPAct 1992”), introduced new provisions regarding DOE’s authority to regulate certain commercial and industrial equipment. Among the equipment EPAct 1992 required DOE to regulate were small and large air-cooled commercial package air conditioning and heating equipment, along with

commercial warm air furnaces (“CWAFFs”). See EPAct 1992, sec. 122 (codified as amended at 42 U.S.C. 6313(a)). As part of these changes, Congress specified energy conservation standards for this equipment to meet. See *id.* Later, the Energy Policy Act of 2005, Public Law 109–58 (August 8, 2005) (“EPACT 2005”), further amended DOE’s authority to include very large air-cooled commercial package air conditioning and heating equipment and added standards for this equipment to meet as well. See EPACT 2005, sec. 136 (codified as amended at 42 U.S.C. 6313(a)). (Small, large, and very large, air-cooled commercial package air conditioning and heating equipment are also known generally as air-cooled commercial unitary air conditioners and heat pumps (“CUACs” and “CUHPs”). Congress established standards for CUACs/CUHPs that have a rated capacity between 65,000 British thermal units per hour (Btu/h) and 760,000 Btu/h. Similarly, for CWAFFs, Congress established standards for equipment that (1) have a rated capacity (rated maximum input³) greater than or equal to 225,000 Btu/h, (2) can be gas-fired or oil-fired, and (3) are designed to heat commercial and industrial buildings. See 42 U.S.C. 6313(a)(4).

Collectively, CUACs/CUHPs and CWAFFs are designed to heat and cool commercial buildings and are often located on a building’s rooftop.

Section 342(a) of EPCA concerns energy conservation standards for small, large, and very large, CUACs and CUHPs. (42 U.S.C. 6313(a)) This category of equipment has a rated capacity between 65,000 Btu/h and 760,000 Btu/h. This equipment is designed to heat and cool commercial buildings and is often located on the building’s rooftop.

The initial Federal energy conservation standards for CWAFFs were added to EPCA by the Energy Policy Act of 1992 (EPACT 1992), Public Law 102–486 (Oct. 24, 1992). See 42 U.S.C. 6313(a)(4). These types of covered equipment have a rated capacity (rated maximum input⁴) greater than or equal to 225,000 Btu/h, can be gas-fired or oil-fired, and are designed to heat commercial and industrial buildings. *Id.*

Pursuant to section 342(a)(6) of EPCA, DOE is to consider amending the energy efficiency standards for certain types of commercial and industrial equipment whenever ASHRAE amends the

standard levels or design requirements prescribed in ASHRAE/IES Standard 90.1, and whenever more than 6 years had elapsed since the issuance of the most recent final rule establishing or amending a standard for the equipment as of the date of AEMTCA’s enactment, December 18, 2012. (42 U.S.C. 6313(a)(6)(C)(vi)) Because more than six years had elapsed since DOE issued a final rule with standards for CUACs and CUHPs or CWAFFs on October 18, 2005 (see 70 FR 60407), DOE initiated the process to review these standards.

Pursuant to EPCA, DOE’s energy conservation program for covered equipment consists essentially of four parts: (1) Testing; (2) labeling; (3) the establishment of Federal energy conservation standards; and (4) certification and enforcement procedures. Subject to certain criteria and conditions, DOE is required to develop test procedures to measure the energy efficiency, energy use, or estimated annual operating cost of covered equipment. (42 U.S.C. 6314) Manufacturers of covered equipment must use the prescribed DOE test procedure as the basis for certifying to DOE that their equipment comply with the applicable energy conservation standards adopted under EPCA and when making representations to the public regarding their energy use or efficiency. (42 U.S.C. 6314(d)) Similarly, DOE must use these test procedures to determine whether a given manufacturer’s equipment complies with standards adopted pursuant to EPCA. The DOE test procedures for small, large, and very large CUACs/CUHPs and CWAFFs currently appear at title 10 of the Code of Federal Regulations (“CFR”) 431.96 and 431.76, respectively.

When setting standards for the equipment addressed by this document, EPCA prescribes that in deciding whether a proposed standard is economically justified, DOE must determine whether the benefits of the standard exceed its burdens. DOE must make this determination after receiving comments on the proposed standard, and by considering, to the maximum extent practicable, the following seven statutory factors:

1. The economic impact of the standard on manufacturers and consumers of products subject to the standard;
2. The savings in operating costs throughout the estimated average life of the covered products in the type (or class) compared to any increase in the price, initial charges, or maintenance expenses for the covered products

¹ Part C was codified as Part A–1 of the corresponding portion of the U.S. Code.

² All references to EPCA in this document refer to the statute as amended through the Energy Efficiency Improvement Act of 2015, Public Law 114–11 (April 30, 2015).

³ “Rated maximum input” means the maximum gas-burning capacity of a CWAFF in Btus per hour, as specified by the manufacturer.

⁴ “Rated maximum input” means the maximum gas-burning capacity of a CWAFF in Btus per hour, as specified by the manufacturer.

which are likely to result from the standard;

3. The total projected amount of energy savings likely to result directly from the standard;

4. Any lessening of the utility or the performance of the covered products likely to result from the standard;

5. The impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the standard;

6. The need for national energy conservation; and

7. Other factors the Secretary of Energy considers relevant. (42 U.S.C. 6313(a)(6)(B)(ii))

With respect to the types of equipment at issue in this document, EPCA also contains what is known as an “anti-backsliding” provision, which prevents the Secretary from prescribing any amended standard that either increases the maximum allowable energy use or decreases the minimum required energy efficiency of a covered product. (42 U.S.C. 6313(a)(6)(B)(iii)(I)) Also, the Secretary may not prescribe an amended or new standard if interested persons have established by a preponderance of the evidence that the standard is likely to result in the unavailability in the United States of any covered product type (or class) of performance characteristics (including reliability, features, sizes, capacities, and volumes) that are substantially the same as those generally available in the United States. (42 U.S.C. 6313(a)(6)(B)(iii)(II)(aa))

With respect to the equipment addressed by this document, DOE notes that EPCA prescribes limits on the Agency’s ability to promulgate a standard if DOE has made a finding that interested persons have established by a preponderance of the evidence that a standard is likely to result in the unavailability of any product type (or class) of performance characteristics that are substantially the same as those generally available in the United States at the time of the finding. See 42 U.S.C. 6313(B)(iii)(II).

Additionally, EPCA generally specifies criteria to follow when promulgating multiple energy conservation standards for covered products based on different subcategories. In these cases, DOE must specify a different standard level for a type or class of product that has the same function or intended use if DOE determines that products within such group: (A) Consume a different kind of energy from that consumed by other covered products within such type (or class); or (B) have a capacity or other performance-related feature which other

products within such type (or class) do not have and such feature justifies a higher or lower standard. See 42 U.S.C. 6295(q)(1). In determining whether a performance-related feature justifies a different standard for a group of products, DOE must consider such factors as the utility to the customer of such a feature and other factors DOE deems appropriate. Id. Any rule prescribing such a standard must include an explanation of the basis on which such higher or lower level was established. See 42 U.S.C. 6295(q)(2). With respect to the equipment addressed by this supplemental notice of proposed rulemaking (“SNOPR”), DOE notes that EPCA prescribes limits on the Agency’s ability to promulgate a standard if DOE has made a finding that interested persons have established by a preponderance of the evidence that a standard is likely to result in the unavailability of any product type (or class) of performance characteristics that are substantially the same as those generally available in the United States at the time of the finding. See 42 U.S.C. 6313(B)(iii)(II).

With particular regard to this document, the Energy Independence and Security Act of 2007 (“EISA 2007”), Public Law 110–140 (December 19, 2007), amended EPCA, in relevant part, to grant DOE authority to issue a type of final rule (*i.e.*, a “direct final rule”) establishing an energy conservation standard for a product on receipt of a statement that is submitted jointly by interested persons that are fairly representative of relevant points of view (including representatives of manufacturers of covered products, States, and efficiency advocates), as determined by the Secretary, and that contains recommendations with respect to an energy or water conservation standard. If the Secretary determines that the recommended standard contained in the statement is in accordance with 42 U.S.C. 6295(o) or 42 U.S.C. 6313(a)(6)(B), as applicable, the Secretary may issue a final rule establishing the recommended standard. A notice of proposed rulemaking (“NOPR”) that proposes an identical energy efficiency standard is published simultaneously with the direct final rule. A public comment period of at least 110 days is provided. See 42 U.S.C. 6295(p)(4). Not later than 120 days after the date on which a direct final rule issued under this authority is published in the **Federal Register**, the Secretary shall withdraw the direct final rule if the Secretary receives 1 or more adverse public comments relating to the direct final rule or any alternative joint

recommendation and based on the rulemaking record relating to the direct final rule, the Secretary determines that such adverse public comments or alternative joint recommendation may provide a reasonable basis for withdrawing the direct final rule under subsection 42 U.S.C. 6295(o), 6313(a)(6)(B), or any other applicable law. On withdrawal of a direct final rule, the Secretary shall proceed with the notice of proposed rulemaking published simultaneously with the direct final rule and publish in the **Federal Register** the reasons why the direct final rule was withdrawn. This direct final rule provision applies to the equipment at issue in this SNOPR. See 42 U.S.C. 6316(b)(1). In this instance, because DOE has already published NOPRs related to the amendment of standards both CUACs/CUHPs and CWAFFs, see 79 FR 58948 (September 30, 2014) (CUAC/CUHP proposal) and 80 FR 6182 (February 4, 2015), DOE is publishing an SNOPR consistent with the direct final rule’s statutory requirements.

Responding to comments received from interested parties with respect to DOE’s proposals, on April 1, 2015, DOE issued a Notice of Intent to Establish the Commercial Package Air Conditioners and Commercial Warm Air Furnaces Working Group to Negotiate Potential Energy Conservation Standards for Commercial Package Air Conditioners and Commercial Warm Air Furnaces. 80 FR 17363. The CUAC/CUHP–CWAFF Working Group (in context, “the Working Group”) was established under the Appliance Standards and Rulemaking Federal Advisory Committee (“ASRAC”) in accordance with the Federal Advisory Committee Act and the Negotiated Rulemaking Act with the purpose of discussing and, if possible, reaching consensus on a set of energy conservation standards to propose or finalize for CUACs, CUHPs and CWAFFs. The Working Group was to consist of fairly representative parties having a defined stake in the outcome of the proposed standards, and would consult, as appropriate, with a range of experts on technical issues.

DOE received 17 nominations for membership. Ultimately, the Working Group consisted of 17 members, including one member from ASRAC and one DOE representative.⁵ The Working

⁵ The group members were John Cymbalsky (U.S. Department of Energy), Marshall Hunt (Pacific Gas & Electric Company, San Diego Gas & Electric Company, Southern California Edison, and Southern California Gas Company), Andrew deLaski (Appliance Standards Awareness Project), Louis Starr (Northwest Energy Efficiency Alliance),

Group met six times (five times in-person and once by teleconference). The meetings were held on April 28, May 11–12, May 20–21, June 1–2, June 9–10, and June 15, 2015. As a result of these efforts, the Working Group successfully reached consensus on energy conservation standards for CUACs, CUHPs, and CWAFFs. On June 15, 2015, it submitted a Term Sheet to ASRAC outlining its recommendations, which ASRAC subsequently adopted.⁶ See <http://www.regulations.gov/#!documentDetail;D=EERE-2013-BT-STD-0007-0093>.

DOE has determined that the statement containing recommendations with respect to energy conservation standards for CUACs, CUHPs and CWAFFs was submitted jointly by interested persons that are fairly representative of relevant points of view, in accordance with 42 U.S.C. 6295(p)(4)(A) and 6313(a)(6)(B).⁷ In reaching this determination, DOE took into consideration the fact that the Working Group, in conjunction with ASRAC members who approved the recommendations, consisted of representatives of manufacturers of covered products, States, and efficiency advocates—all of which are groups specifically identified by Congress as relevant parties to any consensus recommendation. (42 U.S.C. 6295(p)(4)(A) As delineated above, the Term Sheet was signed and submitted

by a broad cross-section of interests, including the manufacturers of the subject equipment, trade associations representing these manufacturers and installation contractors, environmental and energy-efficiency advocacy organizations, and electric utility companies. The ASRAC Committee approving the Working Group's recommendations included at least two members representing States—one representing the National Association of State Energy Officials (NASEO) and one representing the State of California.⁸ By its plain terms, the statute contemplates that the Secretary will exercise discretion to determine whether a given statement is “submitted jointly by interested persons that are fairly representative of relevant points of view (including representatives of manufacturers of covered products, States, and efficiency advocates).” In this case, given the broad range of persons participating in the process that led to the submission—in the Working Group and in ASRAC—and given the breadth of perspectives expressed in that process, DOE has determined that the statement it received meets this criterion.

Pursuant to 42 U.S.C. 6295(p)(4), the Secretary must also determine whether a jointly-submitted recommendation for an energy or water conservation standard satisfies 42 U.S.C. 6295(o) or 42 U.S.C. 6313(a)(6)(B), as applicable. In making this determination, DOE has conducted an analysis to evaluate whether the potential energy conservation standards under consideration would meet these requirements. This evaluation is similar to the comprehensive approach that DOE typically conducts whenever it considers potential energy conservation standards for a given type of product or equipment. DOE applies the same principles to any consensus recommendations it may receive to satisfy its statutory obligation to ensure that any energy conservation standard that it adopts achieves the maximum improvement in energy efficiency that is technologically feasible and economically justified and will result in the significant conservation of energy. Upon review, the Secretary determined that the Term Sheet submitted in the instant rulemaking comports with the standard-setting criteria set forth under 42 U.S.C. 6313(a)(6)(B). As a result, DOE published a direct final rule establishing energy conservation standards for CUACs/CUHPs and CWAFFs elsewhere in this **Federal Register**. If DOE receives

adverse comments that may provide a reasonable basis for withdrawal and withdraws the direct final rule, DOE will consider those comments and any other comments received in determining how to proceed with this proposed rule.

For further background information on these proposed standards and the supporting analyses, please see the direct final rule published elsewhere in this **Federal Register**. That document includes additional discussion of the EPCA requirements for promulgation of energy conservation standards; the current standards for CUACs/CUHPs and CWAFFs; the history of the standards rulemakings establishing such standards; and information on the test procedures used to measure the energy efficiency of CUACs/CUHPs and CWAFFs. The document also contains an in-depth discussion of the analyses conducted in support of this rulemaking, the methodologies DOE used in conducting those analyses, and the analytical results.

II. Proposed Standards

When considering more stringent standards for the equipment at issue, DOE must determine, supported by clear and convincing evidence that adopting those standards would result in the significant additional conservation of energy and be technologically feasible and economically justified. See 42 U.S.C. 6313(a)(6)(A)(ii). In determining whether a standard is economically justified, the Secretary must determine whether the benefits of the standard exceed its burdens by, to the greatest extent practicable, considering the seven statutory factors discussed previously. (42 U.S.C. 6313(a)(6)(B)(ii)(I)–(VII))

DOE considered the impacts of amended standards for CUACs/CUHPs and CWAFFs at each TSL, beginning with the maximum technologically feasible level, to determine whether that level would be economically justified. Where the max-tech level was not justified, DOE then considered the next most efficient level and undertook the same evaluation until it reached the highest efficiency level that is both technologically feasible and economically justified and saves a significant amount of energy.

To aid the reader as DOE discusses the benefits and/or burdens of each TSL, tables in this section present a summary of the results of DOE's quantitative analysis for each TSL. In addition to the quantitative results presented in the tables, DOE also considers other burdens and benefits that affect economic justification.

Meg Waltner (Natural Resources Defense Council), Jill Hootman (Ingersoll Rand/Trane), John Hurst (Lennox), Karen Meyers (Rheem Manufacturing Company), Charlie McCrudden (Air Conditioning Contractors of America), Harvey Sachs (American Council for an Energy Efficient Economy), Paul Doppel (Mitsubishi Electric), Robert Whitwell (United Technologies Corporation), Michael Shows (Underwriters Laboratories), Russell Tharp (Goodman Manufacturing), Sami Zendah (Emerson Climate Technologies), Mark Tezigni (Sheet Metal and Air Conditioning Contractors National Association, Inc.), Nick Mislak (Air-Conditioning, Heating, and Refrigeration Institute).

⁶ Available at <http://www.regulations.gov/#!documentDetail;D=EERE-2013-BT-STD-0007-0093>. The following individuals served as members of ASRAC that received and approved the Term Sheet: Co-Chair John Mandyck (Carrier/United Technologies Corporation), Co-Chair Andrew deLaski (Appliance Standards Awareness Project), Ashley Armstrong (U.S. Department of Energy), John Caskey (National Electrical Manufacturers Association), Jennifer Cleary (Association of Home Appliance Manufacturers), Thomas Eckman (Northwest Power and Conservation Council), Charles Hon (True Manufacturing Company), Dr. David Hungerford (California Energy Commission), Dr. Diane Jakobs (Rheem Manufacturing Company), Kelley Kline (General Electric, Appliances), Deborah Miller (National Association of State Energy Officials), and Scott Blake Harris (Harris, Wiltshire & Grannis, LLP).

⁷ See 42 U.S.C. 6313(b) (applying 42 U.S.C. 6295(p)(4) to energy conservation standard rulemakings involving a variety of industrial equipment, including CUACs, CUHPs, and CWAFFs).

⁸ These individuals were Deborah E. Miller (NASEO) and David Hungerford (California Energy Commission).

A. Benefits and Burdens of TSLs Considered for Small, Large, and Very Large Air-Cooled Commercial Package Air Conditioning and Heating Equipment

Table II.1 and Table II.2 summarize the quantitative impacts estimated for

each TSL for CUACs and CUHPs. The national impacts are measured over the lifetime of CUACs and CUHPs purchased in the 2018–2048 period. The energy savings, emissions reductions, and value of emissions reductions refer to full-fuel-cycle results. The efficiency

levels contained in each TSL are described in section V.A of the direct final rule.

TABLE II.1—SUMMARY OF ANALYTICAL RESULTS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT: NATIONAL IMPACTS

Category	TSL 1	TSL 2	TSL 2.5	Recommended TSL*	TSL 3	TSL 3.5	TSL 4	TSL 5
National FFC Energy Savings (quads)								
	5.3	9.8	13.9	14.8	15.9	16.4	19.7	23.4
NPV of Consumer Benefits (2014\$ billion)								
3% discount rate	18.0	32.8	47.5	50.0	53.7	55.3	64.1	68.2
7% discount rate	5.4	10.1	15.1	15.2	16.8	17.1	19.2	18.8
Cumulative Emissions Reduction (Total FFC Emissions)								
CO ₂ (million metric tons)	314	578	824	873	943	973	1,167	1,383
SO ₂ (thousand tons)	164	303	431	454	493	508	610	722
NO _x (thousand tons) ...	586	1,080	1,538	1,634	1,759	1,815	2,180	2,584
Hg (tons)	0.61	1.12	1.59	1.68	1.82	1.88	2.25	2.66
CH ₄ (thousand tons)	1,401	2,582	3,677	3,917	4,208	4,342	5,215	6,185
N ₂ O (thousand tons)	3.45	6.35	9.05	9.54	10.34	10.67	12.80	15.16
CH ₄ (million tons CO ₂ eq **).	39.2	72.3	103.0	109.7	117.8	121.6	146.0	173.2
N ₂ O (thousand tons CO ₂ eq **).	913	1,682	2,397	2,528	2,741	2,828	3,392	4,017
Value of Emissions Reduction (Total FFC Emissions)								
CO ₂ (2014\$ billion)†	1,845 to 27.53	3,409 to 50.82	4,870 to 72.52	5,046 to 75.94	5,556 to 82.83	5,729 to 85.44	6,860 to 102.4	8,127 to 121.4
NO _x —3% discount rate (2014\$ million)	1,828	3,376	4,820	5,038	5,503	5,677	6,804	8,067
NO _x —7% discount rate (2014\$ million)	606	1,121	1,604	1,614	1,826	1,881	2,245	2,652

* For the Recommended TSL, the NES is forecasted over the lifetime of equipment sold from 2018–2048. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2048.

** CO₂eq is the quantity of CO₂ that would have the same global warming potential (GWP).

† Range of the economic value of CO₂ reductions is based on estimates of the global benefit of reduced CO₂ emissions.

TABLE II.2—SUMMARY OF ANALYTICAL RESULTS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT: MANUFACTURER AND CONSUMER IMPACTS

Category	TSL 1	TSL 2	TSL 2.5	Recommended TSL	TSL 3	TSL 3.5	TSL 4	TSL 5
Manufacturer Impacts								
Industry NPV (2014\$ million) (No-new-standards case INPV = 1,638.2)	1,431.0 to 1,705.5	1,421.9 to 1,758.6	1,300.5 to 1,721.1	1,204.1 to 1,606.1	1,197.4 to 1,697.0	1,138.2 to 1,670.3	1,025.0 to 1,660.9	762.7 to 1,737.6
Industry NPV (% change)	(6.5) to 3.7	(13.5) to 6.9	(20.9) to 4.7	(26.8) to (2.3)	(27.2) to 3.2	(30.8) to 1.6	(37.7) to 1.0	(53.6) to 5.7
Commercial Consumer Average LCC Savings (2014\$)								
Small CUACs	(210)	870	3,777	4,233	4,233	3,517	3,035	5,326
Large CUACs	3,997	3,728	7,991	10,135	10,135	12,266	16,803	12,900
Very Large CUACs	1,547	4,777	8,610	8,610	8,881	8,881	18,386	18,338
Average *	1,045	1,971	5,340	6,220	6,238	6,396	8,370	8,697
Commercial Consumer PBP (years)								
Small CUACs	14.9	8.5	4.9	4.9	4.9	2.6	2.5	4.6
Large CUACs	1.3	2.4	2.4	2.6	2.6	2.6	2.5	4.6
Very Large CUACs	5.8	7.0	6.2	6.2	7.2	7.2	5.6	6.3
Average *	10.6	6.7	4.3	4.4	4.5	3.0	2.8	4.8
% of Consumers that Experience Net Cost								
Small CUACs	48	25	5	5	5	13	25	16
Large CUACs	0	10	5	2	2	1	1	11
Very Large CUACs	7	13	7	7	23	23	3	6

TABLE II.2—SUMMARY OF ANALYTICAL RESULTS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT: MANUFACTURER AND CONSUMER IMPACTS—Continued

Category	TSL 1	TSL 2	TSL 2.5	Recommended TSL	TSL 3	TSL 3.5	TSL 4	TSL 5
Average *	32	20	5	4	6	11	16	14

Parentheses indicate negative (–) values.

* Weighted by shares of each equipment class in total projected shipments in the year of compliance.

DOE first considered TSL 5, which represents the max-tech efficiency levels. TSL 5 would save 23.4 quads of energy, an amount DOE considers significant. Under TSL 5, the NPV of consumer benefit would be \$18.8 billion using a discount rate of 7-percent, and \$68.2 billion using a discount rate of 3-percent.

The cumulative emissions reductions at TSL 5 are 1,383 million Mt of CO₂, 722 thousand tons of SO₂, 2,584 thousand tons of NO_x, 2.66 tons of Hg, 6,185 thousand tons of CH₄, and 15.16 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 5 ranges from \$8.127 billion to \$121.4 billion.

At TSL 5, the average LCC impact is a savings of \$5,326 for small CUACs, \$12,900 for large CUACs, and \$18,338 for very large CUACs. The simple payback period is 4.6 years for small CUACs, 4.6 years for large CUACs, and 6.3 years for very large CUACs. The fraction of consumers experiencing a net LCC cost is 16 percent for small CUACs, 11 percent for large CUACs, and 6 percent for very large CUACs. Although DOE did not estimate consumer impacts for CUHPs, the results would be very similar to those for CUACs for the reasons stated in section V.B.1 of the direct final rule.

At TSL 5, the projected change in INPV ranges from a decrease of \$881.9 million to an increase of \$93.1 million, which corresponds to a change of –53.7 percent and 5.7 percent, respectively. The industry is expected to incur \$591.0 million in total conversion costs at this level. DOE projects that 98.7 percent of current equipment listings would require redesign at this level to meet this standard level today. At this level, DOE recognizes that manufacturers could face technical resource constraints. Manufacturers stated they would require additional engineering expertise and additional test laboratory capacity. It is unclear whether manufacturers could complete the hiring of the necessary technical expertise and construction of the necessary test facilities in time to allow for the redesign of all equipment to meet max-tech by 2019. Furthermore, DOE recognizes that a standard set at max-tech could greatly limit equipment

differentiation in the CUAC/CUHP market. By commoditizing a key differentiating feature, a standard set at max-tech would likely accelerate consolidation in the industry.

The Secretary tentatively concludes that at TSL 5 for CUACs and CUHPs, the benefits of energy savings, positive NPV of consumer benefits, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the economic burden on some consumers, and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a large reduction in INPV. Consequently, the Secretary has tentatively concluded that TSL 5 is not economically justified.

DOE then considered TSL 4. TSL 4 would save 19.7 quads of energy, an amount DOE considers significant. Under TSL 4, the NPV of consumer benefit would be \$19.2 billion using a discount rate of 7-percent, and \$64.1 billion using a discount rate of 3-percent.

The cumulative emissions reductions at TSL 4 are 1,167 million Mt of CO₂, 610 thousand tons of SO₂, 2,180 thousand tons of NO_x, 2.25 tons of Hg, 5,215 thousand tons of CH₄, and 12.80 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 4 ranges from \$6.860 billion to \$102.4 billion.

At TSL 4, the average LCC impact is a savings of \$3,035 for small CUACs, \$16,803 for large CUACs, and \$18,386 for very large CUACs. The simple payback period is 2.5 years for small CUACs, 2.5 years for large CUACs, and 5.6 years for very large CUACs. The fraction of consumers experiencing a net LCC cost is 25 percent for small CUACs, 1 percent for large CUACs, and 3 percent for very large CUACs. Although DOE did not estimate consumer impacts for CUHPs, the results would be very similar to those for CUACs for the reasons stated in section V.B.1 of the direct final rule.

At TSL 4, the projected change in INPV ranges from a decrease of \$619.6 million to an increase of \$16.3 million, which corresponds to a change of –37.7 percent and 1.0 percent, respectively. The industry is expected to incur \$538.8 million in total conversion costs at this

level. DOE projects that 96.0 percent of current equipment listings would require redesign at this level to meet this standard level today.

The Secretary tentatively concludes that at TSL 4 for CUACs and CUHPs, the benefits of energy savings, positive NPV of consumer benefits, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the economic burden on some consumers, and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a reduction in INPV. Consequently, the Secretary has tentatively concluded that TSL 4 is not economically justified.

DOE then considered TSL 3.5. TSL 3.5 would save 16.4 quads of energy, an amount DOE considers significant. Under TSL 3.5, the NPV of consumer benefit would be \$17.1 billion using a discount rate of 7-percent, and \$55.3 billion using a discount rate of 3-percent.

The cumulative emissions reductions at TSL 3.5 are 973 million Mt of CO₂, 508 thousand tons of SO₂, 1,815 thousand tons of NO_x, 1.88 tons of Hg, 4,342 thousand tons of CH₄, and 10.67 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 3.5 ranges from \$5.729 billion to \$85.44 billion.

At TSL 3.5, the average LCC impact is a savings of \$3,517 for small CUACs, \$12,266 for large CUACs, and \$8,881 for very large CUACs. The simple payback period is 2.6 years for small CUACs, 2.6 years for large CUACs, and 7.2 years for very large CUACs. The fraction of consumers experiencing a net LCC cost is 13 percent for small CUACs, 1 percent for large CUAC, and 23 percent for very large CUACs. Although DOE did not estimate consumer impacts for CUHPs, the results would be very similar to those for CUACs for the reasons stated in section V.B.1 of the direct final rule.

At TSL 3.5, the projected change in INPV ranges from a decrease of \$506.4 million to an increase of \$25.7 million, which corresponds to a change of –30.8 percent and 1.6 percent, respectively. The industry is expected to incur \$489.2 million in total conversion costs at this level. DOE projects that 93.5 percent of current equipment listings would

require redesign at this level to meet this standard level today.

The Secretary tentatively concludes that at TSL 3.5 for CUACs and CUHPs, the benefits of energy savings, positive NPV of consumer benefits, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the economic burden on some consumers, and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a reduction in INPV. Consequently, the Secretary has tentatively concluded that TSL 3.5 is not economically justified.

DOE then considered TSL 3. TSL 3 would save 15.9 quads of energy, an amount DOE considers significant. Under TSL 3, the NPV of consumer benefit would be \$16.8 billion using a discount rate of 7-percent, and \$53.7 billion using a discount rate of 3-percent.

The cumulative emissions reductions at TSL 3 are 943 million Mt of CO₂, 493 thousand tons of SO₂, 1,759 thousand tons of NO_x, 1.82 tons of Hg, 4,208 thousand tons of CH₄, and 10.34 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 3 ranges from \$5.556 billion to \$82.83 billion.

At TSL 3, the average LCC impact is a savings of \$4,233 for small CUACs, \$10,135 for large CUACs, and \$8,881 for very large CUACs. The simple payback period is 4.9 years for small CUACs, 2.6 years for large CUACs, and 7.2 years for very large CUACs. The fraction of consumers experiencing a net LCC cost is 5 percent for small CUACs, 2 percent for large CUAC, and 23 percent for very large CUACs. Although DOE did not estimate consumer impacts for CUHPs, the results would be very similar to those for CUACs for the reasons stated in section V.B.1 of the direct final rule.

At TSL 3, the projected change in INPV ranges from a decrease of \$447.2 million to an increase of \$52.4 million, which corresponds to a change of -27.2 percent and 3.2 percent, respectively. DOE projects that 81.6 percent of current equipment listings would require redesign at this level to meet this standard level today.

The Secretary tentatively concludes that at TSL 3 for CUACs and CUHPs, the benefits of energy savings, positive NPV of consumer benefits, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the economic burden on some consumers, and the impacts on manufacturers, including the conversion

costs and profit margin impacts that could result in a large reduction in INPV. Consequently, the Secretary has tentatively concluded that TSL 3 is not economically justified.

DOE then considered the Recommended TSL, which reflects the standard levels recommended by the Working Group. The Recommended TSL would save 14.8 quads of energy, an amount DOE considers significant. Under the Recommended TSL, the NPV of consumer benefit would be \$15.2 billion using a discount rate of 7-percent, and \$50.0 billion using a discount rate of 3-percent.

The cumulative emissions reductions at the Recommended TSL are 873 million Mt of CO₂, 454 thousand tons of SO₂, 1,634 thousand tons of NO_x, 1.68 tons of Hg, 3,917 thousand tons of CH₄, and 9.54 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at the Recommended TSL ranges from \$5.046 billion to \$75.94 billion.

At the Recommended TSL, the average LCC impact is a savings of \$4,233 for small CUACs, \$10,135 for large CUACs, and \$8,610 for very large CUACs. The simple payback period is 4.9 years for small CUACs, 2.6 years for large CUACs, and 6.2 years for very large CUACs. The fraction of consumers experiencing a net LCC cost is 5 percent for small CUACs, 2 percent for large CUACs, and 7 percent for very large CUACs. Although DOE did not estimate consumer impacts for CUHPs, the results would be very similar to those for CUACs for the reasons stated in section V.B.1 of the direct final rule.

The Recommended TSL, as presented by the Working Group and approved by ASRAC, aligns the effective dates of the CUAC/CUHP and CWAFF rulemakings. That approach adopts the ASHRAE 90.1-2013 efficiency levels in 2018 and a higher level in 2023 as recommended by the Working Group. DOE anticipates that aligning the effective dates will reduce total conversion costs and cumulative regulatory burden, while also allowing industry to gain clarity on potential regulations that could affect refrigerant availability before the higher appliance standard takes effect in 2023. DOE projects that 31.5 percent of current equipment listings would require redesign at this level to meet the 2018 standard level, while 79.6 percent of current equipment listings would require redesign at this level to meet the 2023 standard level.

At the Recommended TSL, the projected change in INPV ranges from a

decrease of \$440.4 million to a decrease of \$38.5 million, which corresponds to a change of -26.8 percent and -2.3 percent, respectively. The industry is expected to incur \$520.8 million in total conversion costs at this level. However, the industry members of the Working Group noted that aligning the compliance dates for the CUAC/CUHP and CWAFF standards in the manner recommended would allow manufacturers to coordinate their redesign and testing expenses for these equipment. (CUAC: AHRI and ACEEE, No. 80 at p. 1). With this coordination, manufacturers explained that there would be a reduction in the total conversion costs associated with the direct final rule. The resulting synergies from aligning the CUAC/CUHP and CWAFF compliance dates would produce INPV impacts that are less severe than the forecasted INPV range of -26.8 percent to -2.3 percent.

After considering the analysis and weighing the benefits and burdens, DOE has tentatively determined that the recommended standards are in accordance with 42 U.S.C. 6313(a)(6)(B), which contains provisions for adopting a uniform national standard more stringent than the amended ASHRAE Standard 90.1 for the equipment considered in this document. Specifically, the Secretary has tentatively determined, supported by clear and convincing evidence that such adoption would result in the significant additional conservation of energy and is technologically feasible and economically justified. In determining whether the recommended standards are economically justified, the Secretary has tentatively determined that the benefits of the recommended standards exceed the burdens. Namely, the Secretary has tentatively concluded that under the recommended standards for CUACs and CUHPs, the benefits of energy savings, positive NPV of consumer benefits, emission reductions, the estimated monetary value of the emissions reductions, and positive average LCC savings would outweigh the negative impacts on some consumers and on manufacturers, including the conversion costs that could result in a reduction in INPV for manufacturers.

The proposed amended energy conservation standards for CUACs and CUHPs, which prescribe the minimum allowable IEER and, for commercial unitary heat pumps, COP, are shown in Table II.3.

TABLE II.3—PROPOSED ENERGY CONSERVATION STANDARDS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT

Equipment type		Heating type	Proposed energy conservation standard	Compliance date
Small Commercial Packaged AC and HP (Air-Cooled)—≥65,000 Btu/h and <135,000 Btu/h Cooling Capacity.	AC	Electric Resistance Heating or No Heating.	12.9 IEER 14.8 IEER	January 1, 2018. January 1, 2023.
		All Other Types of Heating	12.7 IEER ... 14.6 IEER	January 1, 2018. January 1, 2023.
	HP	Electric Resistance Heating or No Heating.	12.2 IEER ... 3.3 COP 14.1 IEER 3.4 COP	January 1, 2018. January 1, 2023.
		All Other Types of Heating	12.0 IEER ... 3.3 COP 13.9 IEER 3.4 COP	January 1, 2018. January 1, 2023.
Large Commercial Packaged AC and HP (Air-Cooled)—≥135,000 Btu/h and <240,000 Btu/h Cooling Capacity.	AC	Electric Resistance Heating or No Heating.	12.4 IEER 14.2 IEER	January 1, 2018. January 1, 2023.
		All Other Types of Heating	12.2 IEER ... 14.0 IEER	January 1, 2018. January 1, 2023.
	HP	Electric Resistance Heating or No Heating.	11.6 IEER ... 3.2 COP 13.5 IEER 3.3 COP	January 1, 2018. January 1, 2023.
		All Other Types of Heating	11.4 IEER ... 3.2 COP 13.3 IEER 3.3 COP	January 1, 2018. January 1, 2023.
Very Large Commercial Packaged AC and HP (Air-Cooled)—≥240,000 Btu/h and <760,000 Btu/h Cooling Capacity.	AC	Electric Resistance Heating or No Heating.	11.6 IEER 13.2 IEER	January 1, 2018. January 1, 2023.
		All Other Types of Heating	11.4 IEER ... 13.0 IEER	January 1, 2018. January 1, 2023.
	HP	Electric Resistance Heating or No Heating.	10.6 IEER ... 3.2 COP 12.5 IEER 3.2 COP	January 1, 2018. January 1, 2023.
		All Other Types of Heating	10.4 IEER ... 3.2 COP 12.3 IEER 3.2 COP	January 1, 2018. January 1, 2023.

The benefits and costs of the proposed standards—which mimic those found in the direct final rule—can also be expressed in terms of annualized values. The annualized net benefit is the sum of: (1) The annualized national economic value (expressed in 2014\$) of the benefits from operating equipment that meet the adopted standards (consisting primarily of operating cost savings from using less energy, minus increases in product purchase costs, and (2) the annualized monetary value of the benefits of CO₂ and NO_x emission reductions.⁹

Table II.4 shows the annualized values for CUACs and CUHPs under the Recommended TSL, expressed in 2014\$. The results under the primary estimate are as follows. Using a 7-percent discount rate for benefits and costs other than CO₂ reduction, (for which DOE used a 3-percent discount rate along with the SCC series that has a value of \$40.0/t in 2015),¹⁰ the estimated cost of the standards in this rule is \$708 million per year in increased equipment costs, while the estimated annual benefits are \$2,099 million in reduced equipment operating costs, \$1,320

million in CO₂ reductions, and \$147.5 million in reduced NO_x emissions. In this case, the net benefit amounts to \$2,859 million per year. Using a 3-percent discount rate for all benefits and costs and the SCC series has a value of \$40.0/t in 2015, the estimated cost of the standards is \$792 million per year in increased equipment costs, while the estimated annual benefits are \$3,441 million in reduced operating costs, \$1,320 million in CO₂ reductions, and \$267.3 million in reduced NO_x emissions. In this case, the net benefit amounts to \$4,237 million per year.

TABLE II.4—ANNUALIZED BENEFITS AND COSTS OF PROPOSED STANDARDS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT

	Discount rate (%)	Million 2014\$/year		
		Primary estimate*	Low net benefits estimate	High net benefits estimate
Benefits				
Consumer Operating Cost Savings	7	2,099	2,021	2,309
	3	3,441	3,287	3,830
CO ₂ Reduction Value (\$12.2/t case)**	5	357	355	361
CO ₂ Reduction Value (\$40.0/t case)**	3	1,320	1,313	1,337
CO ₂ Reduction Value (\$62.3/t case)**	2.5	1,973	1,964	1,999
CO ₂ Reduction Value (\$117/t case)**	3	4,028	4,009	4,080
NO _x Reduction Value†	7	147.5	146.7	149.5
	3	267.3	265.9	270.7
Total Benefits††	7% plus CO ₂ range.	2,603 to 6,275.	2,522 to 6,176.	2,820 to 6,539
	7	3,566	3,481	3,796
	3 plus CO ₂ range.	4,065 to 7,737.	3,908 to 7,561.	4,462 to 8,181
	3	5,028	4,866	5,438
Costs				
Consumer Incremental Product Costs	7	708	888	275
	3	792	1028	231
Net Benefits				
Total††	7% plus CO ₂ range.	1,895 to 5,567.	1,635 to 5,288.	2,546 to 6,265
	7	2,859	2,593	3,521
	3 plus CO ₂ range.	3,274 to 6,945.	2,879 to 6,533.	4,232 to 7,951
	3	4,237	3,838	5,207

* This table presents the annualized costs and benefits associated with CUACs and CUHPs shipped in 2018–2048. These results include benefits to consumers which accrue after 2048 from the CUACs and CUHPs purchased in 2018–2048. The results account for the incremental variable and fixed costs incurred by manufacturers due to the standard, some of which may be incurred in preparation for the rule. The Primary, Low Benefits, and High Benefits estimates utilize projections of energy prices from the *AEO 2015* Reference case, Low Economic Growth case, and High Economic Growth case, respectively. In addition, incremental product costs reflect a constant price trend in the Primary estimate, a slightly increasing price trend in the Low Benefits estimate, and a slightly decreasing price trend in the Low Benefits estimate. The methods used to project price trends are explained in section IV.D.1.

** The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor. † Total Benefits for both the 3% and 7% cases are derived using the series corresponding to the average SCC with 3-percent discount rate (\$40.0/t) case. In the rows labeled “7% plus CO₂ range” and “3% plus CO₂ range,” the operating cost and NO_x benefits are calculated using the labeled discount rate, and those values are added to the full range of CO₂ values.

⁹ To convert the time-series of costs and benefits into annualized values, DOE calculated a present value in 2014, the year used for discounting the NPV of total consumer costs and savings. For the benefits, DOE calculated a present value associated with each year's shipments in the year in which the

shipments occur (2020, 2030, etc.), and then discounted the present value from each year to 2015. The calculation uses discount rates of 3- and 7-percent for all costs and benefits except for the value of CO₂ reductions, for which DOE used case-specific discount rates. Using the present value,

DOE then calculated the fixed annual payment over a 30-year period, starting in the compliance year that yields the same present value.

¹⁰ DOE used a 3-percent discount rate because the SCC values for the series used in the calculation were derived using a 3-percent discount rate.

† The \$/ton values used for NO_x are described in section IV.L.2 of the direct final rule. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the Regulatory Impact Analysis titled, “*Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants*,” published in June 2014 by EPA’s Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposalRIAFinal0602.pdf>.) For DOE’s Primary Estimate and Low Net Benefits Estimate, the agency is presenting a national benefit-per-ton estimate for particulate matter emitted from the Electric Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). For DOE’s High Net Benefits Estimate, the benefit-per-ton estimates were based on the Six Cities study (Lepuele et al., 2011), which are nearly two-and-a-half times larger than those from the ACS study. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emission, DOE intends to investigate refinements to the agency’s current approach of one national estimate by assessing the regional approach taken by EPA’s Regulatory Impact Analysis for the Clean Power Plan Final Rule.

†† Total Benefits for both the 3% and 7% cases are derived using the series corresponding to the average SCC with 3-percent discount rate (\$40.0/t) case. In the rows labeled “7% plus CO₂ range” and “3% plus CO₂ range,” the operating cost and NO_x benefits are calculated using the labeled discount rate, and those values are added to the full range of CO₂ values.

B. Benefits and Burdens of TSLs Considered for Commercial Warm Air Furnaces

Table II.5 and Table II.6 summarize the quantitative impacts estimated for

each TSL for CWAFFs. For TSL 2, the national impacts are projected over the lifetime of equipment sold in 2023–2048. For the other TSLs, the impacts are projected over the lifetime of equipment sold in 2019–2048. The

energy savings, emissions reductions, and value of emissions reductions refer to full-fuel-cycle results. The efficiency levels contained in each TSL are described in section V.A of the direct final rule.

TABLE II.5—SUMMARY OF ANALYTICAL RESULTS FOR COMMERCIAL WARM AIR FURNACES: NATIONAL IMPACTS

	Trial standard level				
	1	2	3	4	5
Cumulative FFC Energy Savings Quads	0.25	0.23	0.41	0.41	2.4
NPV of consumer costs and benefits 2014\$ billion					
3% discount rate	1.1	1.0	-0.1	-0.1	2.6
7% discount rate	0.4	0.3	-0.4	-0.4	-0.4
Cumulative FFC emissions reduction					
CO ₂ million metric tons	13.4	12.4	22.0	22.0	126
SO ₂ thousand tons	0.40	0.40	0.63	0.67	-10.2
NO _x thousand tons	43.0	41.2	70.5	72.2	473
Hg tons	0.001	0.001	0.002	0.002	-0.04
CH ₄ thousand tons	159	146	260	260	1,673
CH ₄ thousand tons CO ₂ eq*	4,440	4,096	7,289	7,292	46,831
N ₂ O thousand tons	0.03	0.03	0.05	0.06	0.08
N ₂ O thousand tons CO ₂ eq*	8.8	8.4	14.3	14.6	21.2
Value of emissions reduction					
CO ₂ 2014\$ million**	79.8 to 1,185	71.4 to 1,078	126 to 1,891	126 to 1,897	713 to 10,809
NO _x —3% discount rate 2014\$ million	120 to 264 ...	110 to 243 ...	188 to 414 ...	192 to 424 ...	1258 to 2772
NO _x —7% discount rate 2014\$ million	42.3 to 94.4	36.1 to 80.9	64.2 to 144 ..	65.9 to 147 ..	423 to 945

For TSL 2, the impacts are projected over the lifetime of equipment sold in 2023–2048. For the other TSLs, the impacts are projected over the lifetime of equipment sold in 2019–2048.

* CO₂eq is the quantity of CO₂ that would have the same global warming potential (GWP).

** Range of the economic value of CO₂ reductions is based on estimates of the global benefit of reduced CO₂ emissions.

TABLE II.6—SUMMARY OF ANALYTICAL RESULTS FOR COMMERCIAL WARM AIR FURNACES: MANUFACTURER AND CONSUMER IMPACTS*

Category	Trial standard level				
	1	2	3	4	5
Manufacturer Impacts					
Industry NPV (2014\$ million) (No-New-Standards Case INPV = 96.3).	85.8 to 92.6	83.0 to 90.5	65.5 to 125.2	60.4 to 124.8	(19.3) to 143.5
Industry NPV (% change)	(11.0) to (3.9).	(13.9) to (6.1).	(32.0) to 29.9	(37.3) to 29.5	(120.1) to 49.0
Consumer average LCC savings (2014\$)					
Gas-Fired Commercial Warm Air Furnaces	\$284	\$284	\$75	\$75	\$766
Oil-Fired Commercial Warm Air Furnaces	NA	\$400	NA	\$400	\$1,817
Average*	\$284	\$285	\$75	\$79	\$781

TABLE II.6—SUMMARY OF ANALYTICAL RESULTS FOR COMMERCIAL WARM AIR FURNACES: MANUFACTURER AND CONSUMER IMPACTS*—Continued

Category	Trial standard level				
	1	2	3	4	5
Consumer simple PBP (years)					
Gas-Fired Commercial Warm Air Furnaces	1.4	1.4	12.3	12.3	11.3
Oil-Fired Commercial Warm Air Furnaces	NA	1.9	NA	1.9	7.5
Average*	1.4	1.4	12.3	12.1	11.3
% of Consumers that Experience Net Cost					
Gas-Fired Commercial Warm Air Furnaces	6%	6%	58%	58%	58%
Oil-Fired Commercial Warm Air Furnaces	0%	11%	0%	11%	54%

* Weighted by shares of each equipment class in total projected shipments in 2019.

† At max tech, the standard will likely require CWAFF manufacturers to make design changes to the cooling components of commercial HVAC products and to the chassis that houses the heating and cooling components. Because these cooling system changes are triggered by the CWAFF standard, they are taken into account in the MIA's estimate of conversion costs. The additional expense of updating the commercial cooling product contributes to an INPV loss that is greater than 100%.

DOE first considered TSL 5, which represents the max-tech efficiency levels. TSL 5 would save 2.4 quads of energy, an amount DOE considers significant. Under TSL 5, the NPV of consumer cost would be \$0.4 billion using a 7-percent discount rate, and the NPV of consumer benefit would be \$2.6 billion using a 3-percent discount rate.

The cumulative emissions reductions at TSL 5 are 126 Mt of CO₂, 473 thousand tons of NO_x, 1,673 thousand tons of CH₄, and 0.08 thousand tons of N₂O. Projected emissions show an increase of 10.2 thousand tons of SO₂ and 0.04 ton of Hg. The estimated monetary value of the CO₂ emissions reduction at TSL 5 ranges from \$713 million to \$10,809 million.

At TSL 5, the average LCC impact is a savings of \$766 for gas-fired CWAFFs and \$1,817 for oil-fired CWAFFs. The simple payback period is 11.3 years for gas-fired CWAFFs and 7.5 years for oil-fired CWAFFs. The fraction of consumers experiencing a net LCC cost is 58 percent for gas-fired CWAFF and 54 percent for oil-fired CWAFFs.

At TSL 5, the projected change in INPV ranges from a decrease of \$115.7 million to an increase of \$47.2 million, which corresponds to a change of –120.1 percent and 49.0 percent, respectively. The industry is expected to incur \$157.5 million in total conversion costs at this level. DOE projects that 99 percent of current equipment listings would require redesign at this level.

The Secretary tentatively concludes that at TSL 5 for CWAFFs, the benefits of energy savings, positive NPV of consumer benefits using a discount rate of 3 percent, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the economic burden on most consumers, the negative NPV of

consumer benefits using a 7-percent discount rate, and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a large reduction in INPV. Consequently, the Secretary has tentatively concluded that TSL 5 is not economically justified.

DOE then considered TSL 4. TSL 4 would save 0.41 quads of energy, an amount DOE considers significant. Under TSL 4, the NPV of consumer cost would be \$0.4 billion using a 7-percent discount rate, and \$0.1 billion using a 3-percent discount rate.

The cumulative emissions reductions at TSL 4 are 22 Mt of CO₂, 0.67 thousand tons of SO₂, 72.2 thousand tons of NO_x, 0.002 ton of Hg, 260 thousand tons of CH₄, and 0.06 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 4 ranges from \$126 million to \$1,897 million.

At TSL 4, the average LCC impact is a savings of \$75 for gas-fired CWAFFs and \$400 for oil-fired CWAFFs. The simple payback period is 12.3 years for gas-fired CWAFFs and 1.9 years for oil-fired CWAFFs. The fraction of consumers experiencing a net LCC cost is 58 percent for gas-fired CWAFFs, and 11 percent for oil-fired CWAFFs.

At TSL 4, the projected change in INPV ranges from a decrease of \$35.9 million to an increase of \$28.4 million, which corresponds to a change of –37.3 percent and 29.5 percent, respectively. The industry is expected to incur \$47.6 million in total conversion costs at this level. DOE projects that 94 percent of current product listings would require redesign at this level.

The Secretary tentatively concludes that at TSL 4 for CWAFFs, the benefits of energy savings, emission reductions, and the estimated monetary value of the

emissions reductions would be outweighed by the economic burden on many consumers, negative NPV of consumer benefits, and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a large reduction in INPV. Consequently, the Secretary has tentatively concluded that TSL 4 is not economically justified.

DOE then considered TSL 3. TSL 3 would save 0.41 quads of energy, an amount DOE considers significant. Under TSL 3, the NPV of consumer cost would be \$0.4 billion using a 7-percent discount rate, and \$0.1 billion using a 3-percent discount rate.

The cumulative emissions reductions at TSL 3 are 22 Mt of CO₂, 0.63 thousand tons of SO₂, 70.5 thousand tons of NO_x, 0.002 ton of Hg, 260 thousand tons of CH₄, and 0.05 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 3 ranges from \$126 million to \$1,891 million.

At TSL 3, the average LCC impact is a savings of \$75 for gas-fired CWAFFs. The simple payback period is 12.3 years for gas-fired CWAFFs. The fraction of consumers experiencing a net LCC cost is 58 percent for gas-fired CWAFFs. The EL at TSL 3 for oil-fired CWAFFs is the baseline, so there are no LCC impacts for oil-fired CWAFFs at TSL 3.

At TSL 3, the projected change in INPV ranges from a decrease of \$30.9 million to an increase of \$28.8 million, which corresponds to a change of –32.0 percent and 29.9 percent, respectively. The industry is expected to incur \$41.0 million in total conversion costs at this level. DOE projects that 91 percent of current equipment listings would require redesign at this level.

The Secretary tentatively concludes that at TSL 3 for CWAFFs, the benefits of

energy savings, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the economic burden on many consumers, negative NPV of consumer benefits, and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a large reduction in INPV. Consequently, the Secretary has tentatively concluded that TSL 3 is not economically justified.

DOE then considered TSL 2, which corresponds to the recommendations by the Working Group. TSL 2 would save 0.23 quads of energy, an amount DOE considers significant. Under TSL 2, the NPV of consumer benefit would be \$0.3 billion using a 7-percent discount rate, and \$1.0 billion using a 3-percent discount rate.

The cumulative emissions reductions at TSL 2 are 12.4 Mt of CO₂, 0.40 thousand tons of SO₂, 41.2 thousand tons of NO_x, 0.001 ton of Hg, 146 thousand tons of CH₄, and 0.03 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 2 ranges from \$71.4 million to \$1,078 million.

At TSL 2, the average LCC impact is a savings of \$284 for gas-fired CWAFFs and \$400 for oil-fired CWAFFs. The simple payback period is 1.4 years for gas-fired CWAFF and 1.9 years for oil-fired CWAFFs. The fraction of consumers experiencing a net LCC cost is 6 percent for gas-fired CWAFFs and 11 percent for oil-fired CWAFFs.

At TSL 2, 57 percent of current equipment listings would require redesign at this level. The projected change in INPV ranges from a decrease of \$13.4 million to a decrease of \$5.9 million, which corresponds to a decrease of 13.9 percent and 6.1 percent, respectively. The CWAFF industry is expected to incur \$22.2 million in total conversion costs. However, the industry noted that aligning the compliance dates for the CUAC/CUHP and CWAFF standards, as recommended by the Working Group, would allow manufacturers to coordinate their redesign and testing expenses for this equipment. If this occurs, there could be a reduction in the total conversion costs associated with

the DFR. The resulting synergies from aligning the compliance dates of the CUAC/CUHP and CWAFF standards would produce INPV impacts that are less severe than the forecasted INPV range of -13.9 percent to -6.1 percent.

After considering the analysis and weighing the benefits and burdens, DOE has tentatively determined that the recommended standards are in accordance with 42 U.S.C. 6313(a)(6)(B), which contains provisions for adopting a uniform national standard more stringent than the amended ASHRAE/IES Standard 90.1 for the equipment considered in this document. Specifically, the Secretary has tentatively determined, supported by clear and convincing evidence, that such adoption would result in significant additional conservation of energy and is technologically feasible and economically justified. In determining whether the recommended standards are economically justified, the Secretary has tentatively determined that the benefits of the recommended standards exceed the burdens. Namely, the Secretary has tentatively concluded that under the recommended standards for CWAFFs, the benefits of energy savings, positive NPV of consumer benefits, emission reductions, the estimated monetary value of the emissions reductions, and positive average LCC savings would outweigh the negative impacts on some consumers and on manufacturers, including the conversion costs that could result in a reduction in INPV for manufacturers.

Based on the above analyses, DOE is proposing to amend the energy conservation standards for CWAFFs—as expressed in terms of thermal efficiency—in the manner shown in Table II.7.

TABLE II.7—PROPOSED ENERGY CONSERVATION STANDARDS FOR COMMERCIAL WARM AIR FURNACES

Equipment type	Input capacity (Btu/h)	Thermal efficiency (%)
Gas-fired CWAFFs.	≥225,000 Btu/h	81

TABLE II.7—PROPOSED ENERGY CONSERVATION STANDARDS FOR COMMERCIAL WARM AIR FURNACES—Continued

Equipment type	Input capacity (Btu/h)	Thermal efficiency (%)
Oil-fired CWAFFs.	≥225,000 Btu/h	82

The benefits and costs of the proposed standards can also be expressed in terms of annualized values. The annualized net benefit is the sum of: (1) The annualized national economic value (expressed in 2014\$) of the benefits from operating equipment that meet the adopted standards (consisting primarily of operating cost savings from using less energy, minus increases in equipment purchase costs), and (2) the annualized monetary value of the benefits of CO₂ and NO_x emission reductions.

Table II.8 shows the annualized values for CWAFFs under TSL 2, expressed in 2014\$. The results under the primary estimate are as follows. Using a 7-percent discount rate for benefits and costs other than CO₂ reductions, (for which DOE used a 3-percent discount rate along with the average SCC series corresponding to a value of \$40.0/ton in 2015 (2014\$)), the estimated cost of the adopted standards for CWAFFs is \$4.31 million per year in increased equipment costs, while the estimated benefits are \$49.0 million per year in reduced equipment operating costs, \$24 million per year in CO₂ reductions, and \$5.49 million per year in reduced NO_x emissions. In this case, the net benefit amounts to \$75 million per year.

Using a 3-percent discount rate for all benefits and costs and the average SCC series corresponding to a value of \$40.0/ton in 2015 (in 2014\$), the estimated cost of the adopted standards for CWAFFs is \$4.38 million per year in increased equipment costs, while the estimated benefits are \$71 million per year in reduced operating costs, \$24.3 million per year in CO₂ reductions, and \$8.76 million per year in reduced NO_x emissions. In this case, the net benefit amounts to \$100 million per year.

TABLE II.8—ANNUALIZED BENEFITS AND COSTS OF PROPOSED STANDARDS (TSL 2) FOR COMMERCIAL WARM AIR FURNACES

	Million 2014\$/year			
	Discount rate %	Primary estimate *	Low net benefits estimate *	High net benefits estimate *
Benefits				
Consumer Operating Cost Savings	7	49	48	54
CO ₂ Reduction Value (\$12.2/t case)**	3	71	70	81
CO ₂ Reduction Value (\$40.0/t case)**	5	6.99	7.08	7.37
CO ₂ Reduction Value (\$62.3/t case)**	3	24	25	26
CO ₂ Reduction Value (\$117/t case)**	2.5	36	36	38
NO _x Reduction Value†	3	74	75	79
NO _x Reduction Value†	7	5 to 11	5 to 11	5 to 11
NO _x Reduction Value†	3	8 to 17	8 to 17	8 to 18
Total Benefits††	7 plus CO ₂ range	61 to 134	60 to 134	67 to 144
Total Benefits††	7	78	78	85
Total Benefits††	3 plus CO ₂ range	86 to 162	84 to 162	96 to 177
Total Benefits††	3	103	102	114
Costs				
Consumer Incremental Installed Costs	7	4.31	5.04	3.92
Consumer Incremental Installed Costs	3	4.38	5.22	3.94
Net Benefits				
Total††	7 plus CO ₂ range	57 to 130	55 to 129	63 to 140
Total††	7	74	72	81
Total††	3 plus CO ₂ range	82 to 158	79 to 157	92 to 173
Total††	3	99	97	110

*This table presents the annualized costs and benefits associated with CWAFFs shipped in 2023–2048. These results include benefits to consumers which accrue after 2048 from the CWAFFs purchased from 2023–2048. The results account for the incremental variable and fixed costs incurred by manufacturers due to the standard, some of which may be incurred in preparation for the rule. The Primary, Low Benefits, and High Benefits Estimates utilize projections of energy prices from the AEO 2015 Reference case, Low Economic Growth case, and High Economic Growth case, respectively. In addition, incremental equipment costs reflect a medium decline rate in the Primary Estimate, a low decline rate in the Low Benefits Estimate, and a high decline rate in the High Benefits Estimate.

**The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

†The \$/ton values used for NO_x are described in the Direct Final Rule. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the Regulatory Impact Analysis titled, “Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants,” published in June 2014 by EPA’s Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposalRIAFinal0602.pdf>.) For DOE’s Primary Estimate and Low Net Benefits Estimate, the agency is presenting a national benefit-per-ton estimate for particulate matter emitted from the Electric Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). For DOE’s High Net Benefits Estimate, the benefit-per-ton estimates were based on the Six Cities study (Lepule et al., 2011), which are nearly two-and-a-half times larger than those from the ACS study. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emission, DOE intends to investigate refinements to the agency’s current approach of one national estimate by assessing the regional approach taken by EPA’s Regulatory Impact Analysis for the Clean Power Plan Final Rule.

††Total Benefits for both the 3% and 7% cases are derived using the series corresponding to the average SCC with 3-percent discount rate (\$40.0/t case). In the rows labeled “7% plus CO₂ range” and “3% plus CO₂ range,” the operating cost and NO_x benefits are calculated using the labeled discount rate, and those values are added to the full range of CO₂ values.

III. Public Participation

Submission of Comments

DOE will accept comments, data, and information regarding this proposed rule before or after the public meeting, but no later than the date provided in the DATES section at the beginning of this proposed rule. Interested parties may submit comments, data, and other information using any of the methods described in the ADDRESSES section at the beginning of this document.

Submitting comments via www.regulations.gov. The www.regulations.gov Web page will require you to provide your name and

contact information. Your contact information will be viewable to DOE Building Technologies staff only. Your contact information will not be publicly viewable except for your first and last names, organization name (if any), and submitter representative name (if any). If your comment is not processed properly because of technical difficulties, DOE will use this information to contact you. If DOE cannot read your comment due to technical difficulties and cannot contact you for clarification, DOE may not be able to consider your comment.

However, your contact information will be publicly viewable if you include

it in the comment itself or in any documents attached to your comment. Any information that you do not want to be publicly viewable should not be included in your comment, nor in any document attached to your comment. Otherwise, persons viewing comments will see only first and last names, organization names, correspondence containing comments, and any documents submitted with the comments.

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Include contact information each time you submit comments, data, documents, and other information to DOE. If you submit via mail or hand delivery/courier, please provide all items on a CD, if feasible, in which case it is not necessary to submit printed copies. No telefacsimiles (faxes) will be accepted.

Comments, data, and other information submitted to DOE electronically should be provided in PDF (preferred), Microsoft Word or Excel, WordPerfect, or text (ASCII) file format. Provide documents that are not secured, that are written in English, and that are free of any defects or viruses. Documents should not contain special characters or any form of encryption and, if possible, they should carry the electronic signature of the author.

Campaign form letters. Please submit campaign form letters by the originating organization in batches of between 50 to 500 form letters per PDF or as one form letter with a list of supporters’ names compiled into one or more PDFs. This reduces comment processing and posting time.

Confidential Business Information. Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt

by law from public disclosure should submit via email, postal mail, or hand delivery/courier two well-marked copies: one copy of the document marked “confidential” including all the information believed to be confidential, and one copy of the document marked “non-confidential” with the information believed to be confidential deleted. Submit these documents via email or on a CD, if feasible. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

Factors of interest to DOE when evaluating requests to treat submitted information as confidential include: (1) A description of the items; (2) whether and why such items are customarily treated as confidential within the industry; (3) whether the information is generally known by or available from other sources; (4) whether the information has previously been made available to others without obligation concerning its confidentiality; (5) an explanation of the competitive injury to the submitting person that would result from public disclosure; (6) when such information might lose its confidential character due to the passage of time; and (7) why disclosure of the information would be contrary to the public interest.

It is DOE’s policy that all comments may be included in the public docket, without change and as received, including any personal information provided in the comments (except information deemed to be exempt from public disclosure).

IV. Procedural Issues and Regulatory Review

The regulatory reviews conducted for this proposed rule are identical to those conducted for the direct final rule published elsewhere in this **Federal Register**. Please see the direct final rule for further details.

V. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this proposed rule.

List of Subjects in 10 CFR Part 431

Administrative practice and procedure, Confidential business information, Energy conservation, Household appliances, Imports, Intergovernmental relations, Reporting and recordkeeping requirements, Small businesses.

Issued in Washington, DC, on December 17, 2015.

David T. Danielson,

Assistant Secretary, Energy Efficiency and Renewable Energy.

For the reasons set forth in the preamble, DOE proposes to amend part 431 of chapter II, subchapter D, of title 10 of the Code of Federal Regulations, to read as set forth below:

PART 431—ENERGY EFFICIENCY PROGRAM FOR CERTAIN COMMERCIAL AND INDUSTRIAL EQUIPMENT

■ 1. The authority citation for part 431 continues to read as follows:

Authority: 42 U.S.C. 6291–6317.

■ 2. Section 431.77 is revised to read as follows:

§ 431.77 Energy conservation standards and their effective dates.

(a) *Gas-fired commercial warm air furnaces.* Each gas-fired commercial warm air furnace must meet the following energy efficiency standard levels:

(1) For gas-fired commercial warm air furnaces manufactured starting on January 1, 1994, until January 1, 2023, the TE at the maximum rated capacity (rated maximum input) must be not less than 80 percent; and

(2) For gas-fired commercial warm air furnaces manufactured starting on January 1, 2023, the TE at the maximum rated capacity (rated maximum input) must be not less than 81 percent.

(b) *Oil-fired commercial warm air furnaces.* Each oil-fired commercial warm air furnace must meet the following energy efficiency standard levels:

(1) For oil-fired commercial warm air furnaces manufactured starting on January 1, 1994, until January 1, 2023, the TE at the maximum rated capacity (rated maximum input) must be not less than 81 percent; and

(2) For oil-fired commercial warm air furnaces manufactured starting on January 1, 2023, the TE at the maximum rated capacity (rated maximum input) must be not less than 82 percent.

■ 3. Section 431.92 is amended by adding the definition of “Double-duct air conditioner or heat pump means air-cooled commercial package air conditioning and heating equipment” in alphabetical order to read as follows:

§ 431.92 Definitions concerning commercial air conditioners and heat pumps.

* * * * *

Double-duct air conditioner or heat pump means air-cooled commercial

package air conditioning and heating equipment that—

(1) Is either a horizontal single package or split-system unit; or a vertical unit that consists of two components that may be shipped or installed either connected or split;

(2) Is intended for indoor installation with ducting of outdoor air from the building exterior to and from the unit, as evidenced by the unit and/or all of its components being non-weatherized, including the absence of any marking (or listing) indicating compliance with UL 1995, “Heating and Cooling Equipment,” or any other equivalent requirements for outdoor use;

(3)(i) If it is a horizontal unit, a complete unit has a maximum height of 35 inches;

(ii) If it is a vertical unit, a complete unit has a maximum depth of 35 inches; and

(4) Has a rated cooling capacity greater than or equal to 65,000 Btu/h and up to 300,000 Btu/h.

* * * * *

■ 4. Section 431.97 is amended by:

a. Redesignating Tables 5 through 11 as Tables 7 through 13;

b. Revising paragraph (b) and the introductory text of paragraph (c);

c. In paragraph (d)(1) introductory text, removing “Table 7” and adding in its place “Table 9”;

d. In paragraph (d)(2) introductory text, removing “Table 8” and adding in its place “Table 10”; and

e. In paragraph (d)(3) introductory text, removing “Table 9” and adding in its place “Table 11”.

The revisions read as follows:

§ 431.97 Energy efficiency standards and their compliance dates.

* * * * *

(b) Each commercial air conditioner or heat pump (not including single package vertical air conditioners and single package vertical heat pumps, packaged terminal air conditioners and packaged terminal heat pumps, computer room air conditioners, and variable refrigerant flow systems) manufactured starting on the compliance date listed in the corresponding table must meet the applicable minimum energy efficiency standard level(s) set forth in Tables 1 through 6 of this section.

TABLE 1 TO § 431.97—MINIMUM COOLING EFFICIENCY STANDARDS FOR AIR CONDITIONING AND HEATING EQUIPMENT

[Not including single package vertical air conditioners and single package vertical heat pumps, packaged terminal air conditioners and packaged terminal heat pumps, computer room air conditioners, and variable refrigerant flow multi-split air conditioners and heat pumps]

Equipment type	Cooling capacity	Sub-category	Heating type	Efficiency level	Compliance date: Equipment manufactured starting on . . .
Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Split-System).	<65,000 Btu/h	AC	All	SEER = 13	June 16, 2008.
Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Single-Pack-age).	<65,000 Btu/h	HP	All	SEER = 13	June 16, 2008. ¹
		AC	All	SEER = 13	June 16, 2008. ¹
Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled).	≥65,000 Btu/h and <135,000 Btu/h.	HP	All	SEER = 13	June 16, 2008. ¹
		AC	No Heating or Electric Resist- ance Heating.	EER = 11.2	January 1, 2010. ²
		HP	All Other Types of Heating.	EER = 11.0	January 1, 2010. ²
			No Heating or Electric Resist- ance Heating.	EER = 11.0	January 1, 2010. ²
Large Commercial Package Air Con- ditioning and Heating Equipment (Air-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	AC	All Other Types of Heating.	EER = 10.8	January 1, 2010. ²
			No Heating or Electric Resist- ance Heating.	EER = 11.0	January 1, 2010. ²
		HP	All Other Types of Heating.	EER = 10.6	January 1, 2010. ²
			No Heating or Electric Resist- ance Heating.	EER = 10.4	January 1, 2010. ²
Very Large Commercial Package Air Conditioning and Heating Equip- ment (Air-Cooled).	≥240,000 Btu/h and <760,000 Btu/h.	AC	All Other Types of Heating.	EER = 10.0	January 1, 2010. ²
			No Heating or Electric Resist- ance Heating.	EER = 9.8	January 1, 2010. ²
		HP	All Other Types of Heating.	EER = 9.5	January 1, 2010. ²
			No Heating or Electric Resist- ance Heating.	EER = 9.3	January 1, 2010. ²
Small Commercial Package Air Con- ditioning and Heating Equipment (Water-Cooled).	<65,000 Btu/h	AC	All	EER = 12.1	October 29, 2003.

TABLE 1 TO § 431.97—MINIMUM COOLING EFFICIENCY STANDARDS FOR AIR CONDITIONING AND HEATING EQUIPMENT—
Continued

[Not including single package vertical air conditioners and single package vertical heat pumps, packaged terminal air conditioners and packaged terminal heat pumps, computer room air conditioners, and variable refrigerant flow multi-split air conditioners and heat pumps]

Equipment type	Cooling capacity	Sub-category	Heating type	Efficiency level	Compliance date: Equipment manufactured starting on . . .
Large Commercial Package Air-Conditioning and Heating Equipment (Water-Cooled).	≥65,000 Btu/h and <135,000 Btu/h.	AC	No Heating or Electric Resistance Heating. All Other Types of Heating.	EER = 12.1	June 1, 2013.
	≥135,000 Btu/h and <240,000 Btu/h.	AC	No Heating or Electric Resistance Heating. All Other Types of Heating.	EER = 11.9	June 1, 2013.
Very Large Commercial Package Air-Conditioning and Heating Equipment (Water-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	AC	No Heating or Electric Resistance Heating. All Other Types of Heating.	EER = 12.5	June 1, 2014.
	≥240,000 Btu/h and <760,000 Btu/h.	AC	No Heating or Electric Resistance Heating. All Other Types of Heating.	EER = 12.3	June 1, 2014.
Small Commercial Package Air-Conditioning and Heating Equipment (Evaporatively-Cooled).	≥240,000 Btu/h and <760,000 Btu/h.	AC	No Heating or Electric Resistance Heating. All Other Types of Heating.	EER = 12.4	June 1, 2014.
	<65,000 Btu/h	AC	All	EER = 12.2	June 1, 2014.
Large Commercial Package Air-Conditioning and Heating Equipment (Evaporatively-Cooled).	≥65,000 Btu/h and <135,000 Btu/h.	AC	All	EER = 12.1	October 29, 2003.
	≥65,000 Btu/h and <135,000 Btu/h.	AC	No Heating or Electric Resistance Heating. All Other Types of Heating.	EER = 12.1	June 1, 2013.
Very Large Commercial Package Air-Conditioning and Heating Equipment (Evaporatively-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	AC	No Heating or Electric Resistance Heating. All Other Types of Heating.	EER = 11.9	June 1, 2013.
	≥135,000 Btu/h and <240,000 Btu/h.	AC	No Heating or Electric Resistance Heating. All Other Types of Heating.	EER = 12.0	June 1, 2014.
Small Commercial Package Air-Conditioning and Heating Equipment (Water-Source: Water-to-Air, Water-Loop).	≥240,000 Btu/h and <760,000 Btu/h.	AC	No Heating or Electric Resistance Heating. All Other Types of Heating.	EER = 11.8	June 1, 2014.
	<17,000 Btu/h	AC	No Heating or Electric Resistance Heating. All Other Types of Heating.	EER = 11.9	June 1, 2014.
Small Commercial Package Air-Conditioning and Heating Equipment (Water-Source: Water-to-Air, Water-Loop).	≥17,000 Btu/h and <65,000 Btu/h.	HP	All	EER = 11.7	June 1, 2014.
	≥65,000 Btu/h and <135,000 Btu/h.	HP	All	EER = 11.2	October 29, 2003. ³
Small Commercial Package Air-Conditioning and Heating Equipment (Water-Source: Water-to-Air, Water-Loop).	≥17,000 Btu/h and <65,000 Btu/h.	HP	All	EER = 12.0	October 29, 2003. ³
	≥65,000 Btu/h and <135,000 Btu/h.	HP	All	EER = 12.0	October 29, 2003. ³

¹ And manufactured before January 1, 2017. See Table 3 of this section for updated efficiency standards.² And manufactured before January 1, 2018. See Table 3 of this section for updated efficiency standards.³ And manufactured before October 9, 2015. See Table 3 of this section for updated efficiency standards.TABLE 2 TO § 431.97—MINIMUM HEATING EFFICIENCY STANDARDS FOR AIR CONDITIONING AND HEATING EQUIPMENT
[Heat pumps]

[Not including single package vertical air conditioners and single package vertical heat pumps, packaged terminal air conditioners and packaged terminal heat pumps, computer room air conditioners, variable refrigerant flow multi-split air conditioners and heat pumps, and double-duct air-cooled commercial package air conditioning and heating equipment]

Equipment type	Cooling capacity	Efficiency level	Compliance date: Equipment manufactured starting on . . .
Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Split-System).	<65,000 Btu/h	HSPF = 7.7	June 16, 2008. ¹
Small Commercial Package Air-Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Single-Package).	<65,000 Btu/h	HSPF = 7.7	June 16, 2008. ¹
Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled).	≥65,000 Btu/h and <135,000 Btu/h.	COP = 3.3	January 1, 2010. ²
Large Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	COP = 3.2	January 1, 2010. ²

TABLE 2 TO § 431.97—MINIMUM HEATING EFFICIENCY STANDARDS FOR AIR CONDITIONING AND HEATING EQUIPMENT—
Continued

[Heat pumps]

[Not including single package vertical air conditioners and single package vertical heat pumps, packaged terminal air conditioners and packaged terminal heat pumps, computer room air conditioners, variable refrigerant flow multi-split air conditioners and heat pumps, and double-duct air-cooled commercial package air conditioning and heating equipment]

Equipment type	Cooling capacity	Efficiency level	Compliance date: Equipment manufactured starting on . . .
Very Large Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥240,000 Btu/h and <760,000 Btu/h.	COP = 3.2	January 1, 2010. ²
Small Commercial Packaged Air Conditioning and Heating Equipment (Water-Source: Water-to-Air, Water-Loop).	<135,000 Btu/h	COP = 4.2	October 29, 2003.

¹ And manufactured before January 1, 2017. See Table 4 of this section for updated heating efficiency standards.² And manufactured before January 1, 2018. See Table 4 of this section for updated heating efficiency standards.TABLE 3 TO § 431.97—UPDATES TO THE MINIMUM COOLING EFFICIENCY STANDARDS FOR AIR CONDITIONING AND
HEATING EQUIPMENT

[Not including single package vertical air conditioners and single package vertical heat pumps, packaged terminal air conditioners and packaged terminal heat pumps, computer room air conditioners, variable refrigerant flow multi-split air conditioners and heat pumps, and double-duct air-cooled commercial package air conditioning and heating equipment]

Equipment type	Cooling capacity	Sub-category	Heating type	Efficiency level	Compliance date: Equipment manufactured starting on . . .
Small Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥65,000 Btu/h and <135,000 Btu/h.	AC	Electric Resistance Heating or No Heating.	IEER = 12.9	January 1, 2018. ¹
				IEER = 14.8	January 1, 2023.
		HP	All Other Types of Heating.	IEER = 12.7	January 1, 2018. ¹
				IEER = 14.6	January 1, 2023.
Large Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	AC	Electric Resistance Heating or No Heating.	IEER = 12.2	January 1, 2018. ¹
				IEER = 14.1	January 1, 2023.
		HP	All Other Types of Heating.	IEER = 12.0	January 1, 2018. ¹
				IEER = 13.9	January 1, 2023.
Very Large Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥240,000 Btu/h and <760,000 Btu/h.	AC	Electric Resistance Heating or No Heating.	IEER = 12.4	January 1, 2018. ¹
				IEER = 14.2	January 1, 2023.
		HP	All Other Types of Heating.	IEER = 12.2	January 1, 2018. ¹
				IEER = 14.0	January 1, 2023.
		AC	Electric Resistance Heating or No Heating.	IEER = 11.6	January 1, 2018. ¹
				IEER = 13.2	January 1, 2023.
		HP	All Other Types of Heating.	IEER = 11.4	January 1, 2018. ¹
				IEER = 13.0	January 1, 2023.
		HP	Electric Resistance Heating or No Heating.	IEER = 10.6	January 1, 2018. ¹
				IEER = 12.5	January 1, 2023.

TABLE 3 TO § 431.97—UPDATES TO THE MINIMUM COOLING EFFICIENCY STANDARDS FOR AIR CONDITIONING AND HEATING EQUIPMENT—Continued

[Not including single package vertical air conditioners and single package vertical heat pumps, packaged terminal air conditioners and packaged terminal heat pumps, computer room air conditioners, variable refrigerant flow multi-split air conditioners and heat pumps, and double-duct air-cooled commercial package air conditioning and heating equipment]

Equipment type	Cooling capacity	Sub-category	Heating type	Efficiency level	Compliance date: Equipment manufactured starting on . . .
Small Commercial Package Air-Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Split-System).	<65,000 Btu/h ...	AC	All Other Types of Heating.	IEER = 10.4 IEER = 12.3	January 1, 2018. ¹ January 1, 2023.
		HP	All	SEER = 13.0	June 16, 2008.
Small Commercial Package Air-Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Single-Package).	<65,000 Btu/h ...	AC	All	SEER = 14.0	January 1, 2017.
		HP	All	SEER = 14.0	January 1, 2017.
Small Commercial Packaged Air-Conditioning and Heating Equipment (Water Source: Water-to-Air, Water-Loop).	<17,000 Btu/h ...	HP	All	EER = 12.2	January 1, 2017.
		HP	All	EER = 13.0	October 9, 2015.
		HP	All	EER = 13.0	October 9, 2015.

¹ And manufactured before January 1, 2023.

TABLE 4 TO § 431.97—UPDATES TO THE MINIMUM HEATING EFFICIENCY STANDARDS FOR AIR-COOLED AIR CONDITIONING AND HEATING EQUIPMENT

[Heat Pumps]

[Not including single package vertical air conditioners and single package vertical heat pumps, packaged terminal air conditioners and packaged terminal heat pumps, computer room air conditioners, variable refrigerant flow multi-split air conditioners and heat pumps, and double-duct air-cooled commercial package air conditioning and heating equipment]

Equipment type	Cooling capacity	Efficiency level ¹	Compliance date: equipment manufactured starting on . . .
Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Split-System).	<65,000 Btu/h	HSPF = 8.2	January 1, 2017.
Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Single Package).	<65,000 Btu/h	HSPF = 8.0	January 1, 2017.
Small Commercial Package Air Conditioning and Heating Equipment (Water-Source: Water-to-Air, Water-Loop).	<135,000 Btu/h	COP = 4.3	October 9, 2015.
Small Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥65,000 Btu/h and <135,000 Btu/h.	COP = 3.3 COP = 3.4	January 1, 2018. ² January 1, 2023.
Large Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	COP = 3.2 COP = 3.3	January 1, 2018. ² January 1, 2023.
Very Large Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥240,000 Btu/h and <760,000 Btu/h.	COP = 3.2	January 1, 2018.

¹ For units tested using the relevant AHRI Standards, all COP values must be rated at 47 °F outdoor dry-bulb temperature for air-cooled equipment.

² And manufactured before January 1, 2023.

TABLE 5 TO § 431.97—MINIMUM COOLING EFFICIENCY STANDARDS FOR DOUBLE-DUCT AIR-CONDITIONING AND HEATING EQUIPMENT

Equipment type	Cooling capacity	Sub-category	Heating type	Efficiency level	Compliance date: equipment manufactured starting on . . .
Small Double-Duct Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥65,000 Btu/h and <135,000 Btu/h.	AC	Electric Resistance Heating or No Heating.	EER = 11.2 ..	January 1, 2010.
		HP	All Other Types of Heating Electric Resistance Heating or No Heating.	EER = 11.0 .. EER = 11.0 ..	January 1, 2010. January 1, 2010.
Large Commercial Double-Duct Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	AC	All Other Types of Heating Electric Resistance Heating or No Heating.	EER = 10.8 .. EER = 11.0 ..	January 1, 2010. January 1, 2010.
		HP	All Other Types of Heating Electric Resistance Heating or No Heating.	EER = 10.8 .. EER = 10.6 ..	January 1, 2010. January 1, 2010.
Very Large Double-Duct Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥240,000 Btu/h and <300,000 Btu/h.	AC	All Other Types of Heating Electric Resistance Heating or No Heating.	EER = 10.4 .. EER = 10.0 ..	January 1, 2010. January 1, 2010.
		HP	All Other Types of Heating Electric Resistance Heating or No Heating. All Other Types of Heating	EER = 9.8 EER = 9.5 EER = 9.3	January 1, 2010. January 1, 2010. January 1, 2010.

TABLE 6 TO § 431.97—MINIMUM HEATING EFFICIENCY STANDARDS FOR DOUBLE-DUCT AIR-COOLED AIR CONDITIONING AND HEATING EQUIPMENT
[Heat pumps]

Equipment type	Cooling capacity	Heating type	Efficiency level ¹	Compliance date: Equipment manufactured starting on . . .
Small Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥65,000 Btu/h and <135,000 Btu/h	Electric Resistance Heating or No Heating.	COP = 3.3	January 1, 2010.
		All Other Types of Heating.	COP = 3.3	January 1, 2010.
Large Commercial Packaged Air-Conditioning and Heating Equipment (Air-Cooled).	≥135,000 Btu/h and <240,000 Btu/h	Electric Resistance Heating or No Heating.	COP = 3.2	January 1, 2010.
		All Other Types of Heating	COP = 3.2	January 1, 2010.
Very Large Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥240,000 Btu/h and <300,000 Btu/h	Electric Resistance Heating or No Heating.	COP = 3.2	January 1, 2010.
		All Other Types of Heating.	COP = 3.2	January 1, 2010.

¹For units tested using the relevant AHRI Standards, all COP values must be rated at 47 °F outdoor dry-bulb temperature for air-cooled equipment.

(c) Each packaged terminal air conditioner (PTAC) and packaged terminal heat pump (PTHP) manufactured starting on January 1, 1994, but before October 8, 2012 (for standard size PTACs and PTHPs) and before October 7, 2010 (for non-standard size PTACs and PTHPs) must meet the applicable minimum energy efficiency standard level(s) set forth in Table 7 of this section. Each standard size PTAC and PTHP manufactured starting on October 8, 2012, and each non-standard size PTAC and PTHP manufactured

starting on October 7, 2010, must meet the applicable minimum energy efficiency standard level(s) set forth in Table 6 of this section.

* * * * *

[FR Doc. 2015–33069 Filed 1–14–16; 8:45 am]

BILLING CODE 6450–01–P

SMALL BUSINESS ADMINISTRATION

13 CFR Part 120

RIN 3245–AG76

Economic Development Investments for Certified Development Companies

AGENCY: U.S. Small Business Administration.

ACTION: Advance notice of proposed rulemaking.

SUMMARY: The U.S. Small Business Administration (SBA) is soliciting

comments on whether Certified Development Companies (CDCs) should be required to invest specific amounts in local economic development activities (other than lending through the CDC program) and to reserve specific amounts for their future operations. SBA is also soliciting input into what types of activities may qualify as economic development activities.

DATES: Comments must be submitted on or before March 15, 2016.

ADDRESSES: You may submit comments, identified by RIN 3245–AG76, by any of the following methods: (1) Federal Rulemaking Portal: <http://www.regulations.gov>. Follow the instructions for submitting comments; or (2) Mail/Hand Delivery/Courier: U.S. Small Business Administration, Attn: Linda Reilly, Acting Director, Office of Financial Assistance, 409 Third Street SW., 8th Floor, Washington, DC 20416. All comments will be posted on www.regulations.gov. If you wish to submit confidential business information (CBI) as defined in the User Notice at www.regulations.gov, you must submit such information to the U.S. Small Business Administration, Attn: Linda Reilly, Acting Director, Office of Financial Assistance, 409 Third Street SW., 8th Floor, Washington, DC 20416, or send an email to linda.reilly@sba.gov. Highlight the information that you consider to be CBI and explain why you believe SBA should hold this information as confidential. SBA will review your information and determine whether it will make the information public.

FOR FURTHER INFORMATION CONTACT: Linda Reilly, Acting Director, Office of Financial Assistance, U.S. Small Business Administration, 409 3rd Street SW., 8th Floor, Washington, DC 20416, telephone number (202) 205–9949 or linda.reilly@sba.gov.

SUPPLEMENTARY INFORMATION:

I. Background

The Certified Development Company (CDC) program, also referred to as the 504 Loan Program, is authorized pursuant to Title V of the Small Business Investment Act of 1958, 15 U.S.C. 695 *et seq.* The 504 Loan Program is an SBA financing program established to target companies in their growth cycle to create jobs, expand the tax base, and improve American communities. Specifically, the core mission of the 504 Loan Program is to provide long-term fixed asset financing (504 Loans) to small businesses for the purchase or improvement of land, buildings, and major equipment purchases, in an effort

to facilitate the creation of jobs and local economic development.

Under the 504 Loan Program, loans are made to small business applicants by CDCs, which are SBA's community-based partners for providing 504 Loans. With the exception of several for-profit CDCs grandfathered into the 504 Loan Program, a CDC is a nonprofit corporation that promotes economic development within its community through 504 Loans. CDCs are certified and regulated by the SBA, and work with SBA and participating lenders (typically banks) to provide financing to small businesses with the goal of facilitating the creation and retention of jobs and local economic development. There are over 260 CDCs nationwide each with a defined Area of Operations covering a specific geographic area. The Area of Operations for most CDCs is the state in which they are incorporated.

Under 13 CFR 120.825, CDCs are required to be able to sustain their operations continuously with reliable sources of funds, such as income from services rendered and contributions from government or other sponsors. This regulation also provides that any funds generated from loan activity in the 504 Loan Program that remain after payment of staff and overhead expenses (such funds referred to herein as "remaining funds") must be retained by the CDC as a reserve for future operations or for investment in other local economic development activity in the CDC's Area of Operations. In addition, on March 21, 2014, SBA issued a Final Rule (79 FR 15641) that requires each CDC's Board of Directors to ensure that the CDC establishes and maintains adequate reserves for operations (13 CFR 120.823(d)(9)) and invests in economic development in each State in its Area of Operations where the CDC has outstanding 504 Loans (13 CFR 120.823(d)(10)). Accordingly, in reading 13 CFR 120.823(d)(9) and (10) and 120.825 together, each CDC's Board of Directors must ensure that any remaining funds are either retained as a reserve or invested in the CDC's community, but the current rules do not require the CDC to retain or invest any specific amounts or percentages.

CDCs have requested that SBA provide guidance on the acceptable types and amounts of investments that should apply to the remaining funds. To address the issue raised by the CDCs, SBA is considering whether to issue a future Proposed Rulemaking that would require CDCs to set aside a certain amount of their revenues for investing in other local economic development activities. SBA is also considering

whether the rulemaking should address minimum and/or maximum requirements with respect to the size of the reserve that a CDC retains for its future operations. As stated above, 13 CFR 120.825 requires a CDC "to be able to sustain its operations continuously, with reliable sources of funds," and a minimum reserve requirement would assist CDCs in complying with this provision. Excessive reserves, however, could limit the amount a CDC would have available for investing in local economic development activities. To develop a proposed rule to address these issues, SBA needs additional information and invites interested parties to provide it by responding to the questions set forth below.

Finally, SBA is considering providing guidance, through an agency directive (e.g., Standard Operating Procedure, Procedural or Policy Notice), on what constitutes acceptable types of investment in other local economic development activities under 13 CFR 120.825, and is soliciting comments on how to define investments in economic development activity.

II. Comments Requested

To assist SBA in addressing the above issues, SBA requests comments from interested parties on the following questions:

1. What percentage of the CDC's 504 Loan Program revenues do remaining funds typically represent at the end of the CDC's fiscal year?

2. Should SBA require CDCs to use a certain amount or percentage of their remaining funds to invest in other local economic development activity in the CDC's Area of Operations? Please provide reasons for your response.

3. If the answer to question 2 is yes, how should the amount required to be invested in other local economic development activity in the CDC's Area of Operations be calculated? Some possibilities could include a percentage of the original loan amount of the CDC's 504 portfolio, a percentage of the current outstanding loan amount of the CDC's 504 portfolio, a percentage of the annual fees received by the CDC as a result of its 504 lending, or a percentage of the CDC's remaining funds. Should the percentage vary depending upon the dollar value of the CDC's portfolio or other factors? If so, describe how the percentage should vary and upon what factors.

4. Should SBA require CDCs to retain a minimum amount as a reserve for future operations if there are any remaining funds? If not, why not?

5. If the answer to question 4 is yes, how should the amount of a CDC's

required reserve be calculated? Some possibilities could include a percentage of the original loan amount of the CDC's 504 portfolio, a percentage of the current outstanding loan amount of the CDC's 504 portfolio, a percentage of the annual fees received by the CDC as a result of its 504 lending, or a percentage of the CDC's remaining funds. Another approach would be to calculate the required reserve as a dollar amount equal to at least six months, but no more than 12 months, of staff and overhead expenses of the CDC.

6. Should SBA limit the amount that CDCs may retain as a reserve for future operations? If not, why not? If yes, what would be a reasonable maximum amount to allow as a reserve?

7. Should a CDC be able to decide that the reserve option would be a more prudent use of its remaining funds than economic development investments to ensure that it has the ability to "sustain its operations continuously"? Why or why not?

8. Should SBA require CDCs to first apply any remaining funds to the reserve for future operations before using any remaining funds for investments? Please provide reasons for your response.

9. What requirements, if any, should apply to a CDC's remaining funds if it voluntarily decertifies or is removed from the 504 Loan Program? Should the CDC be required to invest these funds in local economic development activities prior to decertification or removal?

10. What types of economic development activities should be included in the definition of "acceptable investments in economic development"? Are there any activities that should not be included in the definition? Examples of such acceptable investments in economic development could include loans, grants or other forms of direct financial support that are issued by the CDC for: (1) Other federal, state or local lending programs, such as microlending or revolving loan funds; (2) Small Business Development Centers; (3) business incubators; (4) industrial development; and (5) other non-profit economic development entities. Should the definition include business or technical procurement assistance provided by the CDC or paid for by the CDC?

Interested parties are invited to provide any other comments that they may have relating to the issues described in this Advance Notice of Proposed Rulemaking. We ask that you provide a brief justification for any suggested changes.

Dated: January 7, 2016.

Maria Contreras-Sweet,
Administrator.

[FR Doc. 2016-00731 Filed 1-14-16; 8:45 am]

BILLING CODE 8025-01-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-2134; Directorate Identifier 2015-CE-012-AD]

RIN 2120-AA64

Airworthiness Directives; B/E Aerospace Protective Breathing Equipment Part Number 119003-11

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Supplemental notice of proposed rulemaking (NPRM); reopening of comment period.

SUMMARY: We are revising an earlier proposed airworthiness directive (AD) for certain B/E Aerospace protective breathing equipment (PBE) that is installed on airplanes. The NPRM proposed inspecting the PBE to determine if the pouch has the proper vacuum seal and replacing if necessary. The NPRM was prompted by reports of a compromise in the vacuum seal of the pouch that contains the PBE. This action revises the NPRM by requiring replacement of the PBE following newly issued service information regardless of inspection results. We are proposing this supplemental NPRM (SNPRM) to correct the unsafe condition on these products. Since these actions impose an additional burden over that proposed in the NPRM, we are reopening the comment period to allow the public the chance to comment on these proposed changes.

DATES: We must receive comments on this SNPRM by February 29, 2016.

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- *Federal eRulemaking Portal:* Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- *Fax:* 202-493-2251.
- *Mail:* U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- *Hand Delivery:* U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE.,

Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed rule, contact B/E Aerospace, Inc., Commercial Aircraft Products Group, 10800 Pflumm Road, Lenexa, Kansas 66215; telephone: (913) 338-9800; fax: (913) 338-8419; Internet: www.beaerospace.com. You may review this referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-2134; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone: 800-647-5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT:

David Enns, Aerospace Engineer, Wichita Aircraft Certification Office, FAA, 1801 S. Airport Road, Room 100, Wichita, Kansas 67209; telephone: (316) 946-4147; fax: (316) 946-4107; email: david.enns@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the **ADDRESSES** section. Include "Docket No. FAA-2015-2134; Directorate Identifier 2015-CE-012-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

We issued an NPRM to amend 14 CFR part 39 by adding an AD that would apply to certain B/E Aerospace protective breathing equipment (PBE) that is installed on airplanes. The NPRM published in the **Federal Register** on June 16, 2015 (80 FR 34330). The NPRM proposed to require inspecting the PBE to determine if the pouch has the proper vacuum seal and replacing if necessary.

Actions Since Previous NPRM Was Issued

Since we issued the NPRM (80 FR 34330, June 16, 2015), further investigation into the fire of the PBE, part number (P/N) 119003–11, found that the ignitor candles from the PBE units that caught fire had a breach of the filter in the candle assembly. The breach of the filter in the candle assembly allowed hot particles from the igniter candle to enter the oxygen rich environment of the PBE hood, which could cause a fire. All ignitor candles that were examined after fire events showed a breach in the filter. Due to the complexities involved with the chemical reaction within the candle, a definitive cause for the breached filters has not been identified. B/E Aerospace PBE, P/N 119003–21, contains a stainless steel mesh in the outlet path of the igniter candle. It has been established that the installation of the stainless steel mesh will prevent hot particles from entering the PBE hood as a result of a breached filter. Also, it was initially believed that the fire events occurred only with PBEs that had compromised vacuum sealed pouches. Two recent events occurred with PBEs that were reported by the operators to be in serviceable conditions, although the FAA and PBE manufacturer could not verify the condition of the pouch or PBE before the event. Therefore, we can no longer conclude that a PBE, P/N 119003–11, with an intact vacuum seal will prevent the possibility of spark and fire.

This condition, if not corrected, could result in the PBE catching fire.

Comments

We gave the public the opportunity to comment on the NPRM (80 FR 34330, June 16, 2015). The following presents the comments received on the NPRM (80 FR 34330, June 16, 2015) and the FAA's response to each comment.

Request To Change Cost of Compliance Section

B/E Aerospace, Inc. requested that the labor cost stated for doing the inspection be changed from .5 work-hour to .1 work-hour.

The commenter stated that the manpower specified in the related service bulletin for doing the inspection is 1 minute for 1 person. By comparison, the labor cost stated in the NPRM is .5 work-hour. The commenter believes that 0.5 work-hour is unreasonably long based on experience with the PBE. The commenter also stated that as a consequence, this aspect of the NPRM incorrectly suggests a substantial burden on the industry given the number of PBE units requiring the inspection.

The commenter requested that the labor cost for doing the inspection be changed to be consistent with the related service information.

We partially agree with the commenter. Even though we agree that it may take less than .5 work-hour to inspect the PBE, it is FAA practice to present labor cost in .5 work-hour increments. We have not changed this proposed AD based on this comment.

Request To Change Applicability

Airbus stated that the Applicability section should also include PBE, P/N 119003–21, all FAA-approved PBEs.

The commenter stated that the candle in PBE, P/N 119003–21, is identical to the one in PBE, P/N 119003–11, and the abnormal behavior of the candle is also possible on the PBE, P/N 119003–21. The remaining effects of a candle malfunction from a PBE, P/N 119003–21, are still not sufficiently known, e.g. functional aspects, heat, or generation of noxious gases. A compromised seal could also lead to a malfunction of a PBE, P/N 119003–21, or other FAA-approved PBEs as well.

The commenter requested that the inspections also apply to PBE, P/N 119003–21, and all other FAA-approved PBEs as well.

We do not agree with the commenter. Our investigation revealed that the cause of the unsafe condition has been limited to PBE, P/N 119003–11. The manufacturer has tested PBE, P/N 119003–21, with candle assemblies that had a breach in the filter. The PBE, P/N 119003–21, has been shown to stop hot particles from entering the hood and causing a fire. Due to additional testing and investigation, this proposed AD now requires replacing the PBE, P/N 119003–11, with a PBE, P/N 119003–21, or other FAA-approved PBE. We are still allowing inspecting the PBE, P/N 119003–11, until the required replacement time.

We have not changed this proposed AD based on this comment.

Request To Include Allowance for Minimum Equipment List (MEL) Relief

United Airlines requested incorporating existing MEL procedures into the AD.

The commenter stated that the proposed AD requires replacing a PBE that has a compromised vacuum seal before further flight. The commenter requested a revision to the AD to allow airplane operation with a minimum equipment list (MEL).

We agree with the commenter. An MEL is intended to permit operation with inoperative instruments or equipment for a period of time until repairs can be done. Repairs must be done at the earliest opportunity. To maintain an acceptable level of safety and reliability, the MEL establishes limitations on the duration of and conditions for operation with inoperative equipment.

We have changed this proposed AD based on this comment.

Related Service Information Under 1 CFR Part 51

We reviewed B/E Aerospace Service Bulletin No. 119003–35–011, Rev. 000, dated February 4, 2015, and Service Bulletin 119003–35–009, Rev. 009, dated November 9, 2015. The B/E Aerospace Service Bulletin No. 119003–35–011, Rev. 000, dated February 4, 2015, describes procedures for inspecting PBE, P/N 119003–11, to determine if the vacuum seal of the pouch containing the PBE is compromised. B/E Aerospace Service Bulletin 119003–35–009, Rev. 009, dated November 9, 2015, describes procedures for replacing PBE, P/N 119003–11, with P/N 119003–21. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section of this SNPRM.

FAA's Determination

We are proposing this SNPRM because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design. Certain changes described above expand the scope of the NPRM (80 FR 34330, June 16, 2015). As a result, we have determined that it is necessary to reopen the comment period to provide additional opportunity for the public to comment on this SNPRM.

Proposed Requirements of This SNPRM

This SNPRM would require accomplishing the actions specified in the service information described

previously, except as discussed under “Differences Between this SNPRM and the Service Information.

Differences Between This SNPRM and the Service Information

B/E Aerospace Service Bulletin No. 119003–35–011, Rev. 000, dated February 4, 2015, applies to all PBE

with P/N 119003–11 and P/N 119003–21. We have determined that this proposed AD would apply only to a PBE with P/N 119003–11 with regard to the inspection requirement of paragraph (g) of this proposed AD. B/E Aerospace Service Bulletin 119003–35–009, Rev. 009, dated November 9, 2015, includes instructions for disposal. In this

proposed AD, we are requiring only the replacement action.

Costs of Compliance

We estimate that this proposed AD affects 9,000 products installed on airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

ESTIMATED COSTS

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspecting the pouch containing the PBE for proper vacuum seal.	.5 work-hour × \$85 per hour = \$42.50	Not applicable ...	\$42.50	\$382,500
Replace the PBE P/N 119003–11 with a PBE P/N 119003–21.	.5 work-hour × \$85 per hour = \$42.50	\$1,510	1,552.50	13,972,500

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. “Subtitle VII: Aviation Programs” describes in more detail the scope of the Agency’s authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, section 44701: “General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative,

on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

B/E Aerospace: Docket No. FAA–2015–2134; Directorate Identifier 2015–CE–012–AD.

(a) Comments Due Date

We must receive comments by February 29, 2016.

(b) Affected ADs

None.

(c) Applicability

This AD applies to B/E Aerospace Protective Breathing Equipment (PBE), part number (P/N) 119003–11, that is installed on airplanes.

(d) Subject

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 35; Oxygen.

(e) Unsafe Condition

This AD was prompted by a report of a PBE, P/N 119003–11, catching fire upon activation by a crewmember. We are issuing

this AD to correct the unsafe condition on these products.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Inspection

Within 3 months after the effective date of this AD, while still in the stowage box, physically inspect the PBE pouch to determine if it has an intact vacuum seal. Do this inspection following paragraph III.A.1. of the Accomplishment Instructions in B/E Aerospace Service Bulletin No. 119003–35–011, Rev. 000, dated February 4, 2015.

(h) Replacement

(1) *If a PBE pouch is found that does not have an intact vacuum seal during the inspection required in paragraph (g) of this AD:* Before further flight or following existing minimum equipment list (MEL) procedures, replace the PBE with a PBE, P/N 119003–21, following paragraphs III.C., III.D.(4), III.D.(6), and III.D.(7) of the Accomplishment Instructions in B/E Aerospace Service Bulletin No. 119003–35–009, Rev. 000, dated November 9, 2015, or replace it with another FAA-approved serviceable PBE.

(2) *If a PBE pouch is found during the inspection required in paragraph (g) of this AD where the vacuum seal is intact:* Within 18 months after the effective date of this AD, remove PBE, P/N 119003–11, and replace the PBE with PBE, P/N 119003–21, following paragraphs III.C., III.D.(4), III.D.(6), and III.D.(7) of the Accomplishment Instructions in B/E Aerospace Service Bulletin No. 119003–35–009, Rev. 000, dated November 9, 2015, or replace it with another FAA-approved serviceable PBE.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Wichita Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly

to the manager of the ACO, send it to the attention of the person identified in paragraph (j)(1) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(j) Related Information

(1) For more information about this AD, contact David Enns, Aerospace Engineer, Wichita ACO, FAA, 1801 S. Airport Road, Room 100, Wichita, Kansas 67209; phone: (316) 946-4147; fax: (316) 946-4107; email: david.enns@faa.gov.

(2) For service information identified in this AD, contact B/E Aerospace, Inc., 10800 Pflumm Road, Commercial Aircraft Products Group, Lenexa, Kansas 66215; telephone: (913) 338-9800; fax: (913) 338-8419; Internet: www.beaerospace.com. You may review this referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

Issued in Kansas City, Missouri, on January 6, 2016.

Kelly Broadway,

Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2016-00374 Filed 1-14-16; 8:45 am]

BILLING CODE 4910-13-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-0068; Directorate Identifier 2015-CE-037-AD]

RIN 2120-AA64

Airworthiness Directives; SOCATA Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for SOCATA Models MS 880B, MS 885, MS 892A-150, MS 892E-150, MS 893A, MS 893E, MS 894A, MS 894E, Rallye 100S, Rallye 150ST, Rallye 150T, Rallye 235E, and Rallye 235C airplanes that would supersede AD 92-06-10. This proposed AD results from mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as fatigue failure of the nose landing gear wheel axle. We are issuing this proposed AD to require actions to

address the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by February 29, 2016.

ADDRESSES: You may send comments by any of the following methods:

- **Federal eRulemaking Portal:** Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- **Fax:** (202) 493-2251.
- **Mail:** U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- **Hand Delivery:** U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact SOCATA, Direction des services, 65921 Tarbes Cedex 9, France; phone: +33 (0) 5 62 41 73 00; fax: +33 (0) 5 62 41 76 54; email: info@socata.daher.com; Internet: <http://www.tbm.aero/>. For the United States, contact SOCATA NORTH AMERICA, North Perry Airport, 601 NE 10 Street, Pompano Beach, Florida 33060; phone: (954) 366-3331; Internet: <http://www.socatanorthamerica.com/default.htm>. You may review copies of the referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106.

FOR FURTHER INFORMATION CONTACT:

Albert Mercado, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4119; fax: (816) 329-4090; email: albert.mercado@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the **ADDRESSES** section. Include "Docket No. FAA-2016-0068; Directorate Identifier 2015-CE-037-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each

substantive verbal contact we receive about this proposed AD.

Discussion

On February 25, 1992, we issued AD 92-06-10, Amendment 39-8190 (57 FR 8063; March 6, 1992) ("92-06-10"). That AD required actions intended to address an unsafe condition on SOCATA Models MS 880B, MS 885, MS 894A, MS 893A, MS 892A-150, MS 892E-150, MS 893E, MS 894E, Rallye 100S, Rallye 150T, Rallye 150ST, Rallye 235E, and Rallye 235C airplanes and was based on mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country.

Since we issued AD 92-06-10, new findings led to an adjustment of the inspection intervals.

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA AD 2015-0203, dated October 7, 2015 (referred to after this as "the MCAI"), to correct an unsafe condition for the specified products. The MCAI states:

A nose landing gear (NLG) wheel axle rupture occurred in service. The results of the technical investigation revealed that this failure was due to premature wear.

This condition, if not detected and corrected, could lead to cracks in the axle and detachment of axle and wheel, possibly resulting in failure of the NLG with consequent damage to the aeroplane and injury to occupants.

To address this potential unsafe condition, DGAC France issued AD 91-163(A) (later revised twice) to require repetitive detailed inspections (DET) of the NLG wheel axle and replacement of the NLG wheel axle attachment screws in accordance with the instructions of SOCATA Service Bulletin (SB) 150-32.

Since DGAC France AD 91-163(A)R2 was issued, new findings led to an adjustment of the inspection interval. Consequently, SOCATA issued SB 150-32, now at Revision 3.

For the reasons described above, this new AD retains the requirements of the DGAC France AD 91-163(A)R2, which is superseded, but requires these actions to be accomplished within reduced intervals.

You may examine the MCAI on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-0068.

Related Service Information Under 1 CFR Part 51

SOCATA has issued Daher-Socata Mandatory Service Bulletin SB 150-32, Revision 3, dated September 2015. The service bulletin describes procedures for inspection of the nose gear wheel axle. This service information is reasonably available because the interested parties

have access to it through their normal course of business or by the means identified in the **ADDRESSES** section of this NPRM.

FAA's Determination and Requirements of the Proposed AD

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to our bilateral agreement with this State of Design Authority, they have notified us of the unsafe condition described in the MCAI and service information referenced above. We are proposing this AD because we evaluated all information and determined the unsafe condition exists and is likely to exist or develop on other products of the same type design.

Costs of Compliance

We estimate that this proposed AD will affect 77 products of U.S. registry. We also estimate that it would take about 10 work-hours per product to comply with the basic requirements of this proposed AD. The average labor rate is \$85 per work-hour. Required parts would cost about \$500 per product.

Based on these figures, we estimate the cost of the proposed AD on U.S. operators to be \$103,950, or \$1,350 per product.

In addition, we estimate that any necessary follow-on actions would take about 3 work-hours and require parts costing \$1,450, for a cost of \$1,705 per product. We have no way of determining the number of products that may need these actions.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by removing Amendment 39–8190 (57 FR 8063; March 6, 1992), and adding the following new AD:

SOCATA: Docket No. FAA–2016–0068; Directorate Identifier 2015–CE–037–AD.

(a) Comments Due Date

We must receive comments by February 29, 2016.

(b) Affected ADs

This AD supersedes AD 92–06–10 Amendment 39–8190 (57 FR 8063; March 6, 1992) ("AD 92–06–10").

(c) Applicability

This AD applies to SOCATA Models MS 880B, MS 885, MS 892A–150, MS 892E–150, MS 893A, MS 893E, MS 894A, MS 894E, Rallye 100S, Rallye 150ST, Rallye 150T, Rallye 235E, and Rallye 235C airplanes, all serial numbers, certificated in any category.

(d) Subject

Air Transport Association of America (ATA) Code 32: Landing Gear.

(e) Reason

This AD was prompted by mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as fatigue failure of the nose landing gear wheel axle. We are issuing this proposed AD to detect and correct chafing and cracking of the nose gear wheel axle, which could lead to failure of the nose landing gear with consequent damage to the airplane and/or occupants.

(f) Actions and Compliance

Unless already done, do the following actions in paragraphs (f)(1) through (f)(5) of this AD, including all subparagraphs.

(1) Do a detailed visual inspection of the intersection between the axle radius and the nose landing gear fork area for chafing at whichever occurs later in paragraph (f)(1)(i) or (f)(1)(ii) of this AD and repetitively thereafter at intervals not to exceed 200 hours time-in-service (TIS) following Daher-Socata Mandatory Service Bulletin SB 150–32, Revision 3, dated September 2015:

(i) Upon accumulating 200 hours TIS since the airplane's first flight or 200 hours TIS since the last inspection required by AD 92–06–10; or

(ii) Within the next 50 hours TIS after the effective date of this AD or within 500 hours TIS since the last inspection required by AD 92–06–10, whichever occurs first.

(2) Do a dye penetrant inspection on the nose wheel axle for cracks, distortion, and nicks or wear at whichever occurs later in paragraph (f)(2)(i) or (f)(2)(ii) of this AD and repetitively thereafter at intervals not to exceed 200 hours time-in-service (TIS) following Daher-Socata Mandatory Service Bulletin SB 150–32, Revision 3, dated September 2015:

(i) Upon accumulating 200 hours TIS since the airplane's first flight or 200 hours TIS since the last inspection required by AD 92–06–10; or

(ii) Within the next 50 hours TIS after the effective date of this AD or within 500 hours TIS since the last inspection required by AD 92–06–10, whichever occurs first.

(3) If any cracks or damage is found in any inspection required by paragraphs (f)(1) or (f)(2) in this AD, contact SOCATA for FAA-approved repair or replacement instructions approved specifically for this AD and, before further flight, implement those instructions. Use the contact information found in paragraph (i) of this AD to contact SOCATA.

(4) Replace the nose landing gear wheel axle attachment screws with new screws at whichever occurs later in paragraph (f)(4)(i) or (f)(4)(ii) of this AD following Daher-Socata Mandatory Service Bulletin SB 150–32, Revision 3, dated September 2015:

(i) Upon accumulating 2,000 hours TIS since airplane's first flight or 2,000 hours TIS since last nose landing gear wheel attachment screw replacement with new screws; or

(ii) Within 50 hours TIS since April 17, 1992 (the effective date retained from AD 92–06–10).

(5) After the effective date of this AD, a used nose landing gear or a used nose landing gear wheel axle may be installed provided it has been inspected and found free of cracks and/or damage and the nose landing gear wheel axle attachment screws have been replaced with new screws as specified in paragraphs (f)(1), (f)(2), and (f)(4) of this AD.

(g) Credit for Actions Accomplished in Accordance With Previous Service Information

This AD allows credit for the inspections required in paragraph (f)(1) and (f)(2) of this AD, if done before the effective date of this AD, following Daher-Socata Mandatory Service Bulletin SB 150–32, Revision 2, dated January 1994.

(h) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, Standards Office, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Albert Mercado, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329–4119; fax: (816) 329–4090; email: albert.mercado@faa.gov. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

(2) Airworthy Product: For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

(i) Related Information

Refer to MCAI European Aviation Safety Agency (EASA) AD 2015–0203, dated October 7, 2015; and Daher-Socata Mandatory Service Bulletin SB 150–32, Revision 2, dated January 1994, for related information. You may examine the MCAI on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA–2016–0068. For service information related to this AD, contact SOCATA, Direction des services, 65921 Tarbes Cedex 9, France; phone: +33 (0) 5 62 41 73 00; fax: +33 (0) 5 62 41 76 54; email: info@socata.daher.com; Internet: <http://www.tbm.aero/>. For the United States, contact SOCATA NORTH AMERICA, North Perry Airport, 601 NE 10 Street, Pompano Beach, Florida 33060;

phone: (954) 366–3331; Internet: <http://www.socatanorthamerica.com/default.htm>. You may review copies of the referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329–4148.

Issued in Kansas City, Missouri, on January 5, 2016.

Kelly Broadway,

Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2016–00320 Filed 1–14–16; 8:45 am]

BILLING CODE 4910–13–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA–R09–OAR–2012–959; FRL–9941–14–Region 9]

Revisions to the California State Implementation Plan, Sacramento Metropolitan Air Quality Management District

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing a partial approval and partial disapproval of revisions to the Sacramento Metropolitan (Metro) Air Quality Management District (SMAQMD or District) portion of the California State Implementation Plan (SIP). These revisions concern the District’s demonstration regarding Reasonably Available Control Technology (RACT) requirements for the 1997 8-hour ozone National Ambient Air Quality Standard (NAAQS). We are proposing action on a local SIP revision under the Clean Air Act (CAA or the Act). We are taking comments on this proposal and plan to follow with a final action.

DATES: Any comments must arrive by February 16, 2016.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA–R09–OAR–2012–959 at <http://www.regulations.gov>, or via email to Steckel.Andrew@epa.gov. For comments submitted at Regulations.gov, follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from

Regulations.gov. For either manner of submission, the EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.*, on the web, cloud, or other file sharing system). For additional submission methods, please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section. For the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www2.epa.gov/dockets/commenting-epa-dockets>.

FOR FURTHER INFORMATION CONTACT: Stanley Tong, EPA Region IX, (415) 947–4122, tong.stanley@epa.gov.

SUPPLEMENTARY INFORMATION: Throughout this document, “we,” “us” and “our” refer to the EPA.

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I. The State’s Submittal

A. What documents did the State submit?

Table 1 lists the documents addressed by this proposal with the dates that they were adopted by the local air agency and submitted to the EPA by the California Air Resources Board (CARB).

TABLE 1—SUBMITTED DOCUMENTS

Local agency	Document	Adopted	Submitted
SMAQMD	Reasonably Available Control Technology (RACT) as Applicable to the 8-Hour Ozone Standard, dated October 26, 2006 (“2006 RACT SIP”).	10/26/06	07/11/07

TABLE 1—SUBMITTED DOCUMENTS—Continued

Local agency	Document	Adopted	Submitted
SMAQMD	Reasonably Available Control Technology (RACT) Update as Applicable to the 8-Hour Ozone Standard, dated October 23, 2008 ("Updated RACT SIP").	10/23/08	1/21/09

The 2006 RACT SIP and Updated RACT SIP became complete by operation of law under CAA section 110(k)(1)(B) on January 11, 2008 and July 21, 2009, respectively.

B. Are there other versions of these documents?

There are no previous versions of these documents in the SMAQMD portion of the California SIP.

C. What is the purpose of the RACT SIP submissions?

Volatile organic compounds (VOCs) and nitrogen oxides (NO_x) help produce ground-level ozone and smog, which harm human health and the environment. Section 110(a) of the CAA requires States to submit regulations that control VOC and NO_x emissions. Sections 182(b)(2) and (f) require that SIPs for ozone nonattainment areas classified as moderate or above implement RACT for any source covered by a Control Techniques Guidelines (CTG) document and any major stationary source of VOCs or NO_x. The Sacramento Metro area is subject to this requirement as it is designated and classified as a severe ozone nonattainment area for the 1997 8-hour ozone NAAQS. 40 CFR 81.305; 69 FR 23858 at 23887 (April 30, 2004) (final rule designating and classifying Sacramento Metro area as serious nonattainment for the 1997 8-hour ozone NAAQS); 75 FR 24409 (May 5, 2010) (final rule reclassifying the Sacramento Metro area as severe-15 nonattainment for the 1997 8-hour ozone NAAQS). Therefore, the SMAQMD must, at a minimum, adopt RACT-level controls for all sources covered by a CTG document and for all major non-CTG sources of VOCs or NO_x within the Sacramento Metro nonattainment area. Any stationary source that emits or has a potential to emit at least 25 tons per year (tpy) of VOCs or NO_x is a major stationary source in a severe ozone nonattainment area (CAA section 182(d) and (f)).

Section IV.G. of the preamble to the EPA's final rule to implement the 1997 8-hour ozone NAAQS (70 FR 71612, November 29, 2005) discusses RACT requirements. It states in part that where a RACT SIP is required, States implementing the 8-hour standard generally must assure that RACT is met

either through a certification that previously required RACT controls represent RACT for 8-hour implementation purposes or through a new RACT determination. The submitted documents provide SMAQMD's analyses of its compliance with the CAA section 182 RACT requirements for the 1997 8-hour ozone NAAQS. The EPA's technical support documents (TSDs) ("2006 RACT SIP TSD" and "RACT SIP Update TSD") have more information about the District's submissions and the EPA's evaluations thereof.

II. The EPA's Evaluation and Proposed Action

A. How is the EPA evaluating the RACT SIP submissions?

SIP rules must be enforceable (see CAA section 110(a)(2)), must not interfere with applicable requirements concerning attainment and reasonable further progress or other CAA requirements (see CAA section 110(l)), and must not modify certain SIP control requirements in nonattainment areas without ensuring equivalent or greater emissions reductions (see CAA section 193). Generally, SIP rules must require RACT for each category of sources covered by a CTG document as well as each major source of NO_x or VOCs in ozone nonattainment areas classified as moderate or above (see CAA section 182(b)(2)). The SMAQMD regulates a severe ozone nonattainment area (see 40 CFR 81.305), so the District's rules must implement RACT.

Guidance and policy documents that we use to evaluate enforceability and CAA section 182 RACT SIPs include the following:

1. "Final Rule to Implement the 8-Hour Ozone National Ambient Air Quality Standard—Phase 2" (70 FR 71612; November 29, 2005).
2. "State Implementation Plans, General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990" (57 FR 13498; April 16, 1992).
3. Issues Relating to VOC Regulation Cutpoints, Deficiencies, and Deviations: Clarification to Appendix D of November 24, 1987 **Federal Register**, May 25, 1988, Revised January 11, 1990, U.S. EPA, Air Quality Management Division, Office of Air Quality Planning and Standards ("The Blue Book").
4. Guidance Document for Correcting Common VOC and Other Rule Deficiencies,

August 21, 2001, U.S. EPA Region IX (the "Little Bluebook").

5. "State Implementation Plans; Nitrogen Oxides Supplement to the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990" (57 FR 55620, November 25, 1992) ("the NO_x Supplement").

6. RACT SIPs, Letter dated March 9, 2006 from EPA Region IX (Andrew Steckel) to CARB (Kurt Karperos) describing Region IX's understanding of what constitutes a minimally acceptable RACT SIP.

7. Memorandum from William T. Harnett to Regional Air Division Directors, (May 18, 2006), "RACT Qs & As—Reasonably Available Control Technology (RACT) Questions and Answers".

8. RACT SIPs, Letter dated April 4, 2006 from EPA Region IX (Andrew Steckel) to CARB (Kurt Karperos) listing EPA's current CTGs, ACTs, and other documents which may help to establish RACT.

With respect to major stationary sources, because the Sacramento Metro nonattainment area was classified as "serious" nonattainment for the 1997 8-hour ozone NAAQS at the time that California submitted the 2006 RACT SIP to the EPA, the EPA evaluated this submission in accordance with the 50 ton per year (tpy) threshold for "major stationary sources" of VOC or NO_x emissions in serious ozone nonattainment areas. CAA section 182(c) and (f). The SMAQMD's Updated RACT SIP contains the District's RACT evaluation for additional major stationary sources based upon the 25 tpy major source threshold in severe ozone nonattainment areas (see CAA section 182(d) and (f)), which the EPA evaluated for compliance with the additional RACT requirements that became applicable following the EPA's reclassification of the Sacramento Metro area from "serious" to "severe" nonattainment for the 1997 8-hour ozone NAAQS. See 69 FR 23858 at 23887 (April 30, 2004) (final rule designating and classifying the Sacramento Metro area as serious nonattainment for the 1997 8-hour ozone NAAQS) and 75 FR 24409 (May 5, 2010) (final rule reclassifying the Sacramento Metro area as severe-15 nonattainment for the 1997 8-hour ozone NAAQS).

B. Do the RACT SIP submissions meet the evaluation criteria?

The 2006 RACT SIP and Updated RACT SIP provide the District's

conclusion that the applicable SIP for the Sacramento Metro area satisfies CAA section 182 RACT requirements for the 1997 8-hour ozone NAAQS. This conclusion is based on the District's analyses of SIP-approved requirements that apply to: (1) CTG source categories; (2) certain non-CTG source categories or emission units located at major stationary sources; and (3) all major stationary sources of VOC or NO_x emissions. *See* 2006 RACT SIP Staff Report at Appendices A–D and Updated RACT SIP Staff Report at Appendices A–B. SMAQMD's 2006 RACT SIP Staff Report and Updated RACT SIP Staff Report include detailed analyses of its SIP rules including discussions of how

those rules continue to implement RACT for the 1997 8-hour ozone NAAQS.

First, with respect to CTG source categories, Table 1 of the 2006 RACT SIP Staff Report and Table 1 of the Updated RACT SIP Staff Report lists all CTG source categories and match those CTG categories with corresponding District rules which implement RACT. SMAQMD also searched its database of permitted sources and telephone directories for potential sources belonging to those CTG categories for which the District did not have rules. Based on these evaluations, the District concluded that there were no CTG source categories for which the District had sources but no applicable RACT

requirement. *See* 2006 RACT SIP Staff Report at 2 and Updated RACT SIP Staff Report at 3. Our review of CARB's emissions inventory database for potential CTG sources did not uncover any CTG source categories missing from the District's analyses.

Where there are no existing sources covered by a particular CTG document, states may, in lieu of adopting RACT requirements for those sources, adopt negative declarations certifying that there are no such sources in the relevant nonattainment area. Table 2 below lists all of the source categories for which SMAQMD's 2006 RACT SIP and Updated RACT SIP provide negative declarations.

TABLE 2—SMAQMD NEGATIVE DECLARATIONS

CTG Source category	CTG Document title
Aerospace Coating	EPA-453/R-97-004 and 59 FR 29216 (6/06/94)—Control of Volatile Organic Compound Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations.
Automobile Coating	EPA-450/2-77-008—Control of Volatile Organic Emissions from Existing Stationary Sources, Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks.
Dry Cleaning (Petroleum Solvent)	EPA-450/3-82-009—Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners.
Graphic Arts (Rotogravure)	EPA-450/2-78-033—Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VIII: Graphic Arts—Rotogravure and Flexography.
Large Appliance Coating	EPA-450/2-77-034—Control of Volatile Organic Emissions from Existing Stationary Sources, Volume V: Surface Coating of Large Appliances.
Magnetic Wire Coating	EPA-453/R-07-004—Control Techniques Guidelines for Large Appliance Coatings.
Metal Coil Coating	EPA-450/2-77-033—Control of Volatile Organic Emissions from Existing Stationary Sources, Volume IV: Surface Coating for Insulation of Magnetic Wire.
Natural Gas/Gasoline Processing	EPA-450/2-77-008—Control of Volatile Organic Emissions from Existing Stationary Sources, Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks.
Paper and Fabric Coating	EPA-450/2-83-007—Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants.
Resin Manufacturing (High-Density Polyethylene, Polypropylene, and Polystyrene).	EPA-450/2-77-008—Control of Volatile Organic Emissions from Existing Stationary Sources, Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks.
Refineries	EPA-450/3-83-008—Control of Volatile Organic Compound Emissions from Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins.
Rubber Tire Manufacturing	EPA-450/2-77-025—Control of Refinery Vacuum Producing Systems, Wastewater Separators and Process Unit Turnarounds.
Ship Coating	EPA-450/2-78-036—Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment.
Wood Coating (Flat Wood Paneling)	EPA-450/2-78-030—Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires.
Paper, Film and Foil	61 FR 44050—Control Techniques Guidelines for Shipbuilding and Ship Repair Operations (Surface Coating).
	EPA-450/2-78-032—Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VII: Factory Surface Coating of Flat Wood Paneling.
	EPA-453/R06-004—Control Techniques Guidelines for Flat Wood Paneling Coatings.
	EPA-453/R-07-004—Control Techniques Guidelines for Paper, Film, and Foil Coatings.

Source: 2006 RACT SIP at 1–2 and Updated RACT SIP at 2–3.

Subsequent to submitting its 2006 RACT SIP and Updated RACT SIP, SMAQMD submitted, and the EPA approved, negative declarations for the following CTG source categories: Coating Operations at Aerospace Manufacturing and Rework Operations (77 FR 23130, April 18, 2012), Fiberglass Boat Manufacturing Materials (77 FR 63743, October 17, 2012), and Automobile and Light-Duty Truck Assembly Coatings (77 FR 63743, October 17, 2012).

With the exception of the Pharmaceuticals Manufacturing CTG and the municipal landfill category, we are proposing to find that SMAQMD's 2006 RACT SIP and Updated RACT SIP, including the above negative declarations, largely demonstrate that the applicable SIP rules for the CTG source categories operating within the Sacramento Metro area satisfy RACT for the 1997 8-hour ozone NAAQS. We will discuss the deficiencies with Rule 455, Pharmaceuticals Manufacturing and the municipal landfill category, in the next section.

Our 2006 RACT SIP TSD provides a more detailed discussion of the EPA's rationale, including an overview of the District's analyses which were made available for public comment during the District's rulemaking process, together with recommendations for rule improvements.

Second, with respect to certain non-CTG source categories located at facilities that are major stationary sources of VOC or NO_x emissions, the 2006 RACT SIP Staff Report contains: (1) A summary of recommendations or requirements contained in applicable Alternative Control Technique (ACT) documents, federal and state RACT guidance documents, and/or regulations; (2) a summary of the applicable District rules; and (3) an evaluation of the District's rules in light of the applicable RACT guidance documents and/or regulations. See 2006 RACT SIP Staff Report at Appendix B. Based on these evaluations, SMAQMD concludes that non-CTG emission sources located within these VOC or NO_x major stationary sources are generally covered by SIP-approved rules that satisfy RACT for the 1997 8-hour ozone NAAQS. We are proposing to find that the SMAQMD's 2006 RACT SIP and Updated RACT SIP submissions adequately demonstrate that the applicable SIP rules for these non-CTG sources located at major stationary sources satisfy RACT for the 1997 8-hour ozone NAAQS.

Our 2006 RACT SIP TSD provides a more detailed discussion of the EPA's rationale for these proposals, including

an overview of the District's analyses which were made available for public comment during the District's rulemaking process.

Finally, with respect to all other major stationary sources of VOC or NO_x emissions, the 2006 RACT SIP and Updated RACT SIP identify the applicable SIP rules or SIP-approved permit provisions that the EPA has previously approved as satisfying RACT. Our review of CARB's emissions inventory database did not uncover any additional major stationary sources that were missed in the District's analyses. Based on the EPA's review of the District's evaluations, we propose to conclude that with the exception of the Pharmaceuticals Manufacturing rule and municipal waste landfill category, all of the identified SIP rules and permit conditions satisfy RACT for the 1997 8-hour ozone NAAQS.

C. What are the RACT deficiencies?

Rule 455, Pharmaceuticals Manufacturing, (amended 11/29/83 and 9/5/96) lacks test methods, recordkeeping, and monitoring requirements which are necessary to support enforcement of the rule. See CAA section 110(a). These are deficiencies listed in the EPA's "Blue Book" (Issues Relating to VOC Regulation Cutpoints, Deficiencies, and Deviations, May 25, 1988, revised January 11, 1990) and should be corrected.

The Kiefer landfill is a major source of VOCs located within the Sacramento Metro area. SMAQMD Rule 485, Municipal Landfill Gas, exempts landfills covered under the NSPS, 40 CFR part 60 Subpart WWW, including Kiefer Landfill. Although the District has been delegated authority to implement and enforce the NSPS, as well as the relevant NESHAP (40 CFR part 63 Subpart AAAA), those requirements have not been incorporated into the SIP. The District should amend the rule or submit relevant portions of the facility's permit for SIP approval.

D. EPA Recommendations To Further Improve the RACT SIP

Our TSDs for the 2006 RACT SIP and Updated RACT SIP provide additional recommendations for future rule improvements.

E. Proposed Action and Public Comment

For the reasons discussed above and explained more fully in our 2006 RACT SIP TSD and Updated RACT SIP TSD, the EPA proposes to partially approve and partially disapprove SMAQMD's

2006 RACT SIP and Updated RACT SIP. Under CAA section 110(k)(3), we propose to approve the 2006 RACT SIP and Updated RACT SIP, with the exception of Rule 455, Pharmaceutical Manufacturing and the municipal waste landfill category, as satisfying the RACT requirements of CAA section 182(b)(2) and (f).

Also under CAA section 110(k)(3), we propose to disapprove those elements of the 2006 RACT SIP and Updated RACT SIP that pertain to Rule 455 and the municipal waste landfill category, which the EPA has determined do not meet all of the applicable CAA requirements. We will not finalize this partial disapproval, however, if we fully approve revisions to Rule 455 and the municipal waste landfill category as satisfying RACT before finalizing action on the 2006 RACT SIP and Updated RACT SIP.

The EPA is committed to working with CARB and the District to resolve the Rule 455 and municipal waste landfill RACT deficiencies identified in this proposed action.

If finalized, this partial disapproval would trigger the 2-year clock for the federal implementation plan (FIP) requirement under section 110(c).

In addition, final disapproval would trigger sanctions under CAA section 179 and 40 CFR 52.31 unless the EPA approves subsequent SIP revisions that correct the RACT SIP deficiencies within 18 months of the effective date of the final action.

We will accept comments from the public on the proposed partial approval and partial disapproval for the next 30 days.

III. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at <http://www2.epa.gov/laws-regulations/laws-and-executive-orders>.

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was therefore not submitted to the Office of Management and Budget (OMB) for review.

B. Paperwork Reduction Act (PRA)

This action does not impose an information collection burden under the PRA because this action does not impose additional requirements beyond those imposed by state law.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. This action will not impose any requirements on small entities beyond those imposed by state law.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. This action does not impose additional requirements beyond those imposed by state law. Accordingly, no additional costs to State, local, or tribal governments, or to the private sector, will result from this action.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

F. Executive Order 13175: Coordination With Indian Tribal Governments

This action does not have tribal implications, as specified in Executive Order 13175, because the SIP is not approved to apply on any Indian reservation land or in any other area where the EPA or an Indian tribe has demonstrated that a tribe has jurisdiction, and will not impose substantial direct costs on tribal governments or preempt tribal law. Thus, Executive Order 13175 does not apply to this action.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of “covered regulatory action” in section 2–202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not impose additional requirements beyond those imposed by state law.

H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act (NTTAA)

Section 12(d) of the NTTAA directs the EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. The EPA believes that this action is not subject to the requirements of section 12(d) of the NTTAA because application of those requirements would be inconsistent with the CAA.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Population

The EPA lacks the discretionary authority to address environmental justice in this rulemaking.

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Nitrogen dioxide, Ozone, Reporting and recordkeeping requirements, Volatile organic compounds.

Authority: 42 U.S.C. 7401 *et seq.*

Dated: December 11, 2015.

Jared Blumenfeld,

Regional Administrator, Region IX.

[FR Doc. 2016–00571 Filed 1–14–16; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY**40 CFR Part 52**

[EPA–R09–OAR–2015–0048; FRL–9940–95–Region 9]

Clean Air Plans; 1-Hour and 1997 8-Hour Ozone Nonattainment Area Requirements; San Joaquin Valley, California

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing to approve a state implementation plan (SIP) revision submitted by the State of California to provide for attainment of the 1-hour ozone national ambient air quality standard in the San Joaquin Valley, California ozone nonattainment area

and to meet other Clean Air Act requirements. Specifically, with respect to the 1-hour ozone standard, the EPA is proposing to find the emissions inventories to be acceptable and to approve the reasonably available control measures demonstration, the rate of progress demonstrations, the attainment demonstration, contingency measures for failure to meet rate of progress milestones, the provisions for advanced technology/clean fuels for boilers, and the demonstration that the plan provides sufficient transportation control strategies and measures to offset emissions increases due to increases in motor vehicle activity. For the 1997 8-hour ozone standard, the EPA is proposing to approve the demonstration that the plan provides sufficient transportation control strategies and measures to offset emissions increases due to increases in motor vehicle activity.

DATES: Any comments must arrive by February 16, 2016.

ADDRESSES: Submit your comments, identified by Docket ID Number EPA–R09–OAR–2015–0048, by one of the following methods:

1. <http://www.regulations.gov>: Follow the on-line instructions for submitting comments.

2. *Email:* ungvarsky.john@epa.gov.

3. *Mail or deliver:* John Ungvarsky (AIR–2), U.S. Environmental Protection Agency, Region IX, 75 Hawthorne Street, San Francisco, CA 94105–3901. Deliveries are only accepted during the Regional Office’s normal hours of operation.

Instructions: All comments will be included in the public docket without change and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Information that you consider CBI or otherwise protected should be clearly identified as such and should not be submitted through <http://www.regulations.gov> or email. <http://www.regulations.gov> is an anonymous access system, and the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email directly to the EPA, your email address will be automatically captured and included as part of the public comment. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment.

Docket: The index to the docket and documents in the docket for this action are generally available electronically at www.regulations.gov and in hard copy at EPA Region IX, 75 Hawthorne Street, San Francisco, California. While all documents in the docket are listed at www.regulations.gov, some information may be publicly available only at the hard copy location (e.g., copyrighted material, large maps), and some may not be publicly available in either location (e.g., CBI). To inspect the hard copy materials, please schedule an appointment during normal business hours with the contact listed in the **FOR FURTHER INFORMATION CONTACT** section.

FOR FURTHER INFORMATION CONTACT: John Ungvarsky, Air Planning Office (AIR-2), U.S. Environmental Protection Agency, Region 9, (415) 972-3963, ungvarsky.john@epa.gov.

SUPPLEMENTARY INFORMATION:

Throughout this document, “we,” “us” and “our” refer to the EPA.

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I. Regulatory Context

A. Ozone Standards, SIPs, and Area Designations

Ground-level ozone is formed when oxides of nitrogen (NO_x) and volatile organic compounds (VOC) react in the presence of sunlight.¹ These two pollutants, referred to as ozone precursors, are emitted by many types of pollution sources, including on- and off-

road motor vehicles and engines, power plants and industrial facilities, and smaller area sources such as lawn and garden equipment and paints. Scientific evidence indicates that adverse public health effects occur following exposure to ozone, particularly in children and adults with lung disease. Breathing air containing ozone can reduce lung function and inflame airways, which can increase respiratory symptoms and aggravate asthma or other lung diseases. See “Fact Sheet, Proposal to Revise the National Ambient Air Quality Standards for Ozone,” January 6, 2010 and 75 FR 2938 (January 19, 2010).

Under section 109 of the Clean Air Act (CAA), the EPA promulgates national ambient air quality standards (NAAQS or standards) for pervasive air pollutants, such as ozone. In 1979, the EPA established the NAAQS for ozone at 0.12 parts per million (ppm) averaged over a 1-hour period (“1-hour ozone standard”). 44 FR 8202 (February 8, 1979). An area is considered to have attained the 1-hour ozone standard if there are no violations of the standard, as determined in accordance with the regulation codified at 40 CFR 50.9, based on three consecutive calendar years of complete, quality assured and certified monitoring data. A violation occurs when the ambient ozone air quality monitoring data show greater than one (1.0) “expected number” of exceedances per year at any site in the area, when averaged over three consecutive calendar years.² An exceedance occurs when the maximum hourly ozone concentration during any day exceeds 0.124 ppm. For more information, see “National 1-hour primary and secondary ambient air quality standards for ozone” (40 CFR 50.9) and “Interpretation of the 1-Hour Primary and Secondary National Ambient Air Quality Standards for Ozone” (40 CFR part 50, appendix H).

In 1997, the EPA revised the NAAQS for ozone to set the acceptable level of ozone in the ambient air at 0.08 ppm, averaged over an 8-hour period (“1997 8-hour ozone standard”). 62 FR 38856 (July 18, 1997). The EPA determined that the 1997 8-hour standard would be more protective of human health, especially children and adults who are active outdoors, and individuals with a

pre-existing respiratory disease, such as asthma. In 2008, the EPA revised and further strengthened the NAAQS for ozone by setting the acceptable level of ozone in the ambient air at 0.075 ppm, averaged over an 8-hour period (“2008 8-hour ozone standard”). 73 FR 16436 (March 27, 2008). In 2015, the EPA further tightened the 8-hour ozone standard to 0.070 ppm. 80 FR 65292 (October 26, 2015). While both the 1979 1-hour ozone standard and the 1997 8-hour ozone standard have been revoked, certain requirements that had applied under the revoked standards continue to apply under the anti-backsliding provisions of CAA section 172(e).

Once the EPA has promulgated a NAAQS, states are required to develop and submit plans that provide for the implementation, maintenance, and enforcement of the NAAQS under CAA section 110(a)(1). The content requirements for such plans, which are referred to as state implementation plans (SIPs) are found in CAA section 110(a)(2). Under the Clean Air Act, as amended in 1977, the EPA designated all areas of the country as “attainment,” “nonattainment,” or “unclassifiable” for the various NAAQS depending upon the availability of ambient concentration data and depending upon whether violations of the NAAQS were occurring in a given area. The CAA further requires states with “nonattainment” areas to submit revisions to their SIPs that provide for, among other things, attainment of the relevant standard within certain prescribed periods.

In California, the California Air Resources Board (CARB) is responsible for adoption and submittal to the EPA of California SIPs and California SIP revisions and is the primary State agency responsible for regulation of mobile sources. Local and regional air pollution control districts are responsible for developing regional air quality plans and for regulation of stationary sources. For the San Joaquin Valley, the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD or “District”) develops and adopts air quality management plans to address CAA SIP planning requirements applicable to that region. Such plans are then submitted to CARB for adoption and submittal to the EPA as revisions to the California SIP.

B. The San Joaquin Valley Nonattainment Area

Under the 1977 CAA Amendments, the EPA designated the San Joaquin Valley Air Basin (“San Joaquin Valley” or “Valley”) as a “nonattainment” area for the photochemical oxidant (later, the 1-hour ozone) NAAQS. 43 FR 8962, at

¹ California plans sometimes use the term Reactive Organic Gases (ROG) for VOC. These terms are essentially synonymous. For simplicity, we use the term VOC herein to mean either VOC or ROG.

² An “expected number” of exceedances is a statistical term that refers to an arithmetic average. An “expected number” of exceedances may be equivalent to the number of observed exceedances plus an increment that accounts for incomplete sampling. See, 40 CFR part 50, appendix H. Because, in this context, the term “exceedances” refers to days (during which the daily maximum hourly ozone concentration exceeded 0.124 ppm), the maximum possible number of exceedances in a given year is 365 (or 366 in a leap year).

8972 (March 3, 1978). Initially, eight entire counties comprised the San Joaquin Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Tulare, Kings, and Kern counties. In 2001, however, the EPA approved a request to revise the boundary of the San Joaquin Valley to exclude eastern Kern County. 66 FR 56476 (November 8, 2001). As such, the San Joaquin Valley ozone nonattainment area stretches over 250 miles from north to south, averages a width of 80 miles, and encompasses over 23,000 square miles. It is partially enclosed by the Coast Mountain range to the west, the Tehachapi Mountains to the south, and the Sierra Nevada range to the east. The San Joaquin Valley is one of the nation's leading agricultural areas, and in recent decades, has experienced a high rate of growth in population. From 1990 to 2010, the population in the Valley increased from approximately 2.7 million to 4 million people. For a precise description of the geographic boundaries of the San Joaquin Valley, see 40 CFR 81.305.

The CAA, as amended in 1977, required states to submit SIP revisions for nonattainment areas that, among other requirements, provided for attainment no later than 1987; however, like many areas of the country, the San Joaquin Valley failed to attain the ozone NAAQS by 1987. In the 1990 CAA Amendments, Congress established a classification system for ozone nonattainment areas under which areas with more severe ozone problems were given a higher classification and more time to attain the standard but were subject to a greater number of, and more stringent, SIP requirements. The classifications include "Marginal," "Moderate," "Serious," "Severe," and "Extreme." See CAA section 181(a)(1).

Under this classification system, the San Joaquin Valley was classified as a "Serious" ozone nonattainment area for the 1-hour ozone standard with an attainment date of no later than November 15, 1999. 56 FR 56694 (November 6, 1991). In response, in 1994, CARB submitted *The California Ozone State Implementation Plan* ("1994 California Ozone Plan"), a comprehensive ozone plan for the State of California that included a state strategy as well as certain regional ozone plans, such as the regional plan for the San Joaquin Valley. The EPA approved the 1994 California Ozone Plan in 1997. 62 FR 1150 (January 8, 1997).

In 2001, the EPA found that the San Joaquin Valley had failed to attain the 1-hour ozone standard by the "Serious" area deadline and reclassified the area to "Severe." 66 FR 56476 (November 8,

2001). In 2004, the EPA granted the State's request to voluntarily reclassify the San Joaquin Valley from "Severe" to "Extreme" for the 1-hour ozone standard and required the state to submit a SIP revision providing for the "Extreme" area SIP elements in CAA section 182(e), which include a demonstration of attainment of the standard as expeditiously as practicable, but no later than November 15, 2010. 69 FR 20550 (April 16, 2004).

In response, CARB and the District developed and adopted the *Extreme Ozone Attainment Demonstration Plan* ("2004 Ozone Plan") for the San Joaquin Valley, and, in 2004, CARB submitted the 2004 Ozone Plan to the EPA as a revision to the California SIP. The 2004 Ozone Plan was supported by certain measures and commitments contained in the state's "2003 State Strategy." The 2004 Ozone Plan was later amended and clarified, and the EPA approved the plan, as amended and clarified, in 2010. 75 FR 10420 (March 8, 2010).

Specifically, we approved the following elements of the 2004 Ozone Plan: (1) Rate-of-progress (ROP) demonstration as meeting the requirements of CAA section 172(c)(2) and 182(c)(2) and 40 CFR 51.905(a)(1)(i) and 51.900(f)(4); (2) ROP contingency measures as meeting the requirements of CAA section 172(c)(9) and 182(c)(9); (3) the attainment demonstration as meeting the requirements of 182(c)(2)(A) and 181(a) and 40 CFR 51.905(a)(1)(ii); (4) the attainment contingency measures as meeting the requirements of CAA section 172(c)(9); and (5), along with certain measures contained in the 2003 State Strategy, the demonstration of implementation of reasonably available control measures (RACT)(exclusive of RACT)³ as meeting the requirements of CAA section 172(c) and 40 CFR 51.905(a)(1)(ii). *Id.*, at 10436–10437. In connection with the control strategy of the attainment demonstration, we approved certain committal measures and aggregate emission reduction commitments made by CARB and the District. *Id.* We also found that the 2004 Ozone Plan met the following requirements: (1) CAA section 182(e)(3) and 40 CFR 51.905(a)(1)(i) and 51.900(f)(7) for clean fuel/clean technology boilers; and (2) CAA section 182(d)(1)(A) and 40 CFR 51.905(a)(1)(i) and 51.900(f)(11) for transportation control measures (TCMs) sufficient to offset growth in emissions from growth

in vehicle-miles-traveled (VMT) or the number of vehicle trips. Lastly, in our approval of the 2004 Ozone Plan, we approved a specific rule, District Rule 9310, related to school buses.

Our approval of the 2004 Ozone Plan was challenged, and the U.S. Court of Appeals for the Ninth Circuit remanded the approval of the plan back to the EPA based on its conclusion that the EPA had not adequately considered and addressed the implications of more recent emissions data in determining that the 2004 Ozone Plan had met all applicable CAA requirements. *Sierra Club v. EPA*, 671 F.3d 955 (9th Cir. 2012) ("*Sierra Club*").⁴ In response to the *Sierra Club* decision, the EPA withdrew its approval of the 2004 Ozone Plan. 77 FR 70376 (November 26, 2012).⁵ CARB indicated that it intended to withdraw the plan upon EPA's approval withdrawal action, and thus, in the same **Federal Register** document as the withdrawal of approval, the EPA issued a finding of failure to submit required SIP revisions to provide for attainment of the 1-hour ozone NAAQS in the San Joaquin Valley.

Meanwhile, as noted above, in 1997, the EPA established an 8-hour ozone standard to replace the 1-hour ozone standard, and in 2004, the EPA designated the San Joaquin Valley as a "Serious" nonattainment area for the 1997 8-hour ozone standard. 69 FR 23858, at 23888–23899 (April 30, 2004). In 2010, the EPA approved a request by CARB to reclassify the San Joaquin Valley as "Extreme" for the 1997 8-hour ozone standard. 75 FR 24409 (May 5, 2010). In 2004, the EPA also established regulations governing the transition from the 1-hour ozone standard to the 1997 8-hour ozone standard, and under these regulations, the 1-hour ozone standard was revoked in most areas of the country, including the San Joaquin Valley, effective June 15, 2005, but the SIP revision requirements that applied at the time of revocation of the standard continue to apply after revocation

⁴ For further background on this court decision, see our proposed rule at 77 FR 58078 (September 19, 2012).

⁵ The EPA's March 8, 2010 final rule taking action on the 2004 Ozone Plan also took final approval action on SJVUAPCD Rule 9310 ("School Bus Fleets"). Approval of District Rule 9310 was not affected by the decision in *Sierra Club*, and thus the EPA did not withdraw its approval of that rule when it withdrew its approval of the rest of the action taken on March 8, 2010. However, the EPA *did* intend to withdraw approval of all of the elements of the 2004 Ozone Plan but inadvertently failed to withdraw its approval of the 2008 Clarification submitted by CARB in support of the 2004 Ozone Plan. See 40 CFR 52.220(c)(371), and the EPA intends to fix this error by withdrawing that paragraph from 40 CFR 52.220(c) when it takes final action on the 2013 Ozone Plan.

³ We addressed the SIP requirements related to implementation of reasonably available control technology (RACT) for the 1-hour ozone standard in separately rulemakings. See, e.g., 77 FR 1417 (January 10, 2012)(final partial approval and partial disapproval of the San Joaquin Valley RACT SIP).

consistent with the anti-backsliding provisions in section 172(e). This means that, notwithstanding revocation of the 1-hour ozone standard, the San Joaquin Valley remained subject to “Extreme” area requirements for the 1-hour ozone standard and is also subject to the “Extreme” area requirements for the 1997 8-hour ozone standard.

In 2007, in response to SIP revision requirements for the 1997 8-hour ozone standard, CARB and the District developed and adopted the *2007 Ozone Plan* (“2007 Ozone Plan”) and related portions of the 2007 State Strategy and submitted them to the EPA as revisions to the SIP. The 2007 Ozone Plan was revised in 2008 and 2011, and in 2012, the EPA approved the plan, as revised, together with the related portions of the 2007 State Strategy. 77 FR 12652 (March 1, 2012). Our approval of the 2007 Ozone Plan and related portions of the 2007 State Strategy were challenged in the Ninth Circuit. In 2015, the Ninth Circuit upheld the EPA’s approval of CARB’s and the District’s committal measures but rejected the EPA’s longstanding interpretation of the CAA as allowing California to take emissions reduction credit for mobile source regulations that the EPA has waived or authorized under CAA section 209 notwithstanding their absence from the federally enforceable California SIP. See *Committee for a Better Arvin v. EPA*, 786 F.3d 1169 (9th Cir. 2015) (“*Committee for a Better Arvin*”). In light of the decision in *Committee for a Better Arvin*, the EPA has proposed approval as a revision to the California SIP of a number of CARB’s mobile source regulations for which preemption has been waived or authorized under CAA section 209. 80 FR 69915 (November 12, 2015).

As part of the approval of the 2007 Ozone Plan, the EPA approved the demonstration that the plan provides for transportation control strategies (TCS) and TCMs sufficient to offset any growth in emissions from growth in VMT or the number of vehicle trips as meeting the requirements of CAA section 182(d)(1)(A). *Id.*, at 12670.⁶ In approving the VMT emissions offset

demonstration in 2012, the EPA applied its then-longstanding interpretation of the VMT emissions offset requirement in CAA section 182(d)(1)(A), first explained in guidance in the General Preamble to Title I of the CAA (see 57 FR 13498, at 13521–13523, April 16, 1992) (herein referred to as the “General Preamble”), that no transportation control measures are necessary if aggregate motor vehicle emissions are projected to decline each year from the base year of the plan to the attainment year. See 76 FR 57872, at 57889 (September 16, 2011). The EPA approved the plan as meeting the requirements of CAA section 182(d)(1)(A) because the emissions inventories in the 2007 Ozone Plan showed decreases in aggregate year-over-year motor vehicle emissions in the San Joaquin Valley from a base year through the applicable attainment year.

However, between the time when the EPA’s approval of the 2007 Ozone Plan was signed and when it was published in the **Federal Register**, the EPA’s petition for rehearing in a case challenging the EPA’s longstanding interpretation of CAA section 182(d)(1)(A) was denied. See *Association of Irrigated Residents v. EPA*, 632 F.3d 584, at 596–597 (9th Cir. 2011), reprinted as amended on January 27, 2012, 686 F.3d 668, further amended February 13, 2012 (“*Association of Irrigated Residents*”). In the *Association of Irrigated Residents* case, the Court ruled that additional transportation control measures are required whenever vehicle emissions are projected to be higher than they would have been had VMT not increased, even when aggregate vehicle emissions are actually decreasing. In light of the *Association of Irrigated Residents* decision, the EPA withdrew its determination that the 2007 Ozone Plan provided sufficient TCMs to offset the growth in emissions from the growth in VMT in the same **Federal Register** document as the Agency’s withdrawal of the approval of the 2004 Ozone Plan and finding of failure to submit required SIP revisions. 77 FR 70376 (November 26, 2012).

In 2013, in response to the EPA’s withdrawal of approval of the 2004 Ozone Plan and the VMT emission offset demonstration for the 1997 8-hour ozone standard and the related finding of failure to submit, CARB and the District prepared, adopted, and submitted the *2013 Plan for the Revoked 1-Hour Ozone Standard* (“2013 Ozone Plan”). The 2013 Ozone Plan addresses the various 1-hour ozone SIP elements for which the EPA had withdrawn approval (*i.e.*, RACM, ROP and attainment demonstrations, ROP and

attainment contingency measures, clean fuels/clean technology boilers, and VMT emissions offset demonstration) and also addresses the VMT emissions offset requirement for the 1997 8-hour ozone standard. The 2013 Ozone Plan builds upon the regulatory foundation built by previous San Joaquin Valley attainment plans for ozone as well as for other nonattainment pollutants, including PM₁₀ and PM_{2.5}, including, but not limited to, dozens of District rules establishing VOC or NO_x emissions limits and other requirements for various types of stationary sources, and dozens of state regulations establishing such limits and requirements for various types of mobile sources, for vehicle inspection and maintenance, for gasoline and diesel fuels, for consumer products and pesticides. These various regulatory programs have resulted in significant emissions reductions of ozone precursors and corresponding ozone concentrations in the San Joaquin Valley despite high rates of growth in population and regional VMT. For instance, 1-hour ozone exceedance days within the Valley (*i.e.*, number of days in a year during which the 0.12 ppm standard was violated at a (*i.e.*, at least one) monitoring site) have decreased from 45 in 1990 to 3 in 2012. See table A–1 of 2013 Ozone Plan. However, as of 2012, the Valley continued to experience violations of the 1-hour ozone standard, and the 2013 Ozone Plan was developed to demonstrate attainment of that standard, and to meet the other remaining 1-hour ozone SIP obligations (and the VMT emissions offset requirement for the 1997 8-hour ozone standard).

Lastly, as noted above, the EPA tightened the 8-hour ozone standard in 2008 and tightened the standard further in 2015. The EPA has designated the San Joaquin Valley as an “Extreme” area for the 2008 8-hour ozone standard. 77 FR 30088 (May 21, 2012). The “Extreme” area plan for the San Joaquin Valley for the 2008 ozone standard is due in 2016. In establishing final implementation rules for the 2008 8-hour ozone standard, the EPA revoked the 1997 8-hour ozone standards and includes anti-backsliding requirements that apply upon revocation of the 1997 8-hour ozone standards. 80 FR 12264 (March 6, 2015). Consistent with the application of anti-backsliding provisions upon revocation of the 1-hour ozone standards, areas that remain designated as nonattainment for the 1997 8-hour ozone standard at the time of revocation of the 1997 8-hour ozone standard continue to be subject to certain SIP requirements that had

⁶ CAA section 182(d)(1)(A), which, in relevant part, requires the state, if subject to its requirements, to “submit a revision that identifies and adopts specific enforceable transportation control strategies and transportation control measures to offset any growth in emissions from growth in vehicle miles traveled or numbers of vehicle trips in such area.” Herein, we use “VMT” to refer to vehicle miles traveled, and refer to the related SIP requirement as the “VMT emissions offset requirement.” In addition, we refer to the SIP revision intended to demonstrate compliance with the VMT emissions offset requirement as the “VMT emissions offset demonstration.”

applied by virtue of the area's classifications for the now-revoked 1997 8-hour ozone standard as well as the revoked 1-hour ozone standard. *Id.* at 12296; 40 CFR 51.1105 and 51.1100(o). For the purposes of this proposed action, this means that outstanding SIP requirements linked to the San Joaquin Valley's "Extreme" nonattainment area classifications for the 1-hour ozone standard and 1997 8-hour ozone standard continue to apply notwithstanding the revocation of these two ozone NAAQS. The EPA has not yet established area designations for the 2015 8-hour ozone standard.

II. CARB's SIP Revision Submittal To Address Remaining 1-Hour and 1997 8-Hour Ozone Requirements in the San Joaquin Valley

A. CARB's SIP Submittal

The District adopted the 2013 Ozone Plan on September 19, 2013, and CARB approved the plan as a revision to the California SIP on November 21, 2013.⁷ CARB submitted the 2013 Ozone Plan to the EPA on December 20, 2013.⁸ The 2013 Ozone Plan includes base year and projected future year emissions inventories, air quality modeling, provisions demonstrating implementation of RACM, provisions for advanced technology/clean fuels for boilers, provisions for transportation control strategies and measures, an ROP demonstration, an attainment demonstration, and contingency measures for failure to make ROP or attain.

Appendix D of the 2013 Ozone Plan contains the VMT emissions offset demonstrations for the 1-hour ozone and 1997 8-hour ozone NAAQS. On June 19, 2014, CARB submitted a technical supplement to the VMT emissions offset demonstrations submitted as part of the 2013 Ozone Plan.⁹ CARB's technical supplement includes a revised set of motor vehicle emissions estimates reflecting technical changes to the inputs used to develop

the original set of calculations.¹⁰ While the vehicle emissions estimates in CARB's technical supplement differ from those contained in the demonstrations in the 2013 Ozone Plan, the conclusions of the analyses remain the same.

B. CAA Procedural Requirements for Adoption and Submittal of SIP Revisions

CAA sections 110(a)(1) and (2) and 110(l) require a state to provide reasonable public notice and opportunity for public hearing prior to the adoption and submittal of a SIP or SIP revision. To meet this requirement, every SIP submittal should include evidence that adequate public notice was given and an opportunity for a public hearing was provided consistent with the EPA's implementing regulations in 40 CFR 51.102.

Both the District and CARB have satisfied applicable statutory and regulatory requirements for reasonable public notice and hearing prior to adoption and submittal of the 2013 Ozone Plan. The District conducted a public workshop on April 16, 2013. On August 20, 2013, the District posted on its Web site an announcement and supporting documents for a September 19, 2013 public hearing and also sent out an email to ozone_plans@lists.valley.org informing interested individuals and parties about the public hearing and links to key documents and participation via webcast.¹¹ The District thereby provided the required public notice and opportunity for public comment prior to its public hearing on the 2013 Ozone Plan. On September 19, 2013, the District held a public hearing to adopt the 2013 Ozone Plan and adopted the plan on that date. See 2013 Ozone Plan, appendix J ("Summary of Significant Comments and Responses") and SJVUAPCD Governing Board Resolution 2013–9–13.

CARB also provided the required public notice and opportunity for public comment prior to its November 21, 2013 public hearing and approval of the 2013 Ozone Plan as a revision to the California SIP. See CARB "Notice of

Public Meeting" dated October 21, 2013, and CARB Resolution No. 13–45. As noted previously, on December 20, 2013, CARB submitted the 2013 Ozone Plan and related public process documentation to the EPA. The EPA determined that CARB's December 20, 2013 SIP revision submittal was complete on May 19, 2014.¹²

Based on information in the December 20, 2013 SIP submittal and subsequent email communication with District staff, the EPA has determined that all hearings were properly noticed. We find, therefore, that the submittal of the 2013 Ozone Plan meets the procedural requirements for public notice and hearing in CAA sections 110(a) and 110(l).

III. Evaluation of the 2013 Ozone Plan

A. Emissions Inventories

We have evaluated the emissions inventories in the 2013 Ozone Plan to determine if they are consistent with EPA guidance (General Preamble at 13502) and adequate to support that plan's RACM, ROP and attainment demonstrations. Appendix B of the 2013 Ozone Plan presents the base year and projected emission inventories relied on for the ROP and attainment demonstrations. Appendix B also discusses the methodology used to determine base year (2007) emissions and identifies the growth and control factors used to project emissions for the 2013 and 2016 (ROP milestone years) and 2017 (ROP increment and attainment) projected year inventories. The plan includes summer (May through October) average daily inventories for the base year of 2007 and projected inventories for years 2013 through 2022 for all major source categories (stationary sources, area sources, and on-road and nonroad mobile sources). Emissions are calculated for the two major ozone precursors—NO_x and VOC. See tables B–1 and B–2 of appendix B of the 2013 Ozone Plan. Additional documentation for the inventories prepared for the 2013 Ozone Plan are found in appendix E, section 6 of the 2013 Ozone Plan.

The emissions inventories in the 2013 Ozone Plan were developed using data provided by CARB, the California Department of Transportation, and the San Joaquin Valley's eight metropolitan planning organizations (MPO).¹³ These

⁷ See SJVUAPCD Governing Board Resolution 2013–09–13: In the Matter of Adopting the San Joaquin Valley Unified Air Pollution Control District 2013 Plan For The Revoked 1-Hour Ozone Standard, September 19, 2013; CARB Resolution No. 13–45, November 21, 2013.

⁸ Letter, Richard Corey, Executive Officer, CARB to Jared Blumenfeld, Regional Administrator, EPA Region 9, December 20, 2013 with enclosures.

⁹ See June 19, 2014 letter and enclosures from Lynn Terry, Deputy Executive Officer, CARB, to Deborah Jordan, Director, Air Division, EPA Region 9. On July 25, 2014, CARB sent the EPA a revised technical supplement that corrected a minor typographical error. See record of July 25, 2014 email and attachment from Jon Taylor, CARB, to Matt Lakin, EPA Region 9, included in the docket.

¹⁰ The principal difference between the two sets of calculations is that CARB's technical supplement includes running exhaust, start exhaust, hot soak, and running loss emissions of VOCs in all of the emissions scenarios. These processes are directly related to VMT and vehicle trips. The revised calculation excludes diurnal and resting loss emissions of VOCs from all of the emissions scenarios because such evaporative emissions are related to vehicle population rather than to VMT or vehicle trips.

¹¹ January 30, 2015 email from Elizabeth Melgoza, CARB, to John Ungvarsky, EPA Region 9; May 13, 2015 and May 19, 2015 emails from SJVUAPCD staff to John Ungvarsky, EPA Region 9.

¹² See letter from Deborah Jordan, Director, Air Division, EPA Region 9, to Richard W. Corey, Executive Officer, CARB, dated May 19, 2014.

¹³ These eight MPOs represent the eight counties in the San Joaquin Valley air basin: the San Joaquin Council of Governments, the Stanislaus Council of Governments, the Merced County Association of

agencies collect data (e.g., industry growth factors, socioeconomic projections, travel activity levels, emission factors, emission speciation profiles, and emissions) and develop methodologies (e.g., model and demographic forecast improvements) used to generate comprehensive emissions inventories. CARB maintains statewide inventories in its California Emissions Inventory Development and Reporting System (CEIDARS) and uses the California Emission Forecasting and Planning Inventory System (CEFS) to forecast or backcast emissions. CEFS is designed to generate year-specific emissions estimates for each county/air basin/district combination taking into account two factors: the effects of growth, and the effects of adopted emission control rules. It does this by linking these growth and control factors directly to CEIDARS emission categories

for a particular base year. The 2007 inventory was used to project future years using CARB's CEFS v 1.06.

CARB also conducts periodic evaluations and updates of the growth profiles to ensure that emission forecasts are based on data that reflect historical trends, current conditions, and recent forecasts. CARB staff conducted a category-by-category review and update of the growth profile data for source categories that, in aggregate, comprise more than 95 percent of the NO_x or VOC emissions in the San Joaquin Valley. To capture the effects of the economic recession, CARB staff ensured that the growth profiles included historical data through at least 2008 (data through 2009 or 2010 were included when available). Growth forecasts for the years 2009 and beyond were obtained primarily from government entities with expertise in

developing forecasts for specific sectors, or in some cases, from econometric models.

Motor vehicle emissions were based on estimates of VMT provided by the regional transportation planning agencies and the California Department of Transportation. The plan uses CARB's Emission FAcT (EMFAC) model, version EMFAC2011, to calculate the emission factors for cars, trucks and buses. At the time that the 2013 Ozone Plan was developed, EMFAC2011 was the mobile source model approved for use in California SIPs.¹⁴ Nonroad emissions estimates were based on CARB's OFFROAD model.

Table 1 provides a summary of the emissions estimates prepared for the 2013 Ozone Plan for the base year (2007) and ROP and attainment years 2013, 2016, and 2017.

TABLE 1—SAN JOAQUIN VALLEY OZONE PRECURSOR BASE YEAR AND PROJECTED FUTURE YEAR EMISSIONS
[Summer average, tpd]

Category	NO _x				VOC			
	2007	2013	2016	2017	2007	2013	2016	2017
Stationary	57	40	30	30	100	96	97	97
Area	11	11	11	11	221	186	191	193
On-road Mobile	273	158	119	110	71	49	35	33
Off-road Mobile	144	108	99	97	65	49	45	43
Total	485	316	259	247	457	381	368	366

Source: 2013 Ozone Plan, appendix B.

NOTE: Because of rounding conventions, the totals may not reflect total of categories.

We have determined that the 2007 base year emission inventory in the 2013 Ozone Plan is comprehensive, accurate, and current and that this inventory as well as the 2013, 2016, and 2017 projected inventories have been prepared consistent with EPA guidance. Accordingly, we propose to find that these inventories provide an appropriate basis for the various other elements of the 2013 Ozone Plan, including RACM, and the ROP and attainment demonstrations.

B. Reasonably Available Control Measures Demonstration and Control Strategy

1. Requirements for RACM and Control Strategies

CAA section 172(c)(1) requires nonattainment area plans to provide for the implementation of all RACM. The

RACM demonstration requirement is a continuing applicable requirement for the San Joaquin Valley "Extreme" 1-hour ozone nonattainment area under EPA's anti-backsliding rules that apply once a standard has been revoked. See 40 CFR 51.1105(a)(1) and 51.1100(o)(17).

The EPA has previously provided guidance interpreting the RACM requirement in the General Preamble at 13560 and a memorandum entitled "Guidance on the Reasonably Available Control Measure Requirement and Attainment Demonstration Submissions for Ozone Nonattainment Areas," John Seitz, Director, OAQPS to Regional Air Directors, November 30, 1999 (Seitz memo). In summary, EPA guidance provides that states, in addressing the RACM requirement, should consider all potential measures for source categories

in the nonattainment area to determine whether they are reasonably available for implementation in that area and whether they would advance the area's attainment date by one or more years.

2. RACM and Control Strategy in the 2013 Ozone Plan

The District's RACM demonstration and control strategy for the 1-hour ozone standard in the 2013 Ozone Plan relies on control measures that have been adopted by CARB and the District under previous attainment plans. In the more recent years prior to the adoption of the 2013 Ozone Plan, CARB and the District have developed and implemented comprehensive plans for the 1997 8-hour ozone standards, 1997 PM_{2.5} standards, and 2006 PM_{2.5} standards that resulted in the adoption of many new rules and revisions to

Governments, the Madera County Transportation Commission, the Council of Fresno County Governments, Kings County Association of Governments, the Tulare County Association of Governments, and the Kern Council of Governments.

¹⁴ See 78 FR 14533 (March 6, 2013) regarding the EPA approval of the 2011 version of the California EMFAC model and announcement of its availability. The software and detailed information on the EMFAC vehicle emission model can be found on the following CARB Web site: <http://www.arb.ca.gov/msei/msei.htm>.

www.arb.ca.gov/msei/msei.htm. EMFAC2011 was the approved version of EMFAC at the time of adoption and submittal of the 2013 Ozone Plan. Recently, the EPA approved an updated version of the model, EMFAC2014. 80 FR 77337 (December 14, 2015).

existing rules for stationary, area, and mobile sources. These previously adopted measures generated significant reductions in NO_x and VOC emissions. The measures are listed in the Technical Support Document (TSD) for today's action. The control measures were developed and adopted under previous San Joaquin Valley attainment plans, including the 2007 Ozone Plan, the 2008 PM_{2.5} Plan (adopted April 30, 2008) ("2008 PM_{2.5} Plan"), and the 2012 PM_{2.5} Plan (adopted December 20, 2012) ("2012 PM_{2.5} Plan"), which were developed to provide, among other things, for attainment of the 1997 8-hour ozone standard, the 1997 PM_{2.5} standards, and the 2006 PM_{2.5} standard, respectively, and which relied on adoption and implementation by CARB of new or tightened mobile source regulations under CARB's 2007 State Strategy.¹⁵

a. The District's RACM Analysis and Adopted Control Strategy

The District's RACM analysis builds on previously adopted measures. Table 3–1 (p. 3–3) in the 2013 Ozone Plan lists currently adopted District rules that are contributing towards attainment of the 1-hour ozone standard. The 2013 Ozone Plan's RACM evaluation for NO_x and VOC sources is summarized in section 4.2 (p. 4–2) and detailed in appendix C

("Stationary and Area Source Control Strategy Evaluation") of the 2013 Ozone Plan. The evaluation of potential controls in the 2013 Ozone Plan is presented by source category. For stationary and area source categories, the evaluation is broken down by the current District rule or rules that fall within a given source category.

The following information is provided in appendix C of the 2013 Ozone Plan for each stationary or area source category or District rule:

- A description of the sources within the category or sources subject to the rule;
- Base year (2007) and projected baseline year emissions (for every year from 2013 to 2022) in the source category or affected by the rule;
- A discussion of the current rule requirements and/or listing and discussion of existing rules, regulations, or other control efforts that address the source category; and
- Identification and discussion of potential new controls, including in many cases, a discussion of the technological and economic feasibility of the new controls. Rules adopted by other agencies (including the EPA, South Coast Air Quality Management District (AQMD), and Bay Area AQMD) are discussed and compared to existing SJVUAPCD rules. Measures proposed by

the public for the source category/rule are also identified and discussed. In addition, non-regulatory approaches to reducing emissions in each stationary and area source category are discussed, including the use of incentives, opportunities for technology advancement programs, policy initiatives, and education/outreach programs.

Through its RACM evaluation process, the District identified two new control measures for adoption, and through adoption of the 2013 Ozone Plan, the District committed to adopt and submit these measures as a revision to the California SIP (see District Resolution 2013–9–13, page 5), although the District and State do not rely on reductions from these commitments in their attainment demonstration. See 2013 Ozone Plan, section 3.1.3 (p. 3–8).

The District's commitments have been fulfilled in that the anticipated rule amendments have been adopted and the rules have been submitted to the EPA as a revision to the California SIP. The current status of the rules is shown in table 2, and as shown there, the EPA has approved one of the two rules and has proposed approval of the other. We expect to take final action on the second rule prior to final action on the 2013 Ozone Plan.

TABLE 2—STATUS OF RULE ADOPTION COMMITMENTS IN THE 2013 OZONE PLAN

Rule	Measure description	Adoption date	Submittal date	Emission reductions	Status
4308	Boilers, Steam Generators, and Process Heaters 0.075 to <2 MMBtu/hr.	11/14/13	5/13/14	Minimal in 2017	Approved 2/12/15 (80 FR 7803).
4905	Natural Gas-Fired, Fan Type Residential Central Furnaces.	1/22/15	4/7/15	To Be Determined	Proposed Approval 11/5/15 (80 FR 68484).

Source: 2013 Ozone Plan, p. 3–9, table 3–3.

In light of the comprehensiveness of the District's stationary and area source program, and the stringency of the District's regulations, the 2013 Ozone Plan concludes that RACM is being implemented for sources under the District's jurisdiction. See section 4.2.1 of the 2013 Ozone Plan.

The District also identified a number of source categories for which existing information is inadequate to determine the feasibility of additional controls. These categories and the additional controls to be studied are discussed in section 3.1.4. (p. 3–9). The schedule for these studies is given in table 3–4 (see 2013 Ozone Plan, p. 3–10).

The TSD for today's action includes additional information on each District rule, including its status in terms of federal approval and the net inventory changes between 2007 and 2017.

b. CARB and Metropolitan Planning Organizations' RACM Analysis and Adopted Control Strategy

Given the need for significant emissions reductions in California nonattainment areas, CARB has been a leader in the development and adoption of stringent mobile source control measures nationwide and has unique authority under CAA section 209 (subject to a waiver or authorization by the EPA) to adopt and implement new

emissions standards for many categories of on-road vehicles and engines and new and in-use off-road engines. CARB has adopted standards and other requirements related to the control of emissions from numerous types of on-road motor vehicles and new and in-use off-road vehicles, such as passenger cars, trucks, buses, motorcycles, off-road engines (gasoline and diesel-powered), in-use off-road diesel fueled fleets, portable equipment, marine engines, and many others.

Historically, the EPA has allowed California to take into account emissions reductions from CARB regulations for which the EPA has issued waivers or authorizations under

¹⁵ The EPA approved the San Joaquin Valley 2007 Ozone Plan and related portions of the 2007 State Strategy at 77 FR 12652 (March 1, 2012); the San

Joaquin Valley 2008 PM_{2.5} Plan and related portions of the 2007 State Strategy at 76 FR 69896 (November 9, 2011). The EPA proposed to approve

portions of the 2012 PM_{2.5} Plan on January 13, 2015 (80 FR 1816).

CAA section 209 notwithstanding the fact that these regulations have not been approved as part of the California SIP. However, in response to the decision by the Ninth Circuit in *Committee for a Better Arvin v. EPA*, discussed previously, the EPA has now proposed to approve the current set of mobile source regulations for which waivers or authorizations have been issued as a revision to the California SIP. 80 FR 69915 (November 12, 2015). We expect to take final action on California's mobile source regulations prior to final action on the 2013 Ozone Plan.

CARB's mobile source program extends beyond regulations that are subject to the waiver or authorization process set forth in CAA section 209 to include standards and other requirements to control emissions from in-use heavy-duty trucks and buses, gasoline and diesel fuel specifications, and many other types of mobile sources. Generally, these regulations have been submitted and approved as revisions to the California SIP. See, e.g., 77 FR 20308 (April 4, 2012) (EPA approval of standards and other requirements to control emissions from in-use heavy-duty diesel-powered trucks).

Section 3.1.1.2 of the 2013 Ozone Plan discusses the emissions reductions from CARB's mobile source program and includes a table (table 3–2) that lists all of the regulations adopted or amended by CARB from 2000 through early 2012. While all of the listed measures contribute to some degree to attainment of the 1-hour ozone standard in the San Joaquin Valley, some are called out in particular as providing significant emissions reductions relied upon for attainment of the ozone standard under the 2013 Ozone Plan. These measures include the in-use heavy-duty diesel-powered truck regulation, the in-use off-road equipment regulation, and the advanced clean car program, among others. The 2013 Ozone Plan concludes that, in light of the comprehensiveness and stringency of CARB's mobile source program, all reasonable control measures under CARB's jurisdiction are being implemented.

With respect to TCMs, the 2013 Ozone Plan relies on the documentation found in appendix C of the 2012 PM_{2.5} Plan to conclude that all reasonably available control measures under the jurisdiction of the Valley's MPOs are being implemented. Appendix C of the 2012 PM_{2.5} Plan describes the efforts by the San Joaquin Valley's eight MPOs to implement cost-effective transportation control measures (TCMs). See section C.11.4 (p. C–33) of appendix C of the 2012 PM_{2.5} Plan. While no additional

TCMs were identified by the MPOs, the 2012 PM_{2.5} Plan includes a discussion of the on-going implementation of a broad range of TCMs in the Valley. There is also a discussion of the MPOs' Congestion Management and Air Quality funding policy, which is a standardized process across the Valley for distributing 20 percent of the Congestion Management and Air Quality funds to projects that meet a minimum cost-effectiveness. During the comment period for the 2012 PM_{2.5} Plan, a number of TCMs were suggested by the public for consideration. See appendix I, pp. I–10 to I–13 of the 2012 PM_{2.5} Plan. The feasibility of these measures is discussed in the District's responses to comments. *Id.*

c. RACM Demonstration

The 2013 Ozone Plan concludes that the RACM requirement is met through implementation of the measures described above under the District's jurisdiction, CARB's jurisdiction, and the MPOs' jurisdiction for stationary and area sources, mobile sources, and TCMs, respectively. The plan also concludes that to advance the attainment date by one year (*i.e.*, from 2017 to 2016) would require an additional reduction of 12.1 tpd of NO_x, and that there are no reasonable measures that collectively would reduce emissions in the Valley by that amount by 2016. In support for that conclusion, the plan notes that about 90 percent of NO_x emission reductions occurring between the 2007 base year and the 2017 attainment year come from mobile sources and that such reductions cannot be expedited through additional District action because, generally, the District does not have jurisdiction over mobile sources.

3. Proposed Action on RACM Demonstration

The process followed by the District in the 2013 Ozone Plan to identify RACM is generally consistent with the EPA's recommendations in the General Preamble. The process included compiling a comprehensive list of potential controls measures for sources of NO_x and VOC in the San Joaquin Valley. This list included measures suggested in public comments on the 2013 Ozone Plan. See 2013 Ozone Plan, appendix J. As part of this process, the District evaluated potential controls for all relevant source categories for economic and technological feasibility and provided justifications for the rejection of certain identified measures. *Id.* After completing this evaluation, the District committed to adopt and submit two measures (*i.e.*, Rules 4308 and

4905), which it has now done. See 2013 Ozone Plan, table 3–3, p. 3–10 and table 2 above.

We have reviewed the District's determination in the 2013 Ozone Plan that its stationary and area source control measures represent RACM for NO_x and VOC. In our review, we also considered our previous evaluations of the District's rules in connection with our approval of the San Joaquin Valley RACT SIP demonstration for the 1997 8-hour ozone standard, our comments on the 2012 PM_{2.5} Plan, and our comments on the District's RACT SIP demonstration for the 2008 8-hour ozone standard.¹⁶ We also reviewed measures suggested by the public in comments on the 2013 Ozone Plan. Based on this review, we believe that the District's rules provide for the implementation of RACM for stationary and area sources of NO_x and VOC.¹⁷

With respect to mobile sources, we recognize CARB as a leader in the development and implementation of stringent control measures for on-road and off-road mobile sources. Its current program addresses the full range of mobile sources in the San Joaquin Valley through regulatory programs for both new and in-use vehicles. See 2013 Ozone Plan, table 3–2 and appendix A of the TSD. With respect to transportation controls, we note that the MPOs have a program to fund cost-effective TCMs. See appendix C, p. C–33 of the 2012 PM_{2.5} Plan. Overall, we believe that CARB's and the MPOs' programs provide for the implementation of RACM for NO_x and VOC from mobile sources in the San Joaquin Valley.

Based on our review of the results of these RACM analyses, the District's and CARB's adopted rules, we propose to find that there are, at this time, no additional reasonably available measures that would advance attainment of the 1-hour ozone standard in the San Joaquin Valley. In the 2013 Ozone Plan, the District estimates that it would take a reduction between of 12.1 tpd of NO_x to advance attainment from

¹⁶ See 77 FR 1417 (January 10, 2012); EPA Region 9, Technical Support Document for the EPA's Notice of Proposed Rulemaking for the California State Implementation Plan—EPA's Evaluation of the San Joaquin Valley Unified Air Pollution Control District's Reasonably Available Control Technology (RACT) Demonstration for Ozone State Implementation Plan (SIP), Adopted April 16, 2009 (dated August 29, 2011); letter dated October 19, 2012, from Kerry Drake, Associate Director, Air Division EPA—Region 9 to Samir Sheikh, SJVUAPCD; and letter dated June 4, 2014, from Andrew Steckel, Chief, Rules Office, EPA Region 9 to Errol Villegas, Planning Manager, SJVUAPCD.

¹⁷ A full list of the District's rules, including citing to our most recent final or proposed rulemaking on each can be found in the TSD.

2017 to 2016 in the San Joaquin Valley. See section 4.2 (p. 4–3). We find that no reasonably available and unadopted measures identified in the 2013 Ozone Plan, either individually or collectively, could deliver this additional increment of reductions in 2016 because of the extent to which the emissions inventory reflects mobile sources (see table 1 above) and the extent to which the mobile source inventory already reflects CARB's emissions standards and other requirements for new and in-use on-road and off-road vehicles and engines.

For the foregoing reasons, we propose to find that the 2013 Ozone Plan provides for the implementation of all RACM as required by CAA section 172(c)(1) and 40 CFR 51.1105(a)(1) and 51.1100(o)(17).

C. Rate of Progress Demonstration

1. Requirements for Rate of Progress Demonstrations

CAA section 172(c) requires nonattainment area plans to provide for reasonable further progress (RFP) which is defined in section 171(1) as such annual incremental reductions in emissions as are required in part D or may reasonably be required by the Administrator in order to ensure attainment of the relevant ambient standard by the applicable date. CAA sections 182(c)(2) and (e) require that "Serious" and above area SIPs include ROP quantitative milestones that are to be achieved every 3 years after 1996

until attainment. For ozone areas classified as Serious and above, section 182(c)(2) requires that the SIP must provide for reductions in ozone-season, weekday VOC emissions of at least 3 percent per year net of growth averaged over each consecutive 3-year period. This is in addition to the 15 percent reduction over the first 6-year period required by CAA section 182(b)(1) for areas classified as moderate and above. The CAA requires that these milestones be calculated from the 1990 inventory after excluding, among other things, emission reductions from "[a]ny measure related to motor vehicle exhaust or evaporative emissions promulgated by the Administrator by January 1, 1990" and emission reductions from certain federal gasoline volatility requirements. CAA section 182(b)(1)(B)–(D). The EPA has issued guidance on meeting 1-hour ozone ROP requirements. See General Preamble at 13516 and "Guidance on the Post-1996 Rate-of-Progress Plan and the Attainment Demonstration," EPA-452/R-93-015, EPA Office of Air Quality Planning and Standards, February 18, 1994 (corrected).

CAA section 182(c)(2)(C) allows for NO_x reductions that occur after 1990 to be used to meet the post-1996 ROP emission reduction requirements, provided that such NO_x reductions meet the criteria outlined in the CAA and the EPA guidance. The criteria require that: (1) The sum of all

creditable VOC and NO_x reductions must meet the 3 percent per year ROP requirement; (2) the substitution is on a percent-for-percent of adjusted base year emissions for the relevant pollutant; and (3) the sum of all substituted NO_x reductions cannot be greater than the cumulative NO_x reductions required by the modeled attainment demonstration. See General Preamble at 13517 and "NO_x Substitution Guidance," EPA Office of Air Quality Planning and Standards, December 1993. Our guidance in the General Preamble states that by meeting the specific ROP milestones discussed above, the general RFP requirements in CAA section 172(c)(2) will also be satisfied. General Preamble at 13518.

The ROP demonstration requirement is a continuing applicable requirement for the San Joaquin Valley "Extreme" 1-hour ozone nonattainment area under the EPA's anti-backsliding rules that apply once a standard has been revoked. See 40 CFR 51.1105(a)(1) and 51.1100(o)(4).

2. ROP Demonstration in the 2013 Ozone Plan

Section 4.3.2 (beginning on page 4–5) of the 2013 Ozone Plan provides a demonstration that the San Joaquin Valley meets the 2010, 2013, and 2016 ROP milestones and 2017 increment.¹⁸ We have summarized the ROP demonstrations in table 3.

TABLE 3—SAN JOAQUIN ROP DEMONSTRATIONS

[Tpd or percent]

	2007	2010	2013	2016	2017
VOC Emission Calculations					
Baseline VOC inventory	457.2	440.5	380.5	368	366.3
Non-creditable FMVCP/RVP adjustments		5.6	3.7	2.7	0.7
Adjusted baseline VOC inventory in baseline year (Line 1–Line 2)		451.6	447.9	445.2	444.5
Basis for required VOC reductions		451.6	407.3	367.9	334.1
RFP Percent Reduction Required from prior milestone		9%	9%	9%	3%
Target level		411.0	370.6	334.8	324.1
Apparent Shortfall		29.5	9.9	33.2	42.2
Forecasted Percent VOC shortfall		6.5%	2.2%	7.5%	9.5%
VOC percent shortfall previously addressed provided by NO _x substitution		0%	6.5%	2.2%	7.5%
Actual VOC percent shortfall		6.5%	–4.3%	5.2%	2.0%
NO_x Emission Calculations					
Baseline NO _x inventory	484.9	368.2	316.0	259.2	247.1
Non-creditable FMVCP adjustments		4.9	–1.9	6.3	0.4
Adjusted baseline NO _x inventory for milestones		480.0	481.9	475.6	475.2

¹⁸In later 2014, i.e., after adoption and submittal of the 2013 Ozone Plan, CARB revised the state's Truck and Bus regulation (see <http://www.arb.ca.gov/regact/2014/truckbus14/truckbus14.htm>). The 2014 revisions resulted in a temporary emission reduction disbenefit of approximately 5 tpd of NO_x in the 2016 and 2017

milestone years in the San Joaquin Valley. See letter from Sylvia Vanderspek, Chief, Air Quality Planning Branch, CARB, to Matthew Lakin, Manager, Air Planning Office, EPA Region 9, dated April 23, 2015. The EPA has determined that because the 2013 Ozone Plan demonstrates that ROP milestones are met by a significant margin in

2016 and 2017, even if the 5 tpd NO_x disbenefit was added back into the 2016 and 2017 baselines, the 2013 Ozone Plan would still exceed the 2016 and 2017 ROP milestones by approximately 33% for both years.

TABLE 3—SAN JOAQUIN ROP DEMONSTRATIONS—Continued
[Tpd or percent]

	2007	2010	2013	2016	2017
Change since 2007		111.8	165.9	216.4	228.1
Forecasted Percent NO _x creditable reductions since 2007		23.3%	34.4%	45.5%	48.0%
NO _x percent previously used for VOC shortfall by NO _x substitution		0%	6.5%	6.5%	11.7%
NO _x percent available for VOC shortfall by NO _x substitution and contingency		23.3%	27.9%	39.0%	36.3%
NO _x percent substitution needed for VOC shortfall		6.5%	0.0%	5.2%	2.0%
Forecasted NO _x percent reduction surplus		16.7%	27.9%	33.8%	34.2%
Contingency measure reserve achieved?		Yes	Yes	Yes	Yes
ROP achieved?		Yes	Yes	Yes	Yes

Source: 2013 Ozone Plan, table 4–2 (page 4–6).

3. Proposed Action on the ROP Demonstration

Based on our review of the ROP calculations in the 2013 Ozone Plan, summarized in table 3 above, we conclude the 2013 Ozone Plan demonstrates that sufficient emission reductions have or will be achieved to meet the 2010, 2013, and 2016 ROP milestones and the 2017 increment. Therefore, we propose to approve the ROP demonstration in the 2013 Ozone Plan as meeting the requirements of CAA section 172(c)(2) and 182(c)(2)(B), and 40 CFR 51.1105(a)(1) and 51.1100(o)(4).

D. Attainment Demonstration

1. Requirements for Attainment Demonstrations

CAA section 182(c)(2)(A) requires states with ozone nonattainment areas classified as “Serious” or above to submit plans that demonstrate attainment of the 1-hour ozone standard by the applicable attainment date. Under the CAA, as amended in 1990, the San Joaquin Valley “Extreme” nonattainment area was to have attained the 1-hour ozone standard by November 15, 2010. In 2011, we determined that the San Joaquin Valley had failed to attain the standard by the 2010 attainment date. 76 FR 82133 (December 30, 2011). Given that the original statutory attainment date had passed and the 1-hour ozone standard had been revoked, in our 2012 final action withdrawing our approval of the 2004 Ozone Plan and issuing findings of failure to submit, we set a new attainment date by reference to CAA section 172(a)(2). 77 FR 70376, at 70377 (November 26, 2012), effective November 26, 2012. Application of the attainment date formulation in section 172(a)(2) means that the state was required to submit a revised San Joaquin Valley plan demonstrating attainment of the 1-hour ozone standard as

expeditiously as practicable, but no later than five years from the effective date of the findings of failure to submit, or, in this case, no later than November 26, 2017.

An attainment demonstration should include a control strategy that identifies specific measures to reduce emissions and photochemical modelling results showing that the emissions reductions from implementation of the control strategy is sufficient to attain the standard by the applicable attainment date. The attainment demonstration requirement is a continuing applicable requirement for the San Joaquin Valley “Extreme” 1-hour ozone nonattainment area under the EPA’s anti-backsliding rules that apply once a standard has been revoked. See 40 CFR 51.1105(a)(1) and 51.1100(o)(12).

2. One-Hour Ozone Attainment Demonstration in the 2013 Ozone Plan

a. Control Strategy for Attainment of the 1-Hour Ozone Standard

The 2013 Ozone Plan relies entirely on reductions from previously adopted measures. Tables 3–1 and 3–2 in the 2013 Ozone Plan documents District and State measures that contribute to attainment of the 1-hour ozone standard in 2017. Although the 2013 Ozone Plan includes two commitment measures (see table 3–3 in 2013 Ozone Plan), reductions from those measures were not relied on for attainment. Moreover, the two measures have been adopted and submitted to the EPA.

The future year inventories, which include reductions from adopted and creditable measures, were used in the 2013 Ozone Plan’s modeling analysis described in appendix E of the 2013 Ozone Plan. Based on the modeling analysis, the District determined that the 1-hour ozone standard could be attained in 2017. A summary of the base year (2007) and 2017 attainment-year emissions inventories is shown in table 1 above. It reflects reductions of 238 tpd

of NO_x and 91 tpd of VOCs from the 2007 base year emissions inventory. For a more detailed comparison of the 2007 base year and 2017 attainment year inventories, see appendix B of the 2013 Ozone Plan and the TSD for today’s action.

For purposes of evaluating the 2013 Ozone Plan, all of the measures relied on to satisfy the applicable control requirements are baseline measures. As the term is used here, baseline measures are federal, State, and District rules and regulations adopted prior by the end of January 2012 (*i.e.*, prior to the development of 2013 Ozone Plan) that continue to achieve emissions reductions through the projected 2017 attainment year and beyond.¹⁹

The District has adopted more than 50 prohibitory rules that limit emissions of either VOC or NO_x. These rules include controls for a variety of sources including boilers, oil field and refinery equipment, surface coatings operations, and open burning. The 2013 Ozone Plan lists many of these measures in table 3–1. Reductions from these measures are incorporated into the future year baseline inventories. Appendix C of the 2013 Ozone Plan includes inventory information that allows for a comparison of 2007 rule-specific emissions inventory data for stationary and area sources against future year rule-specific inventories. The net

¹⁹ These measures are typically rules that may have compliance dates that occur after the adoption date of a plan and mobile source measures that achieve reductions as older engines are replaced through attrition (*e.g.*, through fleet turnover). On December 31, 2014 and subsequent to the submittal of the 2013 Ozone Plan, the State of California’s Office of Administrative Law approved revisions to CARB’s Truck and Bus regulation (see <http://www.arb.ca.gov/regact/2014/truckbus14/truckbus14.htm>). The revisions resulted in a temporary emission reduction disbenefit of approximately 5 tpd of NO_x in 2017. In an April 23, 2015 letter from Sylvia Vanderspek, Chief, Air Quality Branch, CARB to Matt Lakin, Manager, Air Planning Office, EPA Region IX, the State provides an adequate technical justification showing that the demonstration of attainment in 2017 is not affected.

inventory impact of the rule reductions and growth is included in the TSD for today's proposal. We have also provided in the TSD a list of the District's prohibitory NO_x and VOC rules and SIP approval status.

The state's baseline measures fall within two categories: Measures for which the State has obtained a waiver or authorization of federal pre-emption under CAA section 209 ("waiver" measures) and those for which the state is not required to obtain a waiver ("non-waiver" measures). Non-waiver measures include: Improvements to California's inspection and maintenance (I/M) program, SmogCheck; cleaner burning gasoline and diesel regulations; and limits on the VOC content and reactivity of consumer products. Table 3–2 of the 2013 Ozone Plan lists many of the state's measures adopted since 2006 that are contributing to attainment of the 1-hour ozone standard.

Over the years, the EPA has approved the non-waiver measures and amendments to those measures as part of the California SIP. Historically, the EPA has allowed California to take credit for waiver measures (to meet CAA SIP requirements including ROP and attainment demonstrations) notwithstanding the fact that the regulations themselves have not been submitted or approved into the California SIP. However, in light of the Ninth Circuit's decision in *Committee for a Better Arvin v. EPA*, as discussed above, CARB has submitted the most recent set of waiver measures that contribute emissions reductions to the state's attainment plans as part of the SIP, and the EPA has proposed approval of the measures. 80 FR 69915 (November 12, 2015). We anticipate final action on the CARB mobile source SIP submittal prior to final action on the 2013 Ozone Plan.

The 2013 Ozone Plan also includes reductions from federal measures. These measures include, for example, the EPA's national emission standards for heavy duty diesel trucks,²⁰ certain new construction and farm equipment,²¹ and locomotives.²² States are allowed to rely

on reductions from federal measures in attainment and ROP demonstrations.

b. Air Quality Modeling in the 2013 Ozone Plan

CAA section 182(c)(2)(A) requires SIPs for ozone nonattainment areas to include a "demonstration that the plan, as revised, will provide for attainment of the ozone [NAAQS] by the applicable attainment date. This attainment demonstration must be based on photochemical grid modeling or any other analytical method determined by the Administrator, in the Administrator's discretion, to be at least as effective." Air quality modeling is used to establish emissions attainment targets, that is, the combination of emissions of ozone precursors that the area can accommodate without exceeding the relevant standard, and to assess whether the proposed control strategy will result in attainment of that standard. The procedures for modeling ozone as part of an attainment demonstration are contained in the EPA's Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for the 8-Hour Ozone and PM_{2.5} NAAQS and Regional Haze ("Modeling Guidance").²³ The Modeling Guidance recommends for a modeling protocol to be reviewed by the EPA prior to performance of the modeling. The Guidance includes recommendations for model input preparation, model performance evaluation, use of the model output for the attainment demonstration, and modeling documentation. Air quality modeling is performed using meteorology and emissions from a base year, and the modeled concentrations are compared to air quality monitoring data from that year to evaluate model performance. Once the performance is determined to be acceptable, future year emissions are simulated with the model. The relative (or percent) change in modeled concentration due to future emissions reductions provides a Relative Response Factor (RRF). For each monitoring site, the site's RRF is applied to its monitored base year design value to provide the future design value for comparison to the NAAQS. The Modeling Guidance also recommends supplemental air quality analyses, which may be used as part of a Weight of Evidence (WOE) analysis. A WOE

analysis assesses attainment by considering evidence other than the main air quality modeling attainment test, such as trends and additional monitoring and modeling analyses.

Older guidance for the 1-hour ozone NAAQS was provided in Guideline for Regulatory Application of the Urban Airshed Model;²⁴ however, much of its content is outdated. Most importantly, formerly photochemical models were used in an absolute sense for the modeled attainment test, whereas currently the EPA recommends that models be used in a relative sense. That is, formerly the modeled concentration due to future emissions (absolute model prediction) was used directly to compare to the NAAQS. Currently, the EPA recommends that the relative change in modeled concentration (RRF) due to future emission reductions be used; this is applied to the monitored design value and the result compared to the NAAQS. Given that the current guidance is aimed at the 8-hour standard, whereas the older guidance is aimed at the 1-hour standard but is outdated, the State has flexibility in the approach to be used. Discussions between the EPA, CARB, and the District resulted in the approach described in the Plan's Modeling Protocol, which mainly followed the more recent Modeling Guidance, but accommodated the form and level of the 1-hour standard and incorporated model performance goals from the older 1-hour guidance.

CARB performed the air quality modeling for the 2013 Ozone Plan, with assistance from the District. The 2013 Ozone Plan's modeling protocol is contained in appendix E ("Modeling Protocol"). This protocol was reviewed by the EPA, and contains all of the elements recommended in the Guidance, including selection of model, and modeling period, modeling domain, and model boundary conditions and initialization procedures; a thorough discussion of emission inventory development and their spatial and temporal allocation; and other model input preparation procedures, model performance evaluation procedures; selection of days and other details for calculating RRFs; and provisions for the archiving of and access to raw model inputs and outputs. While some additional detail on the input meteorological data could have been useful, overall the protocol adequately addresses all of the expected elements.

²⁰ 66 FR 5001 (January 18, 2001). CARB estimates that interstate trucks registered outside of California represent over 50 percent of the heavy duty trucks in California. See Table III–1 in "Staff Report: Initial Statement of Reason for Proposed Rulemaking, Proposed Regulation for In-Use, On-road Diesel Vehicles," California Air Resources Board (October 2008).

²¹ Tier 2 and 3 non-road engines standards, 63 FR 56968 (October, 23 1998); Tier 4 diesel non-road engine standard, 69 FR 38958 (June 29, 2004).

²² 63 FR 18978 (May 16, 1998) and 73 FR 37045 (June 30, 2008).

²³ "Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for the 8-Hour Ozone and PM_{2.5} NAAQS and Regional Haze," EPA-454/B-07-002, April 2007. Additional EPA modeling guidance can be found in the "Guideline on Air Quality Models" in 40 CFR part 51, appendix W.

²⁴ "Guideline for Regulatory Application of the Urban Airshed Model," EPA-450/4-91-013, July 1991.

The modeling analysis uses the Community Multiscale Air Quality (CMAQ) photochemical model, developed by the EPA. The SAPRC99 (State-wide Air Pollution Research Center, 1999 version) chemical mechanism was used in CMAQ, based on CARB's historical experience with it, its favorable scientific review and good performance over the years. The modeling incorporates routinely available meteorological and air quality data collected during 2007, the base year for the 2013 Ozone Plan. The WRF model (Weather and Research Forecasting model, from the National Center for Atmospheric Research) was used to prepare meteorological input for CMAQ. CMAQ and WRF are both recognized in the Modeling Guidance as technically sound, state-of-the-art models. Air quality modeling was performed for May through September, 2007, a period that spans the ozone season in the San Joaquin Valley. The overall air quality modeling domain includes the entire State of California with 12 km resolution, and a nested domain of finer 4 km resolution that covers the San Joaquin Valley. The overall meteorological modeling covers California's neighboring states, and major portions of the next outer ring of states, with 35 km resolution; it has nested domains at 12 km and 4 km, with the latter, innermost covering the entire State of California. The areal extent, and the horizontal and vertical resolution used in these models were more than adequate for modeling San Joaquin Valley ozone.

Model performance information is provided in appendix F of the 2013 Ozone Plan in the form of time series and scatter plots of modeled ozone compared to monitored ozone, for the May–September, 2007 period. The time series show a good match between predicted and observed concentrations. While there is some underprediction during the second half of the period (mid-July through September), performance is generally good, and the overall peaks were captured by the model. Scatter plots also show good performance, with very few outliers. Modeled values are generally within 20% of observations, and root-mean-square error (RMSE) values are typically near 0.7, showing good correlation between modeled and monitored concentrations. While current Modeling Guidance does not prescribe specific performance goals, the Modeling Protocol adopted goals from the older, 1991 EPA 1-hour ozone modeling guidance, section 5.2: Unpaired highest prediction accuracy: Within 20 percent;

Normalized bias within 15 percent; and Gross error of all pairs above 60 parts per billion (ppb) (*i.e.*, 0.060 ppm) within 35 percent (appendix F, section 1.4.1). The Modeling Protocol mentions evaluation of model performance within multiple geographic subregions, as well as additional performance statistics and spatial plots for ozone and precursor species, but these were not provided in the SIP submittal. The CARB Staff Report stated that all the performance goals were met. See CARB's "Staff Report, San Joaquin Valley 2013 Plan for the Federal 1-Hour Ozone Standard," dated November 8, 2013, page 8. The EPA agrees that the model performance is adequate for the San Joaquin Valley 1-hour ozone attainment demonstration.

The 2013 Ozone Plan used a "band-RRF" approach for the use of modeling results in the modeled attainment test. This a refinement of the approach in the Modeling Guidance, and is described in appendix F ("Modeling Approach and Results," section 1.4.1) of the 2013 Ozone Plan, as well as in the Modeling Protocol and in a journal paper.²⁵ The Modeling Guidance approach is briefly reviewed here before the band-RRF approach is described. As mentioned above, in simplest terms, an RRF is the relative model response to emissions changes, that is, the ratio of future modeled concentration to base year modeled concentration. Since the model provides concentrations for every grid square, for every hour of the simulated period, in actually implementing an RRF, a choice must be made of which particular model concentrations should be included in the calculation. The Modeling Guidance recommends that high concentration days selected from grid cells near the monitor be used; these will be most relevant for estimating the future design value at the monitor. Specifically, for the 1997 0.08 ppm (80 ppb) 8-hour ozone NAAQS in effect at the time, the Modeling Guidance recommends that the highest concentration among grid cells within 15 km of the monitor be used to represent the monitor, and that all modeled maximum daily 8-hour concentrations at or above 085 ppb²⁶

(0.085 ppm) be averaged. The RRF is the average for future days divided by the average for base year days; this ratio reflects the average response of high ozone concentrations near the monitor to future emission changes.

The 2013 Ozone Plan band-RRF approach parallels the Modeling Guidance, but differs in several specifics, especially in the choice of concentration levels to include in calculating the RRF. The 2013 Ozone Plan applied an initial performance screen: Only days that meet the model performance criteria cited above were retained for the calculation. For the choice of grid cell to represent the monitor, the 2013 Ozone Plan used the grid cell containing the monitor itself, rather than the maximum cell within 15 km; this puts a somewhat greater reliance on the spatial accuracy of the model, but is not necessarily less conservative. The 2013 Ozone Plan's choice of concentration days to include is more complex than in the Guidance. Instead of using an average over all high concentration days, in the band-RRF approach there is a different RRF for each 10 ppb-wide (0.010 ppm) band of ozone concentrations; the RRF used for a particular monitored day is computed from future and base year averages only within the concentration band relevant for that day, rather than from all high days.²⁷ This refinement has the advantage of allowing the model response to vary depending on the concentration, instead of assuming the relative response is always the same, as the Modeling Guidance procedure does. The Modeling Guidance acknowledges that there tends to be a greater model response to emission changes at higher ozone concentrations (Modeling Guidance, page 37), so the use of RRF bands is a reasonable refinement. The use of band-RRFs requires that each day be scaled by its corresponding RRF, and that the future design value be estimated from those scaled values concentrations. This is different than the Modeling

²⁵ Sarika Kulkarni, Ajith P. Kaduwela, Jeremy C. Avise, John A. DaMassa & Daniel Chau (2014), "An extended approach to calculate the ozone relative response factors used in the attainment demonstration for the National Ambient Air Quality Standards", *Journal of the Air & Waste Management Association*, 64:10, 1204–1213, DOI: 10.1080/10962247.2014.936984.

²⁶ The 1997 8-hour ozone NAAQS is actually 0.08 ppm; concentrations of 84.999 ppb or below round to 80 and comply with the NAAQS, and concentrations of 85.0 or higher exceed the NAAQS.

²⁷ Specifically, a linear regression between observed and modeled concentrations was used to choose a modeled concentration for each observed day; that modeled concentration predicted from the linear fit was then used to select a ppb band and the corresponding RRF. This indirect procedure avoids quirks of individual days, providing a typical model response appropriate for future projections. It also avoids introducing any inconsistency and model bias into the RRF calculation. If the observed value were used directly to choose a band, and the model happened to underpredict on that day, then the RRF, chosen on the basis of the higher observed value, would be the model response appropriate for a higher ozone concentration, rather than for the modeled base year concentration. In short, it keeps both the RRF numerator and denominator both as modeled values, consistent with the definition of an RRF.

Guidance approach, in which a single RRF is applied to the monitored design value itself. The “design value” for the 1-hour ozone standard is nearly equivalent to the 4th highest concentration.²⁸ In the 2013 Ozone Plan’s approach, the 10 days with the highest observed concentration were multiplied by their respective RRFs, and the 4th highest resulting concentration was used as the predicted future design value for the monitor. The inclusion of 10 candidate days accommodates any shifts in the concentration rank of the days as the result of controls; it ensures the inclusion of days that could contribute to the post-control design value. Applying different RRFs to different days and estimating the design value afterward is very similar to the EPA’s updated guidance procedure for PM_{2.5} attainment demonstrations.²⁹ The band-RRF approach is a refinement to the 8-hour ozone approach recommended in the Modeling Guidance for the modeled attainment test, and is adequate for the San Joaquin Valley 1-hour ozone attainment demonstration.

An additional difference between the 2013 Ozone Plan modeled attainment test and the Modeling Guidance is that

²⁸ The 1-hour ozone NAAQS is met when the “expected number of days per calendar year with maximum hourly average concentrations above 0.12 parts per million . . . is equal to or less than 1” (40 CFR 50.9); 40 CFR part 50, appendix H describes the procedure for calculating this, based on three calendar years. This is approximately the same as allowing one exceedance per year over three years, that is, the three highest values are allowed to exceed 0.12 ppm. Thus, the fourth highest concentration is a unbiased single-year value to use for comparison to the NAAQS level in a modeling context.

²⁹ “Update to the 24 Hour PM_{2.5} NAAQS Modeled Attainment Test,” EPA memorandum dated June 28, 2011, from Tyler Fox, Air Quality Modeling Group, EPA Office of Air Quality Planning and Standards. The updated guidance allowed for the shifting of PM_{2.5} day ranks. A shift is possible since emission controls affect PM_{2.5} species components differently, and species composition may be different for different seasons: Control could affect mainly winter days, with summer days little affected and so becoming higher ranked. The 2013 Ozone Plan’s RRF procedure was carried out for the top 10 observed days. This accommodates differences in ranking between the observed days and their corresponding modeled days and bands, ensuring that days that were not the highest before controls, but are so after control, are available for the design value calculation. It also accommodates the fact that applying controls may result in shifting in the ranks of the days; the particular day that is 4th highest before controls may not be the 4th highest post-control day. The 2013 Ozone Plan does explicitly state whether such rank shifts actually occurred in applying the band-RRF approach, but table 4 in appendix G of the 2013 Ozone Plan does not appear to show such shifts: The 2017 design values remain sorted from high to low as are the 2007 design values. Shifts might be expected to occur if a concentration near the bottom of a band with a relatively small RRF was reduced more than a concentration at the top of the next lower band.

it uses only the single 2005–2007 design value as the starting point, whereas for a 2007 base year the Modeling Guidance would recommend the average of the three design values for 2005–2007, 2006–2008, and 2007–2009. It is not clear how to use band-RRF approach in conjunction with this Guidance recommendation, but presumably it would involve using ozone observations from a longer period than 2005 through 2007. Using a longer period might make for more stable design value estimates, less subject to year-to-year meteorological variability; conversely it also introduces some inconsistency given that emissions changes during a longer period would generally be larger. The EPA estimated the effect of using an alternative starting point by applying modeled percent change in design value from the 2013 Ozone Plan to the 2006–2008 design value, and to the three-design value average mentioned above. The results were 120.2 and 119.6 ppb (0.1202 and 0.1196 ppm), respectively, both slightly higher than the 2013 Ozone Plan’s 119.3 ppb (0.1193 ppm), but both less than the NAAQS-compliant value of 124 ppb (or 0.124 ppm, which rounds to 0.12 ppm). Documentation on the rationale for the 2013 Ozone Plan choice of the 2005–2007 design value starting point would have strengthened the support for the attainment demonstration, but even in its absence, the EPA finds the procedure followed to be adequate for the San Joaquin Valley 1-hour ozone attainment demonstration.

The final model results appear in chapter 2 of the 2013 Ozone Plan (and are repeated in appendix F, section 1.4.2 “Attainment Demonstration”). These are tables of three-year design values for base year 2007 and for the projected year 2017. The highest monitored 2007 design value was 135 ppb (0.135 ppm) at the Edison monitor. The highest projected 2017 design value, accounting for emission reductions occurring during 2007–2017 was 119.3 ppb (0.1193 ppm) at Edison monitor. This is comfortably below the maximum 124 ppb (0.124 ppm) consistent with NAAQS attainment. The next highest 2017 design value was substantially less, 107.4 ppb (0.1074 ppm) at the Arvin monitor.

The 2013 Ozone Plan contains a “Weight of Evidence” (WOE) section in its appendix G. This section includes analyses of ambient concentration and emission trends, and additional analyses that strengthen the 2013 Ozone Plan’s attainment demonstration conclusion that NAAQS attainment will be achieved in 2017. The overall San Joaquin Valley design value trend from

1994 through 2012 is downward, despite some individual multi-year periods of little progress, and corroborates the projection of attainment in 2017 (appendix G, figure 1, page G–2). This pattern is also seen for individual monitoring site design values trends (appendix G, figures 4–6 and 8–10, pages G–6–G–10). An exception to this is the Fresno–Drummond site, for which the 2007–2011 trend is upward, though the number of NAAQS exceedance days remains small (appendix G, figure 6, page G–7). Since VOC and especially NO_x emission trends have been steadily downward (appendix G, figures 18–22, pages G–20–G–23), these stagnant periods are likely due to unfavorable meteorology. The 2013 Ozone Plan also includes trends adjusted for the effect of meteorology, based on a statistical analysis that estimates what ozone would have been had wind speeds and temperatures been more typical (appendix G, section G–2). Since a statistical analysis requires numerous data points, 20-day averages were examined rather than the design values, of which there are only one per year. While this means that the results cannot be used to directly adjust the design value trends, it is clear that for 2008–2011, unfavorable meteorology resulted in higher ozone concentrations (appendix G, figure 12, page G–14), and partly explains the slower recent progress in the design values at some monitoring sites.

The 2013 Ozone Plan includes NO_x vs. VOC diagrams showing the modeled sensitivity of ozone to reductions at each monitoring site (appendix G, figure 23, pages G–34–G–39.). The relatively flat slopes mean that ozone changes relatively little with VOC reductions. While the relative effectiveness varies by site and reduction amount, on a tpd basis NO_x reductions approximately 20 times as effective as VOC reductions; for the Edison design value site, the relative effectiveness is closer to 7. In conjunction with the pronounced downward NO_x emission trend referred to above, these findings provide confidence in the attainment strategy.

Finally, the 2013 Ozone Plan provides a supplemental attainment demonstration using a traditional “single RRF” approach, in addition to the “band-RRF” approach (appendix G, sections 6.1 and 6.2, pages G–26–G–33). (As described above, in the former approach, described in the Modeling Guidance for 8-hour ozone, a single RRF is used regardless of the ozone concentration. In the latter approach there is a different RRF for each “band” or range of ozone values.) The single

RRF approach is more conservative, giving slightly higher future concentrations; this was expected since the RRF includes model results from lower, less responsive, ozone levels. The single RRF approach nevertheless also shows 2017 attainment.

The various analyses provided in appendix G of the 2013 Ozone Plan provide assurance in the attainment demonstration's conclusion that the 1-hr ozone NAAQS will be attained in 2017.

c. Evaluation of the Air Quality Modeling in the 2013 Ozone Plan

The modeling showed that existing State and District control measures are sufficient to attain the 1979 1-hour Ozone NAAQS by 2017 at all monitoring sites in the San Joaquin Valley. Given the extensive discussion of modeling procedures, tests, and performance analyses called for in the Modeling Protocol and the good model performance, the EPA finds that the modeling is adequate for purposes of supporting the 1-hour ozone attainment demonstration.

3. Proposed Action on the Attainment Demonstration

To approve a SIP's attainment demonstration, the EPA must make several findings: First, we must find that the demonstration's technical bases—emissions inventories and air quality modeling—are adequate. As discussed above in section III.A, we propose to find that the inventories in the 2013 Ozone Plan provide an appropriate basis for the various other elements of the 2013 Ozone Plan, including the attainment demonstration, and for the reasons discussed above, we find the air quality modeling adequate to support the attainment demonstration.

Second, we must find that the SIP provides for expeditious attainment through the implementation of all RACM. As discussed above in section III.B, we are proposing to approve the RACM demonstration in the 2013 Ozone Plan.

Third, we must find that the emissions reductions that are relied on for attainment are creditable and are sufficient to provide for attainment. As stated previously in today's action, the EPA is proposing to approve the 2013 Ozone Plan in part based on the permanence and enforceability of the waiver measures flowing from the approval of the measures as part of the SIP. Thus, the EPA will not finalize approval of the 2013 Ozone Plan until the Agency takes final action to approve the waiver measures as part of the California SIP. Once that occurs, the 2013 Ozone Plan will rely entirely on

adopted and approved rules to achieve the emissions reductions needed to attain the 1-hour ozone standards in the San Joaquin Valley in 2017.

E. Contingency Measures

1. Requirements for Contingency Measures

Section 172(c)(9) and 182(c)(9) of the CAA require that SIPs contain contingency measures that will take effect without further action by the state or the EPA if an area fails to attain the ozone standard by the applicable attainment date (section 172(c)(9)) or fails to meet an ROP milestone (section 182(c)(9)). This requirement is a continuing applicable requirement for the San Joaquin Valley "Extreme" 1-hour ozone nonattainment area under the EPA's anti-backsliding rules that apply once a standard has been revoked. See 40 CFR 51.1105(a)(1) and 51.1100(o)(13).

The Act does not specify how many contingency measures are needed or the magnitude of emission reductions that must be provided by these measures. However, the EPA provided initial guidance interpreting the contingency measure requirements in the General Preamble at 13510. Our interpretation is based upon the language in sections 172(c)(9) and 182(c)(9) in conjunction with the control measure requirements of sections 172(c), 182(b) and 182(c)(2)(B), the reclassification and failure to attain provisions of section 181(b) and other provisions. In the General Preamble, the EPA indicated that states with moderate and above ozone nonattainment areas should include sufficient contingency measures so that, upon implementation of such measures, additional emissions reductions of three percent of the emissions in the adjusted base year inventory (or such lesser percentage what will cure the identified failure) would be achieved in the year following the year in which the failure is identified. These reductions should be beyond what is needed to meet the attainment and/or ROP requirement. States may use reductions of either VOC or NO_x or a combination of both to meet the contingency measure requirements. General Preamble at 13520, footnote 6. The states must show that the contingency measures can be implemented with minimal further action on their part and with no additional rulemaking actions.

In subsequent guidance,³⁰ the EPA indicated that contingency measures

could be implemented early, *i.e.*, prior to the milestone or attainment date. Consistent with this policy, states are allowed to use excess reductions from already adopted measures to meet the CAA sections 172(c)(9) and 182(c)(9) contingency measures requirement. This is because the purpose of contingency measures is to provide extra reductions that are not relied on for ROP or attainment that will provide continued progress while the plan is being revised to fully address the failure to meet the required milestone. Nothing in the CAA precludes a state from implementing such measures before they are triggered. This approach has been approved by the EPA in numerous SIPs. See 62 FR 15844 (April 3, 1997) (approval of the Indiana portion of the Chicago area 15 percent ROP plan); 62 FR 66279 (December 18, 1997) (approval of the Illinois portion of the Chicago area 15 percent ROP plan); 66 FR 30811 (June 8, 2001) (proposed approval of the Rhode Island post-1996 ROP plan); and 66 FR 586 and 66 FR 634 (January 3, 2001) (approval of the Massachusetts and Connecticut 1-hour ozone attainment demonstrations). In the only adjudicated challenge to this approach, the court upheld it. See *LEAN v. EPA*, 382 F.3d 575 (5th Cir. 2004). 70 FR 71611, 71651.

2. Contingency Measures in the 2013 Ozone Plan

Contingency measure provisions are described in Section 4.4 of the 2013 Ozone Plan. To provide for contingency measures for failure to meet the ROP milestones, the SIP relies on surplus NO_x reductions in the ROP demonstration. See 2013 Ozone Plan, table 4–2. See also table 3 above.

For the failure to attainment contingency measure, the 3 percent reduction from the 2007 baseline can come from either VOC or NO_x. A three percent reduction from the 2007 baseline is equivalent to 14.5 tpd of NO_x. VOC emission reductions are only 0.3 tpd between 2017 and 2018; thus, NO_x emission reductions are necessary to satisfy the attainment contingency measure requirement. Fleet turnover in 2018 is expected to reduce NO_x emissions by 11.0 tpd. See 2013 Ozone Plan, appendix B, Tables B–1 and B–2. In the 2013 Ozone Plan, the District relies on 3.5 tpd of NO_x reductions from unspecified incentive programs plus the NO_x reductions from fleet turnover to achieve the 14.5 tpd of NO_x necessary for the failure to attainment contingency

³⁰G.T. Helms, Chief, Ozone/Carbon Monoxide Programs Branch, EPA Office of Air Quality Planning and Standards, memorandum titled "Early

Implementation of Contingency Measures for Ozone and Carbon Monoxide (CO) Nonattainment Areas," August 13, 1993.

measure. See 2013 Ozone Plan, table 4–4.

3. Proposed Action on the Contingency Measures

Contingency measures for ROP. As discussed above in section III.C, we are proposing to approve the 2013 Ozone Plan's ROP demonstration. As seen in the second to last line on table 3 above (in the ROP demonstration), there are sufficient excess reductions of NO_x in each milestone year beyond those needed to meet the next ROP percent reduction requirement to provide the 3 percent of adjusted baseline emissions reductions needed to meet the RFP contingency measure requirement for 2010, 2013, 2016, and 2017.

Accordingly, we propose to approve the ROP contingency measures in the 2013 Ozone Plan under CAA section 182(c)(9) and 40 CFR 51.1105(a)(1) and 51.1100(o)(13).

Contingency measures for failure to attain. We are not proposing action on the plan's attainment contingency measures at this time. Attainment contingency measures are a distinct provision of the CAA that we may act on separately from the attainment demonstration.

F. Clean Fuels or Advanced Control Technology for Boilers

1. Requirements for Clean Fuels or Advanced Control Technology for Boilers

CAA section 182(e)(3) provides that SIPs must require each new, modified, and existing electric utility and industrial and commercial boiler that emits more than 25 tons per year (tpy) of NO_x to either burn as its primary fuel natural gas, methanol, or ethanol (or a comparably low polluting fuel), or use advanced control technology (such as catalytic control technology or other comparably effective control methods). This requirement is a continuing applicable requirement for the San Joaquin Valley "Extreme" 1-hour ozone nonattainment area under the EPA's anti-backsliding rules that apply once a standard has been revoked. See 40 CFR 51.1105(a)(1) and 51.1100(o)(6).

Further guidance on this requirement is provided in the General Preamble at 13523. According to the General Preamble, a boiler should generally be considered as any combustion equipment used to produce steam and generally does not include a process heater that transfers heat from combustion gases to process streams. General Preamble at 13523. In addition, boilers with rated heat inputs less than 15 million Btu (MMBtu) per hour which

are oil or gas fired may generally be considered de minimis and exempt from these requirements since it is unlikely that they will exceed the 25 tpy NO_x emission limit. General Preamble at 13524.

2. Provisions for Controls on Boilers in the San Joaquin Valley District Rules

The 2013 Ozone Plan, which addresses the CAA section 182(e)(3) requirements on page 4–10, states that District Rules 4306 and 4352 address NO_x from affected boilers and that these rules meet the requirements of the CAA.

Rule 4306 "Boilers, Steam Generators, and Process Heaters—Phase 3" as revised on October 16, 2008, applies to any gaseous fuel or liquid fuel fired boiler, steam generator, or process heater with a total rated heat input greater than 5 million Btu per hour. The emission limits in the rule (5 ppm to 30 ppm for gaseous fuels and 40 ppm for liquid fuels) cannot be achieved without the use of advanced control technologies. See "Alternative Control Techniques Document—NO_x Emissions from Industrial/Commercial/Institutional (ICI) Boilers," Emissions Standards Division, EPA, March 1994; see also 76 FR 57846 at 57864–57865 (September 11, 2011) and 77 FR 12652 at 12670 (March 1, 2012) (proposed and final rules approving 2007 Ozone Plan for the San Joaquin Valley). All units subject to Rule 4306 were required to comply with the limits in the rule no later than December 1, 2008. See Rule 4306, section 7.0. We most recently approved Rule 4306 as a SIP revision at 75 FR 1715 (January 13, 2010).

Rule 4352 "Solid Fuel Fired Boilers, Steam Generators And Process Heaters" as revised December 15, 2011, applies to any boiler, steam generator or process heater fired on solid fuel at a source that has a potential to emit more than 10 tpy of NO_x or VOC. All units subject to Rule 4352 were required to comply with the rule's most stringent limits no later than January 1, 2013. Rule 4352, section 5.1. We most recently approved Rule 4352 into the California SIP at 77 FR 66548 (November 6, 2012). In an EPA action on the previous version of Rule 4352, we determined that all of the NO_x emission limits in Rule 4352 effectively require operation of Selective Noncatalytic Reduction (SNCR) control systems, which are comparably effective to Selective Catalytic Reduction for the affected sources. SNCR also appears to achieve NO_x emission reductions comparable to combustion of clean fuels at these types of boilers. We therefore concluded that Rule 4352 satisfies the requirements of section 182(e)(3) for solid fuel-fired boilers in the San

Joaquin Valley. 75 FR 60623 (October 10, 2010).

New and modified boilers that will emit or have the potential to emit 25 tpy or more of NO_x are subject to the District's new source permitting rule, Rule 2201 "New and Modified Stationary Source Review Rule." This rule requires new and modified source to install and operate best available control technology/lowest achievable emissions reductions technology. The EPA most recently approved Rule 2201 into the California SIP at 79 FR 55637 (September 17, 2014).

3. Proposed Finding on the Clean Fuel/Advanced Technology for Boilers

Based on our review of, and previous approval of, the emission limitations in the District's rules discussed above, we propose to find that the 2013 Ozone Plan meets the clean fuels or advanced control technology for boilers requirement in CAA section 182(e)(3) and 40 CFR 40 CFR 51.1105(a)(1) and 51.1100(o)(6).

G. Transportation Control Strategies and Transportation Control Measures To Offset Growth in Emissions From Growth in Vehicle Miles Traveled or Number of Vehicle Trips

1. Requirements for VMT Emissions Offset Demonstrations

Section 182(d)(1)(A) of the Act requires, in relevant part, the state, if subject to its requirements for a given area, to "submit a revision that identifies and adopts specific enforceable transportation control strategies and transportation control measures to offset any growth in emissions from growth in vehicle miles traveled or number of vehicle trips in such area."³¹ This requirement is a continuing applicable requirement for the San Joaquin Valley "Extreme" ozone nonattainment area for the 1-hour and 1997 8-hour standards under the EPA's

³¹ CAA section 182(d)(1)(A) includes three separate elements. In short, under section 182(d)(1)(A), states are required to adopt transportation control strategies and measures (1) to offset growth in emissions from growth in VMT, and, (2) in combination with other emission reduction requirements, to demonstrate RFP, and (3) to demonstrate attainment. For more information on the EPA's interpretation of the three elements of section 182(d)(1)(A), please see 77 FR 58067, at 58068 (September 19, 2012) (proposed withdrawal of approval of South Coast VMT emissions offset demonstrations). The decision by the Ninth Circuit in the *Association of Irrigated Residents* case, and the EPA's related withdrawal of the San Joaquin Valley approvals and finding of failure to submit, relate only to the first element of CAA section 182(d)(1)(A) (i.e., the VMT emissions offset requirement). Accordingly, this proposed action relates only to the first element of CAA section 182(d)(1)(A).

anti-backsliding rules that apply once a standard has been revoked. See 40 CFR 40.1105(a)(1) and 51.1100(o)(10).

As described above, in 2012, 77 FR 70376 (November 26, 2012), the EPA withdrew the Agency's approvals of the VMT emissions offset demonstrations for the San Joaquin Valley for the 1-hour ozone and 1997 8-hour ozone standards. In both instances, the EPA had based its approvals on the Agency's long-standing interpretation of the VMT emissions offset requirement that was rejected by the Ninth Circuit in the *Association of Irrigated Residents* case. In response to the Court's decision, the EPA issued a memorandum titled "Guidance on Implementing Clean Air Act Section 182(d)(1)(A): Transportation Control Measures and Transportation Control Strategies to Offset Growth in Emissions Due to Growth in Vehicle Miles Travelled" (herein referred to as the "August 2012 guidance").³²

The August 2012 Guidance discusses the meaning of the terms, "transportation control strategies" (TCSs) and "transportation control measures" (TCMs), and recommends that both TCSs and TCMs be included in the calculations made for the purpose of determining the degree to which any hypothetical growth in emissions due to growth in VMT should be offset. Generally, TCSs is a broad term that encompasses many types of controls including, for example, motor vehicle emission limitations, inspection and maintenance (I/M) programs, alternative fuel programs, other technology-based measures, and TCMs, that would fit within the regulatory definition of "control strategy." See, e.g., 40 CFR 51.100(n). TCMs are defined at 40 CFR 51.100(r) as meaning "any measure that is directed toward reducing emissions of air pollutants from transportation sources. Such measures include, but are not limited to those listed in section 108(f) of the Clean Air Act[,] and generally refer to programs intended to reduce the VMT, the number of vehicle trips, or traffic congestion, such as programs for improved public transit, designation of certain lanes for passenger buses and high-occupancy vehicles (HOVs), trip reduction ordinances, and the like.

The August 2012 guidance explains how states may demonstrate that the VMT emissions offset requirement is

satisfied in conformance with the Court's ruling. States are recommended to estimate emissions for the nonattainment area's base year and the attainment year. One emission inventory is developed for the base year, and three different emissions inventory scenarios are developed for the attainment year. For the attainment year, the state would present three emissions estimates, two of which would represent hypothetical emissions scenarios that would provide the basis to identify the "growth in emissions" due solely to the growth in VMT, and one that would represent projected actual motor vehicle emissions after fully accounting for projected VMT growth and offsetting emissions reductions obtained by all creditable TCSs and TCMs. See the August 2012 guidance for specific details on how states might conduct the calculations.

The base year on-road VOC emissions should be based on VMT in that year and it should reflect all enforceable TCSs and TCMs in place in the base year. This would include vehicle emissions standards, state and local control programs such as I/M programs or fuel rules, and any additional implemented TCSs and TCMs that were already required by or credited in the SIP as of that base year.

The first of the emissions calculations for the attainment year would be based on the projected VMT and trips for that year, and assume that no new TCSs or TCMs beyond those already credited in the base year inventory have been put in place since the base year. This calculation demonstrates how emissions would hypothetically change if no new TCSs or TCMs were implemented, and VMT and trips were allowed to grow at the projected rate from the base year. This estimate would show the potential for an increase in emissions due solely to growth in VMT and trips. This represents a "no action" taken scenario. Emissions in the attainment year in this scenario may be lower than those in the base year due to the fleet that was on the road in the base year gradually being replaced through fleet turnover; however, provided VMT and/or numbers of vehicle trips will in fact increase by the attainment year, they would still likely be higher than they would have been assuming VMT had held constant.

The second of the attainment year's emissions calculations would also assume that no new TCSs or TCMs beyond those already credited have been put in place since the base year, but would also assume that there was no growth in VMT and trips between the base year and attainment year. This

estimate reflects the hypothetical emissions level that would have occurred if no further TCMs or TCSs had been put in place and if VMT and trip levels had held constant since the base year. Like the "no action" attainment year estimate described above, emissions in the attainment year may be lower than those in the base year due to the fleet that was on the road in the base year gradually being replaced by cleaner vehicles through fleet turnover, but in this case they would not be influenced by any growth in VMT or trips. This emissions estimate would reflect a ceiling on the attainment emissions that should be allowed to occur under the statute as interpreted by the Court because it shows what would happen under a scenario in which no offsetting TCSs or TCMs have yet been put in place and VMT and trips are held constant during the period from the area's base year to its attainment year. This represents a "VMT offset ceiling" scenario. These two hypothetical status quo estimates are necessary steps in identifying the target level of emissions from which states would determine whether further TCMs or TCSs, beyond those that have been adopted and implemented in reality, would need to be adopted and implemented in order to fully offset any increase in emissions due solely to VMT and trips identified in the "no action" scenario.

Finally, the state would present the emissions that are actually expected to occur in the area's attainment year after taking into account reductions from all enforceable TCSs and TCMs that in reality were put in place after the baseline year. This estimate would be based on the VMT and trip levels expected to occur in the attainment year (i.e., the VMT and trip levels from the first estimate) and all of the TCSs and TCMs expected to be in place and for which the SIP will take credit in the area's attainment year, including any TCMs and TCSs put in place since the base year. This represents the "projected actual" attainment year scenario. If this emissions estimate is less than or equal to the emissions ceiling that was established in the second of the attainment year calculations, the TCSs or TCMs for the attainment year would be sufficient to fully offset the identified hypothetical growth in emissions.

If, instead, the estimated projected actual attainment year emissions are still greater than the ceiling which was established in the second of the attainment year emissions calculations, even after accounting for post-baseline year TCSs and TCMs, the state would need to adopt and implement additional TCSs or TCMs to further offset the

³² Memorandum from Karl Simon, Director, Transportation and Climate Division, Office of Transportation and Air Quality, to Carl Edland, Director, Multimedia Planning and Permitting Division, EPA Region 6, and Deborah Jordan, Director, Air Division, EPA Region 9, August 30, 2012.

growth in emissions and bring the actual emissions down to at least the “had VMT and trips held constant” ceiling estimated in the second of the attainment year calculations, in order to meet the VMT offset requirement of section 182(d)(1)(A) as interpreted by the Court.

2. Revised San Joaquin Valley VMT Emissions Offset Demonstrations

For the revised San Joaquin Valley VMT emissions offset demonstrations, the State used EMFAC2011, the latest EPA-approved motor vehicle emissions model for California. The EMFAC2011 model estimates the on-road emissions from two combustion processes (*i.e.*, running exhaust and start exhaust) and four evaporative processes (*i.e.*, hot soak, running losses, diurnal losses, and resting losses). The EMFAC2011 model combines trip-based VMT data from the eight San Joaquin Valley MPOs (*e.g.*, Council of Fresno County Governments), starts data based on household travel surveys, and vehicle population data from the California Department of Motor Vehicles. These sets of data are combined with corresponding emission rates to calculate emissions.

Emissions from running exhaust, start exhaust, hot soak, and running losses are a function of how much a vehicle is driven. As such, emissions from these processes are directly related to VMT and vehicle trips, and the State included emissions from them in the calculations that provide the basis for the revised San Joaquin Valley VMT emissions offset demonstrations. The State did not include emissions from resting loss and diurnal loss processes in the analysis because such emissions are related to vehicle population, not to VMT or vehicle trips, and thus are not part of “any growth in emissions from growth in vehicle miles traveled or numbers of

vehicle trips in such area” (emphasis added) under CAA section 182(d)(1)(A).

The revised San Joaquin Valley VMT emissions offset demonstrations address both the 1-hour ozone standard and the 1997 8-hour ozone standard and include two different “base year” scenarios: 1990, for the purposes of the VMT emissions offset demonstration for the 1-hour ozone standard, and 2002, for the purposes of the VMT emissions offset demonstration for the 1997 8-hour ozone standard. The “base year” for VMT emissions offset demonstration purposes should generally be the same “base year” used for nonattainment planning purposes. In 2012, the EPA approved the 2002 base year inventory for the San Joaquin Valley for the purposes of the 1997 8-hour ozone standard, 77 FR 12652, at 12670 (March 1, 2012), and thus, the State’s selection of 2002 as the base year for the revised San Joaquin Valley VMT emissions offset demonstration for the 1997 8-hour ozone standard is appropriate. With respect to the 1-hour ozone standard, the attainment demonstration in the 2013 Ozone Plan relies on a base year of 2007, rather than 1990; however, the State’s selection of 1990 as the base year for the VMT offset demonstration is appropriate because 1990 was used as the base year for 1-hour ozone SIP planning purposes under the CAA Amendments of 1990, which established, among other requirements, the VMT emissions offset requirement in section 182(d)(1)(A).

The demonstrations also include the previously described three different attainment year scenarios (*i.e.*, no action, VMT offset ceiling, and projected actual) but the attainment year differs between the two demonstrations. Year 2017 was selected as the attainment year for the revised VMT emissions offset demonstration for the 1-hour ozone standard, and year 2023 was selected as the attainment year for

the revised demonstration for the 1997 8-hour ozone standard. For the 1997 8-hour ozone standard, the State’s selection of 2023 is appropriate given that the approved San Joaquin Valley 1997 8-hour ozone plan demonstrates attainment by the applicable attainment date of June 15, 2024 based on the 2023 controlled emissions inventory. See 76 FR 57846, at 57856–57861 (September 16, 2011) and 77 FR 12652, at 12670 (March 1, 2012).

The San Joaquin Valley 2013 Ozone Plan, which includes the revised VMT emissions offset demonstrations in appendix D, provides a demonstration of attainment by 2017. The revised San Joaquin Valley 1-hour ozone attainment demonstration thus provides a demonstration of attainment of the 1-hour ozone standard in the San Joaquin Valley by 2017 based on the controlled 2017 emissions inventory. As described in section III.D of this document, the EPA is proposing to approve 2017 as the attainment year for the 1-hour ozone standard in the San Joaquin Valley.³³ Based on the proposed approval of 2017 as the attainment year for the San Joaquin Valley for the 1-hour ozone standard, we find CARB’s selection of year 2017 as the attainment year for the revised VMT emissions offset demonstration for the 1-hour ozone standard to be acceptable. For additional background and justification regarding the 2017 attainment year, please see section III.D in today’s notice.

Tables 4 and 5 summarize the relevant distinguishing parameters for each of the emissions scenarios and show the State’s corresponding VOC emissions estimates. Table 4 provides the parameters and emissions estimates for the revised VMT emissions offset demonstration for the 1-hour ozone standard, and table 5 provides the corresponding values for the revised demonstration for the 1997 8-hour ozone standard.

TABLE 4—VMT EMISSIONS OFFSET INVENTORY SCENARIOS AND RESULTS FOR 1-HOUR OZONE STANDARD

Scenario	VMT		Starts		Controls	VOC Emissions
	Year	1000/day	Year	1000/day	Year	tpd
Base Year	1990	52,199	1990	7,730	1990	196
No Action	2017	115,070	2017	17,133	1990	178
VMT Offset Ceiling	1990	52,199	1990	7,730	1990	81
Projected Actual	2017	115,070	2017	17,133	2017	30

Source: CARB’s Technical Supplement, April 24, 2014. 2017 VMT based on 2013 Federal Transportation Improvement Plans from the eight San Joaquin Valley MPOs.

³³ In this context, “attainment year” refers to the ozone season immediately preceding a nonattainment area’s attainment date. In the case of

the San Joaquin Valley for the 1-hour ozone standard, the proposed applicable attainment date is November 26, 2017, and the ozone season

immediately preceding that date will occur in year 2017.

TABLE 5—VMT EMISSIONS OFFSET INVENTORY SCENARIOS AND RESULTS FOR 1997 8-HOUR OZONE STANDARD

Scenario	VMT		Starts		Controls	VOC Emissions
	Year	1000/day	Year	1000/day	Year	tpd
Base Year	2002	78,400	2002	11,307	2002	76
No Action	2023	130,431	2023	19,466	2002	49
VMT Offset Ceiling	2002	78,400	2002	11,307	2002	28
Projected Actual	2023	130,431	2023	19,466	2023	24

Source: CARB's Technical Supplement, April 24, 2014. 2023 VMT based on 2013 Federal Transportation Improvement Plans from the eight San Joaquin Valley MPOs.

For the two “base year” scenarios, the State ran the EMFAC2011 model for the applicable base year (*i.e.*, 1990 for the 1-hour ozone standard and 2002 for the 1997 8-hour ozone standard) using VMT and starts data corresponding to those years. As shown in tables 5 and 6, the State estimates the San Joaquin Valley VOC emissions at 196 tpd in 1990 and 76 tpd in 2002.

For the two “no action” scenarios, the State first identified the on-road motor vehicle control programs (*i.e.*, TCSs or TCMs) put in place since the base years and incorporated into EMFAC2011 and then ran EMFAC2011 with the VMT and starts data corresponding to the applicable attainment year (*i.e.*, 2017 for the 1-hour ozone standard and 2023 for the 1997 8-hour ozone standard) without the emissions reductions from the on-road motor vehicle control programs put in place after the base year. Thus, the “no action” scenarios reflect the hypothetical VOC emissions that would occur in the attainment years in the San Joaquin Valley if the State had not put in place any additional TCSs or TCMs after 1990 (for the 1-hour ozone VMT emissions offset demonstration) or after 2002 (for the 8-hour ozone demonstration). As shown in tables 5 and 6, the State estimates the “no action” San Joaquin Valley VOC emissions at 178 tpd in 2017 and 49 tpd in 2023. The principal difference between the two estimates is that the latter value (used for the revised VMT emissions offset demonstration for the 8-hour ozone standard) reflects the emissions reductions from TCSs and TCMs put in place by the end of 2002 whereas the former value (used for the revised demonstration for the 1-hour ozone standard) reflects only the emissions reductions from TCSs and TCMs put in place by the end of 1990. The most significant of the measures adopted since 1990 and relied upon for the 1-hour ozone VMT emissions offset demonstration include tiered (series of increasingly stringent limits) emissions standards for new motor vehicles (*i.e.*, Low Emissions Vehicles I, II, and III

standards), content specifications for gasoline (*i.e.*, California Reformulated Gasoline Phases 1, 2, and 3), and enhancements to the State's I/M program (*i.e.*, Smog Check II). See attachments A and B to appendix D of the 2013 Ozone Plan for lists of TCSs and TCMs adopted by the State and MPOs since 1990.³⁴

For the “VMT offset ceiling” scenarios, the State ran the EMFAC2011 model for the attainment years but with VMT and starts data corresponding to base year values. Like the “no action” scenarios, the EMFAC2011 model was adjusted to reflect the VOC emissions levels in the attainment years without the benefits of the post-base-year on-road motor vehicle control programs. Thus, the “VMT offset ceiling” scenarios reflect hypothetical VOC emissions in the San Joaquin Valley if the State had not put in place any TCSs or TCMs after the base years and if there had been no growth in VMT or vehicle trips between the base years and the attainment years.

The hypothetical growth in emissions due to growth in VMT and trips can be determined from the difference between the VOC emissions estimates under the “no action” scenarios and the corresponding estimates under the “VMT offset ceiling” scenarios. Based on the values in tables 5 and 6, the hypothetical growth in emissions due to growth in VMT and trips in the San Joaquin Valley would have been 97 tpd (*i.e.*, 178 tpd minus 81 tpd) for the purposes of the revised VMT emissions offset demonstration for the 1-hour ozone standard, and 21 tpd (*i.e.*, 49 tpd minus 28 tpd) for the purposes of the corresponding demonstration for the 8-hour ozone standard. These hypothetical differences establish the levels of VMT growth-caused emissions that need to be offset by the combination of post-baseline year TCMs

and TCSs and any necessary additional TCMs and TCSs.

For the “projected actual” scenario calculations, the State ran the EMFAC2011 model for the attainment years with VMT and starts data at attainment year values and with the full benefits of the relevant post-baseline year motor vehicle control programs. For this scenario, the State included the emissions benefits from TCSs and TCMs put in place since the base year. The most significant measures put in place during the 2002 to 2023 time frame include Low Emission Vehicles II and III standards, Zero Emissions Vehicle standards, and California Reformulated Gasoline Phase 3. These measures are also relied upon for the revised 1-hour ozone attainment demonstration (proposed for approval herein) and the approved 8-hour ozone attainment demonstration.

As shown in tables 5 and 6, the results from these calculations establish projected actual attainment-year VOC emissions of 30 tpd for the 1-hour standard demonstration and 24 tpd for the 1997 8-hour standard demonstration. The State then compared these values against the corresponding VMT offset ceiling values to determine whether additional TCMs or TCSs would need to be adopted and implemented in order to offset any increase in emissions due solely to VMT and trips. Because the “projected actual” emissions are less than the corresponding “VMT Offset Ceiling” emissions, the State concluded that the demonstration shows compliance with the VMT emissions offset requirement and that there are sufficient adopted TCSs and TCMs to offset the growth in emissions from the growth in VMT and vehicle trips in the San Joaquin Valley for both the 1-hour and 1997 8-hour standards. In fact, taking into account of the creditable post-baseline year TCMs and TCSs, the State showed that they offset the hypothetical differences by 148 tpd for the 1-hour standard and by 25 tpd for the 1997 8-hour standards,

³⁴ The docket for today's action includes an updated list of the post-1990 transportation control strategies in attachment A of appendix D to the 2013 Ozone Plan.

rather than merely the required 97 tpd and 21 tpd, respectively.³⁵

3. Proposed Action on the VMT Emissions Offset Demonstrations

Based on our review of revised San Joaquin Valley VMT emissions offset demonstrations in appendix D of the 2013 Ozone Plan and the related technical supplement, we find the State's analysis to be acceptable and agree that the State has adopted sufficient TCSs and TCMs to offset the growth in emissions from growth in VMT and vehicle trips in the San Joaquin Valley for the purposes of the 1-hour ozone and 1997 8-hour ozone standards. As such, we find that the revised San Joaquin Valley VMT emissions offset demonstrations comply with the VMT emissions offset requirement in CAA section 182(d)(1)(A). Therefore, we propose approval of the revised San Joaquin Valley VMT emissions offset demonstrations for the 1-hour ozone and 1997 8-hour ozone standards as a revision to the California SIP.

IV. Proposed Action

For the reasons discussed above, the EPA is proposing to approve, under CAA section 110(k)(3), CARB's submittal dated December 20, 2013 of the San Joaquin Valley 2013 Ozone Plan as a revision to the California SIP.³⁶ In so doing, the EPA is proposing to approve the following elements of the plan as meeting the specified requirements for the revoked 1-hour ozone standard:

- RACM demonstration as meeting the requirements of CAA section 172(c)(1) and 40 CFR 51.1105(a)(1) and 51.1100(o)(17);
- ROP demonstrations as meeting the requirements of CAA section 172(c)(2) and 182(c)(2)(B), and 40 CFR 51.1105(a)(1) and 51.1100(o)(4);

³⁵ The offsetting VOC emissions reductions from the TCSs and TCMs put in place after the respective base year can be determined by subtracting the "projected actual" emissions estimates from the "no action" emissions estimates in tables 5 and 6. For the purposes of the 1-hour ozone demonstration, the offsetting emissions reductions, 148 tpd (178 tpd minus 30 tpd), exceed the growth in emissions from growth in VMT and vehicle trips (97 tpd). For the purposes of the 8-hour ozone demonstration, the offsetting emissions reductions, 25 tpd (49 tpd minus 24 tpd), exceed the growth in emissions from growth in VMT and vehicle trips (21 tpd).

³⁶ In our final action, we also intend to remove a certain paragraph from the "Identification of Plan" section of 40 CFR part 52 for the State of California. In withdrawing our approval of the 2004 Ozone Plan, as revised and clarified, 77 FR 70376 (November 26, 2012), we inadvertently failed to remove 40 CFR 52.220(c)(371) which codified our March 8, 2010 final approval of the "2008 Clarifications" for the 2004 San Joaquin Valley (1-hour ozone) plan.

- Attainment demonstration as meeting the requirements of CAA section 182(c)(2)(A), and 40 CFR 51.1105(a)(1) and 51.1100(o)(12);
- ROP contingency measures as meeting the requirements of CAA sections 182(c)(9) and 40 CFR 51.1105(a)(1) and 51.1100(o)(13); and
- Provisions for clean fuels or advanced control technology for boilers as meeting the requirements of CAA section 182(e)(3) and 40 CFR 51.1105(a)(1) and 51.1100(o)(6).

The EPA is also proposing to approve the 2013 Ozone Plan as meeting the specified requirements for the revoked 1-hour ozone standard and the revoked 1997 8-hour ozone standard:

- VMT emissions offset demonstrations as meeting the requirements of CAA section 182(d)(1)(A) and 40 CFR 51.1105(a)(1) and 51.1100(o)(10).

The EPA is soliciting public comments on the issues discussed in this document or on other relevant matters. We will accept comments from the public on this proposal for the next 30 days. We will consider these comments before taking final action.

V. Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, the EPA's role is to approve State choices, provided that they meet the criteria of the CAA. Accordingly, this action merely proposes to approve a state plan as meeting Federal requirements and does not impose additional requirements beyond those imposed by State law. For that reason, this proposed action:

- Is not a "significant regulatory action" subject to review by the Office of Management and Budget under Executive Order 12866 (58 FR 51735, October 4, 1993);
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4);
- Does not have Federalism implications as specified in Executive

Order 13132 (64 FR 43255, August 10, 1999);

- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the CAA; and
- Does not provide the EPA with the discretionary authority to address disproportionate human health or environmental effects with practical, appropriate, and legally permissible methods under Executive Order 12898 (59 FR 7629, February 16, 1994).

Executive Order 13175, entitled "Consultation and Coordination with Indian Tribal Governments" (65 FR 67249, November 9, 2000), requires the EPA to develop an accountable process to ensure "meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications." "Policies that have Tribal implications" is defined in the Executive Order to include regulations that have "substantial direct effects on one or more Indian tribes, on the relationship between the Federal government and the Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian Tribes."

Eight Indian tribes are located within the boundaries of the San Joaquin Valley air quality planning area for the 1-hour ozone and 1997 8-hours ozone standards: The Big Sandy Rancheria of Mono Indians of California, the Cold Springs Rancheria of Mono Indians of California, the North Fork Rancheria of Mono Indians of California, the Picayune Rancheria of Chukchansi Indians of California, the Santa Rosa Rancheria of the Tachi Yokut Tribe, the Table Mountain Rancheria of California, the Tejon Indian Tribe, and the Tule River Indian Tribe of the Tule River Reservation.

The EPA's proposed approval of the various SIP elements submitted by CARB to address the 1-hour ozone and 1997 8-hours ozone standards in the San Joaquin Valley would not have tribal implications because the SIP is not approved to apply on any Indian reservation land or in any other area where the EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the proposed SIP approvals do not have tribal implications and will not

impose substantial direct costs on tribal governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000). Therefore, the EPA has concluded that the proposed action will not have tribal implications for the purposes of Executive Order 13175, and would not impose substantial direct costs upon the tribes, nor would it preempt Tribal law. We note that none of the tribes located in the San Joaquin Valley has requested eligibility to administer programs under the CAA.

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental regulations, Nitrogen dioxide, Ozone, Reporting and recordkeeping requirements, Volatile organic compounds.

Authority: 42 U.S.C. 7401 *et seq.*

Dated: December 24, 2015.

Alexis Strauss,

Acting Regional Administrator, EPA Region 9.

[FR Doc. 2016-00089 Filed 1-14-16; 8:45 am]

BILLING CODE 6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 52 and 70

[EPA-R07-OAR-2015-0790; FRL-9941-02-Region 7]

Approval of Missouri's Air Quality Implementation Plans; Reporting Emission Data, Emission Fees and Process Information

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) proposes to approve revisions to the Operating Permits Program for the State of Missouri submitted on March 16, 2015. These

revisions update the emissions fee for permitted sources as set by Missouri Statute from \$40 to \$48 per ton of air pollution emitted annually, effective January 1, 2016.

DATES: Comments on this proposed action must be received in writing by February 16, 2016.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-R07-OAR-2015-0790, to <http://www.regulations.gov>. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from Regulations.gov. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.* on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www2.epa.gov/dockets/commenting-epa-dockets>.

FOR FURTHER INFORMATION CONTACT:

Stephen Krabbe, Environmental Protection Agency, Air Planning and Development Branch, 11201 Renner Boulevard, Lenexa, Kansas 66219 at 913-551-7991, or by email at krabbe.stephen@epa.gov.

SUPPLEMENTARY INFORMATION: In the final rules section of this **Federal Register**, EPA is approving the state's Title V revision to 10 C.S.R. 10-6.110 "Reporting Emission Data, Emission Fees, and Process Information" as a

direct final rule without prior proposal because the Agency views this as a noncontroversial revision amendment and anticipates no relevant adverse comments to this action. A detailed rationale for the approval is set forth in the direct final rule. If no relevant adverse comments are received in response to this action, no further activity is contemplated in relation to this action. If EPA receives relevant adverse comments, the direct final rule will be withdrawn and all public comments received will be addressed in a subsequent final rule based on this proposed action. EPA will not institute a second comment period on this action. Any parties interested in commenting on this action should do so at this time. Please note that if EPA receives adverse comment on part of this rule and if that part can be severed from the remainder of the rule, EPA may adopt as final those parts of the rule that are not the subject of an adverse comment. For additional information, see the direct final rule which is located in the rules section of this **Federal Register**.

List of Subjects

40 CFR Part 52

Environmental protection, Air pollution control, Carbon monoxide, Incorporation by reference, Intergovernmental relations, Lead, Nitrogen dioxide, Ozone, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides, Volatile organic compounds.

40 CFR Part 70

Administrative practice and procedure, Air pollution control, Intergovernmental relations, Operating permits, Reporting and recordkeeping requirements.

Dated: December 23, 2015.

Mark Hague,

Regional Administrator, Region 7.

[FR Doc. 2016-00190 Filed 1-14-16; 8:45 am]

BILLING CODE 6560-50-P

Notices

Federal Register

Vol. 81, No. 10

Friday, January 15, 2016

This section of the FEDERAL REGISTER contains documents other than rules or proposed rules that are applicable to the public. Notices of hearings and investigations, committee meetings, agency decisions and rulings, delegations of authority, filing of petitions and applications and agency statements of organization and functions are examples of documents appearing in this section.

COMMISSION ON CIVIL RIGHTS

Notice of Public Meeting of the Indiana Advisory Committee To Begin Planning a Series of Public Hearings To Study Civil Rights and the School to Prison Pipeline in Indiana

AGENCY: U.S. Commission on Civil Rights.

ACTION: Announcement of meeting.

SUMMARY: Notice is hereby given, pursuant to the provisions of the rules and regulations of the U.S. Commission on Civil Rights (Commission) and the Federal Advisory Committee Act that the Indiana Advisory Committee (Committee) will hold a meeting on Wednesday, February 03, 2016, from 11:00 a.m.–12:00 p.m. EST for the purpose of reviewing testimony received during their January 20, 2016 Web hearing, and finalizing preparations for their February 17, 2016 hearing on Civil Rights and the School to Prison Pipeline in Indiana.

Members of the public may listen to the discussion. This meeting is available to the public through the following toll-free call-in number: 888-437-9445 conference ID: 3383741. Any interested member of the public may call this number and listen to the meeting. The conference call operator will ask callers to identify themselves, the organization they are affiliated with (if any), and an email address prior to placing callers into the conference room. Callers can expect to incur regular charges for calls they initiate over wireless lines, according to their wireless plan. The Commission will not refund any incurred charges. Callers will incur no charge for calls they initiate over land-line connections to the toll-free telephone number. Persons with hearing impairments may also follow the proceedings by first calling the Federal Relay Service at 1-800-977-8339 and providing the Service with the

conference call number and conference ID number.

Members of the public are also invited to make statements during the open comment period at the end of the meeting. In addition, members of the public may submit written comments; the comments must be received in the regional office within 30 days after the meeting. Written comments may be mailed to the Regional Programs Unit, U.S. Commission on Civil Rights, 55 W. Monroe St., Suite 410, Chicago, IL 60615. They may also be faxed to the Commission at (312) 353-8324, or emailed to Administrative Assistant, Carolyn Allen at callen@usccr.gov. Persons who desire additional information may contact the Regional Programs Unit at (312) 353-8311.

Records and documents discussed during the meeting will be available for public viewing prior to and following the meeting at <https://database.faca.gov/committee/meetings.aspx?cid=247> and following the links for “Meeting Details” and then “Documents.” Records generated from this meeting may also be inspected and reproduced at the Regional Programs Unit, as they become available, both before and after the meeting. Persons interested in the work of this Committee are directed to the Commission’s Web site, <http://www.usccr.gov>, or may contact the Regional Programs Unit at the above email or street address.

Agenda

1. Welcome and Roll Call
2. Debriefing and Review of January 20 Web Hearing
3. Preparatory Discussion and Review Regarding Public Hearing “Civil Rights and the School to Prison Pipeline in Indiana”
 - a. Agenda of Panelists
 - b. Location
 - c. Date and Time
 - d. Schedule of Events
 - e. Other logistics
4. Open Comment
5. Adjournment

DATES: The meeting will be held on Wednesday February 3, 2016, from 11:00 a.m.–12:00 p.m. EST.

Public Call Information:

Dial: 888-437-9445
Conference ID: 3383741

FOR FURTHER INFORMATION CONTACT: Melissa Wojnaroski, DFO, at 312-353-8311 or mwojnaroski@usccr.gov.

Dated: January 11, 2016.

David Mussatt,

Chief, Regional Programs Unit.

[FR Doc. 2016-00688 Filed 1-14-16; 8:45 am]

BILLING CODE 6335-01-P

DEPARTMENT OF COMMERCE

Bureau of Industry and Security

Proposed Information Collection; Request

AGENCY: Bureau of Industry and Security.

ACTION: Notice.

SUMMARY: In compliance with the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*), this document announces that the Bureau of Industry and Security (BIS), Department of Commerce, will submit for the Office of Management and Budget (OMB) review, a request for an emergency extension of currently approved Information collection requests which will expire on January 31, 2016. The extension is being sought to evaluate the need for and scope of the existing instruments. The Agency expects that OMB will approve these emergency extensions by January 31, 2016 and approve any revised instruments (after appropriate notice and public comment periods).

FOR FURTHER INFORMATION CONTACT:

Requests for additional information or copies of the information collection instrument and instructions should be directed to Mark Crace, BIS ICB Liaison, (202) 482-8093, mark.crace@bis.doc.gov.

SUPPLEMENTARY INFORMATION:

I. Abstract

Over the years, BIS has worked with other Government agencies and the affected public to identify areas where export licensing requirements may be relaxed without jeopardizing U.S. national security or foreign policy. Many of these relaxations have taken the form of licensing exceptions and exclusions. Some of these license exceptions and exclusions have a reporting or recordkeeping requirement to enable the Government to continue to monitor exports of these items. Exporters may choose to utilize the license exception and accept the reporting or recordkeeping burden in lieu of submitting a license application.

II. Method of Collection

Electronic Information on Individual ICRs for Which an Emergency Extension Is Requested:

Title of Collections:

1. Simple Network Application Process and Multi-purpose Application Form.

2. Offsets in Military Exports.

3. Licensing Exemptions and Exclusions.

III. Data

1. Simple Network Application Process and Multi-purpose Application Form.

OMB Control Number: 0694–0088.

Form Number: None.

Type of Review: Extension of a currently approved information collection.

Affected Public: Non-profit institutions; State, local, or tribal government; business or other for-profit organizations.

Estimated Number of Respondents: 64,612.

Estimated Time per Response: 0.49 hours.

Estimated Total Annual Burden Hours: 31,833.

Estimated Total Annual Cost to Public: \$0.

2. Offsets in Military Exports.

OMB Control Number: 0694–0084.

Form Number: None.

Type of Review: Extension of a currently approved information collection.

Affected Public: Business or other for-profit organizations.

Estimated Number of Respondents: 30.

Estimated Time per Response: 12 hours.

Estimated Total Annual Burden Hours: 360 hours.

Estimated Total Annual Cost to Public: \$0.

3. License Exemptions and Exclusions.

OMB Control Number: 0694–0137.

Form Number: None.

Type of Review: Extension of a currently approved information collection.

Affected Public: Non-profit institutions; State, local, or tribal government; business or other for-profit organizations.

Estimated Number of Respondents: 19,738.

Estimated Time per Response: 1.52 hours.

Estimated Total Annual Burden Hours: 29,998.

Estimated Total Annual Cost to Public: \$0.

Dated: January 12, 2016.

Glenna Mickelson,

Management Analyst, Office of the Chief Information Officer.

[FR Doc. 2016–00718 Filed 1–14–16; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

Bureau of Industry and Security

Order Renewing Order Temporarily Denying Export Privileges

Mahan Airways, Mahan Tower, No. 21, Azadegan St., M.A. Jenah Exp. Way, Tehran, Iran;

Pejman Mahmood Kosarayanifard, a/k/a Kosarian Fard, P.O. Box 52404, Dubai, United Arab Emirates;

Mahmoud Amini, G#22 Dubai Airport Free Zone, P.O. Box 393754, Dubai, United Arab Emirates and P.O. Box 52404, Dubai, United Arab Emirates and Mohamed Abdulla Alqaz Building, Al Maktoum Street, Al Rigga, Dubai, United Arab Emirates;

Kerman Aviation, a/k/a GIE Kerman Aviation, 42 Avenue Montaigne 75008, Paris, France;

Sirjanco Trading LLC, P.O. Box 8709, Dubai, United Arab Emirates;

Ali Eslamian, 33 Cavendish Square, 4th Floor, London, W1G0PW, United Kingdom and 2 Bentinck Close, Prince Albert Road St. Johns Wood, London NW87RY, United Kingdom;

Mahan Air General Trading LLC, 19th Floor Al Moosa Tower One, Sheik Zayed Road, Dubai 40594, United Arab Emirates; Skyco (UK, Ltd., 33 Cavendish Square, 4th Floor, London, W1G 0PV, United Kingdom;

Equipco (UK, Ltd., 2 Bentinck Close, Prince Albert Road, London, NW8 7RY, United Kingdom;

Mehdi Bahrami, Mahan Airways—Istanbul Office, Cumhuriye Cad. Sibil Apt No: 101 D:6, 34374 Emadad, Sisli Istanbul, Turkey;

Al Naser Airlines, a/k/a al-Naser Airlines, a/k/a Alnaser Airlines and Air Freight Ltd., Home 46, Al-Karrada, Babil Region, District 929, St 21, Beside Al Jadrya Private Hospital, Baghdad, Iraq and Al Amirat Street, Section 309, St. 3/H.20, Al Mansour, Baghdad, Iraq and P.O. Box 28360, Dubai, United Arab Emirates and P.O. Box 911399, Amman 11191, Jordan; Ali Abdullah Alhay, a/k/a Ali Alhay, a/k/a Ali Abdullah Ahmed Alhay, Home 46, Al-Karrada, Babil Region, District 929, St 21, Beside Al Jadrya Private Hospital, Baghdad, Iraq and Anak Street, Qatif, Saudi Arabia 61177;

Bahar Safwa General Trading, P.O. Box 113212, Citadel Tower, Floor-5, Office #504, Business Bay, Dubai, United Arab Emirates and P.O. Box 8709, Citadel Tower, Business Bay, Dubai, United Arab Emirates;

Sky Blue Bird Group, a/k/a Sky Blue Bird Aviation, a/k/a Sky Blue Bird Ltd, a/k/a Sky Blue Bird FZC, P.O. Box 16111, Ras Al

Khaimah Trade Zone, United Arab Emirates;

Issam Shammout, a/k/a Muhammad Isam Muhammad, Anwar Nur Shammout, a/k/a Issam Anwar, Philips Building, 4th Floor, Al Fardous Street, Damascus, Syria and Al Kolaa, Beirut, Lebanon 151515 and 17–18 Margaret Street, 4th Floor, London, W1W 8RP, United Kingdom and Cumhuriyet Mah. Kavakli San St. Fulya, Cad. Hazer Sok. No.14/A Silivri, Istanbul, Turkey.

Pursuant to Section 766.24 of the Export Administration Regulations, 15 CFR parts 730–774 (2015) (“EAR” or the “Regulations”),¹ I hereby grant the request of the Office of Export Enforcement (“OEE”) to renew the July 13, 2015 Temporary Denial Order (the “TDO”). The July 13, 2015 Order denied the export privileges of Mahan Airways, Pejman Mahmood Kosarayanifard, Mahmoud Amini, Kerman Aviation, Sirjanco Trading LLC, Ali Eslamian, Mahan Air General Trading LLC, Skyco (UK) Ltd., Equipco (UK) Ltd., Mehdi Bahrami, Al Naser Airlines, Ali Abdullah Alhay, Bahar Safwa General Trading, Sky Blue Bird Group, and Issam Shammout.² I find that renewal of the TDO is necessary in the public interest to prevent an imminent violation of the EAR.

I. Procedural History

On March 17, 2008, Darryl W. Jackson, the then-Assistant Secretary of Commerce for Export Enforcement (“Assistant Secretary”), signed a TDO denying Mahan Airways’ export privileges for a period of 180 days on the grounds that its issuance was necessary in the public interest to prevent an imminent violation of the Regulations. The TDO also named as denied persons Blue Airways, of Yerevan, Armenia (“Blue Airways of Armenia”), as well as the “Balli Group Respondents,” namely, Balli Group PLC, Balli Aviation, Balli Holdings, Vahid Alaghband, Hassan Alaghband, Blue Sky One Ltd., Blue Sky Two Ltd., Blue Sky Three Ltd., Blue Sky Four Ltd., Blue Sky Five Ltd., and Blue Sky Six Ltd., all of the United Kingdom. The TDO was issued *ex parte* pursuant to Section 766.24(a), and went into effect on March 21, 2008, the date it was published in the **Federal Register**.

¹ The Regulations, currently codified at 15 CFR parts 730–774 (2015), originally issued pursuant to the Export Administration Act of 1979. Since August 21, 2001, the Act has been in lapse and the President, through Executive Order 13222 of August 17, 2001 (3 CFR, 2001 Comp. 783 (2002)), which has been extended by successive Presidential Notices, the most recent being that of August 7, 2015 (80 FR 48,223 (Aug. 11, 2015)), has continued the Regulations in effect under the International Emergency Economic Powers Act (50 U.S.C. 1701, *et seq.* (2006 & Supp. IV 2010)).

² See note 3, *infra*.

The TDO subsequently has been renewed in accordance with Section 766.24(d), including most recently on July 13, 2015.³ As of March 9, 2010, the Balli Group Respondents and Blue Airways were no longer subject to the TDO. As part of the February 25, 2011 TDO renewal, Gatewick LLC (a/k/a Gatewick Freight and Cargo Services, a/k/a Gatewick Aviation Services), Mahmoud Amini, and Pejman Mahmood Kosarayanifard (“Kosarian Fard”) were added as related persons in accordance with Section 766.23 of the Regulations.⁴ On July 1, 2011, the TDO was modified by adding Zarand Aviation as a respondent in order to prevent an imminent violation.⁵ As part of the August 24, 2011 renewal, Kerman Aviation, Sirjanco Trading LLC, and Ali Eslamian were added to the TDO as related persons. Mahan Air General Trading LLC, Skyco (UK) Ltd., and Equipco (UK) Ltd. were added as related persons on April 9, 2012. Mehdi Bahrami was added to the TDO as a related person as part of the February 4, 2013 renewal order.

On May 21, 2015, the TDO was modified to add Al Naser Airlines, Ali Abdullah Alhay, and Bahar Safwa General Trading as respondents. Sky Blue Bird Group and its chief executive officer Issam Shammout were added to the TDO as related persons as part of the July 13, 2015 renewal order.⁶

³ The July 13, 2015 Order was published in the *Federal Register* on July 28, 2015 (80 Fed Reg. 44,930, Jul. 28, 2015). The TDO previously had been renewed on September 17, 2008, March 16, 2009, September 11, 2009, March 9, 2010, September 3, 2010, February 25, 2011, August 24, 2011, February 15, 2012, August 9, 2012, February 4, 2013, July 31, 2013, January 24, 2014, July 22, 2014, and January 16, 2015. The August 24, 2011 renewal followed the modification of the TDO on July 1, 2011, which added Zarand Aviation as a respondent. The July 13, 2015 renewal followed the modification of the TDO on May 21, 2015, which added Al Naser Airlines, Ali Abdullah Alhay, and Bahar Safwa General Trading as respondents. Each renewal or modification order was published in the *Federal Register*.

⁴ On August 13, 2014, BIS and Gatewick LLC resolved administrative charges against Gatewick, including a charge for acting contrary to the terms of a BIS denial order (15 CFR 764.2(k)). In addition to the payment of a civil penalty, the settlement includes a seven-year denial order. The first two years of the denial period are active, with the remaining five years suspended on condition that Gatewick LLC pays the civil penalty in full and timely fashion and commits no further violation of the Regulations during the seven-year denial period. The Gatewick LLC Final Order was published in the *Federal Register* on August 20, 2014. See 79 FR 49283 (Aug. 20, 2014).

⁵ As of July 22, 2014, Zarand Aviation was no longer subject to the TDO.

⁶ The U.S. Department of the Treasury’s Office of Foreign Assets Control (“OFAC”) designated Sky Blue Bird and Issam Shammout as Specially Designated Global Terrorists (“SDGTs”) on May 21, 2015, pursuant to Executive Order 13324, for “providing support to Iran’s Mahan Air.” See 80 FR 30762 (May 29, 2015).

On December 18, 2015, BIS, through its Office of Export Enforcement (“OEE”), submitted a written request for renewal of the TDO. The written request was made more than 20 days before the scheduled expiration of the current TDO, which issued on July 13, 2015.⁷ Notice of the renewal request also was provided to Mahan Airways, Al Naser Airlines, Ali Abdullah Alhay, and Bahar Safwa General Trading in accordance with Sections 766.5 and 766.24(d) of the Regulations. No opposition to the renewal of the TDO has been received. Furthermore, no appeal of the related person determinations I made as part of the September 3, 2010, February 25, 2011, August 24, 2011, April 9, 2012, February 4, 2013, and July 13, 2015 renewal or modification orders has been made by Kosarian Fard, Mahmoud Amini, Kerman Aviation, Sirjanco Trading LLC, Ali Eslamian, Mahan Air General Trading LLC, Skyco (UK) Ltd., Equipco (UK) Ltd., Mehdi Bahrami, Sky Blue Bird Group, or Issam Shammout.⁸

II. Renewal of the TDO

A. Legal Standard

Pursuant to Section 766.24, BIS may issue or renew an order temporarily denying a respondent’s export privileges upon a showing that the order is necessary in the public interest to prevent an “imminent violation” of the Regulations. 15 CFR 766.24(b)(1) and 766.24(d). “A violation may be ‘imminent’ either in time or degree of likelihood.” 15 CFR 766.24(b)(3). BIS may show “either that a violation is about to occur, or that the general circumstances of the matter under investigation or case under criminal or administrative charges demonstrate a likelihood of future violations.” *Id.* As to the likelihood of future violations, BIS may show that the violation under investigation or charge “is significant, deliberate, covert and/or likely to occur again, rather than technical or negligent [.]” *Id.* A “lack of information establishing the precise time a violation may occur does not preclude a finding that a violation is imminent, so long as there is sufficient reason to believe the likelihood of a violation.” *Id.*

B. The TDO and BIS’s Request for Renewal

OEE’s request for renewal is based upon the facts underlying the issuance

⁷ The May 21, 2015 modification order did not affect the expiration date of the January 16, 2015 Order.

⁸ A party named or added as a related person may not oppose the issuance or renewal of the underlying temporary denial order, but may file an appeal of the related person determination in accordance with Section 766.23(c).

of the initial TDO and the TDO renewals in this matter and the evidence developed over the course of this investigation indicating a blatant disregard of U.S. export controls and the TDO. The initial TDO was issued as a result of evidence that showed that Mahan Airways and other parties engaged in conduct prohibited by the EAR by knowingly re-exporting to Iran three U.S.-origin aircraft, specifically Boeing 747s (“Aircraft 1–3”), items subject to the EAR and classified under Export Control Classification Number (“ECCN”) 9A991.b, without the required U.S. Government authorization. Further evidence submitted by BIS indicated that Mahan Airways was involved in the attempted re-export of three additional U.S.-origin Boeing 747s (“Aircraft 4–6”) to Iran.

As discussed in the September 17, 2008 renewal order, evidence presented by BIS indicated that Aircraft 1–3 continued to be flown on Mahan Airways’ routes after issuance of the TDO, in violation of the Regulations and the TDO itself.⁹ It also showed that Aircraft 1–3 had been flown in further violation of the Regulations and the TDO on the routes of Iran Air, an Iranian Government airline. Moreover, as discussed in the March 16, 2009, September 11, 2009 and March 9, 2010 Renewal Orders, Mahan Airways registered Aircraft 1–3 in Iran, obtained Iranian tail numbers for them (EP–MNA, EP–MNB, and EP–MNE, respectively), and continued to operate at least two of them in violation of the Regulations and the TDO,¹⁰ while also committing an additional knowing and willful violation when it negotiated for and acquired an additional U.S.-origin aircraft. The additional acquired aircraft was an MD–82 aircraft, which subsequently was painted in Mahan Airways’ livery and flown on multiple Mahan Airways’ routes under tail number TC–TUA.

The March 9, 2010 Renewal Order also noted that a court in the United Kingdom (“U.K.”) had found Mahan Airways in contempt of court on February 1, 2010, for failing to comply with that court’s December 21, 2009 and January 12, 2010 orders compelling Mahan Airways to remove the Boeing 747s from Iran and ground them in the Netherlands. Mahan Airways and the Balli Group Respondents had been litigating before the U.K. court

⁹ Engaging in conduct prohibited by a denial order violates the Regulations. 15 CFR 764.2(a) and (k).

¹⁰ The third Boeing 747 appeared to have undergone significant service maintenance and may not have been operational at the time of the March 9, 2010 renewal order.

concerning ownership and control of Aircraft 1–3. In a letter to the U.K. court dated January 12, 2010, Mahan Airways' Chairman indicated, *inter alia*, that Mahan Airways opposes U.S.

Government actions against Iran, that it continued to operate the aircraft on its routes in and out of Tehran (and had 158,000 “forward bookings” for these aircraft), and that it wished to continue to do so and would pay damages if required by that court, rather than ground the aircraft.

The September 3, 2010 renewal order discussed the fact that Mahan Airways' violations of the TDO extended beyond operating U.S.-origin aircraft and attempting to acquire additional U.S.-origin aircraft. In February 2009, while subject to the TDO, Mahan Airways participated in the export of computer motherboards, items subject to the Regulations and designated as EAR99, from the United States to Iran, via the United Arab Emirates (“UAE”), in violation of both the TDO and the Regulations, by transporting and/or forwarding the computer motherboards from the UAE to Iran. Mahan Airways' violations were facilitated by Gatewick LLC, which not only participated in the transaction, but also has stated to BIS that it acted as Mahan Airways' sole booking agent for cargo and freight forwarding services in the UAE.

Moreover, in a January 24, 2011 filing in the U.K. court, Mahan Airways asserted that Aircraft 1–3 were not being used, but stated in pertinent part that the aircraft were being maintained in Iran especially “in an airworthy condition” and that, depending on the outcome of its U.K. court appeal, the aircraft “could immediately go back into service . . . on international routes into and out of Iran.” Mahan Airways' January 24, 2011 submission to U.K. Court of Appeal, at p. 25, ¶¶ 108, 110. This clearly stated intent, both on its own and in conjunction with Mahan Airways' prior misconduct and statements, demonstrated the need to renew the TDO in order to prevent imminent future violations. Two of these three 747s subsequently were removed from Iran and are no longer in Mahan Airways' possession. The third of these 747s, with Manufacturer's Serial Number (“MSN”) 23480 and Iranian tail number EP–MNE, remained in Iran under Mahan's control. Pursuant to Executive Order 13324, it was designated a Specially Designated Global Terrorist (“SDGT”) by the U.S. Department of the Treasury's Office of Foreign Assets Control (“OFAC”) on

September 19, 2012.¹¹ Furthermore, as discussed in the February 4, 2013 Order, open source information indicated that this 747, painted in the livery and logo of Mahan Airways, had been flown between Iran and Syria, and was suspected of ferrying weapons and/or other equipment to the Syrian Government from Iran's Islamic Revolutionary Guard Corps. Open source information showed that this aircraft had flown from Iran to Syria as recently as June 30, 2013, and continues to show that it remains in active operation in Mahan Airways' fleet.

In addition, as first detailed in the July 1, 2011 and August 24, 2011 orders, and discussed in subsequent renewal orders in this matter, Mahan Airways also continued to evade U.S. export control laws by operating two Airbus A310 aircraft, bearing Mahan Airways' livery and logo, on flights into and out of Iran.¹² At the time of the July 1, 2011 and August 24, 2011 Orders, these Airbus A310s were registered in France, with tail numbers F–OJHH and F–OJHI, respectively.¹³

The August 2012 renewal order also found that Mahan Airways had acquired another Airbus A310 aircraft subject to the Regulations, with MSN 499 and Iranian tail number EP–VIP, in violation of the TDO and the Regulations.¹⁴ On September 19, 2012, all three Airbus A310 aircraft (tail numbers F–OJHH, F–OJHI, and EP–VIP) were designated as SDGTs.¹⁵

The February 4, 2013 Order laid out further evidence of continued and additional efforts by Mahan Airways

and other persons acting in concert with Mahan, including Kral Aviation and another Turkish company, to procure U.S.-origin engines—two GE CF6–50C2 engines, with MSNs 517621 and 517738, respectively—and other aircraft parts in violation of the TDO and the Regulations.¹⁶ The February 4, 2013 renewal order also added Mehdi Bahrami as a related person in accordance with Section 766.23 of the Regulations. Bahrami, a Mahan Vice-President and the head of Mahan's Istanbul Office, also was involved in Mahan's acquisition of the original three Boeing 747s (Aircraft 1–3) that resulted in the original TDO, and has had a business relationship with Mahan dating back to 1997.

The July 31, 2013 Order detailed additional evidence obtained by OEE showing efforts by Mahan Airways to obtain another GE CF6–50C2 aircraft engine (MSN 528350) from the United States via Turkey. Multiple Mahan employees, including Mehdi Bahrami, were involved in or aware of matters related to the engine's arrival in Turkey from the United States, plans to visually inspect the engine, and prepare it for shipment from Turkey.

Mahan sought to obtain this U.S.-origin engine through Pioneer Logistics Havacilik Turizm Yonetim Danismanlik (“Pioneer Logistics”), an aircraft parts supplier located in Turkey, and its director/operator, Gulnihal Yegane, a Turkish national who previously had conducted Mahan related business with Mehdi Bahrami and Ali Eslamian. Moreover, as referenced in the July 31, 2013 Order, a sworn affidavit by Kosol Surinanda, also known as Kosol Surinandha, Managing Director of Mahan's General Sales Agent in Thailand, stated that the shares of Pioneer Logistics for which he was the

¹¹ See <http://www.treasury.gov/resource-center/sanctions/OFAC-Enforcement/pages/20120919.aspx>.

¹² The Airbus A310s are powered with U.S.-origin engines. The engines are subject to the EAR and classified under Export Control Classification (“ECCN”) 9A991.d. The Airbus A310s contain controlled U.S.-origin items valued at more than 10 percent of the total value of the aircraft and as a result are subject to the EAR. They are classified under ECCN 9A991.b. The export or reexport of these aircraft to Iran requires U.S. Government authorization pursuant to Sections 742.8 and 746.7 of the Regulations.

¹³ OEE subsequently presented evidence that after the August 24, 2011 renewal, Mahan Airways worked along with Kerman Aviation and others to de-register the two Airbus A310 aircraft in France and to register both aircraft in Iran (with, respectively, Iranian tail numbers EP–MHH and EP–MHI). It was determined subsequent to the February 15, 2012 renewal order that the registration switch for these A310s was cancelled and that Mahan Airways then continued to fly the aircraft under the original French tail numbers (F–OJHH and F–OJHI, respectively). Both aircraft apparently remain in Mahan Airways' possession.

¹⁴ See note 12, *supra*.

¹⁵ See <http://www.treasury.gov/resource-center/sanctions/OFAC-Enforcement/pages/20120919.aspx>. Mahan Airways was previously designated by OFAC as a SDGT on October 18, 2011. 77 FR 64,427 (October 18, 2011).

¹⁶ Kral Aviation was referenced in the February 4, 2013 Order as “Turkish Company No. 1.” Kral Aviation purchased a GE CF6–50C2 aircraft engine (MSN 517621) from the United States in July 2012, on behalf of Mahan Airways. OEE was able to prevent this engine from reaching Mahan by issuing a redelivery order to the freight forwarder in accordance with Section 758.8 of the Regulations. OEE also issued Kral Aviation a redelivery order for the second CF6–50C2 engine (MSN 517738) on July 30, 2012. The owner of the second engine subsequently cancelled the item's sale to Kral Aviation. In September 2012, OEE was alerted by a U.S. exporter that another Turkish company (“Turkish Company No. 2”) was attempting to purchase aircraft spare parts intended for re-export by Turkish Company No. 2 to Mahan Airways. See February 4, 2013 Order.

On December 31, 2013, Kral Aviation was added to BIS's Entity List, Supplement No. 4 to Part 744 of the Regulations. See 78 FR 75458 (Dec. 12, 2013). Companies and individuals are added to the Entity List for engaging in activities contrary to the national security or foreign policy interests of the United States. See 15 CFR 744.11.

listed owner were “actually the property of and owned by Mahan.” He further stated that he held “legal title to the shares until otherwise required by Mahan” but would “exercise the rights granted to [him] exactly and only as instructed by Mahan and [his] vote and/or decisions [would] only and exclusively reflect the wills and demands of Mahan[.]”¹⁷

The January 24, 2014 Order outlined OEE’s continued investigation of Mahan Airways’ activities and detailed an attempt by Mahan, which OEE thwarted, to obtain, via an Indonesian aircraft parts supplier, two U.S.-origin Honeywell ALF-502R-5 aircraft engines (MSNs LF5660 and LF5325), items subject to the Regulations, from a U.S. company located in Texas. An invoice of the Indonesian aircraft parts supplier dated March 27, 2013, listed Mahan Airways as the purchaser of the engines and included a Mahan ship-to address. OEE also obtained a Mahan air waybill dated March 12, 2013, listing numerous U.S.-origin aircraft parts subject to the Regulations—including, among other items, a vertical navigation gyroscope, a transmitter, and a power control unit—being transported by Mahan from Turkey to Iran in violation of the TDO.

The July 22, 2014 Order discussed open source evidence from the March–June 2014 time period regarding two BAE regional jets, items subject to the Regulations, that were painted in the livery and logo of Mahan Airways and operating under Iranian tail numbers EP-MOK and EP-MOI, respectively.¹⁸ In addition, aviation industry resources indicated that these aircraft were obtained by Mahan Airways in late November 2013 and June 2014, from Ukrainian Mediterranean Airline, a Ukrainian airline that was added to BIS’s Entity List (Supplement No. 4 to Part 744 of the Regulations) on August 15, 2011, for acting contrary to the national security and foreign policy interests of the United States.¹⁹ OEE’s

on-going investigation indicates that both BAE regional jets remain active in Mahan’s fleet, with open source information showing EP-MOI being used on flights into and out of Iran as recently as January 12, 2015. The continued operation of these aircraft by Mahan Airways violates the TDO.

The January 16, 2015 Order detailed evidence of additional attempts by Mahan Airways to acquire items subject to the Regulations in further violation of the TDO. Specifically, in March 2014, OEE became aware of an inertial reference unit bearing serial number 1231 (“the IRU”) that had been sent to the United States for repair. The IRU is subject to the Regulations, classified under ECCN 7A103, and controlled for missile technology reasons. Upon closer inspection, it was determined that IRU came from or had been installed on an Airbus A340 aircraft bearing MSN 056. Further investigation revealed that as of approximately February 2014, this aircraft was registered under Iranian tail number EP-MMB and had been painted in the livery and logo of Mahan Airways.

The January 16, 2015 Order described related efforts by the Departments of Justice and Treasury to further thwart Mahan’s illicit procurement efforts. Specifically, on August 14, 2014, the United States Attorney’s Office for the District of Maryland filed a civil forfeiture complaint for the IRU pursuant to 22 U.S.C. 401(b) that resulted in the court issuing an Order of Forfeiture on December 2, 2014. EP-MMB remains listed as active in Mahan Airways’ fleet.

Additionally, on August 29, 2014, OFAC blocked the property and interests in property of Asian Aviation Logistics of Thailand, a Mahan Airways affiliate or front company, pursuant to Executive Order 13224. In doing so, OFAC described Mahan Airways’ use of Asian Aviation Logistics to evade sanctions by making payments on behalf of Mahan for the purchase of engines and other equipment.²⁰

obtained these aircraft in November 2013, from Khors Air Company, another Ukrainian airline that, like Ukrainian Mediterranean Airlines, was added to BIS’s Entity List on August 15, 2011. Open source evidence indicates the two Airbus A320 aircraft may be transferred by Mahan Airways to another Iranian airline in October 2014, and issued Iranian tail numbers EP-APF and EP-APF, respectively.

²⁰ See <http://www.treasury.gov/resource-center/sanctions/OFAC-Enforcement/Pages/20140829.aspx>. See 79 FR 55073 (Sep. 15, 2014). OFAC also blocked the property and property interests of Pioneer Logistics of Turkey on August 29, 2014. *Id.* Mahan Airways’ use of Pioneer Logistics in an effort to evade the TDO and the Regulations was discussed in a prior renewal order, as summarized, *supra*, at 13–14. BIS added both

The May 21, 2015 modification order detailed the acquisition of two aircraft, specifically an Airbus A340 bearing MSN 164 and an Airbus A321 bearing MSN 550, that were purchased by Al Naser Airlines in late 2014/early 2015 and are currently located in Iran under the possession, control, and/or ownership of Mahan Airways.²¹ The sales agreements for these two aircraft were signed by Ali Abdullah Alhay for Al Naser Airlines.²² Payment information reveals that multiple electronic funds transfers (“EFT”) were made by Ali Abdullah Alhay and Bahar Safwa General Trading in order to acquire MSNs 164 and 550.

The May 21, 2015 modification order also laid out evidence showing the respondents’ attempts to obtain other controlled aircraft, including aircraft physically located in the United States in similarly-patterned transactions during the same recent time period. Transactional documents involving two Airbus A320s bearing MSNs 82 and 99, respectively, again showed Ali Abdullah Alhay signing sales agreements for Al Naser Airlines.²³ A review of the payment information for these aircraft similarly revealed EFTs from Ali Abdullah Alhay and Bahar Safwa General Trading that follow the pattern described for MSNs 164 and 550, *supra*. MSNs 82 and 99 were detained by OEE Special Agents prior to their planned export from the United States.

The July 13, 2015 Order outlined evidence showing that Al Naser Airlines’ attempts to acquire aircraft on behalf of Mahan Airways extended

Asian Aviation Logistics and Pioneer Logistics to the Entity List on December 12, 2013. See 78 FR 75458 (Dec. 12, 2013).

²¹ Both of these aircraft are powered by U.S.-origin engines that are subject to the Regulations and classified under ECCN 9A991.d. Both aircraft contain controlled U.S.-origin items valued at more than 10 percent of the total value of the aircraft and as a result are subject to the EAR regardless of their location. The aircraft are classified under ECCN 9A991.b. The export or re-export of these aircraft to Iran requires U.S. Government authorization pursuant to Sections 742.8 and 746.7 of the Regulations.

²² Ali Abdullah Alhay is a 25% owner of Al Naser Airlines.

²³ Both aircraft were physically located in the United States and therefore are subject to the Regulations pursuant to Section 734.3(a)(1). Moreover, these Airbus A320s are powered by U.S.-origin engines that are subject to the Regulations and classified under Export Control Classification Number ECCN 9A991.d. The Airbus A320s contain controlled U.S.-origin items valued at more than 10 percent of the total value of the aircraft and as a result are subject to the EAR regardless of their location. The aircraft are classified under ECCN 9A991.b. The export or re-export of these aircraft to Iran requires U.S. Government authorization pursuant to Sections 742.8 and 746.7 of the Regulations.

¹⁷ Pioneer Logistics, Gulnihal Yegane, and Kosol Surinanda also were added to the Entity List on December 12, 2013. See 78 FR 75458 (Dec. 12, 2013).

¹⁸ The BAE regional jets are powered with U.S.-origin engines. The engines are subject to the EAR and classified under ECCN 9A991.d. These aircraft contain controlled U.S.-origin items valued at more than 10 percent of the total value of the aircraft and as a result are subject to the EAR. They are classified under ECCN 9A991.b. The export or reexport of these aircraft to Iran requires U.S. Government authorization pursuant to Sections 742.8 and 746.7 of the Regulations.

¹⁹ See 76 FR 50407 (Aug. 15, 2011). The July 22, 2014 TDO renewal order also referenced two Airbus A320 aircraft painted in the livery and logo of Mahan Airways and operating under Iranian tail numbers EP-MMK and EP-MML, respectively. OEE’s investigation also showed that Mahan

beyond MSNs 164 and 550 to include a total of nine aircraft.²⁴ Four of the aircraft, all of which are subject to the Regulations and were obtained by Mahan from Al Naser Airlines, had been issued the following Iranian tail numbers: EP-MMD (MSN 164), EP-MMG (MSN 383), EP-MMH (MSN 391) and EP-MMR (MSN 416), respectively.²⁵ Publicly available flight tracking information provided evidence that at the time of the July 13, 2015 renewal, both EP-MMH and EP-MMR were being actively flown on routes into and out of Iran in violation of the TDO and Regulations.²⁶

The December 18, 2015 renewal request highlights evidence that Mahan Airways continues to operate EP-MMH and EP-MMR on flights into and out of Iran in further violation of the TDO and Regulations. Evidence provided by OEE indicates that EP-MMD, another of the aircraft Mahan obtained from Al Naser Airlines as discussed in the July 13, 2015 renewal order, also is now in active service with Mahan and flew from Tehran, Iran to Bangkok, Thailand on January 4, 2016, and back to Iran on January 5, 2016. Additionally, publically available aviation databases and flight tracking information indicate that Mahan has acquired Iranian tail numbers for at least two more of the Airbus A340 aircraft it obtained from Al Naser Airlines: EP-MME (MSN 371) and EP-MMF (MSN 376), respectively.

²⁴ This evidence included a press release dated May 9, 2015, that appeared on Mahan Airways' Web site and stated that Mahan "added 9 modern aircraft to its air fleet[,] and that the newly acquired aircraft included eight Airbus A340s and one Airbus A321. See <http://www.mahan.aero/en/mahan-air/press-room/44>. The press release was subsequently removed from Mahan Airways' Web site. Publicly available aviation databases similarly showed that Mahan had obtained nine additional aircraft from Al Naser Airlines in May 2015, including MSNs 164 and 550. As also discussed in the July 13, 2015 renewal order, Sky Blue Bird Group, via Issam Shammout, was actively involved in Al Naser Airlines' acquisition of MSNs 164 and 550, and the attempted acquisition of MSNs 82 and 99 (which were detained by OEE).

²⁵ The Airbus A340s are powered by U.S.-origin engines that are subject to the Regulations and classified under ECCN 9A991.d. The Airbus A340s contain controlled U.S.-origin items valued at more than 10 percent of the total value of the aircraft and as a result are subject to the EAR regardless of the their location. The aircraft are classified under ECCN 9A991.b. The export or re-export of these aircraft to Iran requires U.S. Government authorization pursuant to Sections 742.8 and 746.7 of the Regulations.

²⁶ There is some publically available information indicating that the aircraft Mahan Airways is flying under Iranian tail number EP-MMR is now MSN 615, rather than MSN 416. Both aircraft are Airbus A340 aircraft that Mahan acquired from Al Naser Airlines in violation of the TDO and the Regulations. Moreover, both aircraft were designated as SDGTs by OFAC on May 21, 2015, pursuant to Executive Order 13324. See 80 FR 30762 (May 29, 2015).

Moreover, both aircraft now bear Mahan Airways livery and logo, and since January 1, 2016, EP-MME has logged flights to and from Tehran, Iran involving various destinations, including Guangzhou, China and Dubai, United Arab Emirates.

C. Findings

Under the applicable standard set forth in Section 766.24 of the Regulations and my review of the entire record, I find that the evidence presented by BIS convincingly demonstrates that the denied persons have acted in violation of the EAR and the TDO, that such violations have been significant, deliberate and covert, and that there is a likelihood of future violations. Therefore, renewal of the TDO is necessary to prevent imminent violation of the EAR and to give notice to companies and individuals in the United States and abroad that they should continue to cease dealing with Mahan Airways and the other denied persons under the TDO in connection with export and reexport transactions involving items subject to the EAR.

IV. Order

It is therefore ordered:

First, that MAHAN AIRWAYS, Mahan Tower, No. 21, Azadegan St., M.A. Jenah Exp. Way, Tehran, Iran; PEJMAN MAHMOOD KOSARAYANIFARD A/K/A KOSARIAN FARD, P.O. Box 52404, Dubai, United Arab Emirates; MAHMOUD AMINI, G#22 Dubai Airport Free Zone, P.O. Box 393754, Dubai, United Arab Emirates, and P.O. Box 52404, Dubai, United Arab Emirates, and Mohamed Abdulla Alqaz Building, Al Maktoum Street, Al Rigga, Dubai, United Arab Emirates; KERMAN AVIATION A/K/A GIE KERMAN AVIATION, 42 Avenue Montaigne 75008, Paris, France; SIRJANCO TRADING LLC, P.O. Box 8709, Dubai, United Arab Emirates; ALI ESLAMIAN, 33 Cavendish Square, 4th Floor, London W1G0PW, United Kingdom, and 2 Bentinck Close, Prince Albert Road St. Johns Wood, London NW87RY, United Kingdom; MAHAN AIR GENERAL TRADING LLC, 19th Floor Al Moosa Tower One, Sheik Zayed Road, Dubai 40594, United Arab Emirates; SKYCO (UK) LTD., 33 Cavendish Square, 4th Floor, London, W1G 0PV, United Kingdom; EQUIPCO (UK) LTD., 2 Bentinck Close, Prince Albert Road, London, NW8 7RY, United Kingdom; and MEHDI BAHRAMI, Mahan Airways- Istanbul Office, Cumhuriye Cad. Sibil Apt No: 101 D:6, 34374 Emadad, Sisli Istanbul, Turkey; AL NASER AIRLINES A/K/A AL-NASER AIRLINES A/K/A ALNASER AIRLINES

AND AIR FREIGHT LTD., Home 46, Al-Karrada, Babil Region, District 929, St 21, Beside Al Jadriya Private Hospital, Baghdad, Iraq, and Al Amirat Street, Section 309, St. 3/H.20, Al Mansour, Baghdad, Iraq, and P.O. Box 28360, Dubai, United Arab Emirates, and P.O. Box 911399, Amman 11191, Jordan; ALI ABDULLAH ALHAY A/K/A ALI ALHAY A/K/A ALI ABDULLAH AHMED ALHAY, Home 46, Al-Karrada, Babil Region, District 929, St 21, Beside Al Jadriya Private Hospital, Baghdad, Iraq, and Anak Street, Qatif, Saudi Arabia 61177; BAHAR SAFWA GENERAL TRADING, P.O. Box 113212, Citadel Tower, Floor-5, Office #504, Business Bay, Dubai, United Arab Emirates, and P.O. Box 8709, Citadel Tower, Business Bay, Dubai, United Arab Emirates; SKY BLUE BIRD GROUP A/K/A SKY BLUE BIRD AVIATION A/K/A SKY BLUE BIRD LTD A/K/A SKY BLUE BIRD FZC, P.O. Box 16111, Ras Al Khaimah Trade Zone, United Arab Emirates; and ISSAM SHAMMOUT A/K/A MUHAMMAD ISAM MUHAMMAD ANWAR NUR SHAMMOUT A/K/A ISSAM ANWAR, Philips Building, 4th Floor, Al Fardous Street, Damascus, Syria, and Al Kolaa, Beirut, Lebanon 151515, and 17-18 Margaret Street, 4th Floor, London, W1W 8RP, United Kingdom, and Cumhuriyet Mah. Kavakli San St. Fulya, Cad. Hazar Sok. No.14/A Silivri, Istanbul, Turkey, and when acting for or on their behalf, any successors or assigns, agents, or employees (each a "Denied Person" and collectively the "Denied Persons") may not, directly or indirectly, participate in any way in any transaction involving any commodity, software or technology (hereinafter collectively referred to as "item") exported or to be exported from the United States that is subject to the Export Administration Regulations ("EAR"), or in any other activity subject to the EAR including, but not limited to:

A. Applying for, obtaining, or using any license, License Exception, or export control document;

B. Carrying on negotiations concerning, or ordering, buying, receiving, using, selling, delivering, storing, disposing of, forwarding, transporting, financing, or otherwise servicing in any way, any transaction involving any item exported or to be exported from the United States that is subject to the EAR, or in any other activity subject to the EAR; or

C. Benefitting in any way from any transaction involving any item exported or to be exported from the United States that is subject to the EAR, or in any other activity subject to the EAR.

Second, that no person may, directly or indirectly, do any of the following:

A. Export or reexport to or on behalf of a Denied Person any item subject to the EAR;

B. Take any action that facilitates the acquisition or attempted acquisition by a Denied Person of the ownership, possession, or control of any item subject to the EAR that has been or will be exported from the United States, including financing or other support activities related to a transaction whereby a Denied Person acquires or attempts to acquire such ownership, possession or control;

C. Take any action to acquire from or to facilitate the acquisition or attempted acquisition from a Denied Person of any item subject to the EAR that has been exported from the United States;

D. Obtain from a Denied Person in the United States any item subject to the EAR with knowledge or reason to know that the item will be, or is intended to be, exported from the United States; or

E. Engage in any transaction to service any item subject to the EAR that has been or will be exported from the United States and which is owned, possessed or controlled by a Denied Person, or service any item, of whatever origin, that is owned, possessed or controlled by a Denied Person if such service involves the use of any item subject to the EAR that has been or will be exported from the United States. For purposes of this paragraph, servicing means installation, maintenance, repair, modification or testing.

Third, that, after notice and opportunity for comment as provided in section 766.23 of the EAR, any other person, firm, corporation, or business organization related to a Denied Person by affiliation, ownership, control, or position of responsibility in the conduct of trade or related services may also be made subject to the provisions of this Order.

Fourth, that this Order does not prohibit any export, reexport, or other transaction subject to the EAR where the only items involved that are subject to the EAR are the foreign-produced direct product of U.S.-origin technology.

In accordance with the provisions of Sections 766.24(e) of the EAR, Mahan Airways, Al Naser Airlines, Ali Abdullah Alhay, and/or Bahar Safwa General Trading may, at any time, appeal this Order by filing a full written statement in support of the appeal with the Office of the Administrative Law Judge, U.S. Coast Guard ALJ Docketing Center, 40 South Gay Street, Baltimore, Maryland 21202-4022. In accordance with the provisions of Sections 766.23(c)(2) and 766.24(e)(3) of the EAR,

Pejman Mahmood Kosarayanifard, Mahmoud Amini, Kerman Aviation, Sirjanco Trading LLC, Ali Eslamian, Mahan Air General Trading LLC, Skycro (UK) Ltd., Equipco (UK) Ltd., Mehdi Bahrami, Sky Blue Bird Group, and/or Issam Shammout may, at any time, appeal their inclusion as a related person by filing a full written statement in support of the appeal with the Office of the Administrative Law Judge, U.S. Coast Guard ALJ Docketing Center, 40 South Gay Street, Baltimore, Maryland 21202-4022.

In accordance with the provisions of Section 766.24(d) of the EAR, BIS may seek renewal of this Order by filing a written request not later than 20 days before the expiration date. A renewal request may be opposed by Mahan Airways, Al Naser Airlines, Ali Abdullah Alhay, and/or Bahar Safwa General Trading as provided in Section 766.24(d), by filing a written submission with the Assistant Secretary of Commerce for Export Enforcement, which must be received not later than seven days before the expiration date of the Order.

A copy of this Order shall be provided to Mahan Airways, Al Naser Airlines, Ali Abdullah Alhay, and Bahar Safwa General Trading and each related person, and shall be published in the **Federal Register**. This Order is effective immediately and shall remain in effect for 180 days.

Dated: January 7, 2016.

David W. Mills,

Assistant Secretary of Commerce for Export Enforcement.

[FR Doc. 2016-00760 Filed 1-14-16; 8:45 am]

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DEPARTMENT OF COMMERCE

International Trade Administration

[C-489-827]

Countervailing Duty Investigation of Certain Hot-Rolled Steel Flat Products From the Republic of Turkey: Preliminary Negative Countervailing Duty Determination and Alignment of Final Determination With Final Antidumping Duty Determination

AGENCY: Enforcement and Compliance, International Trade Administration, Department of Commerce.

SUMMARY: The Department of Commerce (the Department) preliminarily determines that *de minimis* countervailable subsidies are being provided to producers and exporters of certain hot-rolled steel flat products (hot-rolled steel) from the Republic of

Turkey (Turkey). The period of investigation is January 1, 2014, through December 31, 2014. We invite interested parties to comment on this preliminary determination.

DATES: *Effective Date:* January 15, 2016.

FOR FURTHER INFORMATION CONTACT:

Emily Halle or Gene Calvert, AD/CVD Operations, Office VII, Enforcement and Compliance, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230; telephone (202) 482-0176, or (202) 482-3586, respectively.

SUPPLEMENTARY INFORMATION:

Scope of the Investigation

The products covered by this investigation are hot-rolled steel products from Turkey. For a complete description of the scope of this investigation, *see* Appendix II.

Methodology

The Department is conducting this countervailing duty (CVD) investigation in accordance with section 701 of the Tariff Act of 1930, as amended (the Act). For a full description of the methodology underlying our preliminary conclusions, *see* the Preliminary Decision Memorandum. A list of topics discussed in the Preliminary Decision Memorandum is included as Appendix I to this notice. The Preliminary Decision Memorandum is a public document and is on file electronically via Enforcement and Compliance's Antidumping and Countervailing Duty Centralized Electronic Service System (ACCESS). ACCESS is available to registered users at <http://access.trade.gov>, and is available to all parties in the Central Records Unit, Room B8024 of the main Department of Commerce building. In addition, a complete version of the Preliminary Decision Memorandum can be accessed directly at <http://enforcement.trade.gov/frn/>. The signed Preliminary Decision Memorandum and the electronic version are identical in content.

Alignment

As noted in the Preliminary Decision Memorandum,¹ in accordance with section 705(a)(1) of the Act and 19 CFR 351.210(b)(4), we are aligning the final CVD determination in this investigation with the final determination in the

¹ See Department Memorandum, "Decision Memorandum for the Preliminary Negative Countervailing Duty Determination: Countervailing Duty Investigation of Certain Hot-Rolled Steel Flat Products from the Republic of Turkey," dated concurrently with, and hereby adopted by, this notice (Preliminary Decision Memorandum).

companion AD investigation of hot-rolled steel from Turkey based on a request made by Petitioners. Consequently, the final CVD determination will be issued on the same date as the final AD determination, which is currently scheduled to be issued no later than May 22, 2016, unless postponed.

Preliminary Determination

In accordance with section 703(d)(1)(A)(i) of the Act, we calculated a CVD rate for each individually investigated producer/exporter of the subject merchandise. We preliminarily determine that *de minimis* countervailable subsidies are being provided with respect to the manufacture, production or exportation of the subject merchandise. Consistent with section 703(b)(4)(A) of the Act, we have disregarded *de minimis* rates. Consistent with section 703(d) of the Act, we have not calculated an all-others rate because we have not reached an affirmative preliminary determination. We preliminarily determine the countervailable subsidy rates to be:

Company	Subsidy rate
Colakoglu Dis Ticaret A.S.	* 0.38
Eregli Demir ve Celik Fabrikalari T.A.S.	* 0.23

* Percent (*de minimis*).

Because we preliminarily determine that the CVD rates in this investigation are *de minimis*, we will not direct U.S. Customs and Border Protection to suspend liquidation of entries of subject merchandise.

Verification

As provided in section 782(i)(1) of the Act, we intend to verify the information submitted by the respondents prior to making our final determination.

International Trade Commission Notification

In accordance with section 703(f) of the Act, we will notify the International Trade Commission (ITC) of our determination. In addition, we are making available to the ITC all non-privileged and non-proprietary information relating to this investigation. We will allow the ITC access to all privileged and business proprietary information in our files, provided the ITC confirms that it will not disclose such information, either publicly or under an administrative protective order, without the written consent of the Assistant Secretary for Enforcement and Compliance.

In accordance with section 705(b)(2) of the Act, if our final determination is affirmative, the ITC will make its final determination within 45 days after the Department makes its final determination.

Disclosure and Public Comment

The Department intends to disclose to interested parties the calculations performed in connection with this preliminary determination within five days of its public announcement.² Interested parties may submit case and rebuttal briefs, as well as request a hearing.³ For a schedule of the deadlines for filing case briefs, rebuttal briefs, and hearing requests, see the Preliminary Decision Memorandum.

This determination is issued and published pursuant to sections 703(f) and 777(i) of the Act and 19 CFR 351.205(c).

Dated: January 8, 2016.

Paul Piquado,

Assistant Secretary for Enforcement and Compliance.

Appendix I

List of Topics Discussed in the Preliminary Decision Memorandum

- I. Summary
- II. Background
- III. Scope Comments
- IV. Scope of the Investigation
- V. Alignment
- VI. Injury Test
- VII. Subsidies Valuation
- VIII. Benchmarks and Discount Rates
- IX. Analysis of Programs
- X. Disclosure and Public Comment
- XI. Conclusion

Appendix II

Scope of the Investigation

The products covered by this investigation are certain hot-rolled, flat-rolled steel products, with or without patterns in relief, and whether or not annealed, painted, varnished, or coated with plastics or other non-metallic substances. The products covered do not include those that are clad, plated, or coated with metal. The products covered include coils that have a width or other lateral measurement ("width") of 12.7 mm or greater, regardless of thickness, and regardless of form of coil (*e.g.*, in successively superimposed layers, spirally oscillating, etc.). The products covered also include products not in coils (*e.g.*, in straight lengths) of a thickness of less than 4.75 mm and a width that is 12.7 mm or greater and that measures at least 10 times the thickness. The products described above may be rectangular, square, circular, or other shape and include products of either rectangular or non-rectangular cross-section where such cross-section is achieved subsequent to the rolling process, *i.e.*, products which have

been "worked after rolling" (*e.g.*, products which have been beveled or rounded at the edges). For purposes of the width and thickness requirements referenced above:

(1) Where the nominal and actual measurements vary, a product is within the scope if application of either the nominal or actual measurement would place it within the scope based on the definitions set forth above unless the resulting measurement makes the product covered by the existing antidumping⁴ or countervailing duty⁵ orders on Certain Cut-To-Length Carbon-Quality Steel Plate Products From the Republic of Korea (A-580-836; C-580-837), and

(2) Where the width and thickness vary for a specific product (*e.g.*, the thickness of certain products with non-rectangular cross-section, the width of certain products with non-rectangular shape, etc.), the measurement at its greatest width or thickness applies.

Steel products included in the scope of this investigation are products in which: (1) Iron predominates, by weight, over each of the other contained elements; (2) the carbon content is 2 percent or less, by weight; and (3) none of the elements listed below exceeds the quantity, by weight, respectively indicated:

- 2.50 percent of manganese, or
- 3.30 percent of silicon, or
- 1.50 percent of copper, or
- 1.50 percent of aluminum, or
- 1.25 percent of chromium, or
- 0.30 percent of cobalt, or
- 0.40 percent of lead, or
- 2.00 percent of nickel, or
- 0.30 percent of tungsten, or
- 0.80 percent of molybdenum, or
- 0.10 percent of niobium, or
- 0.30 percent of vanadium, or
- 0.30 percent of zirconium.

Unless specifically excluded, products are included in this scope regardless of levels of boron and titanium.

For example, specifically included in this scope are vacuum degassed, fully stabilized (commonly referred to as interstitial-free (IF)) steels, high strength low alloy (HSLA) steels, the substrate for motor lamination steels, Advanced High Strength Steels (AHSS), and Ultra High Strength Steels (UHSS). IF steels are recognized as low carbon steels with micro-alloying levels of elements such as titanium and/or niobium added to stabilize carbon and nitrogen elements. HSLA steels are recognized as steels with micro-alloying levels of elements such as chromium, copper, niobium, titanium, vanadium, and molybdenum. The substrate for motor lamination steels contains micro-alloying levels of elements such as silicon and

⁴ Notice of Amendment of Final Determinations of Sales at Less Than Fair Value and Antidumping Duty Orders: Certain Cut-To-Length Carbon-Quality Steel Plate Products From France, India, Indonesia, Italy, Japan and the Republic of Korea, 65 FR 6585 (February 10, 2000).

⁵ Notice of Amended Final Determinations: Certain Cut-to-Length Carbon-Quality Steel Plate From India and the Republic of Korea; and Notice of Countervailing Duty Orders: Certain Cut-To-Length Carbon-Quality Steel Plate From France, India, Indonesia, Italy, and the Republic of Korea, 65 FR 6587 (February 10, 2000).

² See 19 CFR 351.224(b).

³ See 19 CFR 351.309(c)-(d), 19 CFR 351.310(c).

aluminum. AHSS and UHSS are considered high tensile strength and high elongation steels, although AHSS and UHSS are covered whether or not they are high tensile strength or high elongation steels.

Subject merchandise includes hot-rolled steel that has been further processed in a third country, including but not limited to pickling, oiling, levelling, annealing, tempering, temper rolling, skin passing, painting, varnishing, trimming, cutting, punching, and/or slitting, or any other processing that would not otherwise remove the merchandise from the scope of the investigation if performed in the country of manufacture of the hot-rolled steel.

All products that meet the written physical description, and in which the chemistry quantities do not exceed any one of the noted element levels listed above, are within the scope of this investigation unless specifically excluded. The following products are outside of and/or specifically excluded from the scope of this investigation:

- Universal mill plates (*i.e.*, hot-rolled, flat-rolled products not in coils that have been rolled on four faces or in a closed box pass, of a width exceeding 150 mm but not exceeding 1250 mm, of a thickness not less than 4.0 mm, and without patterns in relief);
- Products that have been cold-rolled (cold-reduced) after hot-rolling;⁶
- Ball bearing steels;⁷
- Tool steels;⁸ and
- Silico-manganese steels;⁹

The products subject to this investigation are currently classified in the Harmonized Tariff Schedule of the United States (HTSUS) under item numbers: 7208.10.1500,

7208.10.3000, 7208.10.6000, 7208.25.3000, 7208.25.6000, 7208.26.0030, 7208.26.0060, 7208.27.0030, 7208.27.0060, 7208.36.0030, 7208.36.0060, 7208.37.0030, 7208.37.0060, 7208.38.0015, 7208.38.0030, 7208.38.0090, 7208.39.0015, 7208.39.0030, 7208.39.0090, 7208.40.6030, 7208.40.6060, 7208.53.0000, 7208.54.0000, 7208.90.0000, 7210.70.3000, 7211.14.0030, 7211.14.0090, 7211.19.1500, 7211.19.2000, 7211.19.3000, 7211.19.4500, 7211.19.6000, 7211.19.7530, 7211.19.7560, 7211.19.7590, 7225.11.0000, 7225.19.0000, 7225.30.3050, 7225.30.7000, 7225.40.7000, 7225.99.0090, 7226.11.1000, 7226.11.9030, 7226.11.9060, 7226.19.1000, 7226.19.9000, 7226.91.5000, 7226.91.7000, and 7226.91.8000. The products subject to the investigation may also enter under the following HTSUS numbers: 7210.90.9000, 7211.90.0000, 7212.40.1000, 7212.40.5000, 7212.50.0000, 7214.91.0015, 7214.91.0060, 7214.91.0090, 7214.99.0060, 7214.99.0075, 7214.99.0090, 7215.90.5000, 7226.99.0180, and 7228.60.6000.

The HTSUS subheadings above are provided for convenience and U.S. Customs and Border Protection purposes only. The written description of the scope of the investigation is dispositive.

[FR Doc. 2016-00749 Filed 1-14-16; 8:45 am]

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DEPARTMENT OF COMMERCE

International Trade Administration

[C-351-846]

Countervailing Duty Investigation of Certain Hot-Rolled Steel Flat Products From Brazil: Preliminary Affirmative Determination and Alignment of Final Determination With Final Antidumping Duty Determination

AGENCY: Enforcement and Compliance, International Trade Administration, Department of Commerce.

SUMMARY: The Department of Commerce (the Department) preliminarily determines that countervailable subsidies are being provided to producers and exporters of certain hot-rolled steel flat products (hot-rolled steel) from Brazil. The period of investigation is January 1, 2014, through December 31, 2014. We invite interested parties to comment on this preliminary determination.

DATES: *Effective date:* January 15, 2016.

FOR FURTHER INFORMATION CONTACT: Nicholas Czajkowski or Lana Nigro, AD/CVD Operations, Office I, Enforcement and Compliance, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230; telephone: (202) 482-1395 or (202) 482-1779, respectively.

Scope of the Investigation

The products covered by this investigation are hot-rolled steel flat products from Brazil. For a complete description of the scope of this investigation, *see* Appendix II.

Methodology

The Department is conducting this countervailing duty (CVD) investigation in accordance with section 701 of the Tariff Act of 1930, as amended (Act). For each of the subsidy programs found countervailable, we preliminarily determine that there is a subsidy, *i.e.*, a financial contribution by an “authority” that gives rise to a benefit to the recipient, and that the subsidy is specific.¹ For a full description of the methodology underlying our preliminary conclusions, *see* the Preliminary Decision Memorandum.² A list of topics discussed in the Preliminary Decision Memorandum is included as Appendix I to this notice. The Preliminary Decision Memorandum is a public document and is on file electronically *via* Enforcement and Compliance’s Antidumping and Countervailing Duty Centralized Electronic Service System (ACCESS). ACCESS is available to registered users at <http://access.trade.gov>, and is available to all parties in the Central Records Unit, room B8024 of the main Department of Commerce building. In addition, a complete version of the Preliminary Decision Memorandum can be accessed directly at <http://enforcement.trade.gov/frn/>. The signed Preliminary Decision Memorandum and the electronic versions of the Preliminary Decision Memorandum are identical in content.

In making this preliminary determination, the Department relied, in part, on facts otherwise available.³ For further information, *see* “Use of Facts Otherwise Available” in the accompanying Preliminary Decision Memorandum.

Alignment

As noted in the Preliminary Decision Memorandum, in accordance with section 705(a)(1) of the Act and 19 CFR 351.210(b)(4), we are aligning the final

¹ See sections 771(5)(B) and (D) of the Act regarding financial contribution; section 771(5)(E) of the Act regarding benefit; and section 771(5A) of the Act regarding specificity.

² See Memorandum to Paul Piquado, Assistant Secretary for Enforcement and Compliance, from Christian Marsh, Deputy Assistant Secretary for Antidumping and Countervailing Duty Operations; Re: Decision Memorandum for the Preliminary Determination in the Countervailing Duty Investigation of Certain Hot-Rolled Steel Flat Products from Brazil, dated January 8, 2016.

³ See section 776(a) of the Act.

⁶ For purposes of this scope exclusion, rolling operations such as a skin pass, levelling, temper rolling or other minor rolling operations after the hot-rolling process for purposes of surface finish, flatness, shape control, or gauge control do not constitute cold-rolling sufficient to meet this exclusion.

⁷ Ball bearing steels are defined as steels which contain, in addition to iron, each of the following elements by weight in the amount specified: (i) Not less than 0.95 nor more than 1.13 percent of carbon; (ii) not less than 0.22 nor more than 0.48 percent of manganese; (iii) none, or not more than 0.03 percent of sulfur; (iv) none, or not more than 0.03 percent of phosphorus; (v) not less than 0.18 nor more than 0.37 percent of silicon; (vi) not less than 1.25 nor more than 1.65 percent of chromium; (vii) none, or not more than 0.28 percent of nickel; (viii) none, or not more than 0.38 percent of copper; and (ix) none, or not more than 0.09 percent of molybdenum.

⁸ Tool steels are defined as steels which contain the following combinations of elements in the quantity by weight respectively indicated: (i) More than 1.2 percent carbon and more than 10.5 percent chromium; or (ii) not less than 0.3 percent carbon and 1.25 percent or more but less than 10.5 percent chromium; or (iii) not less than 0.85 percent carbon and 1 percent to 1.8 percent, inclusive, manganese; or (iv) 0.9 percent to 1.2 percent, inclusive, chromium and 0.9 percent to 1.4 percent, inclusive, molybdenum; or (v) not less than 0.5 percent carbon and not less than 3.5 percent molybdenum; or (vi) not less than 0.5 percent carbon and not less than 5.5 percent tungsten.

⁹ Silico-manganese steel is defined as steels containing by weight: (i) Not more than 0.7 percent of carbon; (ii) 0.5 percent or more but not more than 1.9 percent of manganese, and (iii) 0.6 percent or more but not more than 2.3 percent of silicon.

CVD determination in this investigation with the final determination in the companion antidumping duty (AD) investigation of hot-rolled steel from Brazil based on a request made by Petitioners.⁴ Consequently, the final CVD determination will be issued on the same date as the final AD determination, which is currently scheduled to be issued no later than May 22, 2016,⁵ unless postponed.

Preliminary Determination

In accordance with section 703(d)(1)(A)(i) of the Act, we calculated a CVD rate for each individually investigated respondent company. Section 705(c)(5)(A)(i) of the Act states that, for companies not individually investigated, we will determine an “all-others” rate equal to the weighted-average countervailable subsidy rates established for exporters and producers individually investigated, excluding any zero and *de minimis* countervailable subsidy rates, and any rates determined entirely under section 776 of the Act.

Consistent with the Department’s practice, we normally calculate the all-others rate based on the weighted average of the mandatory respondents’ calculated subsidy rates.⁶ In this case however, the two mandatory respondents have the same rate. Therefore, it is unnecessary to calculate an all-others rate that is the weighted average of the mandatory respondents’ rates. The all-others rate is the rate calculated for both mandatory respondents.

We preliminarily determine the countervailable subsidy rates to be:

Company	Subsidy rate (percent)
Companhia Siderurgica Nacional (CSN)	7.42

⁴ AK Steel Corporation, ArcelorMittal USA LLC, Nucor Corporation, Steel Dynamics Inc., and the United States Steel Corporation (collectively, Petitioners). See letter from Petitioners, “Certain Hot-Rolled Steel Flat Products from Brazil and the Republic of Korea: Request to Align the Countervailing Duty Final Determinations with the Companion Antidumping Duty Final Determinations,” dated January 7, 2016 (Petitioners’ Request for Alignment).

⁵ The current deadline for the final AD determination, May 22, 2016, is a Sunday. Pursuant to Department practice, the signature date will be the next business day, which is Monday, May 23, 2016. See *Notice of Clarification: Application of “Next Business Day” Rule for Administrative Determination Deadlines Pursuant to the Tariff Act of 1930, As Amended*, 70 FR 24533 (May 10, 2005).

⁶ See, e.g., *Countervailing Duty Investigation of Certain Passenger Vehicle and Light Truck Tires From the People’s Republic of China: Final Affirmative Determination, and Final Affirmative Critical Circumstances Determination*, in Part, 80 FR 34888 (June 18, 2015).

Company	Subsidy rate (percent)
Usinas Siderurgicas de Minas Gerais S.A. (Usiminas)	7.42
All-Others	7.42

Suspension of Liquidation

In accordance with section 703(d)(2) of the Act, we will direct U.S. Customs and Border Protection (CBP) to suspend liquidation of all entries of hot-rolled steel from Brazil as described in the scope of the investigation section entered, or withdrawn from warehouse, for consumption on or after the date of publication of this notice in the **Federal Register**. Section 703(e)(2) of the Act provides that, given an affirmative determination of critical circumstances, any suspension of liquidation shall apply to unliquidated entries of merchandise entered, or withdrawn from warehouse, for consumption on or after the later of (a) the date which is 90 days before the date on which the suspension of liquidation was first ordered, or (b) the date on which notice of initiation of the investigation was published. On December 9, 2015, we preliminarily found that critical circumstances exist for imports produced or exported by CSN and Usiminas.⁷ For CSN and Usiminas, in accordance with section 703(e)(2)(A) of the Act, suspension of liquidation of hot-rolled steel products from Brazil, as described in the “Scope of the Investigation” section, shall apply to unliquidated entries of merchandise entered, or withdrawn from warehouse, for consumption on or after the date which is 90 days before the publication of this notice, the date suspension of liquidation is first ordered. Because we preliminarily found critical circumstances do not exist for all other producers and exporters, we will begin suspension of liquidation for such firms on the date of publication of this notice in the **Federal Register**. In accordance with sections 703(d)(1)(B) and 703(e)(2)(A) of the Act, the Department will instruct CBP to require a cash deposit equal to the amounts indicated above.

Verification

As provided in section 782(i)(1) of the Act, we intend to verify the information

⁷ See *Antidumping Duty Investigations of Certain Hot-Rolled Steel Flat Products From Australia, Brazil, Japan, and the Netherlands and Countervailing Duty Investigation of Certain Hot-Rolled Steel Flat Products From Brazil: Preliminary Determinations of Critical Circumstances*, 80 FR 76444 (December 9, 2015).

submitted by the respondents prior to making our final determination.

International Trade Commission Notification

In accordance with section 703(f) of the Act, we will notify the International Trade Commission (ITC) of our determination. In addition, we are making available to the ITC all non-privileged and non-proprietary information relating to this investigation. We will allow the ITC access to all privileged and business proprietary information in our files, provided the ITC confirms that it will not disclose such information, either publicly or under an administrative protective order, without the written consent of the Assistant Secretary for Enforcement and Compliance.

In accordance with section 705(b)(2) of the Act, if our final determination is affirmative, the ITC will make its final determination within 45 days after the Department makes its final determination.

Disclosure and Public Comment

The Department intends to disclose to interested parties the calculations performed in connection with this preliminary determination within five days of its public announcement.⁸ Interested parties may submit case and rebuttal briefs, as well as request a hearing.⁹ For a schedule of the deadlines for filing case briefs, rebuttal briefs, and hearing requests, see the Preliminary Decision Memorandum.

This determination is issued and published pursuant to sections 703(f) and 777(i) of the Act and 19 CFR 351.205(c).

Dated: January 8, 2016.

Paul Piquado,

Assistant Secretary for Enforcement and Compliance.

Appendix I

List of Topics Discussed in the Preliminary Decision Memorandum

- I. Summary
- II. Background
- III. Preliminary Determination of Critical Circumstances
- IV. Scope Comments
- V. Scope of the Investigation
- VI. Alignment
- VII. Injury Test
- VIII. Use of Facts Otherwise Available
- IX. Subsidies Valuation
- X. Analysis of Programs
- XI. Calculation of the All-Others Rate
- XII. ITC Notification
- XIII. Disclosure and Public Comment
- XIV. Verification

⁸ See 19 CFR 351.224(b).

⁹ See 19 CFR 351.309(c)–(d), 19 CFR 351.310(c).

XV. Conclusion

Appendix II

Scope of the Investigation

The products covered by this investigation are certain hot-rolled, flat-rolled steel products, with or without patterns in relief, and whether or not annealed, painted, varnished, or coated with plastics or other non-metallic substances. The products covered do not include those that are clad, plated, or coated with metal. The products covered include coils that have a width or other lateral measurement ("width") of 12.7 mm or greater, regardless of thickness, and regardless of form of coil (e.g., in successively superimposed layers, spirally oscillating, etc.). The products covered also include products not in coils (e.g., in straight lengths) of a thickness of less than 4.75 mm and a width that is 12.7 mm or greater and that measures at least 10 times the thickness. The products described above may be rectangular, square, circular, or other shape and include products of either rectangular or non-rectangular cross-section where such cross-section is achieved subsequent to the rolling process, i.e., products which have been "worked after rolling" (e.g., products which have been beveled or rounded at the edges). For purposes of the width and thickness requirements referenced above:

(1) Where the nominal and actual measurements vary, a product is within the scope if application of either the nominal or actual measurement would place it within the scope based on the definitions set forth above unless the resulting measurement makes the product covered by the existing antidumping¹⁰ or countervailing duty¹¹ orders on Certain Cut-To-Length Carbon-Quality Steel Plate Products From the Republic of Korea (A-580-836; C-580-837), and

(2) where the width and thickness vary for a specific product (e.g., the thickness of certain products with non-rectangular cross-section, the width of certain products with non-rectangular shape, etc.), the measurement at its greatest width or thickness applies.

Steel products included in the scope of this investigation are products in which: (1) Iron predominates, by weight, over each of the other contained elements; (2) the carbon content is 2 percent or less, by weight; and (3) none of the elements listed below exceeds the quantity, by weight, respectively indicated:

- 2.50 percent of manganese, or
- 3.30 percent of silicon, or
- 1.50 percent of copper, or
- 1.50 percent of aluminum, or

- 1.25 percent of chromium, or
- 0.30 percent of cobalt, or
- 0.40 percent of lead, or
- 2.00 percent of nickel, or
- 0.30 percent of tungsten, or
- 0.80 percent of molybdenum, or
- 0.10 percent of niobium, or
- 0.30 percent of vanadium, or
- 0.30 percent of zirconium.

Unless specifically excluded, products are included in this scope regardless of levels of boron and titanium.

For example, specifically included in this scope are vacuum degassed, fully stabilized (commonly referred to as interstitial-free (IF)) steels, high strength low alloy (HSLA) steels, the substrate for motor lamination steels, Advanced High Strength Steels (AHSS), and Ultra High Strength Steels (UHSS). IF steels are recognized as low carbon steels with micro-alloying levels of elements such as titanium and/or niobium added to stabilize carbon and nitrogen elements. HSLA steels are recognized as steels with micro-alloying levels of elements such as chromium, copper, niobium, titanium, vanadium, and molybdenum. The substrate for motor lamination steels contains micro-alloying levels of elements such as silicon and aluminum. AHSS and UHSS are considered high tensile strength and high elongation steels, although AHSS and UHSS are covered whether or not they are high tensile strength or high elongation steels.

Subject merchandise includes hot-rolled steel that has been further processed in a third country, including but not limited to pickling, oiling, levelling, annealing, tempering, temper rolling, skin passing, painting, varnishing, trimming, cutting, punching, and/or slitting, or any other processing that would not otherwise remove the merchandise from the scope of the investigation if performed in the country of manufacture of the hot-rolled steel.

All products that meet the written physical description, and in which the chemistry quantities do not exceed any one of the noted element levels listed above, are within the scope of this investigation unless specifically excluded. The following products are outside of and/or specifically excluded from the scope of this investigation:

- Universal mill plates (i.e., hot-rolled, flat-rolled products not in coils that have been rolled on four faces or in a closed box pass, of a width exceeding 150 mm but not exceeding 1250 mm, of a thickness not less than 4.0 mm, and without patterns in relief);
- Products that have been cold-rolled (cold-reduced) after hot-rolling;¹²
- Ball bearing steels;¹³

¹² For purposes of this scope exclusion, rolling operations such as a skin pass, levelling, temper rolling or other minor rolling operations after the hot-rolling process for purposes of surface finish, flatness, shape control, or gauge control do not constitute cold-rolling sufficient to meet this exclusion.

¹³ Ball bearing steels are defined as steels which contain, in addition to iron, each of the following elements by weight in the amount specified: (i) Not less than 0.95 nor more than 1.13 percent of carbon; (ii) not less than 0.22 nor more than 0.48 percent of manganese; (iii) none, or not more than 0.03 percent of sulfur; (iv) none, or not more than 0.03

- Tool steels;¹⁴ and
- Silico-manganese steels;¹⁵

The products subject to this investigation are currently classified in the Harmonized Tariff Schedule of the United States (HTSUS) under item numbers: 7208.10.1500, 7208.10.3000, 7208.10.6000, 7208.25.3000, 7208.25.6000, 7208.26.0030, 7208.26.0060, 7208.27.0030, 7208.27.0060, 7208.36.0030, 7208.36.0060, 7208.37.0030, 7208.37.0060, 7208.38.0015, 7208.38.0030, 7208.38.0090, 7208.39.0015, 7208.39.0030, 7208.39.0090, 7208.40.6030, 7208.40.6060, 7208.53.0000, 7208.54.0000, 7208.90.0000, 7210.70.3000, 7211.14.0030, 7211.14.0090, 7211.19.1500, 7211.19.2000, 7211.19.3000, 7211.19.4500, 7211.19.6000, 7211.19.7530, 7211.19.7560, 7211.19.7590, 7225.11.0000, 7225.19.0000, 7225.30.3050, 7225.30.7000, 7225.40.7000, 7225.99.0090, 7226.11.1000, 7226.11.9030, 7226.11.9060, 7226.19.1000, 7226.19.9000, 7226.91.5000, 7226.91.7000, and 7226.91.8000. The products subject to the investigation may also enter under the following HTSUS numbers: 7210.90.9000, 7211.90.0000, 7212.40.1000, 7212.40.5000, 7212.50.0000, 7214.91.0015, 7214.91.0060, 7214.91.0090, 7214.99.0060, 7214.99.0075, 7214.99.0090, 7215.90.5000, 7226.99.0180, and 7228.60.6000.

The HTSUS subheadings above are provided for convenience and U.S. Customs purposes only. The written description of the scope of the investigation is dispositive.

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percent of phosphorus; (v) not less than 0.18 nor more than 0.37 percent of silicon; (vi) not less than 1.25 nor more than 1.65 percent of chromium; (vii) none, or not more than 0.28 percent of nickel; (viii) none, or not more than 0.38 percent of copper; and (ix) none, or not more than 0.09 percent of molybdenum.

¹⁴ Tool steels are defined as steels which contain the following combinations of elements in the quantity by weight respectively indicated: (i) More than 1.2 percent carbon and more than 10.5 percent chromium; or (ii) not less than 0.3 percent carbon and 1.25 percent or more but less than 10.5 percent chromium; or (iii) not less than 0.85 percent carbon and 1 percent to 1.8 percent, inclusive, manganese; or (iv) 0.9 percent to 1.2 percent, inclusive, chromium and 0.9 percent to 1.4 percent, inclusive, molybdenum; or (v) not less than 0.5 percent carbon and not less than 3.5 percent molybdenum; or (vi) not less than 0.5 percent carbon and not less than 5.5 percent tungsten.

¹⁵ Silico-manganese steel is defined as steels containing by weight: (i) Not more than 0.7 percent of carbon; (ii) 0.5 percent or more but not more than 1.9 percent of manganese, and (iii) 0.6 percent or more but not more than 2.3 percent of silicon.

¹⁰ Notice of Amendment of Final Determinations of Sales at Less Than Fair Value and Antidumping Duty Orders: Certain Cut-To-Length Carbon-Quality Steel Plate Products From France, India, Indonesia, Italy, Japan and the Republic of Korea, 65 FR 6585 (February 10, 2000).

¹¹ Notice of Amended Final Determinations: Certain Cut-to-Length Carbon-Quality Steel Plate From India and the Republic of Korea; and Notice of Countervailing Duty Orders: Certain Cut-To-Length Carbon-Quality Steel Plate From France, India, Indonesia, Italy, and the Republic of Korea, 65 FR 6587 (February 10, 2000).

DEPARTMENT OF COMMERCE**International Trade Administration**

[C-570-031]

Certain Iron Mechanical Transfer Drive Components From the People's Republic of China: Postponement of Preliminary Determination in the Countervailing Duty Investigation

AGENCY: Enforcement and Compliance, International Trade Administration, Department of Commerce.

DATES: *Effective date:* January 15, 2016.

FOR FURTHER INFORMATION CONTACT: Robert Galantucci at (202) 482-2923, AD/CVD Operations, Enforcement and Compliance, International Trade Administration, Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230.

SUPPLEMENTARY INFORMATION:**Background**

On November 17, 2015, the Department of Commerce (the Department) initiated the countervailing duty (CVD) investigation of certain iron mechanical transfer drive components from the People's Republic of China.¹ Currently, the preliminary determination is due no later than January 21, 2015.

Postponement of the Preliminary Determination

Section 703(b)(1) of the Tariff Act of 1930, as amended (the Act), requires the Department to issue the preliminary determination in a CVD investigation within 65 days after the date on which the Department initiated the investigation. However, if the Department concludes that the parties concerned are cooperating, and that the case is extraordinarily complicated such that additional time is necessary to make the preliminary determination, section 703(c)(1)(B) of the Act allows the Department to postpone making the preliminary determination until no later than 130 days after the date on which the administering authority initiated the investigation. We have concluded that the parties concerned are cooperating and that the case is extraordinarily complicated, such that we will need more time to make the preliminary determination. Specifically, the Department finds that the instant case is extraordinarily complicated by reason of the number and complexity of the alleged countervailable subsidy

practices, and the need to determine the extent to which particular alleged countervailable subsidies are used by individual manufacturers, producers and exporters.

Additionally, the Department notes that we issued questionnaires to the respondents in this case on December 18, 2015. The due date for these questionnaires is January 25, 2016, which is after the unextended preliminary determination date. For these reasons, the Department will extend the deadline for completion of the preliminary determination by 65 days (*i.e.*, 130 days after the date of initiation of this investigation). However, because 65 days following the current deadline falls on a Saturday, the new deadline is Monday, March 28, 2016.²

This notice is issued and published pursuant to section 703(c)(2) of the Act and 19 CFR 351.205(f)(1).³

Dated: January 11, 2016.

Paul Piquado,

Assistant Secretary for Enforcement and Compliance.

[FR Doc. 2016-00741 Filed 1-14-16; 8:45 am]

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DEPARTMENT OF COMMERCE**International Trade Administration**

[A-549-821]

Polyethylene Retail Carrier Bags From Thailand: Rescission of Antidumping Duty Administrative Review in Part; 2014-2015

AGENCY: Enforcement and Compliance, International Trade Administration, Department of Commerce.

SUMMARY: The Department of Commerce (the Department) is rescinding its administrative review in part on polyethylene retail carrier bags from Thailand for the period of review (POR) August 1, 2014, through July 31, 2015.

DATES: *Effective date:* January 15, 2016.

FOR FURTHER INFORMATION CONTACT: Andre Gziryan, AD/CVD Operations Office I, Enforcement and Compliance, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230; telephone: (202) 482-2201.

² See *Notice of Clarification: Application of "Next Business Day" Rule for Administrative Determination Deadlines Pursuant to the Tariff Act of 1930, As Amended*, 70 FR 24533 (May 10, 2005).

³ We acknowledge that the Department inadvertently did not notify the parties to this investigation of this postponement within the timeframe provided in section 703(c)(2) of the Act.

SUPPLEMENTARY INFORMATION:**Background**

On August 3, 2015, we published a notice of opportunity to request an administrative review of the antidumping duty order on polyethylene retail carrier bags from Thailand for the POR August 1, 2014, through July 31, 2015.¹ On October 6, 2015, in response to timely requests from the petitioners² and in accordance with section 751(a) of the Tariff Act of 1930, as amended (the Act), and 19 CFR 351.221(c)(1)(i), we initiated an administrative review of the antidumping duty order on polyethylene retail carrier bags from Thailand with respect to 45 companies.³ On December 18, 2015, the petitioners withdrew their request for an administrative review for 44 out of 45 companies.⁴ No other party requested a review.

Rescission of Administrative Review in Part

Pursuant to 19 CFR 351.213(d)(1), the Department will rescind an administrative review, "in whole or in part, if a party that requested a review withdraws the request within 90 days of

¹ See *Antidumping or Countervailing Duty Order, Finding, or Suspended Investigation; Opportunity To Request Administrative Review*, 80 FR 45952 (August 3, 2015).

² Polyethylene Retail Carrier Bag Committee and its individual members, Hilex Poly Co., LLC and Superbag Corporation (collectively, the petitioners).

³ See *Initiation of Antidumping and Countervailing Duty Administrative Reviews*, 80 FR 60356 (October 6, 2015).

⁴ The 44 companies for which the petitioners have withdrawn their request for a review are as follows: 2 P Work Co., Ltd., 2PK Interplas Co., Ltd., Angkapol Plastech Co., Ltd., Asia Industry Co., Ltd., Asian Packaging Limited Partnership, Bags and Gloves Co., Ltd., Completely Co., Ltd., C.P. Poly Industry Co., Ltd., CT Import-Export Co., Ltd., Dpac Inter. Corporation Co., Ltd., DTOP Co., Ltd., Ecoplas (Thailand) Co., Ltd., Elite Poly and Packaging Co., Ltd., Firstpack Co. Ltd., G.L.K. (Thailand) Co., Ltd., Green Smile Supply Co., Ltd., Hinwiset Packaging Limited Partnership, King Bag Co., Ltd., King Pac Industrial Co., Ltd., KPA Packing & Product Co., Ltd., Napa Plastic Co., Ltd., Naraipak Co., Ltd., NKD Intertrade Limited Partnership, NNN Packaging Limited Partnership, Northeast Pack Company Limited, P.C.S. International Company Limited, Pasiam Ltd., Partnership, PMC Innopack Co., Ltd., Poly Plast (Thailand) Co., Ltd., Poly World Co., Ltd., PPN Plaspack Limited Partnership, Prepack Thailand Co., Ltd., PSSP Plaspack Co., Ltd., SSGT Products Limited Partnership, Super Grip Co., Ltd., T.P. Plaspack Co., Ltd., T.T.P. Packaging (Thailand) Co., Ltd., Thantawan Industry Public Co., Ltd., Triple B Pack Co., Ltd., Triyamook Vanich Limited Partnership, Two Path Plaspack Co., Ltd., Udomrutpanich Limited Partnership, Win Win and Pro Pack Co. Ltd., and Winbest Industrial (Thailand) Co., Ltd. See letter from the petitioners to the Department, "Polyethylene Retail Carrier Bags from Thailand: Partial Withdrawal of Request for Administrative Review" (December 18, 2015). No withdrawal was requested for K. International Packing Co., Ltd.

¹ See *Certain Iron Mechanical Transfer Drive Components From the People's Republic of China: Initiation of Countervailing Duty Investigation*, 80 FR 73722 (November 25, 2015).

the date of publication of notice of initiation of the requested review.” Because the petitioners withdrew their review request in a timely manner, and because no other party requested a review of these companies, we are rescinding the administrative review in part with respect to the aforementioned 44 companies.

Assessment

The Department will instruct U.S. Customs and Border Protection (CBP) to assess antidumping duties on all appropriate entries. For the aforementioned companies, for which the review is rescinded, antidumping duties shall be assessed at rates equal to the cash deposit of estimated antidumping duties required at the time of entry, or withdrawal from warehouse, for consumption, in accordance with 19 CFR 351.212(c)(1)(i). The Department intends to issue appropriate assessment instructions to CBP within 15 days after publication of this notice.

Notifications to Importers

This notice serves as a final reminder to importers of their responsibility under 19 CFR 351.402(f)(2) to file a certificate regarding the reimbursement of antidumping duties prior to liquidation of the relevant entries during this review period. Failure to comply with this requirement may result in the Department’s presumption that reimbursement of antidumping duties occurred and the subsequent assessment of doubled antidumping duties.

Notification Regarding Administrative Protective Orders

This notice also serves as a reminder to parties subject to administrative protective order (APO) of their responsibility concerning the disposition of proprietary information disclosed under APO, in accordance with 19 CFR 351.305(a)(3). Timely written notification of the return or destruction of APO materials or conversion to judicial protective order is hereby requested. Failure to comply with the regulations and the terms of an APO is a sanctionable violation.

This notice is issued and published in accordance with sections 751(a)(1) and 777(i)(1) of the Act and 19 CFR 351.213(d)(4).

Dated: January 8, 2016.

Christian Marsh,

Deputy Assistant Secretary for Antidumping and Countervailing Duty Operations.

[FR Doc. 2016–00619 Filed 1–14–16; 8:45 am]

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DEPARTMENT OF COMMERCE

International Trade Administration

[C–580–884]

Countervailing Duty Investigation of Certain Hot-Rolled Steel Flat Products From the Republic of Korea: Preliminary Negative Determination and Alignment of Final Determination With Final Antidumping Duty Determination

AGENCY: Enforcement and Compliance, International Trade Administration, Department of Commerce.

SUMMARY: The Department of Commerce (the “Department”) preliminarily determines that *de minimis* countervailable subsidies are being provided to producers/exporters of certain hot-rolled steel flat products (“hot-rolled steel”) from the Republic of Korea (“Korea”). The period of investigation is January 1, 2014, through December 31, 2014. We invite interested parties to comment on this preliminary determination.

DATES: *Effective date:* January 15, 2016.

FOR FURTHER INFORMATION CONTACT: Katie Marksberry or Bob Palmer, AD/CVD Operations, Office V, Enforcement and Compliance, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230; telephone (202) 482–7906 or (202) 482–9068, respectively.

SUPPLEMENTARY INFORMATION:

Scope of the Investigation

The products covered by this investigation are certain hot-rolled steel flat products from Korea. For a complete description of the scope of this investigation, *see* Appendix II.

Methodology

The Department is conducting this countervailing duty (“CVD”) investigation in accordance with section 701 of the Tariff Act of 1930, as amended (the “Act”). For a full description of the methodology underlying our preliminary conclusions, *see* the Preliminary Decision Memorandum.¹ A list of topics discussed in the Preliminary Decision Memorandum is included as Appendix I to this notice. The Preliminary

¹ *See* Memorandum to Paul Piquado, Assistant Secretary for Enforcement and Compliance, from Christian Marsh, Deputy Assistant Secretary for Antidumping and Countervailing Duty Operations; Re: Decision Memorandum for the Preliminary Negative Determination: Countervailing Duty Investigation of Certain Hot-Rolled Steel Flat Products from the Republic of Korea, dated January 8, 2015 (“Preliminary Decision Memorandum”).

Decision Memorandum is a public document and is on file electronically via Enforcement and Compliance’s Antidumping and Countervailing Duty Centralized Electronic Service System (“ACCESS”). ACCESS is available to registered users at <http://access.trade.gov>, and is available to all parties in the Central Records Unit, room B8024 of the main Department of Commerce building. In addition, a complete version of the Preliminary Decision Memorandum can be accessed directly at <http://enforcement.trade.gov/frn/>. The signed Preliminary Decision Memorandum and the electronic version are identical in content.

The Department notes that, in making this preliminary determination, we relied, in part, on facts otherwise available.² For further information, *see* “Use of Facts Otherwise Available” in the accompanying Preliminary Decision Memorandum.

Alignment

As noted in the Preliminary Decision Memorandum,³ in accordance with section 705(a)(1) of the Act and 19 CFR 351.210(b)(4), we are aligning the final CVD determination in this investigation with the final determination in the companion AD investigation of hot-rolled steel from Korea based on a request made by Petitioners. Consequently, the final CVD determination will be issued on the same date as the final AD determination, which is currently scheduled to be issued no later than May 23, 2016, unless postponed.⁴

Preliminary Determination

In accordance with section 703(d)(1)(A)(i) of the Act, we calculated a CVD rate for each individually investigated producer/exporter of the subject merchandise. We preliminarily determine that *de minimis* countervailable subsidies are being provided with respect to the manufacture, production or exportation of the subject merchandise. Consistent with section 703(b)(4)(A) of the Act, we have disregarded *de minimis* rates. Consistent with section 703(d) of the Act, we have not calculated an all-others rate because we have not reached an affirmative preliminary

² *See* section 776(a) of the Act.

³ *See* Preliminary Decision Memorandum.

⁴ We note that the current deadline for the final AD determination is May 22, 2016, which is a Sunday. Pursuant to Department practice, the signature date will be the next business day, which is Monday, March 9, 2016. *See Notice of Clarification: Application of “Next Business Day” Rule for Administrative Determination Deadlines Pursuant to the Tariff Act of 1930, As Amended*, 70 FR 24533 (May 10, 2005).

determination. We preliminarily determine the countervailable subsidy rates to be:

Company	Subsidy rate
POSCO and Daewoo International Corporation	0.17
Hyundai Steel Co., Ltd	0.63

Percent (*de minimis*).

Because we preliminarily determine that the CVD rates in this investigation are *de minimis*, we will not direct U.S. Customs and Border Protection (“CBP”) to suspend liquidation of entries of subject merchandise.

Verification

As provided in section 782(i)(1) of the Act, we intend to verify the information submitted by the respondents prior to making our final determination.

International Trade Commission Notification

In accordance with section 703(f) of the Act, we will notify the International Trade Commission (“ITC”) of our determination. In addition, we are making available to the ITC all non-privileged and non-proprietary information relating to this investigation. We will allow the ITC access to all privileged and business proprietary information in our files, provided the ITC confirms that it will not disclose such information, either publicly or under an administrative protective order, without the written consent of the Assistant Secretary for Enforcement and Compliance.

In accordance with section 705(b)(3) of the Act, if our final determination is affirmative, the ITC will make its final determination within 75 days after the Department makes its final determination.

Disclosure and Public Comment

The Department intends to disclose to interested parties the calculations performed in connection with this preliminary determination within five days of its public announcement.⁵ Interested parties may submit case and rebuttal briefs, as well as request a hearing.⁶ For a schedule of the deadlines for filing case briefs, rebuttal briefs, and hearing requests, see the Preliminary Decision Memorandum.

This determination is issued and published pursuant to sections 703(f) and 777(i) of the Act and 19 CFR 351.205(c).

Dated: January 8, 2016.

Paul Piquado,

Assistant Secretary for Enforcement and Compliance.

Appendix I

List of Topics Discussed in the Preliminary Decision Memorandum

- I. Summary
- II. Background
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- V. Injury Test
- VI. Use of Facts Otherwise Available
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- VIII. Analysis of Programs
- IX. Disclosure and Public Comment
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Appendix II

Scope of the Investigation

The products covered by this investigation are certain hot-rolled, flat-rolled steel products, with or without patterns in relief, and whether or not annealed, painted, varnished, or coated with plastics or other non-metallic substances. The products covered do not include those that are clad, plated, or coated with metal. The products covered include coils that have a width or other lateral measurement (“width”) of 12.7 mm or greater, regardless of thickness, and regardless of form of coil (*e.g.*, in successively superimposed layers, spirally oscillating, etc.). The products covered also include products not in coils (*e.g.*, in straight lengths) of a thickness of less than 4.75 mm and a width that is 12.7 mm or greater and that measures at least 10 times the thickness. The products described above may be rectangular, square, circular, or other shape and include products of either rectangular or non-rectangular cross-section where such cross-section is achieved subsequent to the rolling process, *i.e.*, products which have been “worked after rolling” (*e.g.*, products which have been beveled or rounded at the edges). For purposes of the width and thickness requirements referenced above:

- (1) where the nominal and actual measurements vary, a product is within the scope if application of either the nominal or actual measurement would place it within the scope based on the definitions set forth above unless the resulting measurement makes the product covered by the existing antidumping⁷ or countervailing duty⁸ orders on Certain Cut-To-Length Carbon-Quality Steel Plate Products From the Republic of Korea (A-580-836; C-580-837), and
- (2) where the width and thickness vary for a specific product (*e.g.*, the thickness of

certain products with non-rectangular cross-section, the width of certain products with non-rectangular shape, etc.), the measurement at its greatest width or thickness applies.

Steel products included in the scope of this investigation are products in which: (1) Iron predominates, by weight, over each of the other contained elements; (2) the carbon content is 2 percent or less, by weight; and (3) none of the elements listed below exceeds the quantity, by weight, respectively indicated:

- 2.50 percent of manganese, or
- 3.30 percent of silicon, or
- 1.50 percent of copper, or
- 1.50 percent of aluminum, or
- 1.25 percent of chromium, or
- 0.30 percent of cobalt, or
- 0.40 percent of lead, or
- 2.00 percent of nickel, or
- 0.30 percent of tungsten, or
- 0.80 percent of molybdenum, or
- 0.10 percent of niobium, or
- 0.30 percent of vanadium, or
- 0.30 percent of zirconium.

Unless specifically excluded, products are included in this scope regardless of levels of boron and titanium.

For example, specifically included in this scope are vacuum degassed, fully stabilized (commonly referred to as interstitial-free (IF)) steels, high strength low alloy (HSLA) steels, the substrate for motor lamination steels, Advanced High Strength Steels (AHSS), and Ultra High Strength Steels (UHSS). IF steels are recognized as low carbon steels with micro-alloying levels of elements such as titanium and/or niobium added to stabilize carbon and nitrogen elements. HSLA steels are recognized as steels with micro-alloying levels of elements such as chromium, copper, niobium, titanium, vanadium, and molybdenum. The substrate for motor lamination steels contains micro-alloying levels of elements such as silicon and aluminum. AHSS and UHSS are considered high tensile strength and high elongation steels, although AHSS and UHSS are covered whether or not they are high tensile strength or high elongation steels.

Subject merchandise includes hot-rolled steel that has been further processed in a third country, including but not limited to pickling, oiling, levelling, annealing, tempering, temper rolling, skin passing, painting, varnishing, trimming, cutting, punching, and/or slitting, or any other processing that would not otherwise remove the merchandise from the scope of the investigations if performed in the country of manufacture of the hot-rolled steel.

All products that meet the written physical description, and in which the chemistry quantities do not exceed any one of the noted element levels listed above, are within the scope of these investigations unless specifically excluded. The following products are outside of and/or specifically excluded from the scope of this investigation:

- Universal mill plates (*i.e.*, hot-rolled, flat-rolled products not in coils that have been rolled on four faces or in a closed box pass, of a width exceeding 150 mm but not exceeding 1250 mm, of a thickness not less than 4.0 mm, and without patterns in relief);

⁵ See 19 CFR 351.224(b).

⁶ See 19 CFR 351.309(c)–(d), 19 CFR 351.310(c).

⁷ See Notice of Amendment of Final Determinations of Sales at Less Than Fair Value and Antidumping Duty Orders: Certain Cut-To-Length Carbon-Quality Steel Plate Products From France, India, Indonesia, Italy, Japan and the Republic of Korea, 65 FR 6585 (February 10, 2000).

⁸ See Notice of Amended Final Determinations: Certain Cut-to-Length Carbon-Quality Steel Plate From India and the Republic of Korea; and Notice of Countervailing Duty Orders: Certain Cut-To-Length Carbon-Quality Steel Plate From France, India, Indonesia, Italy, and the Republic of Korea, 65 FR 6587 (February 10, 2000).

- Products that have been cold-rolled (cold-reduced) after hot-rolling;⁹
- Ball bearing steels;¹⁰
- Tool steels;¹¹ and
- Silico-manganese steels;¹²

The products subject to this investigation are currently classified in the Harmonized Tariff Schedule of the United States (“HTSUS”) under item numbers:

7208.10.1500, 7208.10.3000, 7208.10.6000, 7208.25.3000, 7208.25.6000, 7208.26.0030, 7208.26.0060, 7208.27.0030, 7208.27.0060, 7208.36.0030, 7208.36.0060, 7208.37.0030, 7208.37.0060, 7208.38.0015, 7208.38.0030, 7208.38.0090, 7208.39.0015, 7208.39.0030, 7208.39.0090, 7208.40.6030, 7208.40.6060, 7208.53.0000, 7208.54.0000, 7208.90.0000, 7210.70.3000, 7211.14.0030, 7211.14.0090, 7211.19.1500, 7211.19.2000, 7211.19.3000, 7211.19.4500, 7211.19.6000, 7211.19.7530, 7211.19.7560, 7211.19.7590, 7225.11.0000, 7225.19.0000, 7225.30.3050, 7225.30.7000, 7225.40.7000, 7225.99.0090, 7226.11.1000, 7226.11.9030, 7226.11.9060, 7226.19.1000, 7226.19.9000, 7226.91.5000, 7226.91.7000, and 7226.91.8000. The products subject to the investigation may also enter under the following HTSUS numbers: 7210.90.9000, 7211.90.0000, 7212.40.1000, 7212.40.5000, 7212.50.0000, 7214.91.0015, 7214.91.0060, 7214.91.0090, 7214.99.0060, 7214.99.0075, 7214.99.0090, 7215.90.5000, 7226.99.0180, and 7228.60.6000.

The HTSUS subheadings above are provided for convenience and U.S. Customs purposes only. The written description of the scope of the investigation is dispositive.

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BILLING CODE 3510–DS–P

⁹For purposes of this scope exclusion, rolling operations such as a skin pass, levelling, temper rolling or other minor rolling operations after the hot-rolling process for purposes of surface finish, flatness, shape control, or gauge control do not constitute cold-rolling sufficient to meet this exclusion.

¹⁰Ball bearing steels are defined as steels which contain, in addition to iron, each of the following elements by weight in the amount specified: (i) Not less than 0.95 nor more than 1.13 percent of carbon; (ii) not less than 0.22 nor more than 0.48 percent of manganese; (iii) none, or not more than 0.03 percent of sulfur; (iv) none, or not more than 0.03 percent of phosphorus; (v) not less than 0.18 nor more than 0.37 percent of silicon; (vi) not less than 1.25 nor more than 1.65 percent of chromium; (vii) none, or not more than 0.28 percent of nickel; (viii) none, or not more than 0.38 percent of copper; and (ix) none, or not more than 0.09 percent of molybdenum.

¹¹Tool steels are defined as steels which contain the following combinations of elements in the quantity by weight respectively indicated: (i) More than 1.2 percent carbon and more than 10.5 percent chromium; or (ii) not less than 0.3 percent carbon and 1.25 percent or more but less than 10.5 percent chromium; or (iii) not less than 0.85 percent carbon and 1 percent to 1.8 percent, inclusive, manganese; or (iv) 0.9 percent to 1.2 percent, inclusive, chromium and 0.9 percent to 1.4 percent, inclusive, molybdenum; or (v) not less than 0.5 percent carbon and not less than 3.5 percent molybdenum; or (vi) not less than 0.5 percent carbon and not less than 5.5 percent tungsten.

¹²Silico-manganese steel is defined as steels containing by weight: (i) Not more than 0.7 percent of carbon; (ii) 0.5 percent or more but not more than 1.9 percent of manganese, and (iii) 0.6 percent or more but not more than 2.3 percent of silicon.

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XE291

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to a Marine Geophysical Survey in the South Atlantic Ocean, January to March 2016

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; issuance of an incidental harassment authorization.

SUMMARY: In accordance with the Marine Mammal Protection Act (MMPA) implementing regulations, we hereby give notice that we have issued an Incidental Harassment Authorization (Authorization) to Lamont-Doherty Earth Observatory (Lamont-Doherty), a component of Columbia University, in collaboration with the National Science Foundation (NSF), to take marine mammals, by harassment, in the South Atlantic Ocean, January through March 2016.

DATES: Effective January 4 through March 31, 2016.

ADDRESSES: A copy of the final Authorization and application and other supporting documents are available by writing to Jolie Harrison, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910, by telephoning the contacts listed here, or by visiting the internet at: <http://www.nmfs.noaa.gov/pr/permits/incidental/research.htm>.

The NSF prepared a draft Environmental Analysis in accordance with Executive Order 12114, “Environmental Effects Abroad of Major Federal Actions” for their proposed federal action. The environmental analysis titled “Environmental Analysis of a Marine Geophysical Survey by the R/V *Marcus G. Langseth* in the South Atlantic Ocean, Austral Summer 2016,” prepared by LGL, Ltd. environmental research associates, on behalf of NSF and Lamont-Doherty is available at the same internet address.

NMFS prepared an Environmental Assessment (EA) titled, “Proposed Issuance of an Incidental Harassment Authorization to Lamont-Doherty Earth Observatory to Take Marine Mammals by Harassment Incidental to a Marine Geophysical Survey in the South Atlantic Ocean, January–March 2016,”

in accordance with NEPA and NOAA Administrative Order 216–6. To obtain an electronic copy of these documents, write to the previously mentioned address, telephone the contact listed here (see **FOR FURTHER INFORMATION CONTACT**), or download the files at: <http://www.nmfs.noaa.gov/pr/permits/incidental/research.htm>.

NMFS also issued a Biological Opinion under section 7 of the Endangered Species Act (ESA) to evaluate the effects of the survey and Authorization on marine species listed as threatened and endangered. The Biological Opinion is available online at: <http://www.nmfs.noaa.gov/pr/consultations/opinions.htm>.

FOR FURTHER INFORMATION CONTACT: Jeannine Cody, NMFS, Office of Protected Resources, NMFS (301) 427–8401.

SUPPLEMENTARY INFORMATION:

Background

Section 101(a)(5)(D) of the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. 1361 *et seq.*) directs the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals of a species or population stock, by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if, after NMFS provides a notice of a proposed authorization to the public for review and comment: (1) NMFS makes certain findings; and (2) the taking is limited to harassment.

An Authorization shall be granted for the incidental taking of small numbers of marine mammals if NMFS finds that the taking will have a negligible impact on the species or stock(s), and will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant). The Authorization must also set forth the permissible methods of taking; other means of effecting the least practicable adverse impact on the species or stock and its habitat (*i.e.*, mitigation); and requirements pertaining to the monitoring and reporting of such taking. NMFS has defined “negligible impact” in 50 CFR 216.103 as “an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.”

Except with respect to certain activities not pertinent here, the MMPA at 16 U.S.C. 1362(18)(A) defines “harassment” as: Any act of pursuit, torment, or annoyance which (i) has the

potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment].

Summary of Request

On July 29, 2015, NMFS received an application from Lamont-Doherty requesting that NMFS issue an Authorization for the take of marine mammals, incidental to Texas A&M University and the University of Texas conducting a seismic survey in the South Atlantic Ocean, January through March 2016. Following the initial application submission, Lamont-Doherty submitted a revised application with revised take estimates. NMFS considered the revised application adequate and complete on October 30, 2015.

Lamont-Doherty proposes to conduct a two-dimensional (2-D), seismic survey on the R/V *Marcus G. Langseth* (*Langseth*), a vessel owned by NSF and operated on its behalf by Columbia University's Lamont-Doherty in international waters in the South Atlantic Ocean approximately 1,938 kilometers (km) (1,232 miles [mi]) southeast of the west coast of Brazil for approximately 22 days. The following specific aspect of the proposed activity has the potential to take marine mammals: Increased underwater sound generated during the operation of the seismic airgun array. We anticipate that take, by Level B harassment, of 38 species of marine mammals could result from the specified activity. Although unlikely, NMFS also anticipates that a small level of take by Level A harassment of 16 species of marine mammals could occur during the proposed survey.

Description of the Specified Activity

Overview

Lamont-Doherty plans to use one source vessel, the *Langseth*, an array of 36 airguns as the energy source, a receiving system of seven ocean bottom seismometers (OBS), and a single 8-kilometer (km) hydrophone streamer. In addition to the operations of the airguns, Lamont-Doherty intends to operate a multibeam echosounder and a sub-bottom profiler continuously throughout the proposed survey. However, Lamont-Doherty will not operate the multibeam echosounder and sub-bottom profiler during transits to and from the survey area and in

between transits to each of the five OBS tracklines (*i.e.*, when the airguns are not operating).

The purpose of the survey is to collect and analyze seismic refraction data from the Mid-Atlantic Ridge westward to the Rio Grande Rise to study the evolution of the South Atlantic Ocean crust on million-year timescales and the evolution and stability of low-spreading ridges over time. NMFS refers the public to Lamont-Doherty's application (see page 3) for more detailed information on the proposed research objectives.

Dates and Duration

Lamont-Doherty proposes to conduct the seismic survey for approximately 42 days, which includes approximately 22 days of seismic surveying with 10 days of OBS deployment and retrieval. The proposed study (*e.g.*, equipment testing, startup, line changes, repeat coverage of any areas, and equipment recovery) would include approximately 528 hours of airgun operations (*i.e.*, 22 days over 24 hours). Some minor deviation from Lamont-Doherty's requested dates of January through March 2016 is possible, depending on logistics, weather conditions, and the need to repeat some lines if data quality is substandard. Thus, the proposed Authorization, if issued, would be effective from early January through March 31, 2016.

Specified Geographic Region

Lamont-Doherty proposes to conduct the proposed seismic survey in the South Atlantic Ocean, located approximately between 10–35° W, 27–33° S (see Figure 1). Water depths in the survey area range from approximately 1,150 to 4,800 meters (m) (3,773 feet [ft] to 2.98 miles [mi]).

Principal and Collaborating Investigators

The proposed survey's principal investigators are Drs. R. Reece and R. Carlson (Texas A&M University) and Dr. G. Christeson (University of Texas at Austin).

Detailed Description of the Specified Activities

Transit Activities

The *Langseth* would depart and return from Cape Verde and transit to the survey area. Some minor deviations with the transit schedule and port locations are possible depending on logistics and weather.

Vessel Specifications

NMFS outlined the vessel's specifications in the notice of proposed Authorization (80 FR 75355, December 1, 2015). NMFS does not repeat the

information here as the vessel's specifications have not changed between the notice of proposed Authorization and this notice of an issued Authorization.

Data Acquisition Activities

NMFS outlined the details regarding Lamont-Doherty's data acquisition activities using the airguns, multibeam echosounder, and the sub-bottom profiler in the notice of proposed Authorization (80 FR 75355, December 1, 2015). NMFS does not repeat the information here as the data acquisition activities have not changed between the notice of proposed Authorization and this notice of an issued Authorization.

For a more detailed description of the authorized action (*i.e.*, vessel and acoustic source specifications, metrics, characteristics of airgun pulses, predicted sound levels of airguns, *etc.*) please see the notice of proposed Authorization (80 FR 75355, December 1, 2015) and associated documents referenced above this section.

Comments and Responses

NMFS published a notice of receipt of Lamont-Doherty's application and proposed Authorization in the **Federal Register** on December 1, 2015 (80 FR 75355). During the 30-day public comment period, NMFS received comments from the Marine Mammal Commission (Commission). NMFS has posted the comments online at: <http://www.nmfs.noaa.gov/pr/permits/incidental/research.htm>.

NMFS addresses any comments specific to Lamont-Doherty's application related to the statutory and regulatory requirements or findings that NMFS must make under the MMPA in order to issue an Authorization. The following is a summary of the public comments and NMFS' responses.

Modeling Exclusion and Buffer Zones

Comment 1: The Commission expressed concerns regarding Lamont-Doherty's method to estimate exclusion and buffer zones. It stated that the model is not the best available science because it assumes the following: Spherical spreading, constant sound speed, and no bottom interactions. In light of their concerns, the Commission recommended that NMFS require Lamont-Doherty to re-estimate the proposed exclusion and buffer zones incorporating site-specific environmental and operational parameters (*e.g.*, sound speed profiles, refraction, bathymetry/water depth, sediment properties/bottom loss, or absorption coefficients) into their model.

Response: NMFS acknowledges the Commission's concerns about Lamont-Doherty's current modeling approach for estimating exclusion and buffer zones and also acknowledges that Lamont-Doherty did not incorporate site-specific sound speed profiles, bathymetry, and sediment characteristics of the research area in the current approach to estimate those zones for this proposed seismic survey.

Lamont-Doherty's application (LGL, 2015) and the NSF's draft environmental analyses (NSF, 2015) describe the approach to establishing mitigation exclusion and buffer zones. In summary, Lamont-Doherty acquired field measurements for several array configurations at shallow- and deep-water depths during acoustic verification studies conducted in the northern Gulf of Mexico in 2003 (Tolstoy *et al.*, 2004) and in 2007 and 2008 (Tolstoy *et al.*, 2009). Based on the empirical data from those studies, Lamont-Doherty developed a sound propagation modeling approach that predicts received sound levels as a function of distance from a particular airgun array configuration in deep water. For this proposed survey, Lamont-Doherty developed the exclusion and buffer zones for the airgun array based on the empirically-derived measurements from the Gulf of Mexico calibration survey (Fig. 5a in Appendix H of the NSF's 2011 PEIS). Based upon the best available information (*i.e.*, the three data points, two of which are peer-reviewed, discussed in this response), NMFS finds that the exclusion and buffer zone calculations are appropriate for use in this particular survey.

In 2015, Lamont-Doherty explored solutions to this issue (*i.e.*, the question of whether the Gulf of Mexico calibration data adequately informs the model to predict exclusion isopleths in other areas) by conducting a retrospective sound power analysis of one of the lines acquired during Lamont-Doherty's seismic survey offshore New Jersey in 2014 (Crone, 2015). NMFS presented a comparison of the predicted radii (*i.e.*, modeled exclusion zones) with radii based on in situ measurements (*i.e.*, the upper bound [95th percentile] of the cross-line prediction) in a previous notice of issued Authorization (see Table 1, 80 FR 27635, May 14, 2015) for Lamont-Doherty.

Briefly, Crone's (2015) preliminary analysis, specific to the proposed survey site offshore New Jersey, confirmed that in-situ, site specific measurements and estimates of the 160- and 180-decibel (dB) isopleths collected by the

Langseth's hydrophone streamer in shallow water were smaller than the modeled (*i.e.*, predicted) exclusion and buffer zones proposed for use in two seismic surveys conducted offshore New Jersey in shallow water in 2014 and 2015. In that particular case, Crone's (2015) results show that Lamont-Doherty's modeled exclusion (180-dB) and buffer (160-dB) zones were approximately 28 and 33 percent smaller than the in situ, site-specific measurements confirming that Lamont-Doherty's model was conservative in that case, as emphasized by Lamont-Doherty in its application and in supporting environmental documentation. The following is a summary of two additional analyses of in-situ data that support Lamont-Doherty's use of the modeled exclusion and buffer zones in this particular case.

In 2010, Lamont-Doherty assessed the accuracy of their modeling approach by comparing the sound levels of the field measurements acquired in the Gulf of Mexico study to their model predictions (Diebold *et al.*, 2010). They reported that the observed sound levels from the field measurements fell almost entirely below the predicted mitigation radii curve for deep water (greater than 1,000 meters [m]; 3280.8 feet [ft]) (Diebold *et al.*, 2010).

In 2012, Lamont-Doherty used a similar process to model exclusion and buffer zones for a shallow-water seismic survey in the northeast Pacific Ocean offshore Washington in 2012. Lamont-Doherty conducted the shallow-water survey using the same airgun configuration proposed for this seismic survey (*i.e.*, 6,600 cubic inches [in³]) and recorded the received sound levels on the shelf and slope off Washington State using the *Langseth's* 8-kilometer (km) hydrophone streamer. Crone *et al.* (2014) analyzed those received sound levels from the 2012 survey and confirmed that in-situ, site specific measurements and estimates of the 160- and 180-dB isopleths collected by the *Langseth's* hydrophone streamer in shallow water were two to three times smaller than what Lamont-Doherty's modeling approach predicted. While the results confirm bathymetry's role in sound propagation, Crone *et al.* (2014) were able to confirm that the empirical measurements from the Gulf of Mexico calibration survey (the same measurements used to inform Lamont-Doherty's modeling approach for this seismic survey in the South Atlantic Ocean) overestimated the size of the exclusion and buffer zones for the shallow-water 2012 survey off Washington and were thus precautionary, in that particular case.

The model Lamont-Doherty currently uses does not allow for the consideration of environmental and site-specific parameters as requested by the Commission. NMFS continues to work with Lamont-Doherty and the NSF to address the issue of incorporating site-specific information to further inform the analysis and development of mitigation measures in oceanic and coastal areas for future seismic surveys with Lamont-Doherty. However, Lamont-Doherty's current modeling approach (supported by the three data points discussed previously) represents the best available information for NMFS to reach determinations for the Authorization. As described earlier, the comparisons of Lamont-Doherty's model results and the field data collected in the Gulf of Mexico, offshore Washington, and offshore New Jersey illustrate a degree of conservativeness built into Lamont-Doherty's model for deep water, which NMFS expects to offset some of the limitations of the model to capture the variability resulting from site-specific factors.

Lamont-Doherty has conveyed to NMFS that additional modeling efforts to refine the process and conduct comparative analysis may be possible with the availability of research funds and other resources. Obtaining research funds is typically through a competitive process, including those submitted to U.S. Federal agencies. The use of models for calculating buffer and exclusion zone radii and for developing take estimates is not a requirement of the MMPA incidental take authorization process. Furthermore, NMFS does not provide specific guidance on model parameters nor prescribe a specific model for applicants as part of the MMPA incidental take authorization process at this time. There is a level of variability not only with parameters in the models, but also the uncertainty associated with data used in models, and therefore, the quality of the model results submitted by applicants. NMFS considers this variability when evaluating applications and the take estimates and mitigation that the model informs. NMFS takes into consideration the model used and its results in determining the potential impacts to marine mammals; however, it is just one component of the analysis during the MMPA consultation process as NMFS also takes into consideration other factors associated with the proposed action, (*e.g.*, geographic location, duration of activities, context, intensity, etc.).

Monitoring and Reporting

Comment 2: The Commission has indicated that monitoring and reporting requirements should provide a reasonably accurate assessment of the types of taking and the numbers of animals taken by the proposed activity. They recommend that NMFS and Lamont-Doherty incorporate an accounting for animals at the surface but not detected [*i.e.*, g(0) values] and for animals present but underwater and not available for sighting [*i.e.*, f(0) values] into monitoring efforts. In light of the Commission's previous comments, they recommend that NMFS consult with the funding agency (*i.e.*, the NSF) and individual applicants (*e.g.*, Lamont-Doherty and other related entities) to develop, validate, and implement a monitoring program that provides a scientifically sound, reasonably accurate assessment of the types of marine mammal takes and the actual numbers of marine mammals taken, accounting

for applicable g(0) and f(0) values. They also recommend that Lamont-Doherty and other relevant entities continue to collect appropriate sightings data in the field which NMFS can then pool to determine g(0) and f(0) values relevant to the various geophysical survey types.

Response: NMFS agrees with the Commission's recommendation to improve the post-survey reporting requirements for NSF and Lamont-Doherty by accounting for takes using applicable g(0) and f(0) values. In December 2015, NMFS met with Commission representatives to discuss ways to develop and validate a monitoring program that provides a scientifically sound, reasonably accurate assessment of the types of marine mammal takes and the actual numbers of marine mammals taken, accounting for applicable g(0) and f(0) values. We will work with NSF to develop ways to improve their post-survey take estimates and have included a requirement in the

South Atlantic Authorization for them to do so in collaboration with us and the Commission.

Description of Marine Mammals in the Area of the Specified Activity

Table 1 in this notice provides the following: All marine mammal species with possible or confirmed occurrence in the proposed activity area; information on those species' regulatory status under the MMPA and the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*); abundance; and occurrence and seasonality in the proposed activity area. Based on the best available information, NMFS expects that there may be a potential for certain cetacean and pinniped species to occur within the survey area (*i.e.*, potentially be taken) and have included additional information for these species in Table 1 of this notice. NMFS will carry forward analyses on the species listed in Table 1 later in this document.

TABLE 1—GENERAL INFORMATION ON MARINE MAMMALS THAT COULD POTENTIALLY OCCUR IN THE PROPOSED SURVEY AREAS WITHIN THE SOUTH ATLANTIC OCEAN
[January through March 2016]

Species	Regulatory status ^{1 2}	Species abundance ³	Local occurrence and range ⁴	Season ⁵
Antarctic minke whale (<i>Balaenoptera bonaerensis</i>).	MMPA—NC, ESA—NL	⁶ 515,000	Uncommon shelf, pelagic	Winter.
Blue whale (<i>B. musculus</i>)	MMPA—D	⁷ 2,300	Rare coastal, slope, pelagic	Winter.
	ESA—EN			
Bryde's whale (<i>B. edeni</i>)	MMPA—NC, ESA—NL	⁸ 43,633	Rare coastal, pelagic	Winter.
Common (dwarf) minke whale (<i>B. acutorostrata</i>).	MMPA—NC, ESA—NL	⁶ 515,000	Uncommon shelf, pelagic	Winter.
Fin whale (<i>B. physalus</i>)	MMPA—D, ESA—EN	⁹ 22,000	Uncommon Coastal, pelagic	Fall.
Humpback whale (<i>Megaptera novaeangliae</i>).	MMPA—D, ESA—EN	¹⁰ 42,000	Uncommon Coastal, shelf, pelagic ...	Winter.
Sei whale (<i>B. borealis</i>)	MMPA—D, ESA—EN	¹¹ 10,000	Uncommon Shelf edges, pelagic	Winter.
Southern right whale (<i>Eubalaena australis</i>).	MMPA—D, ESA—EN	¹² 12,000	Uncommon Coastal, shelf	Winter.
Sperm whale (<i>Physeter macrocephalus</i>).	MMPA—D, ESA—EN	¹³ 355,000	Uncommon Slope, pelagic	Winter.
Dwarf sperm whale (<i>Kogia sima</i>)	MMPA—NC, ESA—NL	3,785	Rare Shelf, slope, pelagic	Winter.
Pygmy sperm whale (<i>K. breviceps</i>) ...	MMPA—NC, ESA—NL	3,785	Rare Shelf, slope, pelagic	Winter.
Cuvier's beaked whale (<i>Ziphius cavirostris</i>).	MMPA—NC, ESA—NL	¹⁴ 599,300	Uncommon Slope	Winter.
Andrew's beaked whale (<i>Mesoplodon bowdoini</i>).	MMPA—NC, ESA—NL	¹⁴ 599,300	Rare Pelagic	Winter.
Arnoux's beaked whale (<i>Berardius arnuxii</i>).	MMPA—NC, ESA—NL	¹⁴ 599,300	Rare Pelagic	Winter.
Blainville's beaked whale (<i>M. densirostris</i>).	MMPA—NC, ESA—NL	¹⁴ 599,300	Rare Slope, pelagic	Winter.
Gervais' beaked whale (<i>M. europaeus</i>).	MMPA—NC, ESA—NL	¹⁴ 599,300	Rare pelagic	Winter.
Gray's beaked whale (<i>M. grayi</i>)	MMPA—NC, ESA—NL	¹⁴ 599,300	Rare Pelagic	Winter.
Hector's beaked whale (<i>M. hectori</i>) ...	MMPA—NC, ESA—NL	¹⁴ 599,300	Rare pelagic	Winter.
Shepherd's beaked whale (<i>Tasmacetus shepherdi</i>).	MMPA—NC, ESA—NL	¹⁴ 599,300	Rare pelagic	Winter.
Strap-toothed beaked whale (<i>M. layardii</i>).	MMPA—NC, ESA—NL	¹⁴ 599,300	Rare pelagic	Winter.
True's beaked whale (<i>M. mirus</i>)	MMPA—NC, ESA—NL	7,092	Rare pelagic	Winter.
Southern bottlenose whale (<i>Hyperoodon planifrons</i>).	MMPA—NC, ESA—NL	¹⁴ 599,300	Rare Coastal, shelf, pelagic	Winter.
Bottlenose dolphin (<i>Tursiops truncatus</i>).	MMPA—NC, ESA—NL	¹⁵ 600,000	Uncommon Coastal, pelagic	Winter.

TABLE 1—GENERAL INFORMATION ON MARINE MAMMALS THAT COULD POTENTIALLY OCCUR IN THE PROPOSED SURVEY AREAS WITHIN THE SOUTH ATLANTIC OCEAN—Continued
[January through March 2016]

Species	Regulatory status ^{1 2}	Species abundance ³	Local occurrence and range ⁴	Season ⁵
Rough-toothed dolphin (<i>Steno bredanensis</i>).	MMPA—NC, ESA—NL	271	Uncommon shelf, pelagic	Winter.
Pantropical spotted dolphin (<i>Stenella attenuata</i>).	MMPA—NC, ESA—NL	3,333	Uncommon Coastal, slope, pelagic ..	Winter.
Striped dolphin (<i>S. coeruleoalba</i>)	MMPA—NC, ESA—NL	54,807	Rare Pelagic	Winter.
Fraser's dolphin (<i>Lagenodelphis hosei</i>).	MMPA—NC, ESA—NL	¹⁶ 289,000	Uncommon Pelagic	Winter.
Spinner dolphin (<i>Stenella longirostris</i>)	MMPA—NC, ESA—NL	¹⁶ 1,200,000	Rare Pelagic	Winter.
Atlantic spotted dolphin (<i>S. frontalis</i>)	MMPA—NC, ESA—NL	44,715	Uncommon Pelagic	Winter.
Clymene dolphin (<i>S. clymene</i>)	MMPA—NC, ESA—NL	6,215	Rare Pelagic	Winter.
Risso's dolphin (<i>Grampus griseus</i>)	MMPA—NC, ESA—NL	20,692	Uncommon Pelagic	Winter.
Long-beaked common dolphin (<i>Delphinus capensis</i>).	MMPA—NC, ESA—NL	¹⁷ 20,000	Rare Coastal	Winter.
Short-beaked common dolphin (<i>Delphinus delphis</i>).	MMPA—NC, ESA—NL	173,486	Uncommon Coastal, shelf	Winter.
Southern right whale dolphin (<i>Lissodelphis peronii</i>).	MMPA—NC, ESA—NL	Unknown	Uncommon Coastal, shelf	Winter.
Melon-headed whale (<i>Peponocephala electra</i>).	MMPA—NC, ESA—NL	¹⁸ 50,000	Uncommon Coastal, shelf, pelagic ...	Winter.
Pygmy killer whale (<i>Feresa attenuata</i>).	MMPA—NC, ESA—NL	3,585	Uncommon Coastal, shelf, pelagic ...	Winter.
False killer whale (<i>Pseudorca crassidens</i>).	MMPA—NC, ESA—NL	442	Rare Pelagic	Winter.
Killer whale (<i>Orcinus orca</i>)	MMPA—NC, ESA—NL	¹⁹ 50,000	Uncommon Coastal, pelagic	Winter.
Long-finned pilot whale (<i>Globicephala melas</i>).	MMPA—NC, ESA—NL	¹⁴ 200,000	Uncommon Pelagic	Winter.
Short-finned pilot whale (<i>Globicephala macrorhynchus</i>).	MMPA—NC, ESA—NL	¹⁴ 200,000	Uncommon Pelagic	Winter.
Southern Elephant Seal (<i>Mirounga leonina</i>).	MMPA—NC, ESA—NL	²⁰ 650,000	Rare Coastal	Winter.
Subantarctic fur seal (<i>Arctocephalus tropicalis</i>).	MMPA—NC, ESA—NL	²¹ 310,000	Uncommon Pelagic	Winter.

² MMPA: NC= Not classified; D= Depleted; ESA: EN = Endangered, T = Threatened, DL = Delisted, NL = Not listed.

³ Except where noted abundance information obtained from NOAA Technical Memorandum NMFS—NE—231, U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments—2014 (Waring *et al.*, 2015) and the Draft 2015 U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments (*in review*, 2015). NA = Not available.

⁴ Occurrence and range information available from the International Union for the Conservation of Nature (IUCN).

⁵ NA= Not available due to limited information on that species' seasonal occurrence in the proposed area.

⁶ Best estimate from the International Whaling Commission's (IWC) estimate for the minke whale population (Southern Hemisphere, 2004).

⁷ Best estimate from the IWC's estimate for the blue whale population (Southern Hemisphere, 1998).

⁸ Estimate from IUCN Web page for Bryde's whales. Southern Hemisphere: Southern Indian Ocean (13,854); western South Pacific (16,585); and eastern South Pacific (13,194) (IWC, 1981).

⁹ Best estimate from the IWC's estimate for the fin whale population (East Greenland to Faroes, 2007).

¹⁰ Best estimate from the IWC's estimate for the humpback whale population (Southern Hemisphere, partial coverage of Antarctic feeding grounds, 2007).

¹¹ Estimate from the IUCN Web page for sei whales (IWC, 1996).

¹² Best estimate from the IWC's estimate for the southern right whale population (Southern Hemisphere, 2009).

¹³ Whitehead, (2002).

¹⁴ Abundance estimates for beaked, southern bottlenose, and pilot whales south of the Antarctic Convergence in January (Kasamatsu and Joyce, 1995).

¹⁵ Wells and Scott, (2009).

¹⁶ Jefferson *et al.*, (2008).

¹⁷ Cockcroft and Peddemors, (1990).

¹⁸ Estimate from the IUCN Web page for melon-headed whales (IUCN, 2015).

¹⁹ Estimate from the IUCN Web page for killer whales (IUCN, 2015).

²⁰ Estimate from the IUCN Web page for southern elephant seals (IUCN, 2015).

²¹ Arnoud, (2009).

NMFS refers the public to Lamont-Doherty's application, NSF's draft environmental analysis (see **ADDRESSES**), NOAA Technical Memorandum NMFS—NE—231, U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments—2014 (Waring *et al.*, 2015); and the Draft 2015 U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments (*in review*, 2015) available

online at: <http://www.nmfs.noaa.gov/pr/sars/species.htm> for further information on the biology and local distribution of these species.

Potential Effects of the Specified Activities on Marine Mammals

NMFS provided a summary and discussion of the ways that the types of stressors associated with the specified

activity (e.g., seismic airgun operations, vessel movement, and entanglement) impact marine mammals (via observations or scientific studies) in the notice of proposed Authorization (80 FR 75355, December 1, 2015).

The "Estimated Take by Incidental Harassment" section later in this document will include a quantitative discussion of the number of marine

mammals anticipated to be taken by this activity. The “Negligible Impact Analysis” section will include the analysis of how this specific proposed activity would impact marine mammals and will consider the content of this section, the “Estimated Take by Incidental Harassment” section, the “Mitigation” section, and the “Anticipated Effects on Marine Mammal Habitat” section to draw conclusions regarding the likely impacts of this activity on the reproductive success or survivorship of individuals and from that on the affected marine mammal populations or stocks.

NMFS provided a background of potential effects of Lamont-Doherty’s activities in the notice of proposed Authorization (80 FR 75355, December 1, 2015). Operating active acoustic sources, such as airgun arrays, has the potential for adverse effects on marine mammals. The majority of anticipated impacts would be from the use of acoustic sources. The effects of sounds from airgun pulses might include one or more of the following: Tolerance, masking of natural sounds, behavioral disturbance, and temporary or permanent hearing impairment or non-auditory effects (Richardson *et al.*, 1995). However, for reasons discussed in the notice of proposed Authorization (80 FR 75355, December 1, 2015), it is unlikely that there would be any cases of temporary or permanent hearing impairment resulting from Lamont-Doherty’s activities. NMFS’ predicted estimates for Level A harassment take for some species are likely overestimates of the injury that will occur. NMFS expects that successful implementation of the required visual and acoustic mitigation measures would avoid Level A take in some instances.

As outlined in previous NMFS documents, the effects of noise on marine mammals are highly variable, often depending on species and contextual factors (based on Richardson *et al.*, 1995).

In the *Potential Effects of the Specified Activity on Marine Mammals* section (80 FR 75355, December 1, 2015); NMFS included a qualitative discussion of the different ways that Lamont-Doherty’s seismic survey may potentially affect marine mammals.

Behavior: Marine mammals may behaviorally react to sound when exposed to anthropogenic noise. These behavioral reactions are often shown as: Changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities; changing/cessation of certain behavioral activities (such as socializing or

feeding); visible startle response or aggressive behavior (such as tail/fluke slapping or jaw clapping); avoidance of areas where noise sources are located; and/or flight responses (e.g., pinnipeds flushing into water from haulouts or rookeries).

Masking: Marine mammals use acoustic signals for a variety of purposes, which differ among species, but include communication between individuals, navigation, foraging, reproduction, avoiding predators, and learning about their environment (Erbe and Farmer, 2000; Tyack, 2000). Introduced underwater sound may through masking reduce the effective communication distance of a marine mammal species if the frequency of the source is close to that of a signal that needs to be detected by the marine mammal, and if the anthropogenic sound is present for a significant fraction of the time (Richardson *et al.*, 1995). For the airgun sound generated from Lamont-Doherty’s seismic survey, sound will consist of low frequency (under 500 Hz) pulses with extremely short durations (less than one second). Masking from airguns is more likely in low-frequency marine mammals like mysticetes. There is little concern that masking would occur near the sound source due to the brief duration of these pulses and relative silence between air gun shots (approximately 22 to 170 seconds). The sounds important to small odontocete communication are predominantly at much higher frequencies than the dominant components of airgun sounds, thus limiting the potential for masking in those species.

Hearing Impairment: Hearing impairment (either temporary or permanent) is also unlikely. Given the higher level of sound necessary to cause permanent threshold shift as compared with temporary threshold shift, it is considerably less likely that permanent threshold shift would occur during the seismic survey. Cetaceans generally avoid the immediate area around operating seismic vessels, as do some other marine mammals. Some pinnipeds show avoidance reactions to airguns, but their avoidance reactions are generally not as strong or consistent compared to cetacean reactions. Also, NMFS expects that some individuals would avoid the source at levels expected to result in injury. Nonetheless, although NMFS expects that Level A harassment is unlikely to occur, we have conservatively authorized and analyzed a low level of permanent threshold shift occurrences for certain species. We acknowledge that it is difficult to quantify the degree

to which the mitigation and avoidance will reduce the number of animals that might incur permanent threshold shift; however, we are proposing to authorize the modeled number of Level A takes, which does not take the mitigation or avoidance into consideration.

Vessel Movement and Entanglement: The *Langseth* will operate at a relatively slow speed (typically 4.6 knots [8.5 km/h; 5.3 mph]) when conducting the survey. Protected species observers would monitor for marine mammals, which would trigger mitigation measures, including vessel avoidance where safe. Therefore, NMFS does not anticipate nor do we authorize takes of marine mammals from vessel strike or entanglement.

NMFS refers the reader to Lamont-Doherty’s application and the NSF’s environmental analysis for additional information on the behavioral reactions (or lack thereof) by all types of marine mammals to seismic vessels. NMFS has reviewed these data and based our decision on the relevant information.

Anticipated Effects on Marine Mammal Habitat

NMFS included a detailed discussion of the potential effects of this action on marine mammal habitat, including physiological and behavioral effects on marine mammal prey items (e.g., fish and invertebrates) in the notice of proposed Authorization (80 FR 75355, December 1, 2015). While NMFS anticipates that the specified activity may result in marine mammals avoiding certain areas due to temporary ensonification, the impact to habitat is temporary and reversible. Further, NMFS also considered these impacts to marine mammals in detail in the notice of proposed Authorization as behavioral modification. The main impact associated with the activity would be temporarily elevated noise levels and the associated direct effects on marine mammals.

Mitigation

In order to issue an Incidental Harassment Authorization under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses (where relevant).

Lamont-Doherty has reviewed the following source documents and has

incorporated a suite of proposed mitigation measures into their project description.

(1) Protocols used during previous Lamont-Doherty and NSF-funded seismic research cruises as approved by us and detailed in the NSF's 2011 PEIS and 2015 draft environmental analysis;

(2) Previous incidental harassment authorizations applications and authorizations that NMFS has approved and authorized; and

(3) Recommended best practices in Richardson *et al.* (1995), Pierson *et al.* (1998), and Weir and Dolman, (2007).

To reduce the potential for disturbance from acoustic stimuli associated with the activities, Lamont-Doherty, and/or its designees have proposed to implement the following mitigation measures for marine mammals:

(1) Vessel-based visual mitigation monitoring;

(2) Proposed exclusion zones;

(3) Power down procedures;

(4) Shutdown procedures;

(5) Ramp-up procedures; and

(6) Speed and course alterations.

NMFS reviewed Lamont-Doherty's proposed mitigation measures and has proposed an additional measure to effect the least practicable adverse impact on marine mammals. They are:

(1) Expanded power down procedures for concentrations of six or more whales that do not appear to be traveling (*e.g.*, feeding, socializing, etc.).

Vessel-Based Visual Mitigation Monitoring

Lamont-Doherty would position observers aboard the seismic source vessel to watch for marine mammals near the vessel during daytime airgun operations and during any start-ups at night. Observers would also watch for marine mammals near the seismic vessel for at least 30 minutes prior to the start of airgun operations after an extended shutdown (*i.e.*, greater than approximately eight minutes for this proposed cruise). When feasible, the observers would conduct observations during daytime periods when the

seismic system is not operating for comparison of sighting rates and behavior with and without airgun operations and between acquisition periods. Based on the observations, the *Langseth* would power down or shutdown the airguns when marine mammals are observed within or about to enter a designated exclusion zone for cetaceans or pinnipeds.

During seismic operations, at least four protected species observers would be aboard the *Langseth*. Lamont-Doherty would appoint the observers with NMFS concurrence, and they would conduct observations during ongoing daytime operations and nighttime ramp-ups of the airgun array. During the majority of seismic operations, two observers would be on duty from the observation tower to monitor marine mammals near the seismic vessel. Using two observers would increase the effectiveness of detecting animals near the source vessel. However, during mealtimes and bathroom breaks, it is sometimes difficult to have two observers on effort, but at least one observer would be on watch during bathroom breaks and mealtimes. Observers would be on duty in shifts of no longer than four hours in duration.

Two observers on the *Langseth* would also be on visual watch during all nighttime ramp-ups of the seismic airguns. A third observer would monitor the passive acoustic monitoring equipment 24 hours a day to detect vocalizing marine mammals present in the action area. In summary, a typical daytime cruise would have scheduled two observers (visual) on duty from the observation tower, and an observer (acoustic) on the passive acoustic monitoring system. Before the start of the seismic survey, Lamont-Doherty would instruct the vessel's crew to assist in detecting marine mammals and implementing mitigation requirements.

The *Langseth* is a suitable platform for marine mammal observations. When stationed on the observation platform, the eye level would be approximately 21.5 m (70.5 ft) above sea level, and the

observer would have a good view around the entire vessel. During daytime, the observers would scan the area around the vessel systematically with reticle binoculars (*e.g.*, 7 x 50 Fujinon), Big-eye binoculars (25 x 150), and with the naked eye. During darkness, night vision devices would be available (ITT F500 Series Generation 3 binocular-image intensifier or equivalent), when required. Laser range-finding binoculars (Leica LRF 1200 laser rangefinder or equivalent) would be available to assist with distance estimation. They are useful in training observers to estimate distances visually, but are generally not useful in measuring distances to animals directly. The user measures distances to animals with the reticles in the binoculars.

Lamont-Doherty would immediately power down or shutdown the airguns when observers see marine mammals within or about to enter the designated exclusion zone. The observer(s) would continue to maintain watch to determine when the animal(s) are outside the exclusion zone by visual confirmation. Airgun operations would not resume until the observer has confirmed that the animal has left the zone, or if not observed after 15 minutes for species with shorter dive durations (small odontocetes and pinnipeds) or 30 minutes for species with longer dive durations (mysticetes and large odontocetes, including sperm, pygmy sperm, dwarf sperm, killer, and beaked whales).

Lamont-Doherty would use safety radii to designate exclusion zones and to estimate take for marine mammals. Table 2 shows the distances at which one would expect to receive sound levels (160-, 180-, and 190-dB,) from the airgun array and a single airgun. If the protected species visual observer detects marine mammal(s) within or about to enter the appropriate exclusion zone, the *Langseth* crew would immediately power down the airgun array, or perform a shutdown if necessary (see Shut-down Procedures).

TABLE 2—PREDICTED DISTANCES TO WHICH SOUND LEVELS GREATER THAN OR EQUAL TO 160 RE: 1 μ PA COULD BE RECEIVED DURING THE PROPOSED SURVEY AREAS WITHIN THE SOUTH ATLANTIC OCEAN

[January through March, 2016]

Source and volume (in ³)	Tow depth (m)	Water depth (m)	Predicted RMS distances ¹ (m)		
			190 dB	180 dB	160 dB
Single Bolt airgun (40 in ³)	9	>1,000	100	100	388
36-Airgun Array (6,600 in ³)	9	>1,000	286	927	5,780

¹ Predicted distances based on information presented in Lamont-Doherty's application.

The 180- or 190-dB level shutdown criteria are applicable to cetaceans and pinnipeds respectively as specified by NMFS (2000). Lamont-Doherty used these levels to establish the exclusion zones as presented in their application.

Power Down Procedures

A power down involves decreasing the number of airguns in use such that the radius of the 180-dB or 190-dB exclusion zone is smaller to the extent that marine mammals are no longer within or about to enter the exclusion zone. A power down of the airgun array can also occur when the vessel is moving from one seismic line to another. During a power down for mitigation, the *Langseth* would operate one airgun (40 in³). The continued operation of one airgun would alert marine mammals to the presence of the seismic vessel in the area. A shutdown occurs when the *Langseth* suspends all airgun activity.

If the observer detects a marine mammal outside the exclusion zone and the animal is likely to enter the zone, the crew would power down the airguns to reduce the size of the 180-dB or 190-dB exclusion zone before the animal enters that zone. Likewise, if a mammal is already within the zone after detection, the crew would power-down the airguns immediately. During a power down of the airgun array, the crew would operate a single 40-in³ airgun which has a smaller exclusion zone. If the observer detects a marine mammal within or near the smaller exclusion zone around the airgun (Table 3), the crew would shut down the single airgun (see next section).

Resuming Airgun Operations After a Power Down

Following a power-down, the *Langseth* crew would not resume full airgun activity until the marine mammal has cleared the 180-dB or 190-dB exclusion zone. The observers would consider the animal to have cleared the exclusion zone if:

- The observer has visually observed the animal leave the exclusion zone; or
- An observer has not sighted the animal within the exclusion zone for 15 minutes for species with shorter dive durations (*i.e.*, small odontocetes or pinnipeds), or 30 minutes for species with longer dive durations (*i.e.*, mysticetes and large odontocetes, including sperm, pygmy sperm, dwarf sperm, and beaked whales); or

The *Langseth* crew would resume operating the airguns at full power after 15 minutes of sighting any species with short dive durations (*i.e.*, small odontocetes or pinnipeds). Likewise, the

crew would resume airgun operations at full power after 30 minutes of sighting any species with longer dive durations (*i.e.*, mysticetes and large odontocetes, including sperm, pygmy sperm, dwarf sperm, and beaked whales).

NMFS estimates that the *Langseth* would transit outside the original 180-dB or 190-dB exclusion zone after an 8-minute wait period. This period is based on the average speed of the *Langseth* while operating the airguns (8.5 km/h; 5.3 mph). Because the vessel has transited away from the vicinity of the original sighting during the 8-minute period, implementing ramp-up procedures for the full array after an extended power down (*i.e.*, transiting for an additional 35 minutes from the location of initial sighting) would not meaningfully increase the effectiveness of observing marine mammals approaching or entering the exclusion zone for the full source level and would not further minimize the potential for take. The *Langseth's* observers are continually monitoring the exclusion zone for the full source level while the mitigation airgun is firing. On average, observers can observe to the horizon (10 km; 6.2 mi) from the height of the *Langseth's* observation deck and should be able to say with a reasonable degree of confidence whether a marine mammal would be encountered within this distance before resuming airgun operations at full power.

Shutdown Procedures

The *Langseth* crew would shut down the operating airgun(s) if they see a marine mammal within or approaching the exclusion zone for the single airgun. The crew would implement a shutdown:

- (1) If an animal enters the exclusion zone of the single airgun after the crew has initiated a power down; or
- (2) If an observer sees the animal is initially within the exclusion zone of the single airgun when more than one airgun (typically the full airgun array) is operating.

Resuming Airgun Operations After a Shutdown: Following a shutdown in excess of eight minutes, the *Langseth* crew would initiate a ramp-up with the smallest airgun in the array (40-in³). The crew would turn on additional airguns in a sequence such that the source level of the array would increase in steps not exceeding 6 dB per five-minute period over a total duration of approximately 30 minutes. During ramp-up, the observers would monitor the exclusion zone, and if he/she sees a marine mammal, the *Langseth* crew would implement a power down or shutdown

as though the full airgun array were operational.

During periods of active seismic operations, there are occasions when the *Langseth* crew would need to temporarily shut down the airguns due to equipment failure or for maintenance. In this case, if the airguns are inactive longer than eight minutes, the crew would follow ramp-up procedures for a shutdown described earlier and the observers would monitor the full exclusion zone and would implement a power down or shutdown if necessary.

If the full exclusion zone is not visible to the observer for at least 30 minutes prior to the start of operations in either daylight or nighttime, the *Langseth* crew would not commence ramp-up unless at least one airgun (40-in³ or similar) has been operating during the interruption of seismic survey operations. Given these provisions, it is likely that the vessel's crew would not ramp up the airgun array from a complete shutdown at night or in thick fog, because the outer part of the zone for that array would not be visible during those conditions.

If one airgun has operated during a power down period, ramp-up to full power would be permissible at night or in poor visibility, on the assumption that marine mammals would be alerted to the approaching seismic vessel by the sounds from the single airgun and could move away. The vessel's crew would not initiate a ramp-up of the airguns if an observer sees the marine mammal within or near the applicable exclusion zones during the day or close to the vessel at night.

Ramp-Up Procedures

Ramp-up of an airgun array provides a gradual increase in sound levels, and involves a step-wise increase in the number and total volume of airguns firing until the full volume of the airgun array is achieved. The purpose of a ramp-up is to "warn" marine mammals in the vicinity of the airguns, and to provide the time for them to leave the area and thus avoid any potential injury or impairment of their hearing abilities. Lamont-Doherty would follow a ramp-up procedure when the airgun array begins operating after an 8 minute period without airgun operations or when shut down has exceeded that period. Lamont-Doherty has used similar waiting periods (approximately eight to 10 minutes) during previous seismic surveys.

Ramp-up would begin with the smallest airgun in the array (40 in³). The crew would add airguns in a sequence such that the source level of the array would increase in steps not exceeding

six dB per five minute period over a total duration of approximately 30 to 35 minutes. During ramp-up, the observers would monitor the exclusion zone, and if marine mammals are sighted, Lamont-Doherty would implement a power-down or shut-down as though the full airgun array were operational.

If the complete exclusion zone has not been visible for at least 30 minutes prior to the start of operations in either daylight or nighttime, Lamont-Doherty would not commence the ramp-up unless at least one airgun (40 in³ or similar) has been operating during the interruption of seismic survey operations. Given these provisions, it is likely that the crew would not ramp up the airgun array from a complete shut-down at night or in thick fog, because the outer part of the exclusion zone for that array would not be visible during those conditions. If one airgun has operated during a power-down period, ramp-up to full power would be permissible at night or in poor visibility, on the assumption that marine mammals would be alerted to the approaching seismic vessel by the sounds from the single airgun and could move away. Lamont-Doherty would not initiate a ramp-up of the airguns if an observer sights a marine mammal within or near the applicable exclusion zones.

Special Procedures for Concentrations of Large Whales

The *Langseth* would avoid exposing concentrations of large whales to sounds greater than 160 dB re: 1 μ Pa within the 160-dB zone and would power down the array, if necessary. For purposes of this proposed survey, a concentration or group of whales would consist of six or more individuals visually sighted that do not appear to be traveling (e.g., feeding, socializing, etc.).

Speed and Course Alterations

If during seismic data collection, Lamont-Doherty detects marine mammals outside the exclusion zone and, based on the animal's position and direction of travel, is likely to enter the exclusion zone, the *Langseth* would change speed and/or direction if this does not compromise operational safety. Due to the limited maneuverability of the primary survey vessel, altering speed, and/or course can result in an extended period of time to realign the *Langseth* to the transect line. However, if the animal(s) appear likely to enter the exclusion zone, the *Langseth* would undertake further mitigation actions, including a power down or shut down of the airguns.

Mitigation Conclusions

NMFS has carefully evaluated Lamont-Doherty's proposed mitigation measures in the context of ensuring that we prescribe the means of effecting the least practicable impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another:

- The manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals;
- The proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and
- The practicability of the measure for applicant implementation.

Any mitigation measure(s) prescribed by NMFS should be able to accomplish, have a reasonable likelihood of accomplishing (based on current science), or contribute to the accomplishment of one or more of the general goals listed here:

1. Avoidance or minimization of injury or death of marine mammals wherever possible (goals 2, 3, and 4 may contribute to this goal).
2. A reduction in the numbers of marine mammals (total number or number at biologically important time or location) exposed to airgun operations that we expect to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing harassment takes only).
3. A reduction in the number of times (total number or number at biologically important time or location) individuals would be exposed to airgun operations that we expect to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing harassment takes only).
4. A reduction in the intensity of exposures (either total number or number at biologically important time or location) to airgun operations that we expect to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing the severity of harassment takes only).
5. Avoidance or minimization of adverse effects to marine mammal habitat, paying special attention to the food base, activities that block or limit passage to or from biologically important areas, permanent destruction of habitat, or temporary destruction/disturbance of habitat during a biologically important time.
6. For monitoring directly related to mitigation—an increase in the probability of detecting marine

mammals, thus allowing for more effective implementation of the mitigation.

Based on the evaluation of Lamont-Doherty's proposed measures, as well as other measures proposed by NMFS (i.e., special procedures for concentrations of large whales), NMFS has determined that the proposed mitigation measures provide the means of effecting the least practicable impact on marine mammal species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Monitoring

In order to issue an Incidental Harassment Authorization for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth "requirements pertaining to the monitoring and reporting of such taking." The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for Authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that we expect to be present in the proposed action area.

Lamont-Doherty submitted a marine mammal monitoring plan in section XIII of the Authorization application. NMFS, NSF, or Lamont-Doherty may modify or supplement the plan based on comments or new information received from the public during the public comment period.

Monitoring measures prescribed by NMFS should accomplish one or more of the following general goals:

1. An increase in the probability of detecting marine mammals, both within the mitigation zone (thus allowing for more effective implementation of the mitigation) and during other times and locations, in order to generate more data to contribute to the analyses mentioned later;
2. An increase in our understanding of how many marine mammals would be affected by seismic airguns and other active acoustic sources and the likelihood of associating those exposures with specific adverse effects, such as behavioral harassment, temporary or permanent threshold shift;
3. An increase in our understanding of how marine mammals respond to stimuli that we expect to result in take and how those anticipated adverse effects on individuals (in different ways and to varying degrees) may impact the population, species, or stock (specifically through effects on annual

rates of recruitment or survival) through any of the following methods:

a. Behavioral observations in the presence of stimuli compared to observations in the absence of stimuli (*i.e.*, to be able to accurately predict received level, distance from source, and other pertinent information);

b. Physiological measurements in the presence of stimuli compared to observations in the absence of stimuli (*i.e.*, to be able to accurately predict received level, distance from source, and other pertinent information);

c. Distribution and/or abundance comparisons in times or areas with concentrated stimuli versus times or areas without stimuli;

4. An increased knowledge of the affected species; and

5. An increase in our understanding of the effectiveness of certain mitigation and monitoring measures.

Monitoring Measures

Lamont-Doherty proposes to sponsor marine mammal monitoring during the present project to supplement the mitigation measures that require real-time monitoring, and to satisfy the monitoring requirements of the Authorization. Lamont-Doherty understands that NMFS would review the monitoring plan and may require refinements to the plan. Lamont-Doherty planned the monitoring work as a self-contained project independent of any other related monitoring projects that may occur in the same regions at the same time. Further, Lamont-Doherty is prepared to discuss coordination of its monitoring program with any other related work that might be conducted by other groups working insofar as it is practical for Lamont-Doherty.

Vessel-Based Passive Acoustic Monitoring

Passive acoustic monitoring would complement the visual mitigation monitoring program, when practicable. Visual monitoring typically is not effective during periods of poor visibility or at night, and even with good visibility, is unable to detect marine mammals when they are below the surface or beyond visual range. Passive acoustic monitoring can improve detection, identification, and localization of cetaceans when used in conjunction with visual observations. The passive acoustic monitoring would serve to alert visual observers (if on duty) when vocalizing cetaceans are detected. It is only useful when marine mammals call, but it can be effective either by day or by night, and does not depend on good visibility. The acoustic observer would monitor the system in

real time so that he/she can advise the visual observers if they acoustically detect cetaceans.

The passive acoustic monitoring system consists of hardware (*i.e.*, hydrophones) and software. The “wet end” of the system consists of a towed hydrophone array connected to the vessel by a tow cable. The tow cable is 250 m (820.2 ft) long and the hydrophones are fitted in the last 10 m (32.8 ft) of cable. A depth gauge, attached to the free end of the cable, typically is towed at depths less than 20 m (65.6 ft). The *Langseth* crew would deploy the array from a winch located on the back deck. A deck cable would connect the tow cable to the electronics unit in the main computer lab where the acoustic station, signal conditioning, and processing system would be located. The PAMguard software amplifies, digitizes, and then processes the acoustic signals received by the hydrophones. The system can detect marine mammal vocalizations at frequencies up to 250 kHz.

One acoustic observer, an expert bioacoustician with primary responsibility for the passive acoustic monitoring system would be aboard the *Langseth* in addition to the other visual observers who would rotate monitoring duties. The acoustic observer would monitor the towed hydrophones 24 hours per day during airgun operations and during most periods when the *Langseth* is underway while the airguns are not operating. However, passive acoustic monitoring may not be possible if damage occurs to both the primary and back-up hydrophone arrays during operations. The primary passive acoustic monitoring streamer on the *Langseth* is a digital hydrophone streamer. Should the digital streamer fail, back-up systems should include an analog spare streamer and a hull-mounted hydrophone.

One acoustic observer would monitor the acoustic detection system by listening to the signals from two channels via headphones and/or speakers and watching the real-time spectrographic display for frequency ranges produced by cetaceans. The observer monitoring the acoustical data would be on shift for one to six hours at a time. The other observers would rotate as an acoustic observer, although the expert acoustician would be on passive acoustic monitoring duty more frequently.

When the acoustic observer detects a vocalization while visual observations are in progress, the acoustic observer on duty would contact the visual observer immediately, to alert him/her to the presence of cetaceans (if they have not

already been seen), so that the vessel's crew can initiate a power down or shutdown, if required. The observer would enter the information regarding the call into a database. Data entry would include an acoustic encounter identification number, whether it was linked with a visual sighting, date, time when first and last heard and whenever any additional information was recorded, position and water depth when first detected, bearing if determinable, species or species group (*e.g.*, unidentified dolphin, sperm whale), types and nature of sounds heard (*e.g.*, clicks, continuous, sporadic, whistles, creaks, burst pulses, strength of signal, etc.), and any other notable information. Acousticians record the acoustic detection for further analysis.

Observer Data and Documentation

Observers would record data to estimate the numbers of marine mammals exposed to various received sound levels and to document apparent disturbance reactions or lack thereof. They would use the data to help better understand the impacts of the activity on marine mammals and to estimate numbers of animals potentially ‘taken’ by harassment (as defined in the MMPA). They will also provide information needed to order a power down or shut down of the airguns when a marine mammal is within or near the exclusion zone.

When an observer makes a sighting, they will record the following information:

1. Species, group size, age/size/sex categories (if determinable), behavior when first sighted and after initial sighting, heading (if consistent), bearing and distance from seismic vessel, sighting cue, apparent reaction to the airguns or vessel (*e.g.*, none, avoidance, approach, paralleling, etc.), and behavioral pace.

2. Time, location, heading, speed, activity of the vessel, sea state, visibility, and sun glare.

The observer will record the data listed under (2) at the start and end of each observation watch, and during a watch whenever there is a change in one or more of the variables.

Observers will record all observations and power downs or shutdowns in a standardized format and will enter data into an electronic database. The observers will verify the accuracy of the data entry by computerized data validity checks during data entry and by subsequent manual checking of the database. These procedures will allow the preparation of initial summaries of data during and shortly after the field program, and will facilitate transfer of

the data to statistical, graphical, and other programs for further processing and archiving.

Results from the vessel-based observations will provide:

1. The basis for real-time mitigation (airgun power down or shutdown).
2. Information needed to estimate the number of marine mammals potentially taken by harassment, which Lamont-Doherty must report to the Office of Protected Resources.
3. Data on the occurrence, distribution, and activities of marine mammals and turtles in the area where Lamont-Doherty would conduct the seismic study.
4. Information to compare the distance and distribution of marine mammals and turtles relative to the source vessel at times with and without seismic activity.
5. Data on the behavior and movement patterns of marine mammals detected during non-active and active seismic operations.

Reporting

Lamont-Doherty would submit a report to us and to NSF within 90 days after the end of the cruise. The report would describe the operations conducted and sightings of marine mammals near the operations. The report would provide full documentation of methods, results, and interpretation pertaining to all monitoring. The 90-day report would summarize the dates and locations of seismic operations, and all marine mammal sightings (dates, times, locations, activities, associated seismic survey activities). The report would also include estimates of the number and nature of exposures that occurred above the harassment threshold based on the observations. The report would consider both published literature and previous monitoring results that could inform the detectability of different species and how that information affects post survey exposure estimates.

In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner not permitted by the authorization (if issued), such as an injury, serious injury, or mortality (*e.g.*, ship-strike, gear interaction, and/or entanglement),

Lamont-Doherty shall immediately cease the specified activities and immediately report the take to the Division Chief, Permits and Conservation Division, Office of Protected Resources, NMFS. The report must include the following information:

- Time, date, and location (latitude/longitude) of the incident;
- Name and type of vessel involved;
- Vessel's speed during and leading up to the incident;
- Description of the incident;
- Status of all sound source use in the 24 hours preceding the incident;
- Water depth;
- Environmental conditions (*e.g.*, wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- Description of all marine mammal observations in the 24 hours preceding the incident;
- Species identification or description of the animal(s) involved;
- Fate of the animal(s); and
- Photographs or video footage of the animal(s) (if equipment is available).

Lamont-Doherty shall not resume its activities until we are able to review the circumstances of the prohibited take. We shall work with Lamont-Doherty to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. Lamont-Doherty may not resume their activities until notified by us via letter, email, or telephone.

In the event that Lamont-Doherty discovers an injured or dead marine mammal, and the lead visual observer determines that the cause of the injury or death is unknown and the death is relatively recent (*i.e.*, in less than a moderate state of decomposition as we describe in the next paragraph), Lamont-Doherty will immediately report the incident to the Division Chief, Permits and Conservation Division, Office of Protected Resources, NMFS. The report must include the same information identified in the paragraph above this section. Activities may continue while NMFS reviews the circumstances of the incident. NMFS would work with Lamont-Doherty to determine whether modifications in the activities are appropriate.

In the event that Lamont-Doherty discovers an injured or dead marine

mammal, and the lead visual observer determines that the injury or death is not associated with or related to the authorized activities (*e.g.*, previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), Lamont-Doherty would report the incident to the Chief Permits and Conservation Division, Office of Protected Resources, NMFS, within 24 hours of the discovery. Lamont-Doherty would provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS.

Estimated Take by Incidental Harassment

Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines "harassment" as: Any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment].

Acoustic stimuli (*i.e.*, increased underwater sound) generated during the operation of the airgun array may have the potential to result in the behavioral disturbance of some marine mammals and may have an even smaller potential to result in permanent threshold shift (non-lethal injury) of some marine mammals. NMFS expects that the proposed mitigation and monitoring measures would minimize the possibility of injurious or lethal takes. However, NMFS cannot discount the possibility (*albeit small*) that exposure to energy from the proposed survey could result in non-lethal injury (Level A harassment). Thus, NMFS proposes to authorize take by Level B harassment and Level A harassment resulting from the operation of the sound sources for the proposed seismic survey based upon the current acoustic exposure criteria shown in Table 3 subject to the limitations in take described in Table 5 later in this notice.

TABLE 3—NMFS' CURRENT ACOUSTIC EXPOSURE CRITERIA

Criterion	Criterion definition	Threshold
Level A Harassment (Injury)	Permanent Threshold Shift (PTS) (Any level above that which is known to cause TTS).	180 dB re 1 microPa-m (cetaceans)/190 dB re 1 microPa-m (pinnipeds) root mean square (rms).
Level B Harassment	Behavioral Disruption (for impulse noises)	160 dB re 1 microPa-m (rms).

NMFS' practice is to apply the 160 dB re: 1 μ Pa received level threshold for underwater impulse sound levels to predict whether behavioral disturbance that rises to the level of Level B harassment is likely to occur. NMFS' practice is to apply the 180 dB or 190 dB re: 1 μ Pa received level threshold for underwater impulse sound levels to predict whether permanent threshold shift (auditory injury), which we consider as Level A harassment is likely to occur.

Acknowledging Uncertainties in Estimating Take

Given the many uncertainties in predicting the quantity and types of impacts of sound on marine mammals, it is common practice to estimate how many animals are likely to be present within a particular distance of a given activity, or exposed to a particular level of sound, and use that information to predict how many animals are taken. In practice, depending on the amount of information available to characterize daily and seasonal movement and distribution of affected marine mammals, distinguishing between the numbers of individuals harassed and the instances of harassment can be difficult to parse. Moreover, when one considers the duration of the activity, in the absence of information to predict the degree to which individual animals are likely exposed repeatedly on subsequent days, the simple assumption is that entirely new animals are exposed every day, which results in a take estimate that in some circumstances overestimates the number of individuals harassed.

The following sections describe NMFS' methods to estimate take by incidental harassment. We base these estimates on the number of marine mammals that could be potentially harassed by seismic operations with the airgun array during approximately 3,236 km (2,028 mi) of transect lines in the South Atlantic Ocean.

Modeled Number of Instances of Exposures: Lamont-Doherty would conduct the proposed seismic survey within the high seas in the South Atlantic Ocean. NMFS presents estimates of the anticipated numbers of instances that marine mammals could be exposed to sound levels greater than or equal to 160, 180, and 190 dB re: 1 μ Pa during the proposed seismic survey. Table 5 represents the numbers of instances of take that NMFS proposes to authorize for this survey within the South Atlantic Ocean.

NMFS' Take Estimate Method for Species with Density Information: In order to estimate the potential number

of instances that marine mammals could be exposed to airgun sounds above the 160-dB Level B harassment threshold and the 180-dB Level A harassment thresholds, NMFS used the following approach for species with density estimates derived from the Navy's Atlantic Fleet Training and Testing Navy Marine Species Density Database (NMSDD) maps for the survey area in the Southern Atlantic Ocean. NMFS used the highest density range for each species within the survey area.

(1) Calculate the total area that the *Langseth* would ensonify above the 160-dB Level B harassment threshold and above the 180-dB Level A harassment threshold for cetaceans within a 24-hour period. This calculation includes a daily ensonified area of approximately 1,377 square kilometers (km^2) (532 square miles [mi^2]) for the five OBS tracklines and 1,839 km^2 (710 mi^2) for the MCS trackline based on the *Langseth* traveling approximately 150 km [93 mi] in one day). Generally, the *Langseth* travels approximately 137 km (85 mi) in one day while conducting a seismic survey; thus, NMFS' estimate of a daily ensonified area based on 150 km is an estimation of the theoretical maximum that the *Langseth* could travel within 24 hours.

(2) Multiply each daily ensonified area above the 160-dB Level B harassment threshold by the species' density (animals/ km^2) to derive the predicted number of instances of exposures to received levels greater than or equal to 160-dB re: 1 μ Pa on a given day;

(3) Multiply each product (*i.e.*, the expected number of instances of exposures within a day) by the number of survey days that includes a 25 percent contingency (*i.e.*, a total of six days for the five OBS tracklines and a total of 22 days for the MCS trackline) to derive the predicted number of instances of exposures above 160 dB over the duration of the survey;

(4) Multiply the daily ensonified area by each species-specific density to derive the predicted number of instances of exposures to received levels greater than or equal to 180-dB re: 1 μ Pa for cetaceans on a given day (*i.e.*, Level A takes). This calculation includes a daily ensonified area of approximately 207 km^2 (80 mi^2) for the five OBS tracklines and 281 km^2 (108 mi^2) for the MCS trackline.

(5) Multiply each product by the number of survey days that includes a 25 percent contingency (*i.e.*, a total of six days for the five OBS tracklines and a total of 22 days for the MCS trackline). Subtract that product from the predicted number of instances of exposures to

received levels greater than or equal to 160-dB re: 1 μ Pa on a given day to derive the number of instances of exposures estimated to occur between 160 and 180-dB threshold (*i.e.*, Level B takes).

In many cases, this estimate of instances of exposures is likely an overestimate of the number of individuals that are taken, because it assumes 100 percent turnover in the area every day, (*i.e.*, that each new day results in takes of entirely new individuals with no repeat takes of the same individuals over the 22-day period (28 days with contingency). It is difficult to quantify to what degree this method overestimates the number of individuals potentially taken. Except as described later for a few specific species, NMFS uses this number of instances as the estimate of individuals (and authorized take) even though NMFS is aware that the number may be somewhat high due to the use of the maximum density estimate from the NMSDD.

Take Estimates for Species with Less than One Instance of Exposure: Using the approach described earlier, the model generated instances of take for some species that were less than one over the 28-day duration. Those species include the humpback, blue, Bryde's, pygmy sperm, and dwarf sperm whale. NMFS used data based on dedicated survey sighting information from the Atlantic Marine Assessment Program for Protected Species (AMAPPS) surveys in 2010, 2011, and 2013 (AMAPPS, 2010, 2011, 2013) to estimate take and assumed that Lamont-Doherty could potentially encounter one group of each species during the proposed seismic survey. NMFS believes it is reasonable to use the average (mean) group size (weighted by effort and rounded up) from the AMAPPS surveys for humpback whale (3), blue whale (2), Bryde's whale (2), pygmy sperm whale (2), and dwarf sperm whale (2) to derive a reasonable estimate of take for eruptive occurrences.

Take Estimates for Species with No Density Information: Density information for the Southern right whale, southern elephant seal, and Subantarctic fur seal in the South Atlantic Ocean is data poor or non-existent. When density estimates were not available, NMFS used data based on dedicated survey sighting information from the Atlantic Marine Assessment Program for Protected Species (AMAPPS) surveys in 2010, 2011, and 2013 (AMAPPS, 2010, 2011, 2013) to estimate take for the three species. NMFS assumed that Lamont-Doherty could potentially encounter one group

of each species during the seismic survey. NMFS believes it is reasonable to use the average (mean) group size (weighted by effort and rounded up) for North Atlantic right whales (3) from the AMMAPS surveys for the Southern right whale and the mean group size for

unidentified seals (2) from the AMMAPS surveys for southern elephant and Subantarctic fur seals multiplied by 28 days to derive an estimate of take from a potential encounter.

NMFS used sighting information from a survey off Namibia, Africa (Rose and

Payne, 1991) to estimate a mean group size for southern right whale dolphins (58) and also multiplied that estimate by 28 days to derive an estimate of take from a potential encounter with that species.

TABLE 4—DENSITIES AND/OR MEAN GROUP SIZE, AND ESTIMATES OF THE POSSIBLE NUMBERS OF MARINE MAMMALS AND POPULATION PERCENTAGES EXPOSED TO SOUND LEVELS GREATER THAN OR EQUAL TO 160, 180, AND 190 dB re: 1 μ Pa OVER 28 DAYS DURING THE PROPOSED SEISMIC SURVEY IN THE SOUTH ATLANTIC OCEAN

[January through March, 2016]

Species	Density estimate ¹	Modeled number of instances of exposures to sound levels $\geq 160, 180, \text{ and } 190 \text{ dB}^2$	Proposed Level A take ³	Proposed Level B take ³	Percent of population ⁴	Population trend ⁵
Antarctic minke whale	0.054983	2,276, 396, -	396	2,276	0.519	Unknown.
Blue whale	0.000032	2, 0, -	0	2	0.074	Unknown.
Bryde's whale	0.000262	2, 0, -	0	2	0.005	Unknown.
Common minke whale	0.054983	2,276, 396, -	396	2,276	0.519	Unknown.
Fin whale	0.002888	106, 28, -	28	106	0.609	Unknown.
Humpback whale	0.000078	3, 0, -	0	3	0.200	↑.
Sei whale	0.002688	106, 28, -	28	106	1.340	Unknown.
Southern right whale	NA	18, 0, -	0	18	0.150	Unknown.
Sperm whale	0.001214	50, 0, -	0	50	0.014	Unknown.
Dwarf sperm whale	0.000041	2, 0, -	0	2	0.053	Unknown.
Pygmy sperm whale	0.000021	2, 0, -	0	2	0.053	Unknown.
Cuvier's beaked whale	0.003831	156, 28, -	28	156	0.031	Unknown.
Andrew's beaked whale	0.000511	28, 0, -	0	28	0.005	Unknown.
Arnoux's beaked whale	0.000956	28, 0, -	0	28	0.005	Unknown.
Blainville's beaked whale	0.000663	28, 0, -	0	28	0.005	Unknown.
Gervais' beaked whale	0.001334	56, 0, -	0	56	0.009	Unknown.
Gray's beaked whale	0.000944	28, 0, -	0	28	0.005	Unknown.
Hector's beaked whale	0.000246	0, 0, -	0	0	0.000	Unknown.
Shepherd's beaked whale	0.000816	28, 0, -	0	28	0.005	Unknown.
Strap-toothed beaked whale	0.000638	28, 0, -	0	28	0.005	Unknown.
True's beaked whale	0.000876	28, 0, -	0	28	0.005	Unknown.
Southern bottlenose whale	0.000917	28, 0, -	0	28	0.005	Unknown.
Bottlenose dolphin	0.020744	848, 156, -	156	848	0.167	Unknown.
Rough-toothed dolphin	0.000418	22, 0, -	0	22	8.118	Unknown.
Pantropical spotted dolphin	0.003674	156, 28, -	28	156	5.521	Unknown.
Striped dolphin	0.174771	7,208, 1,294, -	1,294	7,208	15.513	Unknown.
Fraser's dolphin	0.001568	56, 0, -	0	56	0.019	Unknown.
Spinner dolphin	0.006255	262, 50, -	50	262	0.026	Unknown.
Atlantic spotted dolphin	0.077173	3,180, 580, -	580	3,180	8.409	Unknown.
Clymene dolphin	0.000258	0, 0, -	0	0	0.000	Unknown.
Risso's dolphin	0.037399	1,540, 290, -	290	1,540	8.844	Unknown.
Long-beaked common dolphin	0.000105	0, 0, -	0	0	0.000	Unknown.
Short-beaked common dolphin	0.129873	5,356, 954, -	954	5,356	3.637	Unknown.
Southern right whale dolphin	NA	1,624, 0, -	0	1,624	Unknown	Unknown.
Melon-headed whale	0.006285	262, 50, -	50	262	0.624	Unknown.
Pygmy killer whale	0.001039	50, 0, -	0	50	1.395	Unknown.
False killer whale	0.000158	0, 0, -	0	0	0.000	Unknown.
Killer whale	0.003312	134, 28, -	28	134	0.324	Unknown.
Long-finned pilot whale	0.007614	318, 56, -	56	318	0.187	Unknown.
Short-finned pilot whale	0.015616	636, 106, -	106	636	0.371	Unknown.
Southern Elephant Seal	NA	56, 0, 0	0	56	0.009	Unknown.
Subantarctic fur seal	NA	56, 0, 0	0	56	0.018	Unknown.

¹ Densities (where available) are expressed as number of individuals per km². Densities estimated from the Navy's Atlantic Fleet Training and Testing Navy Marine Species Density Database maps for the survey area in the Southern Atlantic Ocean. NA = Not available.

² See preceding text for information on NMFS' take estimate calculations. NA = Not applicable.

³ Modeled instances of exposures include adjustments for species with no density information. The Level A estimates are overestimates of predicted impacts to marine mammals as the estimates do not take into consideration the required mitigation measures for shutdowns or power downs if a marine mammal is likely to enter the 180 dB exclusion zone while the airguns are active.

⁴ Table 2 in this notice lists the stock species abundance estimates used in calculating the percentage of the population.

⁵ Population trend information from Waring *et al.*, 2015. ↑ = Increasing. ↓ = Decreasing. Unknown = Insufficient data.

Lamont-Doherty did not estimate any additional take from sound sources

other than airguns. NMFS does not expect the sound levels produced by the

echosounder and sub-bottom profiler to exceed the sound levels produced by

the airguns. Lamont-Doherty will not operate the multibeam echosounder and sub-bottom profiler during transits to and from the survey area, (*i.e.*, when the airguns are not operating) and in between transits to each of the five OBS tracklines, and, therefore, NMFS does not anticipate additional takes from these sources in this particular case.

NMFS considers the probability for entanglement of marine mammals as low because of the vessel speed and the monitoring efforts onboard the survey vessel. Therefore, NMFS does not believe it is necessary to authorize additional takes for entanglement at this time.

The *Langseth* will operate at a relatively slow speed (typically 4.6 knots [8.5 km/h; 5.3 mph]) when conducting the survey. Protected species observers would monitor for marine mammals, which would trigger mitigation measures, including vessel avoidance where safe. Therefore, NMFS does not anticipate nor do we authorize takes of marine mammals from vessel strike.

There is no evidence that the planned survey activities could result in serious injury or mortality within the specified geographic area for the requested proposed Authorization. The required mitigation and monitoring measures would minimize any potential risk for serious injury or mortality.

Analysis and Determinations

Negligible Impact

Negligible impact is “an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival” (50 CFR 216.103). The lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population level effects) forms the basis of a negligible impact finding. Thus, an estimate of the number of takes, alone, is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be “taken” through behavioral harassment, NMFS must consider other factors, such as the likely nature of any responses (their intensity, duration, etc.), the context of any responses (critical reproductive time or location, migration, etc.), as well as the number and nature of estimated Level A harassment takes, the number of estimated mortalities, effects on habitat, and the status of the species.

In making a negligible impact determination, NMFS considers:

- The number of anticipated injuries, serious injuries, or mortalities;
- The number, nature, and intensity, and duration of harassment; and
- The context in which the takes occur (*e.g.*, impacts to areas of significance, impacts to local populations, and cumulative impacts when taking into account successive/contemporaneous actions when added to baseline data);
- The status of stock or species of marine mammals (*i.e.*, depleted, not depleted, decreasing, increasing, stable, impact relative to the size of the population);
- Impacts on habitat affecting rates of recruitment/survival; and
- The effectiveness of monitoring and mitigation measures to reduce the number or severity of incidental takes.

To avoid repetition, our analysis applies to all the species listed in Table 5, given that NMFS expects the anticipated effects of the seismic airguns to be similar in nature. Where there are meaningful differences between species or stocks, or groups of species, in anticipated individual responses to activities, impact of expected take on the population due to differences in population status, or impacts on habitat, NMFS has identified species-specific factors to inform the analysis.

Given the required mitigation and related monitoring, NMFS does not anticipate that serious injury or mortality would occur as a result of Lamont-Doherty’s proposed seismic survey in the South Atlantic Ocean. Thus the proposed authorization does not authorize any mortality.

NMFS’ predicted estimates for Level A harassment take for some species are likely overestimates of the injury that will occur. NMFS expects that successful implementation of the required visual and acoustic mitigation measures would avoid Level A take in some instances. Also, NMFS expects that some individuals would avoid the source at levels expected to result in injury. Nonetheless, although NMFS expects that Level A harassment is unlikely to occur at the numbers proposed to be authorized, because it is difficult to quantify the degree to which the mitigation and avoidance will reduce the number of animals that might incur PTS, we are proposing to authorize, and have included in our analyses, the modeled number of Level A takes, which does not take the mitigation or avoidance into consideration. However, because of the constant movement of the *Langseth* and the animals, as well as the fact that the boat is not staying in any one area in which individuals would be expected to

concentrate for any long amount of time (*i.e.*, since the duration of exposure to loud sounds will be relatively short), we anticipate that any PTS incurred would be in the form of only a small degree of permanent threshold shift and not total deafness.

Of the marine mammal species under our jurisdiction that are known to occur or likely to occur in the study area, the following species are listed as endangered under the ESA: Blue, fin, humpback, sei, Southern right whale, and sperm whales. The western north Atlantic population of humpback whales is known to be increasing. The other marine mammal species that may be taken by harassment during Lamont-Doherty’s seismic survey program are not listed as threatened or endangered under the ESA.

Cetaceans. Odontocete reactions to seismic energy pulses are usually thought to be limited to shorter distances from the airgun(s) than are those of mysticetes, in part because odontocete low-frequency hearing is assumed to be less sensitive than that of mysticetes. Given sufficient notice through relatively slow ship speed, NMFS generally expects marine mammals to move away from a noise source that is annoying prior to becoming potentially injurious, although Level A takes for a small group of species are proposed for authorization here.

Potential impacts to marine mammal habitat were discussed previously in this document (see the “Anticipated Effects on Habitat” section). Although some disturbance is possible to food sources of marine mammals, the impacts are anticipated to be minor enough as to not affect annual rates of recruitment or survival of marine mammals in the area. Based on the size of the South Atlantic Ocean where feeding by marine mammals occurs versus the localized area of the marine survey activities, any missed feeding opportunities in the direct project area will be minor based on the fact that other feeding areas exist elsewhere. Taking into account the planned mitigation measures, effects on cetaceans are generally expected to be restricted to avoidance of a limited area around the survey operation and short-term changes in behavior, falling within the MMPA definition of “Level B harassment.” Animals are not expected to permanently abandon any area that is surveyed, and any behaviors that are interrupted during the activity are expected to resume once the activity ceases. Only a small portion of marine mammal habitat will be affected at any time, and other areas within the South

Atlantic Ocean would be available for necessary biological functions.

Pinnipeds. During foraging trips, extralimital pinnipeds may not react at all to the sound from the proposed survey, ignore the stimulus, change their behavior, or avoid the immediate area by swimming away or diving. Behavioral responses can range from a mild orienting response, or a shifting of attention, to flight and panic. Research and observations show that pinnipeds in the water are tolerant of anthropogenic noise and activity. They may react in a number of ways depending on their experience with the sound source and what activity they are engaged in at the time of the exposure. Significant behavioral effects are more likely at higher received levels within a few kilometers of the source and activities involving sound from the proposed survey would not occur near any haulout areas where resting behaviors occur.

Many animals perform vital functions, such as feeding, resting, traveling, and socializing, on a diel cycle (*i.e.*, 24 hour cycle). Behavioral reactions to noise exposure (such as disruption of critical life functions, displacement, or avoidance of important habitat) are more likely to be significant if they last more than one diel cycle or recur on subsequent days (Southall *et al.*, 2007). While NMFS anticipates that the seismic operations would occur on consecutive days and the duration of the survey would last no more than 28 days, the seismic operations would increase sound levels in the marine environment in a relatively small area surrounding the vessel (compared to the range of most of the marine mammals within the proposed survey area), which is constantly travelling over distances, and some animals may only be exposed to and harassed by sound for less than a day.

For reasons stated previously in this document and based on the following factors, Lamont-Doherty's specified activities are not likely to cause long-term behavioral disturbance, serious injury, or death, or other effects that would be expected to adversely affect reproduction or survival of any individuals. They include:

- The anticipated impacts of Lamont-Doherty's survey activities on marine mammals are temporary behavioral changes due, primarily, to avoidance of the area;
- The likelihood that, given the constant movement of boat and animals and the nature of the survey design (not concentrated in areas of high marine mammal concentration), PTS incurred would be of a low level;

- The availability of alternate areas of similar habitat value for marine mammals to temporarily vacate the survey area during the operation of the airgun(s) to avoid acoustic harassment;

- The expectation that the seismic survey would have no more than a temporary and minimal adverse effect on any fish or invertebrate species that serve as prey species for marine mammals, and therefore consider the potential impacts to marine mammal habitat minimal; and

- The knowledge that the survey is taking place in the open ocean and not located within an area of biological importance for breeding, calving, or foraging for marine mammals.

Table 4 in this document outlines the number of requested Level A and Level B harassment takes that we anticipate as a result of these activities.

Required mitigation measures, such as special shutdowns for large whales, vessel speed, course alteration, and visual monitoring would be implemented to help reduce impacts to marine mammals. Based on the analysis herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the proposed monitoring and mitigation measures, NMFS finds that Lamont-Doherty's proposed seismic survey would have a negligible impact on the affected marine mammal species or stocks.

Small Numbers

As mentioned previously, NMFS estimates that Lamont-Doherty's activities could potentially affect, by Level B harassment, 38 species of marine mammals under our jurisdiction. NMFS estimates that Lamont-Doherty's activities could potentially affect, by Level A harassment, up to 16 species of marine mammals under our jurisdiction.

For each species, the numbers of take being proposed for authorization are small numbers relative to the population sizes: Less than 16 percent for striped dolphins, less than 8 percent of Risso's dolphins, less than 6 percent for pantropical spotted dolphins, and less than 4 percent for all other species. NMFS has provided the regional population and take estimates for the marine mammal species that may be taken by Level A and Level B harassment in Table 4 in this notice. NMFS finds that the proposed incidental take described in Table 4 for the proposed activity would be limited to small numbers relative to the affected species or stocks.

Impact on Availability of Affected Species or Stock for Taking for Subsistence Uses

There are no relevant subsistence uses of marine mammals implicated by this action.

Endangered Species Act (ESA)

There are six marine mammal species listed as endangered under the Endangered Species Act that may occur in the proposed survey area. Under section 7 of the ESA, NSF initiated formal consultation with NMFS on the proposed seismic survey. NMFS (*i.e.*, National Marine Fisheries Service, Office of Protected Resources, Permits and Conservation Division) also consulted internally with NMFS on the proposed issuance of an Authorization under section 101(a)(5)(D) of the MMPA.

In January, 2016, the Endangered Species Act Interagency Cooperation Division issued a Biological Opinion with an Incidental Take Statement to us and to the NSF, which concluded that the issuance of the Authorization and the conduct of the seismic survey were not likely to jeopardize the continued existence of blue, fin, humpback, sei, South Atlantic right and sperm whales. The Biological Opinion also concluded that the issuance of the Authorization and the conduct of the seismic survey would not affect designated critical habitat for these species.

National Environmental Policy Act (NEPA)

NSF has prepared an environmental analysis titled "*Environmental Analysis of a Marine Geophysical Survey by the R/V Marcus G. Langseth in South Atlantic Ocean, Austral Summer 2016.*" NMFS has also prepared an environmental assessment (EA) titled, "Proposed Issuance of an Incidental Harassment Authorization to Lamont Doherty Earth Observatory to Take Marine Mammals by Harassment Incidental to a Marine Geophysical Survey in the South Atlantic Ocean, January–March 2016," which tiers off of NSF's environmental analysis. NMFS and NSF provided relevant environmental information to the public through the notice of proposed Authorization (80 FR 75355, December 1, 2015) and considered public comments received prior to finalizing our EA and deciding whether or not to issue a Finding of No Significant Impact (FONSI). NMFS concluded that issuance of an Incidental Harassment Authorization to Lamont-Doherty would not significantly affect the quality of the human environment and prepared and

issued a FONSI in accordance with NEPA and NOAA Administrative Order 216–6. NMFS' EA and FONSI for this activity are available upon request (see ADDRESSES).

Authorization

NMFS has issued an Incidental Harassment Authorization to Lamont-Doherty for the take of marine mammals, incidental to conducting a marine seismic survey in the South Atlantic Ocean January through March 2016.

Dated: January 11, 2016.

Perry F. Gayaldo,

Deputy Director, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. 2016–00660 Filed 1–14–16; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XE396

Endangered and Threatened Species; Take of Anadromous Fish

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Issuance seven new scientific research permits, and fourteen renewal scientific research permits.

SUMMARY: Notice is hereby given that NMFS has issued Permit 1440–2R to the Interagency Ecological Program (IEP); Permit 13675–2R to the Fishery Foundation of California (FFC); Permit 13791–2R to the United States Fish and Wildlife Service (USFWS), Stockton Fish and Wildlife Office (SFWO); Permit 14516–2R to Dr. Jerry Smith, Associate Professor in the Department of Biological Sciences at San Jose State University; Permit 15215 to the California Department of Fish and Wildlife (CDFW), Fisheries Branch, Fish Health Laboratory; Permit 16274 to the Mendocino Redwood Company (MRC); Permit 17063 to the United States Forest Service (USFS), Redwood Sciences Laboratory; Permit 17077–2R to Dr. Peter Moyle, with the University of California at Davis, Department of Wildlife, Fish and Conservation Biology; Permit 17219 and Permit 19320 to the NMFS Southwest Fisheries Science Center (SWFSC), Fisheries Ecology Division; Permit 17272 to the USFWS, Arcata Fish and Wildlife Office Fisheries Program (AFWO); Permit 17351 to the Green Diamond Resource Company (GDRC); Permit 17396 to the

USFWS, Anadromous Fish Restoration Program (AFRP); Permit 17867 to the Humboldt Redwood Company (HRC); Permit 17877 to the Bureau of Reclamation (BOR); Permit 17916 to the Bureau of Land Management (BLM), Arcata Field Office; Permit 18012 to the CDFW, Bay Delta Region; Permit 18712 to H.T. Harvey & Associates; Permit 18937 to the Scripps Institution of Oceanography, University of California, San Diego, California Sea Grant College Program (CSGCP); Permit 19121 to the United States Geological Survey (USGS), California Water Survey; and Permit 19400 to ICF consulting.

ADDRESSES: The approved application for each permit is available on the Applications and Permits for Protected Species (APPS), <https://apps.nmfs.noaa.gov> Web site by searching the permit number within the Search Database page. The applications, issued permits and supporting documents are also available upon written request or by appointment: Protected Resources Division, NMFS, 777 Sonoma Avenue, Room 325, Santa Rosa, CA 95404 ph: (707) 575–6080, fax: (707) 578–3435).

FOR FURTHER INFORMATION CONTACT: Jeff Abrams, Santa Rosa, CA (ph.: 707–575–6080), Fax: 707–578–3435, email: Jeff.Abrams@noaa.gov.

SUPPLEMENTARY INFORMATION: The issuance of permits and permit modifications, as required by the Endangered Species Act of 1973 (16 U.S.C. 1531–1543) (ESA), is based on a finding that such permits/modifications: (1) Are applied for in good faith; (2) would not operate to the disadvantage of the listed species which are the subject of the permits; and (3) are consistent with the purposes and policies set forth in section 2 of the ESA. Authority to take listed species is subject to conditions set forth in the permits. Permits and modifications are issued in accordance with and are subject to the ESA and NMFS regulations (50 CFR parts 222–226) governing listed fish and wildlife permits.

Species Covered in This Notice

The following listed species are covered in this notice:

Chinook salmon (*Oncorhynchus tshawytscha*): Threatened Snake River spring/summer-run (SR spr/sum); threatened Lower Columbia River (LCR); threatened California Coastal (CC); threatened Central Valley spring-run (CVSR); endangered Sacramento River winter-run (SRWR).

Coho salmon (*O. kisutch*): Threatened Southern Oregon/Northern California

Coast (SONCC); endangered Central California Coast (CCC).

Steelhead (*O. mykiss*): Threatened Northern California (NC); threatened CCC; threatened California Central Valley (CCV); threatened South-Central California Coast (S–CCC); endangered Southern California (SC).

North American green sturgeon (*Acipenser medirostris*): Threatened southern distinct population segment (sDPS).

Eulachon (*Thaleichthys pacificus*): threatened sDPS.

Permits Issued

Permit 1440–2R

A notice of receipt of an application for scientific research permit renewal (1440–2R) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 1440–2R was issued to IEP on December 23, 2015 and expires on December 31, 2020.

Permit 1440–2R authorizes IEP to take CVSR Chinook salmon, SRWR Chinook salmon, CCV steelhead, CCC steelhead and sDPS green sturgeon while conducting 11 surveys in the San Francisco Bay-Delta region. The studies examine the abundance, and temporal and spatial distribution of various life stages of pelagic fishes of management concern, including listed species, and their food (e.g., zooplankton) resources, along with environmental conditions. These IEP studies are intended to monitor/inform the effectiveness of water operations, aquatic habitat restoration, and fish management practices, thereby providing a benefit to listed fish. The 11 studies included are: (1) Adult Striped Bass, a striped bass population study; (2) Fall Midwater Trawl, which monitors the relative abundance of native and introduced fish species; (3) Sturgeon Tagging, a white sturgeon tagging program; (4) Summer Trawl, which targets delta smelt and young-of-the-year striped bass; (5) Estuarine and Marine Fish, a San Francisco Bay trawl study; (6) 20mm Survey, a study to monitor juvenile delta smelt distribution and relative abundance; (7) Yolo Bypass, a research effort to understand fish and invertebrate use of the Yolo Bypass seasonal floodplain; (8) Upper Estuary Zooplankton, which targets multiple zooplankters; (9) Spring Kodiak Trawl, which determines the relative abundance and distribution of spawning delta smelt; (10) Suisun Marsh Survey, monitoring to determine the effects of the Suisun Marsh Salinity Control Gates operation on fish, including listed salmonids; and (11) Smelt Larva Survey, which provides distribution data for

longfin smelt larvae in the Delta. Listed fish may be captured by fyke net, gill net, midwater trawl, trammel net, hoop net, otter trawl, larval fish net, zooplankton net, Kodiak trawl net, rotary screw trap, and beach seine. The majority of captured fishes will be identified to species, enumerated, measured for standard length, and released. Juvenile SRWR and CVSR Chinook salmon will be identified using the Delta Model Length-at-Date-of-Capture Table. Listed species will be processed first and released. A subsample of wild juvenile SRWR and CVSR Chinook salmon sized captures will be tissue sampled for genetic analysis, and a subsample of hatchery juvenile SRWR and CVSR Chinook salmon sized captures will be sacrificed (*i.e.*, intentional directed mortality) in order to collect coded wire tag data for management purposes and for stock confirmation. To reduce handling mortality, investigators will conduct water to water transfers, use fish-friendly nets, avoid handling when possible, and will not release fish from a vessel under way.

Permit 13675–2R

A notice of receipt of an application for scientific research permit renewal (13675–2R) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 13675–2R was issued to the FFC on December 23, 2015 and expires on December 31, 2020.

Permit 13675–2R authorizes the FFC annually take juvenile-CVSR Chinook salmon, SRWR Chinook salmon, CCV steelhead, and sDPS green sturgeon while conducting research designed to monitor the use of the Fremont Landing Conservation Bank (FLCB) and the Bullock Bend Mitigation Bank (BBMB) at the confluence of the Sacramento and Feather rivers in California's Central Valley. The banks are restored areas that provides mitigation for impacts on listed salmonid species in the Central Valley. The monitoring will evaluate the use of the FLCB and the BBMB by listed fish, provide data directly related to success criteria described in the conservation/mitigation bank management plan, and benefit listed fish by informing adaptive management strategies being conducted at the FLCB and the BBMB. The researchers will use beach seines and fyke nets to capture listed fish. Once captured, all listed fish will be identified by species and released. A subsample will be measured for fork length. No anesthesia will be used, and no additional handling procedures would take place. Captured fish will remain completely wetted at all times to minimize stress. Any fish

exhibiting signs of physiological stress would be immediately released. The researchers are not proposing to kill any of the fish they capture, but some may die as an unintended result of the research.

Permit 13791–2R

A notice of receipt of an application for scientific research permit renewal (13791–2R) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 13791–2R was issued to the USFWS SFWO on December 23, 2015 and expires on December 31, 2020.

Permit 13791–2R authorizes the USFWS SFWO to annually take juvenile and smolt CVSR Chinook salmon, SRWR Chinook salmon, CCV steelhead, and juvenile and larval sDPS green sturgeon while conducting seven research studies. The purpose of the studies is to evaluate/monitor the: (1) Abundance, temporal and spatial distribution, and survival of salmonids and other fishes in the lower Sacramento and San Joaquin rivers and the San Francisco Estuary (SFE); (2) occurrence and habitat use of fishes, especially early life history stages, within the Liberty Island and Cache Slough Complex; (3) relative gear efficiencies for all IEP fish survey nets, and also the distribution of delta smelt; (4) littoral habitat use of juvenile Chinook salmon within the Delta; (5) the effect of projected water operations on delta smelt; (6) length at date race criteria of SRWR Chinook salmon sized juvenile Chinook salmon; and (7) SRWR and CVSR Chinook salmon floodplain usage in the Yolo bypass. These studies will result in capture/handle/release take, tissue sampling, and/or intentional directed mortality. Intentional directed mortality will apply to only juvenile hatchery adipose clipped salmonids and larval green sturgeon. Capture methods will include Kodiak trawl, midwater trawl, beach seine, zooplankton net, larval net, gill net, fyke net, purse seine, and boat electrofishing. All listed fish except adipose fin clipped SRWR and CVSR Chinook salmon will be immediately collected from the sampling gears, placed in containers filled with river water collected at the location being sampled, processed, held in a recovery container filled with aerated river water, and subsequently released at the sampled location. A fin tissue sample will be collected from a subset of natural origin SRWR and CVSR Chinook salmon for stock determination. The purpose of intentional mortality of hatchery origin (adipose clipped) SRWR and CVSR Chinook salmon will be to collect coded wire tags (CWT), and up ten green

sturgeon larvae will be killed during larval fish collections in order to identify the contents of the larval trawl net, which can only be achieved in the lab. The data provided by these studies will provide natural resource managers real-time biological and population data on fishes to evaluate the effect of water operations and fish management practices within the SFE, thereby benefiting listed fish.

Permit 14516–2R

A notice of receipt of an application for scientific research permit renewal (14516–2R) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 14516–2R was issued to Dr. Jerry Smith on December 23, 2015 and expires on December 31, 2020.

Permit 14516–2R authorizes Dr. Jerry Smith, Associate Professor in the Department of Biological Sciences at San Jose State University to annually take multiple life stages of CCC coho salmon and CCC steelhead while conducting two studies: (1) Stream and lagoon surveys in Gazos Creek, Waddell Creek, and Scott Creek; and (2) lagoon surveys in Pescadero Creek Lagoon and San Gregorio Lagoon. The purpose of the studies is to: (1) Provide an annual index of relative abundance for juvenile listed salmonids, provide data on lagoon and upstream habitat utilization and growth, and provide an assessment of trends and year to year response to variations in habitat conditions; and (2) determine juvenile listed salmonid abundance and growth, and provide adult life history information in the lagoons. Capture methods will include backpack electrofishing, and beach seine. Captured salmonids will be measured, and a subset of juvenile captures and all adults will have scale samples taken, before being released at the capture location. A subsample of juvenile steelhead will also be marked via caudal fin clip to perform a mark-recapture analysis. Scale and fin tissue samples will be taken from adult fish carcasses. Captured live fish will be held in flow-through live cars, covered with a towel to provide shade and cover to calm fish. Adult fish will be processed and released first. In lagoons, live cars will be kept in deeper water with cooler temperatures and less turbidity to prevent warming above ambient temperatures or a decrease in dissolved oxygen. The researchers are not proposing to kill any of the fish they capture, but a small number may die as an unintended result of the activities.

Permit 15215

A notice of receipt of an application for scientific research permit (15215)

was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 15215 was issued to CDFW on December 23, 2015 and expires on December 31, 2020.

Permit 15215 authorizes the CDFW, Fisheries Branch, Fish Health Laboratory to take endangered SRWR Chinook salmon, CCC coho salmon and SC steelhead for a period of five years. The purpose of the research is to investigate wild fish kills/disease outbreaks that could occur in California that involve federally listed endangered species. The research will benefit the listed species by providing fisheries managers with the necessary information to help alleviate future outbreaks of fish disease through proper management of fishery and water resources. The research will only be conducted in the event of elevated and unexplained endangered species mortality or the presence of clinically diseased animals. Given such a triggering event, endangered fish will be collected in any of the state waters of California in which a disease outbreak/fish die-off occurred. Adult and juvenile endangered fish will be collected by hand or dip-net, as only dead and/or moribund fish, or fish displaying clinical signs of disease, will be collected. Moribund or clinically diseased fish will be euthanized (*i.e.*, intentional directed mortality). Trained CDFW pathologists and veterinarians will assess moribund or diseased fish prior to euthanasia, and only fish that will likely die regardless of the actions proposed by CDFW will be euthanized. Necropsies will be performed on dead and euthanized captured fish either in the laboratory or in the field, fish will be examined for signs of parasitic and bacterial infections, and fin and/or internal tissues will be collected for virology, histopathology, immunological testing and/or DNA testing.

Permit 16274

A notice of receipt of an application for scientific research permit renewal (16274) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 16274 was issued to the MRC on December 23, 2015 and expires on December 31, 2020.

Permit 16274 authorizes the MRC to take CC Chinook salmon, SONCC coho salmon, CCC coho salmon, NC steelhead, and CCC steelhead while conducting research and monitoring to assess juvenile and adult populations of salmonids and their distribution in streams within MRC's property. Research will be conducted in several watersheds within Mendocino and northern Sonoma counties. The data

gathered will benefit listed fish by informing a better understanding of salmonid distribution, abundance, and habitat utilization in these areas. Juvenile salmonids will be captured by backpack electrofishing, anesthetized, weighed, measured to fork length, and released. A subsample of juvenile salmonids will be fin clipped to mark and to collect tissue samples for genetic analysis. Live adults and/or juveniles will be observed via snorkel surveys and spawning surveys. Carcasses will be measured and then marked to ensure duplicate measurements were not made. Outmigrant trapping will be conducted using a rotary screw trap or weir/pipe trap; captured outmigrants will be anesthetized, measured, and released. A subsample of outmigrants will be marked (dye, elastomer, or fin clip) or Passive Integrated Transponder (PIT) tagged. All anesthetized fish will be allowed to recover in a bucket containing aerated natal water prior to being released back into the stream from which they were taken. The researchers are not proposing to kill any of the fish they capture, but a small number may die as an unintended result of the activities.

Permit 17063

A notice of receipt of an application for scientific research permit renewal (17063) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 17063 was issued to the USFS, Redwood Sciences Laboratory on December 23, 2015 and expires on December 31, 2020.

Permit 170963 authorizes the USFS, Redwood Sciences Laboratory to perform eight studies that together will take CC Chinook salmon, SONCC coho salmon, CCC coho salmon, NC steelhead, CC steelhead, and SC steelhead. The purposes of the eight studies are: (1) To investigate the invasion history of non-listed speckled dace in the Van Duzen River and the Eel River, (2) to investigate the invasion history of non-listed California roach in the Van Duzen River and the Eel River, (3) to develop an Individual Based Modeling (IBM) approach to predict the effects of management practices on salmonid population in Northern California, (4) to link abiotic factors (*e.g.*, distance to spawning ground) to the expression of an anadromous or resident life history for *O. mykiss* in the Eel River, (5) to link the distribution and movement of watershed products (*e.g.*, wood, sediment, and water) in tributaries and mainstem channels to fish diversity and abundance in Northern California rivers, (6) to provide managers with insights into the status

and relatedness of Sacramento sucker populations in northern California, (7) to document the speckled dace invasion of the Mad River, and (8) to provide managers with a tool to predict the effects of management decisions on Santa Ana suckers in the Santa Ana River. Listed adult and juvenile salmonids will be observed via snorkel surveys. Listed juvenile salmonids will be captured via backpack and/or boat electrofishing for all eight studies, and also via beach seine and/or fyke net for Study 6 (*i.e.*, Sacramento sucker relatedness and distribution). For most studies, listed salmonids that are captured will be anesthetized, measured and/or weighed, and released. Captured fishes will be held in multiple live cars to prevent overcrowding and to maintain acceptable water quality conditions. In addition to capturing, handling and releasing fish, Study 4 (*i.e.*, factors affecting the expression of an anadromous versus resident life history in *O. mykiss*) will also include intentional directed mortality for otolith microchemical analyses. A maximum of four *O. mykiss* will be sacrificed from each of seventy sample streams distributed throughout the Eel River, which will include both anadromous (listed as threatened) and resident (non-listed) life history forms.

Permit 17077-2R

A notice of receipt of an application for scientific research permit renewal (17077-2R) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 17077-2R was issued to Dr. Peter Moyle on December 23, 2015 and expires on December 31, 2020.

Permit 17077-2R authorizes Dr. Peter Moyle, with the University of California at Davis, Department of Wildlife, Fish and Conservation Biology, to take listed species while conducting research designed to develop a better understanding of how physical habitat, flow and other factors interact to maintain assemblages of native and non-native aquatic species in the upper SFE. This study will provide knowledge about food web and habitat support for native fishes, including listed anadromous fish, which are suspected of utilizing such habitats during development. While listed fish are not the target species for this study, the study will benefit listed fish by improving management decisions regarding creating additional habitat, and helping to anticipate the effects of drought and climate change on food and habitat availability. Sampling will be conducted in three distinct regions of the SFE: (1) The Cache-Lindsey complex, (2) the Sherman Lake complex

and (3) Suisun Marsh, and will take juvenile and adult CVSR Chinook salmon, SRWR Chinook Salmon, CCV steelhead, and sDPS green sturgeon. Capture methods will be similar for each of these regions, and will include otter trawling, beach seining and boat electrofishing, however electrofishing will be suspended immediately upon encountering a listed species. All sampled fish will be placed in a bucket with ambient water and an aerator, examined for responsiveness and returned to the water as soon as possible with a minimum of handling, after identification and length estimates were made. Juvenile SRWR and CVSR Chinook salmon will be identified using published size-at-date criteria. Only adult green sturgeon captures will receive additional processing beyond identification and measuring for length. Adult green sturgeon will be scanned for the presence of a PIT tag, and a soft pelvic fin tissue sample will be collected. The researchers are not proposing to kill any of the fish they capture, but a small number may die as an unintended result of the activities.

Permit 17219

A notice of receipt of an application for scientific research permit renewal (17219) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 17219 was issued to the NMFS SWFSC, Fisheries Ecology Division on December 23, 2015 and expires on December 31, 2020.

Permit 17219 authorizes the NMFS SWFSC, Fisheries Ecology Division to conduct research throughout California that will include take of SRWR Chinook salmon, CVSR Chinook salmon, SONCC coho salmon, CCC coho salmon, NC steelhead, CCC steelhead, CCV steelhead, S-CCC steelhead, SC steelhead, and juvenile sDPS green sturgeon. The research will benefit listed fish by supporting conservation and management of listed anadromous salmonids and green sturgeon in California by directly addressing information needs identified by NMFS and other agencies. FED studies address priority topics identified in NMFS technical recovery team reports, NMFS recovery plans, joint programs such as the California Coastal Monitoring Program developed by NMFS and CDFW, and state programs such as the Fisheries Restoration Grant Program. Research objectives of specific studies include: (1) Estimating population abundance and dynamics; (2) evaluating factors affecting growth, survival, and life-history; (3) assessing life-stage specific habitat use and movement; (4) collecting data necessary to construct

various types of models (e.g., population, life-cycle, bioenergetics, and habitat-use models); (5) determining genetic structure of populations; (6) evaluating the effects of activities such as water management and habitat restoration on populations; and (7) developing improved sampling and monitoring methods.

Research and take will involve various life stages (juvenile, smolt, adult, and carcass). Listed fish will be observed during spawning surveys, and captured by electrofishing, beach seine, rotary screw trap, and/or hook-and-line. The majority of captured fish will be anesthetized, measured to fork length, and released. A subsample of captured fish will be further sampled by collection of scales, fin clips, gill clips or stomach contents; and/or marking or tagging including fin tissue clips, PIT tags, elastomer tags, acoustic tags, or radio tags. Species care after capture will include use of aerated buckets or live cars for holding and recovery, and minimization of handling time. The majority of fish captured will be released alive at their point of capture following recovery from handling. However, in limited cases some fish will be: (1) Retained in enclosures in streams for short-term growth and survival experiments and then released, or (2) euthanized for analysis of otoliths and/or parasitological/pathological studies of parasites and diseases of wild juvenile steelhead.

Permit 17272

A notice of receipt of an application for scientific research permit renewal (17272) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 17272 was issued to the USFWS AFWO on December 23, 2015 and expires on December 31, 2020.

Permit 17272 authorizes the USFWS AFWO to take multiple life stages of hatchery and wild SONCC coho salmon via monitoring and research activities in Northwest California. The purposes of the five studies included are to monitor: (1) Chinook salmon fry production and disease incidence in the Klamath River below Iron Gate dam, (2) Chinook salmon escapement in the mainstem Klamath River below the Shasta River confluence, (3) Chinook salmon escapement in the mainstem Klamath River from Iron Gate dam to the Shasta River confluence, (4) coho salmon escapement between Iron Gate Dam and the Indian Creek confluence, and (5) long-term salmonid disease incidence in the lower Klamath River. Trained AFWO crews will conduct redd surveys, on foot and from rafts, which could observe/harass spawning SONCC coho

salmon. Crews will spend minimal time around redds and avoid walking on redds. Trained AFWO crews will also capture juvenile SONCC coho salmon using rotary-screw traps, frame nets, and beach seines. Juvenile coho salmon will be held in aerated holding buckets filled with fresh river water then anesthetized, measured for fork length, weighed, and released back into the river. There will be some intentional mortality of hatchery juvenile coho salmon for disease analysis. Aside from these hatchery fish, the researchers are not proposing to kill any of the fish they capture, but a small number may die as an unintended result of the activities. The studies will benefit listed coho salmon by informing the AFWO goal to develop conservation strategies for aquatic resources and to evaluate the success of aquatic habitat restoration efforts that will lead to the recovery and conservation of fish populations and fisheries in northern California.

Permit 17351

A notice of receipt of an application for scientific research permit renewal (17351) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 17351 was issued to the GDRC on December 23, 2015 and expires on December 31, 2020.

Permit 17351 authorizes the GDRC to take listed salmonids while conducting research and monitoring under an existing Aquatic Habitat Conservation Plan (AHCP). The AHCP, which was approved in 2007 and is valid until 2057, identifies potential threats to three listed fish species that may result from GDRC's timber harvest activities and describes minimization and mitigation measures and effectiveness monitoring to address potential threats. The requested take limits will allow for implementation of monitoring and research activities in several northern California watersheds including the Winchuk River, Smith River, Lower Klamath basin tributaries, Mad River, Little River, several Humboldt Bay tributaries, and Eel River. The three species identified which will be taken as a direct result of this monitoring are CC Chinook salmon, SONCC coho salmon, and NC steelhead. Research and take will involve various life stages (fry, juvenile, smolt, adult, and carcass). Trained GDRC crews will observe listed salmonids during snorkel surveys and spawning surveys. Crews will avoid walking in suitable spawning habitats (e.g., riffle crests). Listed salmonids will be captured by various capture methods including backpack electrofishing, kick net sampling, rotary screw trapping, v-notch weir outmigrant trapping, and

minnow trapping. Most captured fish will be measured and released. A subsample of captured fish will be anesthetized, then marked via dorsal fin clip, fin tissue sampled, scale sampled, and/or PIT tagged. Anesthetized individuals will be allowed to recover in mesh containers placed in the stream channel prior to release. Data collected will be used to document long-term population trends and better understand the potential impacts on the covered species and their habitats that may result from AHCP covered activities. The researchers are not proposing to kill any of the fish they capture, but a small number may die as an unintended result of the activities.

Permit 17396

A notice of receipt of an application for scientific research permit (17396) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 17396 was issued to the USFWS AFRP on December 23, 2015 and expires on December 31, 2020.

Permit 17396 authorizes the USFWS AFRP to take listed fish while conducting research designed to: (1) Provide data necessary to evaluate the effectiveness of AFRP restoration projects, including appraisal of spawning gravel augmentation, in-channel and floodplain habitat enhancement actions, and water allocation/flow regime alteration actions; and (2) provide reconnaissance-level population and biological data on contemporary anadromous fish population patterns within the Central Valley of California, in order to prioritize and select future restoration projects to benefit anadromous salmonids. All AFRP restoration monitoring projects will serve to benefit anadromous salmonids by providing data on restoration project effectiveness, and providing valuable information relating to adaptive management procedures. Take of listed species including various life stages of CVSR Chinook salmon, CCV steelhead, and sDPS green sturgeon will result from activities in the following five projects: (1) Bobcat flat restoration effectiveness monitoring in the lower Tuolumne River; (2) adult sturgeon acoustic telemetry in the lower San Joaquin basin; (3) San Joaquin River sturgeon spawning habitat assessment; (4) steelhead sampling and acoustic tracking in the lower Stanislaus, Tuolumne and Merced Rivers; and (5) fish reconnaissance in the San Joaquin River system. Observe/harass take will result from snorkel surveys. Capture methods will include beach seine, trammel nets, gill nets, fyke nets, hook-

and-line, egg mats, benthic d-nets, and boat and backpack electrofishing. The majority of captured listed fish will be handled and released; a subsample of captures will be anesthetized, scale sampled, fin clipped (to mark and to collect fin tissue for genetic analysis), acoustic tagged, and/or subject to intentional directed mortality. Green sturgeon eggs ($n = 100$) and larvae ($n = 5$) will be intentionally sacrificed, which will be necessary to provide voucher tissue specimens, and will benefit the species by providing critical information on green sturgeon spawning habitat. To minimize physiological stress, all sturgeon will be held in a net pen submerged in river or with flowing water through their gills while waiting to be handled. All listed salmonids will be immediately collected from the sampling gears, placed in five gallon buckets filled with fresh river water from the location being sampled, processed, held in another container filled with fresh river water for recovery, and subsequently released in the sampled location. The new information on these species generated by these projects will help prioritize future restoration projects, thus benefiting listed species.

Permit 17867

A notice of receipt of an application for scientific research permit renewal (17867) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 17867 was issued to the HRC on December 23, 2015 and expires on December 31, 2020.

Permit 17867 authorizes the HRC to take juvenile and adult CC Chinook salmon, SONCC coho salmon and NC steelhead while conducting research and monitoring that satisfies two objectives: (1) To comply with CDFW's Restorable Class I policy by sampling reaches through snorkel and electrofishing methods to identify Class I habitat within proposed timber harvest plans, and (2) to monitor fish occupancy trends at the reach, sub basin, watershed and HRC property level over time by repeated snorkel surveys at index and randomly selected reaches. Adult and juvenile salmonids will be observed during snorkel surveys, and juvenile salmonids will be captured by backpack electrofishing. Snorkel surveys will be the preferred method of detecting presence/absence of fish species. Captured fish will be identified, and transported upstream of the project area. All captured specimens will be kept in aerated buckets, observed closely, and not released until fully recovered. The monitoring will help to achieve HRC's fisheries program's general goal, which

is to determine the occurrence, distribution, population and habitat conditions of anadromous fishes on HRC lands as well as to monitor, protect, restore and enhance the anadromous fishery resources in watersheds owned by HRC. The researchers are not proposing to kill any of the fish they capture, but a small number may die as an unintended result of the activities.

Permit 17877

A notice of receipt of an application for scientific research permit renewal (17877) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 17877 was issued to the BOR on December 23, 2015 and expires on December 31, 2020.

Permit 17877 authorizes the BOR to take juvenile, smolt, adult and carcasses of SONCC coho salmon via: (1) Observation/harassment by way of snorkel surveys, hand netting that specifically targets other species, and spawning surveys; and (2) capture by rotary screw trap, boat electrofishing, hook-and-line, beach seine, fyke net, or minnow trapping. The BOR applied for this permit as a contingent of the Trinity River Restoration Program (TRRP), an inter-agency partnership of the BOR, USFWS, Hoopa Valley Tribe, Yurok Tribe, CDFW, Trinity County, USFS, NMFS, and the California Department of Water Resources. The TRRP benefits listed species by conducting large-scale channel restoration and habitat restoration activities in the Trinity River mainstem and watershed as a means of restoring declining fishery resources. The following six specific studies are included: (1) Trinity River juvenile salmonid outmigrant monitoring, (2) juvenile Chinook salmon density monitoring, (3) Trinity River Chinook salmon redd and carcass survey, (4) Trinity River invasive brown trout predation on coho investigation, (5) Trinity River juvenile coho salmon ecology study, and (6) watershed rehabilitation/research. Fin tissue samples will be collected from carcasses. The majority of captured juvenile coho salmon will be anesthetized, measured to fork length and released, but a subsample will also be PIT tagged. Tagged fish will be held in recovery pens post tagging to monitor and enhance post-tagging health. The researchers are not proposing to kill any of the fish they capture, but a small number may die as an unintended result of the activities.

Permit 17916

A notice of receipt of an application for scientific research permit renewal

(17916) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 17916 was issued to the BLM on December 23, 2015 and expires on December 31, 2020.

Permit 17916 authorizes the BLM to monitor the effects of current management actions related to the Northwest Forest Plan's Aquatic Conservation Strategy on anadromous salmonids and their habitats. In order to monitor land management actions and implement the Northwest Forest Plan in northern California, BLM needs to obtain updated information on fish distribution and habitat. Sampling will occur in various watersheds, including the Mattole River, Eel River, Lost Coast region tributaries to the Pacific Ocean, and Humboldt Bay tributaries. Take of CC Chinook salmon, SONCC coho salmon, and NC steelhead will result from this monitoring and research. The preponderance of requested take will result from spawning surveys, snorkel surveys, and presence/absence surveys from the bank, all of which will result in observe/harass take of juvenile and/or adult salmonids. Capture methods that will take juvenile salmonids include backpack electrofishing and beach seine. A small number of salmonid fry may also be captured during kick net activities intended to sample invertebrates. Electrofishing will be used only when stream conditions prohibit less invasive sampling methods. Personnel handling fish will have wet hands and experience in fish handling. After length measurements were complete, fish will be placed in a bucket of freshwater for longer than 30 minutes to allow for recovery prior to being released. Recovering fish will be kept in cool, shaded, aerated water and will not be overcrowded. This research will benefit listed fish by informing adaptive management strategies intended to aid in the recovery of at-risk anadromous salmonids. The researchers are not proposing to kill any of the fish they capture, but a small number may die as an unintended result of the activities.

Permit 18012

A notice of receipt of an application for scientific research permit renewal (18012) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 18012 was issued to the CDFW, Bay Delta Region (Region III) on December 23, 2015 and expires on December 31, 2020.

Permit 18012 authorizes the CDFW, Bay Delta Region to take listed species while conducting two research projects, the Watershed Restoration Project (WRP) and the Fisheries Management

Project (FMP), designed to assess and restore the productivity of CC Chinook salmon, CCC coho salmon, NC steelhead, CCC steelhead, and S-CCC steelhead in Sonoma, Mendocino, Napa, Marin, San Mateo, Santa Cruz and Monterey counties in north central California. Program staff will accomplish this goal by conducting habitat and salmonid surveys to determine potential limiting factors and stock status in order to identify the specific measures and actions needed to protect and increase production of listed salmonids. The authorized studies include: (1) Juvenile salmonid occurrence, distribution and habitat monitoring; (2) adult salmonid occurrence, passage, and distribution; (3) spawning ground surveys; (4) life cycle station monitoring; and (5) juvenile steelhead lagoon beach seining. Listed fish will be observed/harassed during snorkel surveys, spawning surveys, carcass surveys, and by the use of electronic counting stations (*i.e.*, DIDSON camera, Vaki Riverwatcher and/or video weir). Listed salmonids will be captured using backpack electrofishing, beach seining, rotary screw traps, fyke/pipe traps, and potentially adults may be captured using a resistance board weir. The majority of juvenile captures will be handled (measured for fork length and weighed), and released. A subset of juvenile salmonid captures will be anesthetized, fin tissue sampled to collect tissue for genetic analysis, scale sampled, marked with an upper caudal fin clip, and/or PIT tagged. Only healthy fish with no signs of stress or injury will be subjected to marking or tagging. All fish will be allowed to recover fully and will be observed carefully for injury prior to release. Captured adult salmonids will be handled (*i.e.*, identified, measured, weighed, and scale and tissue samples taken), tagged (bi-colored Floy tags and/or opercular-hole-punched) and released upstream of the weir. All fish handled will be held in clean and decontaminated containers that are supplied with cool, aerated water and will be released back into the stream reach from which they were collected after recovery. Implementation of these activities under the WRP and the FMP will benefit listed species by informing recommendations on proposed habitat restoration projects and by determining the impacts of various management actions. The researchers are not proposing to kill any of the fish they capture, but a small number may die as an unintended result of the activities.

Permit 18712

A notice of receipt of an application for scientific research permit (18712) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 18712 was issued to H.T. Harvey & Associates on December 23, 2015 and expires on December 31, 2020.

Permit 18712 authorizes H.T. Harvey & Associates to take juvenile and smolt CC Chinook salmon, SONCC coho salmon, CCC coho salmon, NC steelhead, and adult sDPS eulachon while completing a project that is intended to meet three Marine Protected Area (MPA) monitoring goals set by the MPA Monitoring Enterprise. The three monitoring goals are: (1) To assess trends in the condition of ecosystems inside and outside of MPA's, (2) to evaluate the effects of specific MPA design criteria such as MPA size and distance between MPAs, and (3) to evaluate the effect of visitors on MPAs. The project will contribute to the goals of the monitoring enterprise by describing the baseline biological community in four northern California estuaries: (1) Mad River Estuary in Humboldt County, (2) South Humboldt Bay State Marine Recreational Management Area in Humboldt County, (3) Ten Mile Estuary State Marine Conservation Area (SMCA) in Mendocino County, and (4) Big River Estuary SMCA in Mendocino County. Beach seines and fyke nets will be used to capture fish whereby take (*i.e.*, capture/handle/release) of listed salmonids will occur. Handling will consist of identifying and measuring fish to fork length. To ensure that handled fish will experience minimal adverse effects as a result of the sampling process, fish will be allowed to recover briefly either in live wells or in shaded, aerated buckets. The researchers are not proposing to kill any of the fish they capture, but a small number may die as an unintended result of the activities.

Permit 18937

A notice of receipt of an application for scientific research permit (18937) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 18937 was issued to the Scripps Institution of Oceanography, University of California, San Diego, CSGCP on December 23, 2015 and expires on December 31, 2020.

Permit 18937 authorizes the Scripps Institution of Oceanography, University of California, San Diego, CSGCP to annually take listed CC Chinook salmon, CCC coho salmon, and CCC steelhead while monitoring the status

and trends of listed salmonids in the Russian River watershed. The CSGCP will collect data to estimate population metrics such as abundance, survival, growth, and spatial distribution of multiple life stages of salmonids, and relate them to different recovery actions including hatchery releases, habitat enhancement projects, and stream flow improvement projects. Data collection will be designed to meet four specific study objectives: (1) Evaluation of the Russian River Coho Salmon Captive Broodstock Program, (2) implementation of the California Coastal Salmonid Monitoring Plan, (3) comparing juvenile coho salmon oversummer survival with stream flow, and (4) evaluation of habitat enhancement projects. The four studies will provide resource agencies with valuable information that will help guide future decisions regarding recovery actions. Fish populations will be monitored in many tributaries of the Russian River watershed and several methods that could observe/harass and/or capture fish will be employed, including: Snorkel surveys, spawning surveys, redd surveys, downstream migrant trapping (pipe/funnel trap), minnow trapping, operation of PIT tag detection systems (*i.e.*, PIT tag arrays and PIT tag wand surveys), and backpack electrofishing. Handling of live fish captured in traps or during electrofishing surveys will include anesthetization, measuring for fork length, scanning for CWT and PIT tags, fin tissue sampling, scale sampling, PIT tagging, and/or gastric lavage. Adult salmonid carcasses encountered during spawning surveys will be scanned for PIT tags, measured, fin clipped, scale sampled, and otoliths will be extracted. All live fish will be released back into the stream following recovery in aerated buckets of cold water. Specific measures that will be taken to reduce the risk of injury or mortality to fish include minimizing the time that fish are handled, placing potential predators in separate holding buckets, running aerators in buckets, avoiding overcrowding in buckets, changing water in the anesthesia bucket frequently, placing a thermometer in holding buckets and replacing water frequently if the temperatures are rising, wetting measuring boards and weigh pans, processing listed species first, checking traps at least once per day and more frequently in high flow or windy conditions, and placing flow deflectors inside the trap box to provide refugia for fish. The researchers are not proposing to kill any of the fish they capture, but a small number may die as an unintended result of the activities.

Permit 19121

A notice of receipt of an application for scientific research permit (19121) was published in the **Federal Register** on July 29, 2015 (80 FR 45197). Permit 19121 was issued to the USGS, California Water Survey on December 23, 2015 and expires on December 31, 2020.

Permit 19121 authorizes the USGS, California Water Survey take of listed species associated with completing two main objectives: (1) To examine research applications of the SmeltCam that have been developed and coordinated with the IEP, and (2) to provide fisheries science support for the BOR's compliance with Biological Opinions. The studies are intended to: (1) Provide new quantitative data addressing the potential benefits of habitat restoration to the SFE and Delta ecosystem and its native fish populations, and (2) determine the vertical and lateral distribution of delta smelt, and the continued evaluation and application of SmeltCam technology for studies of delta smelt and other fishes. The results of these studies are expected to provide net benefits to listed species by improving our understanding of their ecology and habitat use, and by informing the development of new research tools that can guide management decisions and habitat restoration actions. Sampling will be conducted in Suisun Bay, and will take multiple life stages of CVSR Chinook salmon, SRWR Chinook salmon, CCV steelhead, and sDPS green sturgeon. Capture methods will include beach seine, fyke trap, larval net, otter trawl, midwater trawl, boat electrofishing, set line, and gill net. All sampling will follow methods and protocols designed to minimize take of listed species while conducting research and monitoring. For example, sampling gear such as gill nets will be watched closely to monitor the status of any fishes entangled in the net. Set times will be short (approximately one hour), and nets will be set in habitats that listed fish are unlikely to inhabit. Listed salmonids captured in the course of sampling will be identified, carefully measured for length and released. Green sturgeon will be anesthetized using MS-222, scanned for a presence of a PIT tag, PIT tagged if no PIT tag is present, tissue sampled, and allowed to recover prior to release. All fishes collected in any sampling gear will be handled as gently as possible to facilitate safe release back to the water. The researchers are not proposing to kill any of the fish they capture, but a small number may die as an unintended result of the activities.

Permit 19320

A notice of receipt of an application for scientific research permit (19320) was published in the **Federal Register** on April 8, 2015 (80 FR 18820). Permit 19320 was issued to the NMFS SWFSC, Fisheries Ecology Division on December 1, 2015 and expires on October 29, 2020.

Permit 19320 authorizes the NMFS SWFSC, Fisheries Ecology Division to annually take sub-adult and juvenile listed salmon and steelhead for a period of five years. The permit will authorize research designed to (1) determine the inter-annual and seasonal variability in growth, feeding, and energy status among juvenile salmonids in the coastal ocean off northern and central California; (2) determine migration paths and spatial distribution among genetically distinct salmonid stocks during their early ocean residence; (3) characterize the biological and physical oceanographic features associated with juvenile salmon ocean habitat from the shore to the continental shelf break; (4) identify potential links between coastal geography, oceanographic features, and salmon distribution patterns; and (5) identify and test ecological indices for salmon survival. This research will benefit listed fish by informing comprehensive lifecycle models that incorporate both freshwater and marine conditions and recognize the relationship between the two habitats; it will also identify and predict sources of salmon mortality at sea and thereby help managers develop indices of salmonid survival in the marine environment.

Listed fish will be captured primarily via surface trawling, however midwater trawling and beach seining will be used occasionally. Sub-adult salmonids (*i.e.*, fish larger than 250 mm) that survive capture will have fin tissue and scale samples taken, and then be released. Any subadult salmonids that do not survive capture, and all juvenile salmonids (*i.e.*, fish larger than 80 mm but less than 250 mm) will be lethally sampled (*i.e.*, intentional directed mortality) in order to collect (1) otoliths for age and growth studies; (2) coded wire tags for origin and age of hatchery fish; (3) muscle tissue for stable isotopes and/or lipid assays; (4) stomachs and contents for diet studies; and (5) other tissues including the heart, liver, intestines, pyloric caeca, and kidney for special studies upon request.

Permit 19400

A notice of receipt of an application for scientific research permit (19400) was published in the **Federal Register**

on July 29, 2015 (80 FR 45197). Permit 19400 was issued to ICF consulting on December 23, 2015 and expires on December 31, 2020.

Permit 19400 authorizes ICF consulting to take juvenile CVSR Chinook salmon and SRWR Chinook salmon while conducting a study to investigate if longfin smelt in San Pablo Bay shift their vertical distribution under different environmental and biological conditions. Although this study principally targets longfin smelt, ESA listed Chinook salmon will be encountered during sampling. ICF will collect data that will be useful to local researchers on captured and/or photographed listed Chinook salmon, including abundance, length, and potentially tissue samples. Fish will be sampled using a midwater trawl, however the majority of tows will be conducted with only a video device (*i.e.*, SmeltCam) acting as the codend. Therefore, the majority of take will be observe/harass. The fish camera image program will be able to determine the length, and thereby an estimate of the race/run/listing status, of salmon that pass through the net. In order to verify the results of the SmeltCam, some tows will be conducted with both the video device and a traditional codend. Physically captured juvenile salmonids will be placed in a bucket with aerated water, handled (*i.e.*, measured to fork length and possibly fin tissue sampled for genetic analysis), and released. The researchers are not proposing to kill any of the fish they capture.

Dated: January 12, 2016.

Perry F. Gayaldo,

Deputy Director, Office of Protected Resources, National Marine Fisheries Service.
[FR Doc. 2016-00747 Filed 1-14-16; 8:45 am]

BILLING CODE 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XE394

Endangered and Threatened Species; Status Update on Preparation of Record of Decision, Mitchell Act Hatcheries Environmental Impact Statement

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration, Commerce.

ACTION: Notice.

SUMMARY: The National Marine Fisheries Service (NMFS) released its final Environmental Impact Statement

(EIS) to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs in September 2014 (also known as the Mitchell Act Hatchery EIS). This notice serves as an update on preparation of the agency's record of decision (ROD).

FOR FURTHER INFORMATION CONTACT:

James Dixon, (360) 534-9329 or email: james.dixon@noaa.gov.

SUPPLEMENTARY INFORMATION:

On September 3, 2004 (69 FR 53892), NMFS announced its intent to prepare an EIS pursuant to the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 *et seq.*) and to conduct public scoping related to the allocation and distribution of Mitchell Act funds for Columbia River hatchery operations. Subsequently, in 2009, NMFS announced its decision to expand the scope of the EIS to include analysis of the environmental effects of all hatchery programs in the Columbia River Basin, regardless of the hatchery funding source, in a way that would inform future NMFS decisions about Endangered Species Act compliances for all Columbia River hatchery programs (74 FR 10724, March 12, 2009). A draft EIS was published in August 2010 (75 FR 47591, August 6, 2010). The final EIS was published in September 2014 (79 FR 54707, September 12, 2014) with a public review period through November 12, 2014.

NMFS has been preparing its ROD through careful consideration of a range of comments received during public review of the final EIS. NMFS is also considering the anticipated effects of its preferred policy direction on species listed under the Endangered Species Act. It is anticipated that the ROD will be published in 2016.

Dated: January 12, 2016.

Perry F. Gayaldo,

Deputy Director, Office of Protected Resources, National Marine Fisheries Service.
[FR Doc. 2016-00734 Filed 1-14-16; 8:45 am]

BILLING CODE 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XE348

Endangered Species; File No. 17225

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; receipt of application.

SUMMARY: Notice is hereby given that the NMFS Northeast Fisheries Science Center [Responsible Party: William Karp], 166 Water Street, Woods Hole, MA 02543, has applied in due form for a permit to take Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), loggerhead (*Caretta caretta*), Kemp's ridley (*Lepidochelys kempii*), green (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*) and leatherback (*Dermochelys coraicea*) sea turtles for purposes of scientific research.

DATES: Written, telefaxed, or email comments must be received on or before February 16, 2016.

ADDRESSES: The application and related documents are available for review by selecting "Records Open for Public Comment" from the "Features" box on the Applications and Permits for Protected Species (APPS) home page, <https://apps.nmfs.noaa.gov>, and then selecting File No. 17225 from the list of available applications.

These documents are also available upon written request or by appointment in the Permits and Conservation Division, Office of Protected Resources, NMFS, 1315 East-West Highway, Room 13705, Silver Spring, MD 20910; phone (301) 427-8401; fax (301) 713-0376.

Written comments on this application should be submitted to the Chief, Permits and Conservation Division, at the address listed above. Comments may also be submitted by facsimile to (301) 713-0376, or by email to NMFS.Pr1Comments@noaa.gov. Please include the File No. in the subject line of the email comment.

Those individuals requesting a public hearing should submit a written request to the Chief, Permits and Conservation Division at the address listed above. The request should set forth the specific reasons why a hearing on this application would be appropriate.

FOR FURTHER INFORMATION CONTACT: Malcolm Mohead or Amy Hapeman, (301) 427-8401.

SUPPLEMENTARY INFORMATION: The subject permit is requested under the authority of the Endangered Species Act of 1973, as amended (ESA; 16 U.S.C. 1531 *et seq.*) and the regulations governing the taking, importing, and exporting of endangered and threatened species (50 CFR parts 222-226).

The applicant requests a five-year permit to conduct research on sea turtles and Atlantic sturgeon in the U.S. Atlantic exclusive economic zone from Massachusetts to Georgia. The purpose of the research is to evaluate bycatch reduction devices for commercial fishing gear to mitigate sea turtle and

sturgeon interactions under two projects: Project A (Northern region) and Project B (Southern region). For Project A, up to 223 Atlantic sturgeon, 51 loggerhead, six Kemp's ridley, six green, and six leatherback sea turtles could be targeted for research sampling over the course of the permit that have been legally bycaught in a Federal commercial fishery. For Project B, researchers would capture by experimental or control trawls or gillnets up to 204 Atlantic sturgeon, 148 loggerhead, 62 Kemp's ridley, 10 green, eight leatherback and eight hawksbill sea turtles over the course of the permit. All animals would be measured, weighed, tissue sampled, passive integrated transponder (PIT) and/or flipper tagged, and photographed before release. In addition, up to six sea turtles (any species) and six Atlantic sturgeon may accidentally die or be harmed as a result of research activities over the life of the permit.

Dated: December 22, 2015.

Julia Harrison,

*Chief, Permits and Conservation Division,
Office of Protected Resources, National
Marine Fisheries Service.*

[FR Doc. 2016-00724 Filed 1-14-16; 8:45 am]

BILLING CODE 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XE395

Notice of Intent To Prepare an Environmental Impact Statement for Hatchery Programs Along the Oregon Coast

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice of intent to prepare an environmental impact statement; request for comments.

SUMMARY: Pursuant to the National Environmental Policy Act (NEPA), this notice announces that NMFS intends to obtain information necessary to prepare an Environmental Impact Statement (EIS) for Hatchery and Genetic Management Plans (HGMPs) submitted by the Oregon Department of Fish and Wildlife (ODFW) for NMFS's evaluation and determination under Limit 5 of the Endangered Species Act (ESA) 4(d) Rule for threatened salmon and steelhead. The HGMPs specify the propagation of salmon, steelhead, and trout released in rivers, streams, and lakes throughout the Oregon Coast region.

NMFS provides this notice to: (1) Advise other agencies and the public of its plans to analyze effects related to the action, and (2) obtain suggestions and information that may be useful to the scope of issues and alternatives to include in the EIS. This notice further serves to notify the public of the availability of the HGMPs for comment prior to a decision by NMFS on whether to approve the proposed hatchery programs.

DATES: Written or electronic scoping comments must be received at the appropriate address or email mailbox (see **ADDRESSES**) no later than 5 p.m. Pacific Time February 16, 2016.

ADDRESSES: Written comments may be sent by any of the following methods:

- Email to the following address:

OregonCoastHatcheryEIS.wcr@noaa.gov with the following identifier in the subject line: Oregon Coast Hatchery EIS.

- Mail or hand-deliver to NMFS Sustainable Fisheries Division, 2900 NW Stewart Parkway, Roseburg, OR 97471.

- Fax to (541) 957-3386.

Comments received will be available for public inspection, by appointment, during normal business hours at the above address. All Personal Identifying Information (for example, name, address, etc.) voluntarily submitted by the commenter may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information.

Additional information to assist with consideration of the notice of intent, as well as the HGMPs themselves, is available on the Internet at *www.westcoast.fisheries.noaa.gov*.

FOR FURTHER INFORMATION CONTACT:

Lance Kruczic, NMFS, by phone at (541) 957-3381, or email to *lance.kruczic@noaa.gov*.

SUPPLEMENTARY INFORMATION:

ESA-Listed Species Covered in This Notice

Coho salmon (*O. kisutch*): Threatened, naturally-produced and specified artificially-produced stocks in the Southern Oregon/Northern California Coast and Oregon Coast Evolutionarily Significant Units (ESUs).

Background

The ODFW has submitted HGMPs for all hatchery programs along the Oregon Coast to NMFS, pursuant to Limit 5 of the 4(d) Rule for salmon and steelhead promulgated under the ESA (65 FR 42422, July 10, 2000). Before a decision is made by NMFS on these HGMPs, NEPA requires Federal agencies to

conduct environmental analyses of proposed actions to fully consider their effects on the human environment. NMFS's action of evaluating ODFW's HGMPs under Limit 5 of the 4(d) Rule is a major Federal action subject to environmental review under NEPA. Therefore, NMFS is seeking public input on the scope of the required NEPA analysis, including the range of reasonable alternatives, recommendations for relevant analysis methods, and information associated with impacts of the alternatives to the resources listed below or other relevant resources.

The hatchery facilities to be considered in the analysis are Cole Rivers Hatchery, Indian Hatchery, Elk Hatchery, Bandon Hatchery, Rock Hatchery (Umpqua River), Alsea Hatchery, Salmon Hatchery, Cedar Hatchery, Trask Hatchery, Nehalem Hatchery, and associated satellite facilities. Hatchery fish are released into the following waterbodies: Chetco, Rogue, Elk, Coquille, Coos Umpqua, Siuslaw, Alsea, Yaquina, Siletz, Salmon, Nestucca, Trask, Wilson, and Nehalem Rivers, Tenmile Creek, and various coastal lakes. A list of all of the hatchery programs, including links to the HGMPs themselves, is available on the Internet (see **ADDRESSES**).

NMFS will perform an environmental review of the Oregon Coast HGMPs (and associated hatchery facilities) and prepare an EIS that will evaluate potentially significant direct, indirect, and cumulative impacts on the following resources identified to have a potential for effect from the proposed action:

- Water quantity and water quality
- Fish and wildlife species and their habitats
- Socioeconomics
- Environmental Justice
- Cumulative impacts

NMFS will rigorously explore and objectively evaluate a full range of reasonable alternatives in the EIS, including the proposed action (implementation of ODFW's HGMPs) and a no-action alternative. Additional alternatives could include a reduction in artificial production and/or elimination of the hatchery programs along the Oregon Coast.

For all potentially significant impacts, the EIS will identify measures to avoid, minimize, and mitigate the impacts, where feasible, to a level below significance.

Request for Comments

NMFS provides this notice to: (1) Advise other agencies and the public of

its plans to analyze effects related to the action, and (2) obtain suggestions and information that may be useful to the scope of issues and the full range of alternatives to include in the EIS.

NMFS invites comment from all interested parties to ensure that the full range of issues related to Oregon Coast HGMPs is identified. Comments should be as specific as possible.

Written comments concerning the proposed action and the environmental review should be directed to NMFS as described above (see **ADDRESSES**). All comments and materials received, including names and addresses, will become part of the administrative record and may be released to the public.

Authority

The environmental review of the Oregon Coast HGMPs will be conducted in accordance with requirements of the NEPA of 1969 as amended (42 U.S.C. 4321 *et seq.*), NEPA Regulations (40 CFR parts 1500–1508), other appropriate Federal laws and regulations, and policies and procedures of NMFS for compliance with those regulations. This notice is being furnished in accordance with 40 CFR 1501.7 to obtain suggestions and information from other agencies and the public on the scope of issues and alternatives to be addressed in the EIS.

Under section 4 of the ESA, the Secretary of Commerce is required to adopt such regulations as he deems necessary and advisable for the conservation of species listed as threatened. The ESA salmon and steelhead 4(d) rule (65 FR 42422, July 10, 2000, as updated in 70 FR 37160, June 28, 2005) specifies categories of activities that contribute to the conservation of listed salmonids and sets out the criteria for such activities. Limit 5 of the updated 4(d) rule (50 CFR 223.203(b)(5)) further provides that the prohibitions of paragraph (a) of the updated 4(d) rule (50 CFR 223.203(a)) do not apply to activities associated with artificial propagation programs provided that an HGMP has been approved by NMFS to be in accordance with the salmon and steelhead 4(d) rule (65 FR 42422, July 10, 2000, as updated in 70 FR 37160, June 28, 2005).

Dated: January 12, 2016.

Perry F. Gayaldo,

Deputy Director, Office of Protected Resources, National Marine Fisheries Service.
[FR Doc. 2016-00748 Filed 1-14-16; 8:45 am]

BILLING CODE 3510-22-P

COMMITTEE FOR PURCHASE FROM PEOPLE WHO ARE BLIND OR SEVERELY DISABLED

Procurement List; Proposed Deletions

AGENCY: Committee for Purchase From People Who Are Blind or Severely Disabled.

ACTION: Proposed Deletions from the Procurement List.

SUMMARY: The Committee is proposing to delete products from the Procurement List that was previously furnished by nonprofit agencies employing persons who are blind or have other severe disabilities.

COMMENTS MUST BE RECEIVED ON OR BEFORE: 2/14/2016.

ADDRESSES: Committee for Purchase From People Who Are Blind or Severely Disabled, 1401 S. Clark Street, Suite 715, Arlington, Virginia 22202-4149.

FOR FURTHER INFORMATION CONTACT: Barry S. Lineback, Telephone: (703) 603-7740, Fax: (703) 603-0655, or email CMTEFedReg@AbilityOne.gov.

SUPPLEMENTARY INFORMATION: This notice is published pursuant to 41 U.S.C. 8503(a)(2) and 41 CFR 51-2.3. Its purpose is to provide interested persons an opportunity to submit comments on the proposed actions.

Deletions

The following products are proposed for deletion from the Procurement List:

Products

NSN(s)—Product Name(s):

7195-01-567-9528—Bulletin Bar, Cork, Map Rail, 36" x 1", Aluminum Frame
7195-01-567-9529—Bulletin Board, Cork, Map Rail, 48" x 1", Aluminum Frame
7195-01-567-9530—Bulletin Bar, Cork, Map Rail, 24" x 1", Aluminum Frame

Mandatory Source(s) of Supply: The Lighthouse for the Blind, Inc. (Seattle Lighthouse), Seattle, WA

Contracting Activity(ies): Department of Veterans Affairs, NAC, Hines, IL; General Services Administration, FSS Household and Industrial Furniture, Arlington, VA

NSN(s)—Product Name(s):

7105-00-260-1390—Mirror, Glass, 11³/₈ x 13³/₈"
7105-00-264-5997—Mirror, Glass, 20 x 60"

Mandatory Source(s) of Supply: UNKNOWN
Contracting Activity: General Services Administration, Fort Worth, TX

NSN(s)—Product Name(s):

5140-01-424-9917—Tool Box
5180-01-423-6468—Tool Box and Kit

Mandatory Source(s) of Supply: UNKNOWN
Contracting Activity: General Services Administration, Kansas City, MO

NSN(s)—Product Name(s):

8415-00-NSH-1276—Gortex, Women's Shell Trousers—Small/Short
8415-00-NSH-1277—Gortex, Women's Shell Trousers—Small/Long

8415-00-NSH-1278—Gortex, Women's Shell Trousers—Medium/Short
8415-00-NSH-1279—Gortex, Women's Shell Trousers—Medium/Long
8415-00-NSH-1280—Gortex, Women's Shell Trousers—Large/Short
8415-00-NSH-1281—Gortex, Women's Shell Trousers—Large/Long
8415-00-NSH-1282—Gortex, Women's Shell Trousers—Xlarge/Short
8415-00-NSH-1283—Gortex, Women's Shell Trousers—Xlarge/Long
8415-00-NSH-0591—Trousers, MPS, Navy, Women's, Sage Green, XSR
8415-00-NSH-0592—Trousers, MPS, Navy, Women's, Sage Green, SR
8415-00-NSH-0593—Trousers, MPS, Navy, Women's, Sage Green, MR
8415-00-NSH-0594—Trousers, MPS, Navy, Women's, Sage Green, LR
8415-00-NSH-0595—Trousers, MPS, Navy, Women's, Sage Green, XLR
8415-00-NSH-0994—Trousers, Shell Outer Layer, MPS, Navy, Women's, Black, X Small Short
8415-00-NSH-0995—Trousers, Shell Outer Layer, MPS, Navy, Women's, Black, X Small Long

Mandatory Source(s) of Supply: Group Home Foundation, Inc., Belfast, ME; Peckham Vocational Industries, Inc., Lansing, MI
Contracting Activity(ies): Naval Air Systems Command, Patuxent River, MD; Army Contracting Command—Aberdeen Proving Ground, Natick Contracting Division, Natick, MA

NSN(s)—Product Name(s):

8415-00-NSH-0547—Gortex Shell Jacket, MPS, Army, Men's, Sage Green, XSR
8415-00-NSH-0548—Gortex Shell Jacket, MPS, Army, Men's, Sage Green, SR
8415-00-NSH-0549—Gortex Shell Jacket, MPS, Army, Men's, Sage Green, MR
8415-00-NSH-0550—Gortex Shell Jacket, MPS, Army, Men's, Sage Green, ML
8415-00-NSH-0551—Gortex Shell Jacket, MPS, Army, Men's, Sage Green, LR
8415-00-NSH-0552—Gortex Shell Jacket, MPS, Army, Men's, Sage Green, LL
8415-00-NSH-0553—Gortex Shell Jacket, MPS, Army, Men's, Sage Green, XLR
8415-00-NSH-0554—Gortex Shell Jacket, MPS, Army, Men's, Sage Green, XLL
8415-00-NSH-0877—Gortex Shell Jacket, MPS, Navy, Men's, Sage Green, X Small Short
8415-00-NSH-0878—Gortex Shell Jacket, MPS, Navy, Men's, Sage Green, X Small Long
8415-00-NSH-0879—Gortex Shell Jacket, MPS, Navy, Men's, Sage Green, Small Short
8415-00-NSH-0880—Gortex Shell Jacket, MPS, Navy, Men's, Sage Green, Small Long
8415-00-NSH-0881—Gortex Shell Jacket, MPS, Navy, Men's, Sage Green, Medium Short
8415-00-NSH-0882—Gortex Shell Jacket, MPS, Navy, Men's, Sage Green, Large Short
8415-00-NSH-0883—Gortex Shell Jacket, MPS, Navy, Men's, Sage Green, X Large Short

Mandatory Source(s) of Supply: Group Home Foundation, Inc., Belfast, ME; Peckham

Vocational Industries, Inc., Lansing, MI
Contracting Activity(ies): Naval Air Systems
 Command, Patuxent River, MD; Army
 Contracting Command—Aberdeen
 Proving Ground, Natick Contracting
 Division, Natick, MA

NSN(s)—Product Name(s):

8415-00-NSH-0555—Gortex Shell Jacket,
 MPS, Army, Women's, Sage Green, XSR
 8415-00-NSH-0556—Gortex Shell Jacket,
 MPS, Army, Women's, Sage Green, SR
 8415-00-NSH-0557—Gortex Shell Jacket,
 MPS, Army, Women's, Sage Green, MR
 8415-00-NSH-0558—Gortex Shell Jacket,
 MPS, Army, Women's, Sage Green, LR
 8415-00-NSH-0559—Gortex Shell Jacket,
 MPS, Army, Women's, Sage Green, XLR
 8415-00-NSH-0884—Gortex Shell Jacket,
 MPS, Navy, Women's, Sage Green, X
 Small Short
 8415-00-NSH-0885—Gortex Shell Jacket,
 MPS, Navy, Women's, Sage Green, X
 Small Long
 8415-00-NSH-0886—Gortex Shell Jacket,
 MPS, Navy, Women's, Sage Green, Small
 Short
 8415-00-NSH-0887—Gortex Shell Jacket,
 MPS, Navy, Women's, Sage Green, Small
 Long
 8415-00-NSH-0888—Gortex Shell Jacket,
 MPS, Navy, Women's, Sage Green,
 Medium Short
 8415-00-NSH-0889—Gortex Shell Jacket,
 MPS, Navy, Women's, Sage Green,
 Medium Long
 8415-00-NSH-0890—Gortex Shell Jacket,
 MPS, Navy, Women's, Sage Green, Large
 Short
 8415-00-NSH-0891—Gortex Shell Jacket,
 MPS, Navy, Women's, Sage Green, Large
 Long
 8415-00-NSH-0892—Gortex Shell Jacket,
 MPS, Navy, Women's, Sage Green, X
 Large Short
 8415-00-NSH-0893—Gortex Shell Jacket,
 MPS, Navy, Women's, Sage Green, X
 Large Long
Mandatory Source(s) of Supply: Group
 Home Foundation, Inc., Belfast, ME;
 Peckham Vocational Industries, Inc.,
 Lansing, MI
Contracting Activity(ies): Naval Air
 Systems Command, Patuxent River, MD;
 Army Contracting Command—Aberdeen
 Proving Ground, Natick Contracting
 Division, Natick, MA
 8415-00-NSH-0583—Gortex Shell
 Trousers, MPS, Navy, Men's, Sage Green,
 XSR
 8415-00-NSH-0584—Gortex Shell
 Trousers, MPS, Navy, Men's, Sage Green,
 SR
 8415-00-NSH-0585—Gortex Shell
 Trousers, MPS, Navy, Men's, Sage Green,
 MR
 8415-00-NSH-0586—Gortex Shell
 Trousers, MPS, Navy, Men's, Sage Green,
 ML
 8415-00-NSH-0587—Gortex Shell
 Trousers, MPS, Navy, Men's, Sage Green,
 LR
 8415-00-NSH-0588—Gortex Shell
 Trousers, MPS, Navy, Men's, Sage Green,
 LL
 8415-00-NSH-0589—Gortex Shell
 Trousers, MPS, Navy, Men's, Sage Green,
 XLR

8415-00-NSH-0590—Gortex Shell
 Trousers, MPS, Navy, Men's, Sage Green,
 XLL
 8415-00-NSH-0596—Gortex Shell
 Trousers, MPS, Navy, Men's, Sage Green,
 LS
 8415-00-NSH-0991—Gortex Shell
 Trousers, Shell Outer Layer, MPS, Navy,
 Men's, Black, X Small Short
 8415-00-NSH-0992—Gortex Shell
 Trousers, Shell Outer Layer, MPS, Navy,
 Men's, Black, X Small Long
 8415-00-NSH-0993—Gortex Shell
 Trousers, Shell Outer Layer, MPS, Navy,
 Men's, Black, Small Short
 8415-00-NSH-0996—Gortex Shell
 Trousers, Shell Outer Layer, MPS, Navy,
 Men's, Black, Small Long
 8415-00-NSH-0997—Gortex Shell
 Trousers, Shell Outer Layer, MPS, Navy,
 Men's, Black, Medium Short
 8415-00-NSH-0998—Gortex Shell
 Trousers, Shell Outer Layer, MPS, Navy,
 Men's, Black, X Large Short
Mandatory Source(s) of Supply: Group Home
 Foundation, Inc., Belfast, ME; Peckham
 Vocational Industries, Inc., Lansing, MI
Contracting Activity(ies): Naval Air Systems
 Command, Patuxent River, MD; Army
 Contracting Command—Aberdeen
 Proving Ground, Natick Contracting
 Division, Natick, MA

Barry S. Lineback,

Director, Business Operations.

[FR Doc. 2016-00719 Filed 1-14-16; 8:45 am]

BILLING CODE 6353-01-P

BUREAU OF CONSUMER FINANCIAL PROTECTION

Academic Research Council Solicitation of Applications for Membership

AGENCY: Bureau of Consumer Financial Protection.

ACTION: Notice of solicitation of applications.

SUMMARY: Section 1013(b)(1) of the Consumer Financial Protection Act, 12 U.S.C. 5493(b)(1), establishes the Consumer Financial Protection Bureau's (Bureau) Office of Research and assigns to it the responsibility of researching, analyzing, and reporting on topics relating to the Bureau's mission, including developments in markets for consumer financial products and services, consumer awareness, and consumer behavior. The Bureau established the Academic Research Council (Council) as a technical advisory body comprised of scholars to provide the Office of Research with guidance as it performs its responsibilities. Director Richard Cordray invites qualified individuals to apply for appointment to the Council. Appointments to the Council are typically for three years. However, the

Director may amend the Council charter from time to time during the charter terms as the Director deems necessary to accomplish the purpose of the Council. There are three vacancies on the Academic Research Council. The Bureau expects to announce the selection of new members in April 2016.

DATES: Only complete application packets received on or before 5 p.m. eastern standard time on February 12, 2016, will be given consideration for membership on the Council.

ADDRESSES: Complete application packets must include a curriculum vitae or résumé for each applicant and a completed application. The application can be accessed at: <https://consumer-financial-protection-bureau.forms.fm/application-to-serve-on-the-academic-research-council-arc>.

All applications for membership on the Council should be sent:

- **Electronically:** <https://consumer-financial-protection-bureau.forms.fm/application-to-serve-on-the-academic-research-council-arc>. We strongly encourage electronic submissions.

- **Mail:** Julian Alcazar, Outreach and Engagement Associate, Consumer Financial Protection Bureau, 1700 G Street NW., Washington, DC 20552. Applications must be post marked on or before 5 p.m. eastern standard time on February 12, 2016.

- **Hand Delivery/Courier in Lieu of Mail:** Julian Alcazar, Outreach and Engagement Associate, Consumer Financial Protection Bureau, 1275 First Street NE., 1223-C, Washington, DC 20002. Applications must be received on or before 5 p.m. eastern standard time on February 12, 2016.

FOR FURTHER INFORMATION CONTACT: Requests for additional information should be directed to Julian Alcazar, Outreach and Engagement Associate, Consumer Financial Protection Bureau, (202) 435-9885.

SUPPLEMENTARY INFORMATION:

I. Background

The Bureau is charged with regulating “the offering and provision of consumer financial products or services under the Federal consumer financial laws,” so as to ensure that “all consumers have access to markets for consumer financial products and services and that markets for consumer financial products and services are fair, transparent, and competitive.” Pursuant to section 1021(c) of the Dodd-Frank Wall Street Reform and Consumer Protection Act, Public Law 111-203 (Dodd-Frank Act), the Bureau's primary functions are:

1. Conducting financial education programs;

2. Collecting, investigating, and responding to consumer complaints;
3. Collecting, researching, monitoring, and publishing information relevant to the function of markets for consumer financial products and services to identify risks to consumers and to the proper functioning of such markets;
4. Supervising persons covered under the Dodd-Frank Act for compliance with Federal consumer financial law, and taking appropriate enforcement action to address violations of Federal consumer financial law;
5. Issuing rules, orders, and guidance implementing Federal consumer financial law; and
6. Performing such support activities as may be needed or useful to facilitate the other functions of the Bureau.

II. Academic Research Council

Section 1013(b)(1) of the Consumer Financial Protection Act, 12 U.S.C. 5493(b)(1), establishes the Consumer Financial Protection Bureau's Office of Research and assigns to it the responsibility of researching, analyzing, and reporting on topics relating to the Bureau's mission, including developments in markets for consumer financial products and services, consumer awareness, and consumer behavior. The Bureau established the Council as a technical advisory body comprised of scholars to provide the Office of Research with methodological and technical advice and feedback on its research work by framing research questions; suggesting new data collection strategies and methods of analysis; providing feedback, both backward and forward looking, on the Office of Research's research program; providing input into its research strategic planning process and research agenda; collaborating with the Bureau's research staff on high value research projects which will allow for transfer of specialized expertise; and supporting high quality recruitment.

III. Qualifications

In appointing members of the Council, the Office of Research seeks to recruit tenured academics with a world class research and publishing background, and a record of public or academic service. We are seeking prominent experts who are recognized for their professional achievements and objectivity in economics, statistics, psychology or behavioral science. In particular, academics with strong methodological and technical expertise in structural or reduced form econometrics, modeling of consumer decision-making, behavioral economics, experimental economics, program

evaluation, psychology, and financial choice. The members of the Council will collectively provide a balance of expertise across these areas.

The Council is composed of no more than nine members. Currently we have six Council members. We are looking to fill three additional seats on the Council in 2016. You can learn more about current Academic Research Council members here.

The Bureau has a special interest in ensuring that the perspectives of women and men, all racial and ethnic groups, and individuals with disabilities are adequately represented on the Council and therefore encourages applications from qualified candidates from these groups. The Bureau also has a special interest in establishing a Council that is represented by a diversity of viewpoints and constituencies, and therefore encourages nominations for qualified candidates who:

1. Represent the United States' geographic diversity; and
2. Understand the interests of special populations identified in the Dodd-Frank Act, including servicemembers, older Americans, students, and traditionally underserved consumers and communities.

IV. Application Procedures

Any interested person may apply for membership on the Council.

A complete application packet may include a cover letter and must include:

1. A complete résumé or curriculum vitae for the applicant; and
2. Completed application.

To evaluate potential sources of conflicts of interest, the Bureau will ask potential candidates to provide information related to financial holdings and/or professional affiliations, and to allow the Bureau to perform a background check. The Bureau will not review nominations and will not answer questions from internal or external parties regarding applications until the application period has closed.

The Bureau will not entertain nominations of federally registered lobbyists and individuals who have been convicted of a felony for a position on the Council.

Only complete applications will be given consideration for review of membership on the Council.

Dated: January 7, 2016.

Christopher D'Angelo,
Chief of Staff, Bureau of Consumer Financial Protection.

[FR Doc. 2016-00546 Filed 1-14-16; 8:45 am]

BILLING CODE 4810-AM-P

BUREAU OF CONSUMER FINANCIAL PROTECTION

Consumer Advisory Board and Councils Solicitation of Applications for Membership

AGENCY: Bureau of Consumer Financial Protection.

ACTION: Notice.

SUMMARY: Pursuant to the authorities given to the Director of the Consumer Financial Protection Bureau (Bureau) under the Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) Director Richard Cordray invites the public to apply for membership for appointment to its Consumer Advisory Board (Board), Community Bank Advisory Council, and Credit Union Advisory Council (collectively, Advisory Councils). Membership of the Board and Councils includes representatives of consumers, communities, the financial services industry and academics. Appointments to the Board are typically for three years and appointments to the Councils are typically for two years. However, the Director may amend the respective Board and Council charters from time to time during the charter terms, as the Director deems necessary to accomplish the purpose of the Board and Councils. The Bureau expects to announce the selection of new members in August 2016.

DATES: Complete application packets received on or before February 29, 2016, will be given consideration for membership on the Board and Councils.

ADDRESSES: If electronic submission is not feasible, the completed application packet can be mailed to Julian Alcazar, Outreach and Engagement Associate, Consumer Financial Protection Bureau, 1700 G Street NW., Washington, DC 20552.

All applications for membership on the Board and Councils should be sent:

- *Electronically:* <https://consumer-financial-protection-bureau.forms.fm/application-to-serve-on-advisory-board-body-panel-committee-or-group>. We strongly encourage electronic submissions.

- *Mail:* Julian Alcazar, Outreach and Engagement Associate, Consumer Financial Protection Bureau, 1700 G Street NW., Washington, DC 20552. Submissions must be postmarked on or before 5 p.m. eastern standard time on February 29, 2016.

- *Hand Delivery/Courier in Lieu of Mail:* Julian Alcazar, Outreach and Engagement Associate, Consumer Financial Protection Bureau, 1275 First Street NE., 1223-C, Washington, DC

20002. Submissions must be received on or before 5 p.m. eastern standard time on February 29, 2016.

FOR FURTHER INFORMATION CONTACT:

Requests for additional information should be directed to Julian Alcazar, Outreach and Engagement Associate, Consumer Financial Protection Bureau, (202) 435-9885.

SUPPLEMENTARY INFORMATION:

I. Background

The Bureau is charged with regulating “the offering and provision of consumer financial products or services under the Federal consumer financial laws,” so as to ensure that “all consumers have access to markets for consumer financial products and services and that markets for consumer financial products and services are fair, transparent, and competitive.” Pursuant to section 1021(c) of the Wall Street Reform and Consumer Protection Act, Public Law 111-203, Dodd-Frank Act, the Bureau’s primary functions are:

1. Conducting financial education programs;
2. Collecting, investigating, and responding to consumer complaints;
3. Collecting, researching, monitoring, and publishing information relevant to the function of markets for consumer financial products and services to identify risks to consumers and the proper functioning of such markets;
4. Supervising persons covered under the Dodd-Frank Act for compliance with Federal consumer financial law, and taking appropriate enforcement action to address violations of Federal consumer financial law;
5. Issuing rules, orders, and guidance implementing Federal consumer financial law; and
6. Performing such support activities as may be needed or useful to facilitate the other functions of the Bureau.

As described in more detail below, section 1014 of the Dodd-Frank Act calls for the Director of the Bureau to establish a Consumer Advisory Board to advise and consult with the Bureau regarding its functions, and to provide information on emerging trends and practices in the consumer financial markets.

III. Qualifications

Pursuant to section 1014(b) of the Dodd-Frank Act, in appointing members to the Board, “the Director shall seek to assemble experts in consumer protection, financial services, community development, fair lending and civil rights, and consumer financial products or services and representatives of depository institutions that primarily

serve underserved communities, and representatives of communities that have been significantly impacted by higher-priced mortgage loans, and seek representation of the interests of covered persons and consumers, without regard to party affiliation.” The determinants of “expertise” shall depend, in part, on the constituency, interests, or industry sector the nominee seeks to represent, and where appropriate, shall include significant experience as a direct service provider to consumers.

Pursuant to section 5 of the Community Bank Advisory Council Charter, in appointing members to the Council the Director shall seek to assemble experts in consumer protection, financial services, community development, fair lending and civil rights, and consumer financial products or services and representatives of community banks that primarily serve underserved communities, and representatives of communities that have been significantly impacted by higher-priced mortgage loans, and shall strive to have diversity in terms of points of view. Only current bank or thrift employees (CEOs, compliance officers, government relations officials, etc.) will be considered for membership. Membership is limited to employees of banks and thrifts with total assets of \$10 billion or less that are not affiliates of depository institutions or credit unions with total assets of more than \$10 billion.

Pursuant to section 12 of the Credit Union Advisory Council Charter, in appointing members to the Council the Director shall seek to assemble experts in consumer protection, financial services, community development, fair lending and civil rights, and consumer financial products or services and representatives of credit unions that primarily serve underserved communities, and representatives of communities that have been significantly impacted by higher-priced mortgage loans, and shall strive to have diversity in terms of points of view. Only current credit union employees (CEOs, compliance officers, government relations officials, etc.) will be considered for membership. Membership is limited to employees of credit unions with total assets of \$10 billion or less that are not affiliates of depository institutions or credit unions with total assets of more than \$10 billion.

The Bureau has a special interest in ensuring that the perspectives of women and men, all racial and ethnic groups, and individuals with disabilities are adequately represented on the Board

and Councils, and therefore, encourages applications from qualified candidates from these groups. The Bureau also has a special interest in establishing a Board that is represented by a diversity of viewpoints and constituencies, and therefore encourages applications from qualified candidates who:

1. Represent the United States’ geographic diversity; and
2. Represent the interests of special populations identified in the Dodd-Frank Act, including service members, older Americans, students, and traditionally underserved consumers and communities.

IV. Application Procedures

Any interested person may apply for membership on the Board or Council.

A complete application packet must include:

1. A recommendation letter from a third party describing the applicant’s interests and qualifications to serve on the Board or Council;
2. A complete résumé or curriculum vitae for the applicant; and
3. A one-page cover letter, which summarizes the applicant’s expertise and provides reason(s) why he or she would like to join the Board or Council.
4. A complete application. <https://consumer-financial-protection-bureau.forms.fm/application-to-serve-on-advisory-board-body-panel-committee-or-group>.

To evaluate potential sources of conflicts of interest, the Bureau will ask potential candidates to provide information related to financial holdings and/or professional affiliations, and to allow the Bureau to perform a background check. The Bureau will not review applications and will not answer questions from internal or external parties regarding applications until the application period has closed.

The Bureau will not entertain applications of federally registered lobbyists for a position on the Board and Councils.

Only complete applications will be given consideration for review of membership on the Board and Councils.

Dated: January 7, 2016.

Christopher D’Angelo,
Chief of Staff, Bureau of Consumer Financial Protection.

[FR Doc. 2016-00548 Filed 1-14-16; 8:45 am]

BILLING CODE 4810-AM-P

CORPORATION FOR NATIONAL AND COMMUNITY SERVICE

Proposed Information Collection; Comment Request

AGENCY: Corporation for National and Community Service.

ACTION: Notice.

SUMMARY: The Corporation for National and Community Service (CNCS), as part of its continuing effort to reduce paperwork and respondent burden, conducts a pre-clearance consultation program to provide the general public and federal agencies with an opportunity to comment on proposed and/or continuing collections of information in accordance with the Paperwork Reduction Act of 1995 (PRA95) (44 U.S.C. Sec. 3506(c)(2)(A)). This program helps to ensure that requested data can be provided in the desired format, reporting burden (time and financial resources) is minimized, collection instruments are clearly understood, and the impact of collection requirement on respondents can be properly assessed.

Currently, CNCS is soliciting comments concerning its proposed establishment of the Disability Accommodation Reimbursement Request Form. This form will be used by grantees to submit required information when requesting reimbursement for the costs associated with the provision of reasonable accommodation services to facilitate accessibility by members with disabilities. Completion of the necessary information is required to obtain grant funding reimbursement support from AmeriCorps State & National.

Copies of the information collection request can be obtained by contacting the office listed in the Addresses section of this Notice.

DATES: Written comments must be submitted to the individual and office listed in the **ADDRESSES** section by March 15, 2016.

ADDRESSES: You may submit comments, identified by the title of the information collection activity, by any of the following methods:

(1) *By mail sent to:* Corporation for National and Community Service, AmeriCorps State and National; Attention: Sean R. Scott, Assistant Program Officer, Room 9518A; 1201 New York Avenue NW., Washington, DC 20525.

(2) *By hand delivery or by courier to:* CNCS mailroom at Room 8100 at the mail address given in paragraph (1) above, between 9:00 a.m. and 4:00 p.m. Eastern Time, Monday through Friday, except Federal holidays.

(3) *Electronically through* www.regulations.gov.

Individuals who use a telecommunications device for the deaf (TTY-TDD) may call 1-800-833-3722 between 8:00 a.m. and 8:00 p.m. Eastern Time, Monday through Friday.

FOR FURTHER INFORMATION CONTACT:

Sean R. Scott, 202-606-3866, or by email at accommodations@cns.gov.

SUPPLEMENTARY INFORMATION: CNCS is particularly interested in comments that:

- Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of CNCS, including whether the information will have practical utility;
- Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;
- Enhance the quality, utility, and clarity of the information to be collected; and
- Minimize the burden of the collection of information on those who are expected to respond, including the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology (e.g., permitting electronic submissions of responses).

Background

Grantees provide the information to request reimbursement for services associated with reasonable accommodation of AmeriCorps service members. The information will be collected electronically via email by submission of this form and the receipt(s) for services.

Current Action

This is a new information collection request. The form requests a confirmation if outside resources were consulted, the name of the applying organization, grant number, single point of contact for the organization, POC email and telephone number, attention to and address to which the check should be remitted, member NSPID, type of disability, type of accommodation, a brief statement regarding how the accommodation helps the member achieve full participation, requested reimbursement amount, if the reimbursement is quarterly of one-time and the projected cost for ongoing requests. All measures have been taken to reduce the presence of personally identifiable information.

The information collection will otherwise be used in the same manner

as the existing application. CNCS also seeks to continue using the current application until the revised application is approved by OMB. The current application is due to expire on TBD.

Type of Review: New.

Agency: Corporation for National and Community Service.

Title: Disability Accommodation Reimbursement Request Form.

OMB Number: None.

Agency Number: None.

Affected Public: Grantees and service members.

Total Respondents: Unknown.

Frequency: Intermittent.

Average Time per Response: Averages 10 minutes.

Estimated Total Burden Hours: 20 minutes.

Total Burden Cost (capital/startup): None.

Total Burden Cost (operating/maintenance): None.

Comments submitted in response to this notice will be summarized and/or included in the request for Office of Management and Budget approval of the information collection request; they will also become a matter of public record.

Dated: January 11, 2016.

Jennifer Bastress Tahmasebi,

Deputy Director, AmeriCorps State and National.

[FR Doc. 2016-00712 Filed 1-14-16; 8:45 am]

BILLING CODE 6050-28-P

DEPARTMENT OF DEFENSE

Department of the Army

Intent To Grant an Exclusive License of U.S. Government-Owned Patents

AGENCY: Department of the Army, DoD.

ACTION: Notice.

SUMMARY: In accordance with 35 U.S.C. 209(e) and 37 CFR 404.7(a)(1)(i), announcement is made of the intent to grant an exclusive, royalty-bearing, revocable license to U.S. Patents 7,899,687; 8,510,129; and 8,682,692; issued respectively on March 1, 2011, August 13, 2013 and March 25, 2014, entitled respectively "System and method for handling medical information," "Medical information handling system and method," and "Medical information handling method, and Australia patent application 2003234535, Canada patent CA2486089 C, issued December 17, 2013, and European Patent Office patent applications EPC 0372887.6 and 12170241.9 to Vista Partners Inc., with its principal place of business at 5645 Saddle Creek Trail, Parker, CO 80134.

ADDRESSES: Commander, U.S. Army Medical Research and Materiel Command, ATTN: Command Judge Advocate, MCMR-JA, 504 Scott Street, Fort Detrick, MD 21702-5012.

FOR FURTHER INFORMATION CONTACT: For licensing issues, Mr. Barry Datlof, Office of Research & Technology Assessment, (301) 619-0033. For patent issues, Ms. Elizabeth Arwine, Patent Attorney, (301) 619-7808, both at telefax (301) 619-5034.

SUPPLEMENTARY INFORMATION: Anyone wishing to object to grant of this license can file written objections along with supporting evidence, if any, within 15 days from the date of this publication. Written objections are to be filed with the Command Judge Advocate (see **ADDRESSES**).

Brenda S. Bowen,
Army Federal Register Liaison Officer.
[FR Doc. 2016-00677 Filed 1-14-16; 8:45 am]

BILLING CODE 3710-08-P

DEPARTMENT OF DEFENSE

Office of the Secretary

[Docket ID: DoD-2015-OS-0033]

Submission for OMB Review; Comment Request

ACTION: Notice.

SUMMARY: The Department of Defense has submitted to OMB for clearance, the following proposal for collection of information under the provisions of the Paperwork Reduction Act.

DATES: Consideration will be given to all comments received by February 16, 2016.

FOR FURTHER INFORMATION CONTACT: Fred Licari, 571-372-0493.

SUPPLEMENTARY INFORMATION:

Title, Associated Form and OMB Number: Office of the Secretary of Defense Confidential Conflict-of-Interest Statement for Office of the Secretary of Defense Advisory Committee Members; SD Form X682; 0704-XXXX.

Type of Request: Existing collection in use without an OMB Control Number.

Number of Respondents: 125.

Responses per Respondent: 1.

Annual Responses: 125.

Average Burden per Response: 1 hour.

Annual Burden Hours: 125.

Needs and Uses: The information requested on this form is required by Title I of the Ethics in Government Act of 1978 (5 U.S.C. App.), Executive Order 12674, and 5 CFR part 2634, subpart I, of the Office of Government Ethics regulations. The requested information

is necessary to prevent conflicts of interest and to identify potential conflicts of individuals serving on certain Office of the Secretary of Defense (OSD) Advisory Committees.

Affected Public: Individuals or households.

Frequency: Annually.

Respondent's Obligation: Required to obtain or retain benefits.

OMB Desk Officer: Ms. Jasmeet Seehra.

Comments and recommendations on the proposed information collection should be emailed to Ms. Jasmeet Seehra, DoD Desk Officer, at Oira_submission@omb.eop.gov. Please identify the proposed information collection by DoD Desk Officer and the Docket ID number and title of the information collection.

You may also submit comments and recommendations, identified by Docket ID number and title, by the following method:

- Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the instructions for submitting comments.

Instructions: All submissions received must include the agency name, Docket ID number and title for this **Federal Register** document. The general policy for comments and other submissions from members of the public is to make these submissions available for public viewing on the Internet at <http://www.regulations.gov> as they are received without change, including any personal identifiers or contact information.

DOD Clearance Officer: Mr. Frederick Licari.

Written requests for copies of the information collection proposal should be sent to Mr. Licari at WHS/ESD Directives Division, 4800 Mark Center Drive, East Tower, Suite 02G09, Alexandria, VA 22350-3100.

Dated: January 12, 2016.

Aaron Siegel,
Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2016-00726 Filed 1-14-16; 8:45 am]

BILLING CODE 5001-06-P

DEPARTMENT OF ENERGY

National Petroleum Council

AGENCY: Office of Fossil Energy, Department of Energy.

ACTION: Notice of Renewal.

Pursuant to Section 14(a)(2)(A) of the Federal Advisory Committee Act, App., and section 102-3.65, Title 41, Code of Federal Regulations, and following consultation with the Committee

Management Secretariat, General Services Administration, notice is hereby given that the National Petroleum Council has been renewed for a two-year period.

The Council will continue to provide advice, information, and recommendations to the Secretary of Energy on matters relating to oil and natural gas, or the oil and natural gas industries. The Secretary of Energy has determined that renewal of the National Petroleum Council is essential to the conduct of the Department's business and in the public interest in connection with the performance of duties imposed by law upon the Department of Energy. The Council will continue to operate in accordance with the provisions of the Federal Advisory Committee Act (Pub. L. 92-463), the General Services Administration Final Rule on Federal Advisory Committee Management, and other directives and instructions issued in implementation of those Acts.

FOR FURTHER INFORMATION CONTACT: Ms. Nancy Johnson at (202) 586-6458

Issued at Washington, DC, on January 8, 2016.

Amy Bodette,

Committee Management Officer.

[FR Doc. 2016-00684 Filed 1-14-16; 8:45 am]

BILLING CODE 6450-01-P

DEPARTMENT OF ENERGY

Environmental Management Site-Specific Advisory Board, Hanford

AGENCY: Department of Energy.

ACTION: Notice of open meeting.

SUMMARY: This notice announces a meeting of the Environmental Management Site-Specific Advisory Board (EM SSAB), Hanford. The Federal Advisory Committee Act (Pub. L. 92-463, 86 Stat. 770) requires that public notice of this meeting be announced in the **Federal Register**.

DATES: Wednesday, February 3, 2016—8:30 a.m.—5:00 p.m.

Thursday, February 4, 2016—9:00 a.m.—12:00 p.m.

ADDRESSES: Red Lion Hanford House, 802 George Washington Way, Richland, WA 99352.

FOR FURTHER INFORMATION CONTACT: Kristen Holmes, Federal Coordinator, Department of Energy Richland Operations Office, 825 Jadwin Avenue, P.O. Box 550, A7-75, Richland, WA, 99352; Phone: (509) 376-5803; or Email: Kristen.L.Holmes@rl.doe.gov.

SUPPLEMENTARY INFORMATION:

Purpose of the Board: The purpose of the Board is to make recommendations

to DOE-EM and site management in the areas of environmental restoration, waste management, and related activities.

Tentative Agenda

- Tri-Party Agreement Agencies' Updates
- Hanford Advisory Board Committee Reports
- Discussion of Potential Draft Advice

Public Participation: The meeting is open to the public. The EM SSAB, Hanford, welcomes the attendance of the public at its advisory committee meetings and will make every effort to accommodate persons with physical disabilities or special needs. If you require special accommodations due to a disability, please contact Kristen Holmes at least seven days in advance of the meeting at the phone number listed above. Written statements may be filed with the Board either before or after the meeting. Individuals who wish to make oral statements pertaining to agenda items should contact Kristen Holmes at the address or telephone number listed above. Requests must be received five days prior to the meeting and reasonable provision will be made to include the presentation in the agenda. The Deputy Designated Federal Officer is empowered to conduct the meeting in a fashion that will facilitate the orderly conduct of business. Individuals wishing to make public comments will be provided a maximum of five minutes to present their comments.

Minutes: Minutes will be available by writing or calling Kristen Holmes's office at the address or phone number listed above. Minutes will also be available at the following Web site: <http://www.hanford.gov/page.cfm/hab>.

Issued at Washington, DC, on January 8, 2016.

LaTanya R. Butler,

Deputy Committee Management Officer.

[FR Doc. 2016-00682 Filed 1-14-16; 8:45 am]

BILLING CODE 6450-01-P

DEPARTMENT OF ENERGY

Basic Energy Sciences Advisory Committee

AGENCY: Office of Science, Department of Energy.

ACTION: Notice of open meeting.

SUMMARY: This notice announces a meeting of the Basic Energy Sciences Advisory Committee (BESAC). The Federal Advisory Committee Act (Pub. L. 92-463, 86 Stat. 770) requires that

public notice of these meetings be announced in the **Federal Register**.

DATES:

Thursday, February 11, 2016—8:00 a.m.–5:00 p.m.

Friday, February 12, 2016—9:00 a.m.–12:00 p.m.

ADDRESSES: Bethesda North Hotel and Conference Center, 5701 Marinelli Road, Bethesda, MD 20852.

FOR FURTHER INFORMATION CONTACT:

Katie Runkles, Office of Basic Energy Sciences; U.S. Department of Energy; SC-22/Germantown Building, 1000 Independence Avenue SW.; Washington, DC 20585; Telephone: (301) 903-6529.

SUPPLEMENTARY INFORMATION:

Purpose of the Board: The purpose of this Board is to make recommendation to DOE-SC with respect to the basic energy sciences research program.

Tentative Agenda:

- Swearing in of New Members
 - Annual Ethics Briefing (BESAC Members Only)
 - Call to Order, Introductions, Review of the Agenda
 - News from the Office of Science (Budget)
 - News from the Office of Basic Energy Sciences (Budget)
 - New Charge to be Presented regarding the assessment of the proposed upgrades to x-ray scattering facilities (both free-electron laser-based sources and ring-based sources) and to the Spallation Neutron Source
 - Public Comments
 - Adjourn
- Breaks Taken As Appropriate

Public Participation: The meeting is open to the public. If you would like to file a written statement with the Committee, you may do so either before or after the meeting. If you would like to make oral statements regarding any of the items on the agenda, you should contact Katie Runkles at (301) 903-6594 (fax) or via email Katie.Runkles@science.doe.gov.

Reasonable provision will be made to include the scheduled oral statements on the agenda. The Chairperson of the Committee will conduct the meeting to facilitate the orderly conduct of business. Public comment will follow the 10-minute rule.

Minutes: The minutes of this meeting will be available for public review and copying within 45 days by contacting Katie Runkles at the address above.

Issued in Washington, DC, on January 11, 2016.

LaTanya R. Butler,

Deputy Committee Management Officer.

[FR Doc. 2016-00717 Filed 1-14-16; 8:45 am]

BILLING CODE 6450-01-P

DEPARTMENT OF ENERGY

Secretary of Energy Advisory Board

AGENCY: Department of Energy.

ACTION: Notice of open meeting.

SUMMARY: This notice announces an open meeting of the Secretary of Energy Advisory Board (SEAB). SEAB was reestablished pursuant to the Federal Advisory Committee Act (Pub. L. 92-463, 86 Stat. 770) (the Act). This notice is provided in accordance with the Act.

DATES: Tuesday, January 26, 2016, 8:30 a.m.–12:30 p.m. PT.

ADDRESSES: Lawrence Berkeley National Laboratory, Joint BioEnergy Institute (JBEI), 5885 Hollis Street, 4th Floor, Emeryville, CA 94608.

FOR FURTHER INFORMATION CONTACT:

Karen Gibson, Designated Federal Officer, U.S. Department of Energy, 1000 Independence Avenue SW., Washington, DC 20585; telephone (202) 586-3787; seab@hq.doe.gov.

SUPPLEMENTARY INFORMATION:

Background: The Board was established to provide advice and recommendations to the Secretary on the Department's basic and applied research, economic and national security policy, educational issues, operational issues, and other activities as directed by the Secretary.

Purpose of the Meeting: This meeting is the quarterly meeting of the Board.

Tentative Agenda: The meeting will start at 8:30 a.m. on January 26th. The tentative meeting agenda includes: Updates from SEAB's task forces, presentations from DOE and Berkeley Lab, and an opportunity for comments from the public. The meeting will conclude at 12:30 p.m. Agenda updates will be posted on the SEAB Web site prior to the meeting: www.energy.gov/seab.

Public Participation: The meeting is open to the public. Individuals who would like to attend must RSVP to Karen Gibson no later than 5 p.m. on Thursday, January 21, 2016 at seab@hq.doe.gov. Please provide your name, organization, citizenship, and contact information. Anyone attending the meeting will be required to present government-issued identification.

Individuals and representatives of organizations who would like to offer comments and suggestions may do so during the meeting. Those wishing to speak should register to do so beginning at 8:30 a.m. on January 26th. Approximately 30 minutes will be reserved for public comments. Time allotted per speaker will depend on the number who wish to speak but will not

exceed 5 minutes. The Designated Federal Officer is empowered to conduct the meeting in a fashion that will facilitate the orderly conduct of business.

This meeting is being published less than 15 days prior to the scheduled meeting to allow the public and Board to hear presentations that are unique to this facility, and for the Board to continue to meet their deadlines and reporting schedules. Scheduling conflicts resulted in a delay in securing the venue.

Those not able to attend the meeting or who have insufficient time to address the committee are invited to send a written statement to Karen Gibson, U.S. Department of Energy, 1000 Independence Avenue SW., Washington, DC 20585, email to seab@hq.doe.gov.

Minutes: The minutes of the meeting will be available on the SEAB Web site or by contacting Ms. Gibson. She may be reached at the postal address or email address above, or by visiting SEAB's Web site at www.energy.gov/seab.

Issued in Washington, DC, on January 13, 2016.

Amy Bodette,

Committee Management Officer.

[FR Doc. 2016-00854 Filed 1-14-16; 8:45 am]

BILLING CODE 6450-01-P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. EL14-12-002]

Notice Setting Deadlines To File Briefs

Association of Businesses Advocating Tariff Equity, Coalition of MISO Transmission Customers, Illinois Industrial Energy Consumers, Indiana Industrial Energy Consumers, Inc., Minnesota Large Industrial Group, Wisconsin Industrial Energy Group v. Midcontinent Independent System Operator, Inc., ALLETE, Inc., Ameren Illinois Company, Ameren Missouri, Ameren Transmission Company of Illinois, American Transmission Company LLC, Cleco Power LLC, Duke Energy Business Services, LLC, Entergy Arkansas, Inc., Entergy Gulf States Louisiana, LLC, Entergy Louisiana, LLC, Entergy Mississippi, Inc., Entergy New Orleans, Inc., Entergy Texas, Inc., Indianapolis Power & Light Company, International Transmission Company, ITC Midwest LLC, Michigan Electric Transmission Company, LLC MidAmerican Energy Company, Montana-Dakota Utilities Co., Northern Indiana Public Service Company, Northern States Power Company-Minnesota, Northern States Power Company-Wisconsin, Otter Tail Power Company, Southern Indiana Gas & Electric Company

On January 5, 2016, Arkansas Electric Cooperative Corporation; Mississippi Delta Energy Agency and its members, Clarksdale Public Utilities Commission of the City of Clarksdale, Mississippi and Public Service Commission of Yazoo City, Mississippi; Hoosier Energy Rural Electric Cooperative, Inc.; and South Mississippi Electric Power Association filed a motion for clarification regarding the submission of briefs on exceptions, in the above-referenced proceeding (Motion). On January 8, 2016, MISO Transmission Owners filed an answer to the Motion. Notice is hereby given that the deadline for submitting briefs on exceptions is set to and including January 21, 2016. The deadline to file briefs opposing exceptions is set to and including February 10, 2016.

Dated: January 11, 2016.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2016-00704 Filed 1-14-16; 8:45 am]

BILLING CODE 6717-01-P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Project No. 14439-001]

Hawks Nest Hydro, LLC; Notice of Application Tendered for Filing With the Commission and Establishing Procedural Schedule for Licensing and Deadline for Submission of Final Amendments

Take notice that the following hydroelectric application has been filed with the Commission and is available for public inspection.

- a. *Type of Application:* New Major License.
- b. *Project No.:* 14439-001.
- c. *Date Filed:* December 29, 2015.
- d. *Applicant:* Hawks Nest Hydro, LLC (Hawks Nest Hydro).
- e. *Name of Project:* Glen Ferris Hydroelectric Project.
- f. *Location:* The existing project is located on the Kanawha River, in Fayette County, West Virginia. The project does not occupy any federal lands.
- g. *Filed Pursuant to:* Federal Power Act, 16 U.S.C. 791 (a)-825(r).
- h. *Applicant Contact:* Steven Murphy, Manager, Licensing, Brookfield Renewable Energy Group, 33 West 1st Street South, Fulton, New York 13069; Telephone (315) 598-6130.
- i. *FERC Contact:* Monir Chowdhury, (202) 502-6736 or monir.chowdhury@ferc.gov.

j. This application is not ready for environmental analysis at this time.

k. **Project Description:** The existing Glen Ferris Hydroelectric Project consists of: (1) A low concrete dam with a maximum height of 12 feet above the river bed and a crest elevation of 651.0 feet National Geodetic Vertical Datum of 1929 (NGVD29), consisting of (from left to right—looking downstream) (i) a 590-foot-long spillway section that generally curves upstream; (ii) a 128-foot-long five-bay stoplog sluice; (iii) a 2,132-foot-long right spillway that runs diagonally in a downstream direction; (iv) a trash sluice section; (v) a 54-foot-long by 38-foot-wide east powerhouse with a 62-foot-wide intake structure; and (vi) a 64.5-foot-long by 63-foot-wide west powerhouse with a 82.3-foot-wide intake structure, with both powerhouses integral to the dam; (2) a 190-acre reservoir with a gross storage capacity of approximately 1,500 acre-feet at the dam crest elevation of 651.0 feet NGVD29; (3) two turbine-generator units in the east powerhouse, each with a rated capacity of approximately 1.9 megawatts (MW); (4) six turbine-generator units in the west powerhouse, each with a rated capacity of approximately 0.4 MW; (5) a 4-mile-long, 13.8-kilovolt transmission line; and (6) appurtenant facilities.

The project is currently operated in a run-of-river mode with no usable storage capacity. Hawks Nest Hydro proposes to continue run-of-river operation. The project generates an annual average of 41,482 megawatt-hours.

l. **Locations of the Application:** A copy of the application is available for review at the Commission in the Public Reference Room or may be viewed on the Commission's Web site at <http://www.ferc.gov> using the "eLibrary" link. Enter the docket number excluding the last three digits in the docket number field to access the document. For assistance, contact FERC Online Support at FERCOnlineSupport@ferc.gov or toll-free at 1-866-208-3676, or for TTY, (202) 502-8659. A copy is also available for inspection and reproduction at the address in item (h) above.

m. You may also register online at <http://www.ferc.gov/docs-filing/esubscription.asp> to be notified via email of new filings and issuances related to this or other pending projects. For assistance, contact FERC Online Support.

n. **Procedural Schedule:** The application will be processed according to the following preliminary Hydro Licensing Schedule. Revisions to the schedule may be made as appropriate.

Milestone	Target date
Notice of Acceptance/Notice of Ready for Environmental Analysis.	February 2016.
Filing of recommendations, preliminary terms and conditions, and fishway prescriptions.	April 2016.
Commission issues EA	August 2016.
Comments on EA	September 2016.
Modified Terms and Conditions.	November 2016.
Commission Issues Final EA, if necessary.	February 2017.

o. Final amendments to the application must be filed with the Commission no later than 30 days from the issuance date of the notice of ready for environmental analysis.

Dated: January 11, 2016.

Nathaniel J. Davis, Sr.,
Deputy Secretary.

[FR Doc. 2016-00710 Filed 1-14-16; 8:45 am]

BILLING CODE 6717-01-P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. CP15-560-000]

Cameron LNG, LLC; Notice of Schedule for Environmental Review of the Cameron LNG Terminal Expansion Project

On September 28, 2015, Cameron LNG, LLC filed an application in Docket No. CP15-560-000 requesting Authorization pursuant to section 3 of the Natural Gas Act to construct and operate certain liquefied natural gas (LNG) facilities at the existing Cameron LNG Terminal. The proposed project is known as the Cameron LNG Terminal Expansion Project (Project), and would increase the terminal's capability to liquefy natural gas for export by 515 billion cubic feet per year.

On October 13, 2015, the Federal Energy Regulatory Commission (Commission or FERC) issued its Notice of Application for the Project. Among other things, that notice alerted agencies issuing federal authorizations of the requirement to complete all necessary reviews and to reach a final decision on a request for a federal authorization within 90 days of the date of issuance of the Commission staff's Environmental Assessment (EA) for the Project. This instant notice identifies the FERC staff's planned schedule for the completion of the EA for the Project.

Schedule for Environmental Review

Issuance of EA—February 12, 2016
90-day Federal Authorization Decision
Deadline—May 12, 2016

If a schedule change becomes necessary, additional notice will be provided so that the relevant agencies are kept informed of the Project's progress.

Project Description

Cameron LNG, LLC's Project would add an additional LNG storage tank (Tank 5) and two new systems to liquefy natural gas (Trains 4 and 5) to its existing LNG Terminal in Cameron and Calcasieu Parishes, Louisiana. No construction would occur outside of the existing terminal and no new shipping is proposed as a result of this Project.

Background

On June 18, 2015, the Commission issued a *Notice of Intent to Prepare an Environmental Assessment for the Planned Cameron LNG Expansion Project and Request for Comments on Environmental Issues* (NOI). The NOI was issued during the pre-filing review of the Project in Docket No. PF15-13-000 and was sent to affected landowners; federal, state, and local government agencies; elected officials; environmental and public interest groups; Native American tribes; other interested parties; and local libraries and newspapers. In response to the NOI, the Commission received comments from the U.S. Environmental Protection Agency (EPA). The primary issues raised by the EPA are alternatives, groundwater and water impacts, wildlife and habitat impacts, air quality, hazardous materials, tribal and state historic preservation office consultation, and environmental justice.

The U.S. Department of Transportation and U.S. Department of Energy are cooperating agencies in the preparation of the EA.

Additional Information

In order to receive notification of the issuance of the EA and to keep track of all formal issuances and submittals in specific dockets, the Commission offers a free service called eSubscription. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to www.ferc.gov/docs-filing/esubscription.asp.

Additional information about the Project is available from the Commission's Office of External Affairs at (866) 208-FERC or on the FERC Web

site (www.ferc.gov). Using the "eLibrary" link, select "General Search" from the eLibrary menu, enter the selected date range and "Docket Number" excluding the last three digits (*i.e.*, CP15-560), and follow the instructions. For assistance with access to eLibrary, the helpline can be reached at (866) 208-3676, TTY (202) 502-8659, or at FERCOnlineSupport@ferc.gov. The eLibrary link on the FERC Web site also provides access to the texts of formal documents issued by the Commission, such as orders, notices, and rule makings.

Dated: January 11, 2016.

Nathaniel J. Davis, Sr.,
Deputy Secretary.

[FR Doc. 2016-00703 Filed 1-14-16; 8:45 am]

BILLING CODE 6717-01-P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

Combined Notice of Filings #2

Take notice that the Commission received the following exempt wholesale generator filings:

Docket Numbers: EG16-36-000.

Applicants: Kingbird Solar A, LLC.

Description: Notice of Self-Certification of Exempt Wholesale Generator Status of Kingbird Solar A, LLC.

Filed Date: 1/11/16.

Accession Number: 20160111-5267.

Comments Due: 5 p.m. ET 2/1/16.

Docket Numbers: EG16-37-000.

Applicants: Kingbird Solar B, LLC.

Description: Notice of Self-Certification of Exempt Wholesale Generator Status of Kingbird Solar B, LLC.

Filed Date: 1/11/16.

Accession Number: 20160111-5271.

Comments Due: 5 p.m. ET 2/1/16.

Take notice that the Commission received the following electric rate filings:

Docket Numbers: ER16-38-001.

Applicants: Kingbird Solar A, LLC.

Description: Compliance filing: Application for Initial Market-Based Rate Tariff and Granting Certain Waivers to be effective 1/12/2016.

Filed Date: 1/11/16.

Accession Number: 20160111-5265.

Comments Due: 5 p.m. ET 2/1/16.

Docket Numbers: ER16-705-001.

Applicants: RE Garland LLC.

Description: Tariff Amendment: Amendment to Application and Initial Tariff Filing to be effective 2/12/2016.

Filed Date: 1/11/16.

Accession Number: 20160111–5311.

Comments Due: 5 p.m. ET 2/1/16.

Docket Numbers: ER16–706–001.

Applicants: RE Garland A LLC.

Description: Tariff Amendment: Amendment to Application and Initial Tariff Filing to be effective 2/12/2016.

Filed Date: 1/11/16.

Accession Number: 20160111–5312.

Comments Due: 5 p.m. ET 2/1/16.

Docket Numbers: ER16–708–000.

Applicants: Calpine Energy Services, L.P.

Description: Request for Limited Waiver and Shortened Comment Period of Calpine Energy Services, L.P.

Filed Date: 1/8/16.

Accession Number: 20160108–5278.

Comments Due: 5 p.m. ET 1/19/16.

Docket Numbers: ER16–710–000.

Applicants: Arizona Public Service Company.

Description: Section 205(d) Rate Filing: Service Agreement No. 219—Amendment 2 to be effective 1/1/2016.

Filed Date: 1/11/16.

Accession Number: 20160111–5297.

Comments Due: 5 p.m. ET 2/1/16.

Docket Numbers: ER16–711–000.

Applicants: Pio Pico Energy Center, LLC.

Description: Baseline eTariff Filing: Application for MBR to be effective 3/1/2016.

Filed Date: 1/11/16.

Accession Number: 20160111–5304.

Comments Due: 5 p.m. ET 2/1/16.

The filings are accessible in the Commission's eLibrary system by clicking on the links or querying the docket number.

Any person desiring to intervene or protest in any of the above proceedings must file in accordance with Rules 211 and 214 of the Commission's Regulations (18 CFR 385.211 and 385.214) on or before 5:00 p.m. Eastern time on the specified comment date. Protests may be considered, but intervention is necessary to become a party to the proceeding.

eFiling is encouraged. More detailed information relating to filing requirements, interventions, protests, service, and qualifying facilities filings can be found at: <http://www.ferc.gov/docs-filing/efiling/filing-req.pdf>. For other information, call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Dated: January 11, 2016.

Nathaniel J. Davis, Sr.,
Deputy Secretary.

[FR Doc. 2016–00702 Filed 1–14–16; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Project No. 2512–075]

Hawks Nest Hydro, LLC; Notice of Application Tendered for Filing With the Commission and Establishing Procedural Schedule for Licensing and Deadline for Submission of Final Amendments

Take notice that the following hydroelectric application has been filed with the Commission and is available for public inspection.

a. *Type of Application:* New Major License.

b. *Project No.:* 2512–075.

c. *Date Filed:* December 29, 2015.

d. *Applicant:* Hawks Nest Hydro, LLC (Hawks Nest Hydro).

e. *Name of Project:* Hawks Nest Hydroelectric Project.

f. *Location:* The existing project is located on the New River, in Fayette County, West Virginia. The project does not occupy any federal lands.

g. *Filed Pursuant to:* Federal Power Act, 16 U.S.C. 791 (a)–825(r).

h. *Applicant Contact:* Steven Murphy, Manager, Licensing, Brookfield Renewable Energy Group, 33 West 1st Street South, Fulton, New York 13069; Telephone (315) 598–6130.

i. *FERC Contact:* Monir Chowdhury, (202) 502–6736 or monir.chowdhury@ferc.gov.

j. This application is not ready for environmental analysis at this time.

k. *Project Description:* The existing Hawks Nest Hydroelectric Project consists of: (1) A 948-foot-long concrete gravity dam with a crest elevation of 795.0 feet National Geodetic Vertical Datum of 1929 (NGVD29); (2) 14 ogee-type spillway bays extending almost the entire length of the dam, each with a 25-foot-high by 50-foot-wide Stoney-type steel lift gate and separated by a 9-foot-wide concrete pier; (3) a 243-acre reservoir with a gross storage capacity of 7,323 acre-feet at a normal pool elevation of 819.9 feet NGVD29; (4) an intake structure located at the right shoreline (looking downstream) of the reservoir just upstream of the dam and consisting of a 110-foot-wide by 50-foot-high trashrack structure and a Stoney-type 42-foot-high by 50-foot-wide bulkhead intake gate that sits back approximately 50 feet from the opening where the trashrack is located; (5) a 16,240-foot-long tunnel that runs along the right side of the river to convey water from the intake to the powerhouse downstream of the New River; (6) a 600-foot-long by 170-foot-wide surge basin

located at a point on the tunnel approximately 60 percent of the distance from the intake to the powerhouse; (7) a 116-foot-diameter and 56-foot-high differential surge tank located at the downstream end of the tunnel and before the powerhouse; (8) a 210-foot-long by 74.5-foot-wide powerhouse containing four turbine-generator units, each with a rated capacity of approximately 25.5 megawatts; (9) two parallel approximately 5.5-mile-long, 69-kilovolt transmission lines; and (10) appurtenant facilities.

Hawks Nest Hydro operates the project in a run-of-river mode. The existing license (Article 402) requires that the project release a continuous minimum flow of 100 cubic feet per second into the bypassed reach between the dam and the powerhouse. Hawks Nest Hydro proposes to continue run-of-river operation and a modified minimum flow schedule for the bypassed reach. The project generates an annual average of 544,253 megawatt-hours.

l. *Locations of the Application:* A copy of the application is available for review at the Commission in the Public Reference Room or may be viewed on the Commission's Web site at <http://www.ferc.gov> using the "eLibrary" link. Enter the docket number excluding the last three digits in the docket number field to access the document. For assistance, contact FERC Online Support at FERCOnlineSupport@ferc.gov or toll-free at 1–866–208–3676, or for TTY, (202) 502–8659. A copy is also available for inspection and reproduction at the address in item (h) above.

m. You may also register online at <http://www.ferc.gov/docs-filing/esubscription.asp> to be notified via email of new filings and issuances related to this or other pending projects. For assistance, contact FERC Online Support.

n. *Procedural Schedule:* The application will be processed according to the following preliminary Hydro Licensing Schedule. Revisions to the schedule may be made as appropriate.

Milestone	Target date
Notice of Acceptance/Notice of Ready for Environmental Analysis.	February 2016.
Filing of recommendations, preliminary terms and conditions, and fishway prescriptions.	April 2016.
Commission issues EA Comments on EA	August 2016. September 2016.

Milestone	Target date
Modified Terms and Conditions.	November 2016.
Commission Issues Final EA, if necessary.	February 2017.

o. Final amendments to the application must be filed with the Commission no later than 30 days from the issuance date of the notice of ready for environmental analysis.

Dated: January 11, 2016.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2016–00706 Filed 1–14–16; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Project Nos. 2593–031; 2823–020]

Algonquin Power (Beaver Falls), LLC; Notice of Application Tendered for Filing With the Commission and Soliciting Additional Study Requests and Establishing Procedural Schedule for Relicensing and a Deadline for Submission of Final Amendments

Take notice that the following hydroelectric application has been filed with the Commission and is available for public inspection.

a. *Type of Application:* New Major License.

b. *Project Nos.:* 2593–031 and 2823–020.

c. *Date filed:* December 30, 2015.

d. *Applicant:* Algonquin Power (Beaver Falls), LLC.

e. *Name of Projects:* Upper Beaver Falls and Lower Beaver Falls projects.

f. *Location:* On the Beaver River, in the towns of Croghan and New Bremen, Lewis County, New York. The project does not occupy lands of the United States.

g. *Filed Pursuant to:* Federal Power Act 16 U.S.C. 791 (a)–825(r).

h. *Applicant Contact:* Robert A. Gates, Executive Vice President, Eagle Creek Renewable Energy, 65 Madison Avenue, Suite 500, Morristown, New Jersey 07960; (973) 998–8400; bob.gates@eaglecreekre.com.

i. *FERC Contact:* Andy Bernick, (202) 502–8660 or andrew.bernick@ferc.gov.

j. *Cooperating agencies:* Federal, state, local, and tribal agencies with jurisdiction and/or special expertise with respect to environmental issues that wish to cooperate in the preparation of the environmental document should follow the instructions for filing such requests

described in item l below. Cooperating agencies should note the Commission's policy that agencies that cooperate in the preparation of the environmental document cannot also intervene. *See*, 94 FERC ¶ 61,076 (2001).

k. Pursuant to section 4.32(b)(7) of the Commission's regulations, if any resource agency, Indian Tribe, or person believes that an additional scientific study should be conducted in order to form an adequate factual basis for a complete analysis of the application on its merit, the resource agency, Indian Tribe, or person must file a request for a study with the Commission not later than 60 days from the date of filing of the application, and serve a copy of the request on the applicant.

l. *Deadline for filing additional study requests and requests for cooperating agency status:* February 28, 2016.

The Commission strongly encourages electronic filing. Please file additional study requests and requests for cooperating agency status using the Commission's eFiling system at <http://www.ferc.gov/docs-filing/efiling.asp>. For assistance, please contact FERC Online Support at FERCOnlineSupport@ferc.gov, (866) 208–3676 (toll free), or (202) 502–8659 (TTY). In lieu of electronic filing, please send a paper copy to: Secretary, Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426. The first page of any filing should include docket numbers P–2593–031 and P–2823–020.

m. The application is not ready for environmental analysis at this time.

n. The existing project works are as follows:

The Upper Beaver Falls Project consists of: (1) A 328-foot-long, 25-foot-high concrete gravity dam with an uncontrolled overflow spillway; (2) a 48-acre reservoir with a storage capacity of 800 acre-feet at elevation 799.4 feet North American Vertical Datum of 1988 (NAVD 88); (3) a 17-foot-high, 26.5-foot-wide, 27.5-foot-long intake structure with a steel trash rack; (4) a 90-foot-long, 16-foot-wide, 8-foot-high concrete penstock; (5) a powerhouse containing one turbine-generator with a nameplate rating of 1,500 kilowatts (kW); (6) a tailrace excavated in the riverbed; (7) a 2,120-foot-long, 2.4-kilovolt (kV) overhead transmission line connecting to an existing National Grid substation; and (8) other appurtenances. The project generates about 8,685 megawatt-hours (MWh) annually.

The Lower Beaver Falls Hydroelectric Project consists of: (1) A 400-foot-long concrete gravity dam with a maximum height of 14 feet, including: (i) A 240-foot-long non-overflow section containing an 8-foot-wide spillway

topped with flashboards ranging from 6 to 8 inches in height and (ii) a 160-foot-long overflow section with an ice sluice opening; (2) a 4-acre reservoir with a storage capacity of 27.9 acre-feet at a normal elevation of 769.6 feet NAVD 88; (3) an intake structure with a steel trash rack, integral with a powerhouse containing two 500-kW turbine and generator units; (4) a tailrace; (5) a 250-foot-long, 2.4-kV transmission line connected to the Upper Beaver Falls powerhouse; and (6) appurtenant facilities. The project generates about 5,617 MWh annually.

The Lower Beaver Falls Project is located approximately 600 feet downstream of the Upper Beaver Falls Project. The dams and existing project facilities for both projects are owned by the applicant. The applicant proposes no new project facilities or operational changes, but proposes that both projects be combined under a single license.

o. A copy of the application is available for review at the Commission in the Public Reference Room or may be viewed on the Commission's Web site at <http://www.ferc.gov> using the "eLibrary" link. Enter one of the docket numbers excluding the last three digits in the docket number field to access the document. For assistance, please contact FERC Online Support at FERCOnlineSupport@ferc.gov, (866) 208–3676 (toll free), or (202) 502–8659 (TTY). A copy is also available for inspection and reproduction at the address in item (h) above.

You may also register online at <http://www.ferc.gov/docs-filing/esubscription.asp> to be notified via email of new filings and issuances related to these or other pending projects. For assistance, contact FERC Online Support.

p. *Procedural Schedule:* The application will be processed according to the following preliminary Hydro Licensing Schedule. Revisions to the schedule will be made as appropriate.

Issue Deficiency Letter (if necessary)—

February 2016

Request Additional Information—February 2016

Issue Acceptance Letter—May 2016

Issue Scoping Document 1 for comments—May 2016

Request Additional Information (if necessary)—July 2016

Issue Scoping Document 2—September 2016

Issue notice of ready for environmental analysis—September 2016

Commission issues EA, draft EA, or draft EIS—March 2017

Comments on EA, draft EA, or draft EIS—April 2017

Commission issues final EA or EIS—June 2017

Final amendments to the application must be filed with the Commission no later than 30 days from the issuance date of the notice of ready for environmental analysis.

Dated: January 11, 2016.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2016-00707 Filed 1-14-16; 8:45 am]

BILLING CODE 6717-01-P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

Combined Notice of Filings #1

Take notice that the Commission received the following electric rate filings:

Docket Numbers: ER13-1356-002.

Applicants: Duke Energy Florida, LLC.

Description: Amendment to December 21, 2015 Compliance filing [including Pro Forma sheets] of Duke Energy Florida, LLC.

Filed Date: 1/8/16.

Accession Number: 20160108-5264.

Comments Due: 5 p.m. ET 1/29/16.

Docket Numbers: ER15-1618-003.
Applicants: Duke Energy Florida, LLC.

Description: Compliance filing: ROE Settlement IA's Amendment RS 80, 82 & 105 to be effective 5/1/2015.

Filed Date: 1/8/16.

Accession Number: 20160108-5124.

Comments Due: 5 p.m. ET 1/29/16.

Docket Numbers: ER16-704-000.

Applicants: Southwest Power Pool, Inc.

Description: Section 205(d) Rate Filing: Revisions to Identify US/Canada Border as a Point-of-Delivery/Point-of-Receipt to be effective 3/8/2016.

Filed Date: 1/8/16.

Accession Number: 20160108-5231.

Comments Due: 5 p.m. ET 1/29/16.

Docket Numbers: ER16-705-000.

Applicants: RE Garland LLC.

Description: Baseline eTariff Filing: Application and Initial Baseline Tariff Filing to be effective 2/12/2016.

Filed Date: 1/8/16.

Accession Number: 20160108-5238.

Comments Due: 5 p.m. ET 1/29/16.

Docket Numbers: ER16-706-000.

Applicants: RE Garland A LLC.

Description: Baseline eTariff Filing: Application and Initial Baseline Tariff Filing to be effective 2/12/2016.

Filed Date: 1/8/16.

Accession Number: 20160108-5239.

Comments Due: 5 p.m. ET 1/29/16.

Docket Numbers: ER16-707-000.

Applicants: NorthWestern Corporation.

Description: Section 205(d) Rate Filing: Ministerial Revisions to Montana OATT to be effective 3/12/2016.

Filed Date: 1/11/16.

Accession Number: 20160111-5134.

Comments Due: 5 p.m. ET 2/1/16.

Docket Numbers: ER16-709-000.

Applicants: No Applicants listed for this docket/subdocket.

Description: Section 205(d) Rate Filing: 607R26 Westar Energy, Inc. NITSA NOA to be effective 1/1/2016.

Filed Date: 1/11/16.

Accession Number: 20160111-5167.

Comments Due: 5 p.m. ET 2/1/16.

The filings are accessible in the Commission's eLibrary system by clicking on the links or querying the docket number.

Any person desiring to intervene or protest in any of the above proceedings must file in accordance with Rules 211 and 214 of the Commission's Regulations (18 CFR 385.211 and 385.214) on or before 5:00 p.m. Eastern time on the specified comment date. Protests may be considered, but intervention is necessary to become a party to the proceeding.

eFiling is encouraged. More detailed information relating to filing requirements, interventions, protests, service, and qualifying facilities filings can be found at: <http://www.ferc.gov/docs-filing/efiling/filing-req.pdf>. For other information, call (866) 208-3676 (toll free). For TTY, call (202) 502-8659.

Dated: January 11, 2016.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2016-00708 Filed 1-14-16; 8:45 am]

BILLING CODE 6717-01-P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

Notice of Staff Attendance at the Midcontinent Independent System Operator, Inc. (MISO) Meetings of the Miso Competitive Retail Solution Task Team (CSRTT)

The Federal Energy Regulatory Commission (Commission) hereby gives notice that members of its staff may attend the January meetings of the MISO CSRTT. Their attendance is part of the Commission's ongoing outreach efforts.

The first meeting will be held by conference call on January 15, 2016, from 10:00 a.m. to 12:00 p.m. Eastern. Dial-in and webcast information may be found at <https://www.misoenergy.org/Events/Pages/CSRTT20160115.aspx>.

The second meeting will be held on January 29, 2016, from 11:00 a.m. to 4:00 p.m. Eastern at the Illinois Commerce Commission Hearing Room, 160 North LaSalle, Suite C-800, Chicago, IL 60601.

The discussions may address matters at issue in the following proceedings:

Docket No. ER11-4081, *Midwest Independent System Operator, Inc.*
Docket No. EL12-54, *Viridity Energy, Inc. v. PJM Interconnection, L.L.C.*
Docket No. ER13-535, *PJM Interconnection, L.L.C.*
Docket No. ER13-2108, *PJM Interconnection, L.L.C.*
Docket No. ER14-504, *PJM Interconnection, L.L.C.*
Docket No. ER14-822, *PJM Interconnection, L.L.C.*
Docket Nos. ER14-1461 and EL14-48, *PJM Interconnection, L.L.C.*
Docket No. ER14-2940, *PJM Interconnection, L.L.C.*
Docket No. ER15-135, *PJM Interconnection, L.L.C.*
Docket Nos. ER15-623 and EL15-29, *PJM Interconnection, L.L.C.*
Docket No. EL14-20, *Independent Market Monitor for PJM v. PJM Interconnection, L.L.C.*
Docket Nos. EL14-94 and EL14-36, *FirstEnergy Solutions Corp. and PJM Interconnection, L.L.C.*
Docket No. EL14-55, *FirstEnergy Service Company v. PJM Interconnection, L.L.C.*
Docket No. EL15-41, *Essential Power Rock Springs, L.L.C. et al. v. PJM Interconnection, L.L.C.*
Docket No. EL15-46, *Champion Energy Marketing L.L.C. v. PJM Interconnection, L.L.C.*
Docket No. EL15-80, *Advanced Energy Management Alliance Coalition v. PJM Interconnection, L.L.C.*
Docket No. EL15-83, *National Resources Defense Council, et al., v. PJM Interconnection, L.L.C.*
Docket No. EL15-70, *Public Citizen, Inc. v. Midcontinent Independent System Operator, Inc.*
Docket No. EL15-71, *People of the State of Illinois v. Midcontinent Independent System Operator, Inc.*
Docket No. EL15-72, *Southwestern Electric Cooperative, Inc. v. Midcontinent Independent System Operator, Inc.*
Docket No. EL15-82, *Illinois Industrial Energy Consumers v. Midcontinent Independent System Operator, Inc.*

The meeting is open to the public.

For more information, contact Patrick Clarey, Office of Energy Market Regulation, Federal Energy Regulatory Commission at (317) 249-5937 or patrick.clarey@ferc.gov.

Dated: January 11, 2016.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2016-00705 Filed 1-14-16; 8:45 am]

BILLING CODE 6717-01-P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Project No. 2727-092]

Black Bear Hydro Partners LLC; Notice of Application Tendered for Filing With the Commission and Establishing Procedural Schedule for Licensing and Deadline for Submission of Final Amendments

Take notice that the following hydroelectric application has been filed with the Commission and is available for public inspection.

a. *Type of Application*: New Major License.

b. *Project No.*: 2727-092.

c. *Date Filed*: December 30, 2015.

d. *Applicant*: Black Bear Hydro Partners LLC (Black Bear Hydro).

e. *Name of Project*: Ellsworth Hydroelectric Project (Ellsworth Project).

f. *Location*: The existing project is located on the Union River in Hancock County, Maine. The project does not occupy federal lands.

g. *Filed Pursuant to*: Federal Power Act, 16 U.S.C. 791(a)-825(r).

h. *Applicant Contact*: Ms. Kelly Maloney, Manager of Licensing and Compliance, Brookfield White Pine Hydro LLC, 150 Main Street, Lewiston, ME 04240; Telephone: (207) 755-5606.

i. *FERC Contact*: Dr. Nicholas Palso, (202) 502-8854 or nicholas.palso@ferc.gov.

j. This application is not ready for environmental analysis at this time.

k. *The Project Description*: The existing Ellsworth Project consists of two developments (Graham Lake and Ellsworth) with a total installed capacity of 8.9 megawatts (MW). The project's average annual generation is 30,511 megawatt-hours. The power generated by the project is sold on the open market through the regional grid.

Graham Lake Development

The existing Graham Lake Development consists of: (1) A 750-foot-long, 58-foot-high dam that includes: (i) An 80-foot-long, 58-foot-high concrete spillway section with three 20-foot-wide, 22.5-foot-high spillway gates and one 8-foot-wide sluice gate; and (ii) a 670-foot-long, 45-foot-high west earthen embankment section with a concrete

and sheet pile core wall; (2) a 10,000-acre impoundment (Graham Lake) with a useable storage volume of 123.97 million acre-feet at a normal maximum elevation of 104.2 National Geodetic Vertical Datum (NGVD); (3) a 720-foot-long, 58-foot-high concrete gravity flood control structure with a 65-foot-diameter, 55-foot-high stone-filled sheet pile retaining structure; (4) a 71-foot-long, 36.5-foot-high concrete wing wall; and (5) appurtenant facilities.

Ellsworth Development

The existing Ellsworth Development consists of: (1) A 377-foot-long, 62.75-foot-high dam that includes: (i) A 102-foot-long, 62.75-foot-high west concrete bulkhead section; and (ii) a 275-foot-long, 57-foot-high concrete overflow spillway with 1.7-foot-high flashboards; (2) an 85-foot-long, 71-foot-high concrete non-over flow wall at the west end of the bulkhead section; (3) a 26-foot-high abutment at the east end of the spillway; (4) a 90-acre impoundment (Lake Leonard) with a gross storage volume of 2.46 million acre-feet at a normal maximum elevation of 66.7 feet NGVD; (5) generating facility No. 1 that includes: (i) A headgate and a trashrack with 2.44-inch clear-bar spacing; (ii) a 10-foot-diameter, 74-foot-long penstock; and (iii) a 30-foot-long, 15-foot-wide concrete and masonry gatehouse that is integral with the dam and contains a single 2.5 MW turbine-generator unit; (6) generating facility No. 2 that includes: (i) An 88.4-foot-wide, 32-foot-high intake structure with three headgates and three trashracks with 1.0- to 2.37-inch clear-bar spacing; (ii) an 8-foot-diameter, 164-foot-long penstock, an 8-foot-diameter, 195-foot-long penstock, and a 12-foot-diameter, 225-foot-long penstock; and (iii) a 52.5-foot-long, 68-foot-wide concrete and masonry powerhouse that contains two 2.0-MW and one 2.4-MW turbine-generator units; (7) downstream fish passage facilities that include three 3-foot-wide surface weirs; (8) upstream fish passage facilities that include a 3-foot-wide vertical slot fishway and collection station; (9) a 320-foot-long transmission line connecting the turbine-generator units to the regional grid; and (10) appurtenant facilities.

The Graham Lake Development operates as a water storage facility where water is stored to reduce downstream flooding during periods of high flow and released during periods of low flow to augment generation at the Ellsworth Development. The Ellsworth Development operates as a peaking facility where Lake Leonard is fluctuated up to one foot on a daily basis to regulate downstream flows and

meet peak demands for hydroelectric generation.

The existing license requires an instantaneous minimum flow of 250 cubic feet per second (cfs), or inflow (whichever is less), downstream of each development from May 1 to June 30 each year. The minimum flow for each development is reduced to 105 cfs from July 1 to April 30 each year. In addition to the minimum flows, the existing license requires Black Bear Hydro to maintain Graham Lake and Lake Leonard between elevations 93.4 and 104.2 feet NGVD and 65.7 and 66.7 feet NGVD, respectively. Black Bear Hydro proposes to install upstream eel passage facilities at the Graham Lake and Ellsworth developments, construct a canoe portage at the Graham Lake Development, and improve angler access at the Graham Lake Development.

l. *Locations of the Application*: A copy of the application is available for review at the Commission in the Public Reference Room or may be viewed on the Commission's Web site at <http://www.ferc.gov> using the "eLibrary" link. Enter the docket number excluding the last three digits in the docket number field to access the document. For assistance, please contact FERC Online Support at FERCOnlineSupport@ferc.gov, (866) 208-3676 (toll free), or (202) 502-8659 (TTY). A copy is also available for inspection and reproduction at the address in item (h) above.

m. You may also register online at <http://www.ferc.gov/docs-filing/esubscription.asp> to be notified via email of new filings and issuances related to this or other pending projects. For assistance, contact FERC Online Support.

n. Procedural Schedule:

The application will be processed according to the following preliminary Hydro Licensing Schedule. Revisions to the schedule may be made as appropriate.

Milestone	Target date ¹
Notice of Acceptance/Notice of Ready for Environmental Analysis (REA).	February 2017.
Filing of recommendations, preliminary terms and conditions, and fishway prescriptions.	April 2017.
Commission issues Non-Draft Environmental Assessment (EA).	October 2017.
Comments on EA	November 2017.

Milestone	Target date ¹
Modified terms and conditions.	January 2018.

¹This schedule has been adjusted to account for ongoing studies that must be filed with the Commission no later than December 31, 2016.

o. Final amendments to the application must be filed with the Commission no later than 30 days from the issuance date of the notice of ready for environmental analysis.

Dated: January 11, 2016.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2016-00709 Filed 1-14-16; 8:45 am]

BILLING CODE 6717-01-P

ENVIRONMENTAL PROTECTION AGENCY

[FRL-9927-56-OEI]

Agency Information Collection Activities OMB Responses

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: This document announces the Office of Management and Budget (OMB) responses to Agency Clearance requests, in compliance with the Paperwork Reduction Act (44 U.S.C. 3501 et seq.). An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA regulations are listed in 40 CFR part 9 and 48 CFR chapter 15.

FOR FURTHER INFORMATION CONTACT: Courtney Kerwin (202) 566-1669, or email at kerwin.courtney@epa.gov and please refer to the appropriate EPA Information Collection Request (ICR) Number.

SUPPLEMENTARY INFORMATION:

OMB Responses to Agency Clearance Requests

OMB Approvals

EPA ICR Number 2067.05; Laboratory Quality Assurance Evaluation Program for Analysis of Cryptosporidium under the Safe Drinking Water Act (Renewal); was approved without change on 3/31/2015; OMB Number 2040-0246; expires on 3/31/2018.

EPA ICR Number 2261.03; Safer Detergent Stewardship Initiative (SDSI) Program (Renewal); was approved without change on 3/16/2015; OMB

Number 2070-0171; expires on 3/31/2018.

EPA ICR Number 2020.06; Federal Implementation Plans under the Clean Air Act for Indian Reservations in Idaho, Oregon, and Washington (Renewal); 40 CFR part 49, 49.122, 49.124, 49.126, 49.127, 49.130, 49.131, 49.132, 49.133, 49.134, 49.135, 49.138, and 49.139; was approved without change on 3/16/2015; OMB Number 2060-0558; expires on 3/31/2018.

EPA ICR Number 1974.07; NESHAP for Cellulose Products Manufacturing (Renewal); 40 CFR part 63, subparts UUUU and A; was approved without change on 4/30/2015; OMB Number 2060-0488; expires on 4/30/2018.

EPA ICR Number 0746.09; NSPS for Calciners and Dryers in Mineral Industries (Renewal); 40 CFR part 60, subparts UUU and A; was approved without change on 4/30/2015; OMB Number 2060-0251; expires on 4/30/2018.

EPA ICR Number 1712.09; NESHAP for Shipbuilding and Ship Repair Facilities—Surface Coating (Renewal); 40 CFR part 63, subparts II and A; was approved without change on 4/30/2015; OMB Number 2060-0330; expires on 4/30/2018.

EPA ICR Number 1750.07; National Volatile Organic Compound Emission Standards for Architectural Coatings (Renewal); 40 CFR part 59, subpart D; was approved without change on 4/30/2015; OMB Number 2060-0393; expires on 4/30/2018.

EPA ICR Number 2310.03; Revisions to the RCRA Definition of Solid Waste Final Rule (Revision); 40 CFR parts 260 and 261; was approved without change on 4/28/2015; OMB Number 2050-0202; expires on 4/30/2018.

EPA ICR Number 1947.06; NESHAP for Solvent Extraction for Vegetable Oil Production (Renewal); 40 CFR part 63, subpart GGGG; was approved without change on 4/22/2015; OMB Number 2060-0471; expires on 4/30/2018.

EPA ICR Number 0661.11; NSPS for Asphalt Processing and Roofing Manufacturing (Renewal); 40 CFR part 60, subparts A and UU; was approved without change on 4/22/2015; OMB Number 2060-0002; expires on 4/30/2018.

EPA ICR Number 1812.05; Annual Public Water Systems Compliance Report (Renewal); was approved without change on 4/16/2015; OMB Number 2020-0020; expires on 4/30/2018.

EPA ICR Number 1679.09; NESHAP for Marine Tank Vessel Loading Operations (Renewal); 40 CFR part 63, subpart Y; was approved without

change on 4/13/2015; OMB Number 2060-0289; expires on 4/30/2018.

EPA ICR Number 1681.08; NESHAP for Epoxy Resin and Non-Nylon Polyamide Production (Renewal); 40 CFR part 63, subpart W; was approved without change on 4/13/2015; OMB Number 2060-0290; expires on 4/30/2018.

EPA ICR Number 2394.03; Control of Greenhouse Gas Emissions from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards (Renewal); 40 CFR part 523, 40 CFR part 534, 40 CFR part 535, 40 CFR part 86, 40 CFR part 1036, and 40 CFR 1037; was approved without change on 4/1/2015; OMB Number 2060-0678; expires on 4/30/2018.

Comment Filed

EPA ICR Number 1790.07; NESHAP for Phosphoric Acid Manufacturing and Phosphate Fertilizers Production (Revision); 40 CFR part 63, subparts A, AA and BB; OMB filed comment on 3/30/2015.

EPA ICR Number 2448.02; NESHAP for Ferroalloys (Supplemental Proposed Rule); 40 CFR part 63, subparts XXX and A; OMB filed comment on 3/16/2015.

EPA ICR Number 2503.01; Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (Proposed Rule); 40 CFR part 60; OMB filed comment on 3/16/2015.

EPA ICR Number 2498.01; NSPS Review for Municipal Solid Waste Landfills; 40 CFR part 60; OMB filed comment on 3/16/2015.

EPA ICR Number 2495.01; Data Requirements Rule for 1-Hour SO₂ NAAQS; 40 CFR part 51; OMB filed comment on 3/16/2015.

EPA ICR Number 2514.01; Effluent Limitation Guidelines and Standards for the Dental Category (Proposed Rule); 40 CFR part 403 and 40 CFR part 441; OMB filed comment on 4/16/2015.

EPA ICR Number 1664.10; National Oil and Hazardous Substances Pollution Contingency Plans (Proposed Rule); 40 CFR part 300.900; OMB filed comment on 4/8/2015.

EPA ICR Number 2497.01; NSPS for Grain Elevators (Proposed Rule); 40 CFR part 60; OMB filed comment on 4/8/2015.

Courtney Kerwin,

Acting Director, Collections Strategies Division.

[FR Doc. 2016-00743 Filed 1-14-16; 8:45 am]

BILLING CODE 6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-OPP-2008-0844; FRL-9940-82]

Imidacloprid Registration Review; Draft Pollinator Ecological Risk Assessment; Notice of Availability

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: This notice announces the availability of EPA's draft pollinator-only ecological risk assessment for the registration review of imidacloprid and opens a public comment period on this document. Registration review is EPA's periodic review of pesticide registrations to ensure that each pesticide continues to satisfy the statutory standard for registration, that is, the pesticide can perform its intended function without unreasonable adverse effects on human health or the environment. As part of the registration review process, the Agency has completed a comprehensive draft pollinator-only ecological risk assessment for all registered agricultural uses of imidacloprid, with focus on agricultural crops that are attractive to pollinators. After reviewing comments received during the public comment period, EPA will issue a revised pollinator risk assessment, explain any changes to the draft risk assessment, and respond to comments and may request public input on risk mitigation before completing a proposed registration review decision for imidacloprid. The revised risk assessment will also address the ecological risks for all other taxa, as well as a comprehensive draft human health risk assessment. Through the registration review program, EPA is ensuring that each pesticide's registration is based on current scientific and other knowledge, including its effects on human health and the environment.

DATES: Comments must be received on or before March 15, 2016.

ADDRESSES: Submit your comments, identified by docket identification (ID) number EPA-HQ-OPP-2008-0844, by one of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the online instructions for submitting comments. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute.

- *Mail:* OPP Docket, Environmental Protection Agency Docket Center (EPA/DC), (28221T), 1200 Pennsylvania Ave. NW., Washington, DC 20460-0001.

- *Hand Delivery:* To make special arrangements for hand delivery or delivery of boxed information, please follow the instructions at <http://www.epa.gov/dockets/contacts.html>.

Additional instructions on commenting or visiting the docket, along with more information about dockets generally, is available at <http://www.epa.gov/dockets>.

FOR FURTHER INFORMATION CONTACT:

For pesticide specific information contact: Kelly Ballard, Chemical Review Manager, Pesticide Re-Evaluation Division (7508P), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave. NW., Washington, DC 20460-0001; telephone number: (703) 305-8126; email address: ballard.kelly@epa.gov.

For general questions on the registration review program, contact: Rich Dumas, Pesticide Re-Evaluation Division (7508P), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave. NW., Washington, DC 20460-0001; telephone number: (703) 308-8015; email address: dumas.richard@epa.gov.

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this action apply to me?

This action is directed to the public in general, and may be of interest to a wide range of stakeholders including environmental, human health, farm worker, and agricultural advocates; the chemical industry; pesticide users; and members of the public interested in the sale, distribution, or use of pesticides. Since others also may be interested, the Agency has not attempted to describe all the specific entities that may be affected by this action. If you have any questions regarding the applicability of this action to a particular entity, consult the Chemical Review Manager listed under **FOR FURTHER INFORMATION CONTACT**.

B. What should I consider as I prepare my comments for EPA?

1. *Submitting CBI.* Do not submit this information to EPA through regulations.gov or email. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD-ROM that you mail to EPA, mark the outside of the disk or CD-ROM as CBI and then identify electronically within the disk or CD-ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the

public docket. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

2. *Tips for preparing your comments.* When preparing and submitting your comments, see the commenting tips at <http://www.epa.gov/dockets/comments.html>.

3. *Environmental justice.* EPA seeks to achieve environmental justice, the fair treatment and meaningful involvement of any group, including minority and/or low income populations, in the development, implementation, and enforcement of environmental laws, regulations, and policies. To help address potential environmental justice issues, the Agency seeks information on any groups or segments of the population who, as a result of their location, cultural practices, or other factors, may have atypical or disproportionately high and adverse human health impacts or environmental effects from exposure to the pesticide(s) discussed in this document, compared to the general population.

II. Authority

EPA is conducting its registration review of imidacloprid pursuant to section 3(g) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Procedural Regulations for Registration Review at 40 CFR part 155, subpart C. Section 3(g) of FIFRA provides, among other things, that the registrations of pesticides are to be reviewed every 15 years. Under FIFRA, a pesticide product may be registered or remain registered only if it meets the statutory standard for registration given in FIFRA section 3(c)(5) (7 U.S.C. 136a(c)(5)). When used in accordance with widespread and commonly recognized practice, the pesticide product must perform its intended function without unreasonable adverse effects on the environment; that is, without any unreasonable risk to man or the environment, or a human dietary risk from residues that result from the use of a pesticide in or on food.

III. Registration Reviews

As directed by FIFRA section 3(g), EPA is reviewing the pesticide registration for imidacloprid to ensure that it continues to satisfy the FIFRA standard for registration—that is, that imidacloprid can still be used without unreasonable adverse effects on human health or the environment. Imidacloprid is a neonicotinoid insecticide used for the control of sucking insects on a large variety of agricultural and non-agricultural sites, including vegetable crops, tree nuts, tree fruits, stone fruits,

cotton, tobacco, grapes, citrus, turf, and ornamentals. EPA has completed a comprehensive draft pollinator-only ecological risk assessment for all registered agricultural uses of imidacloprid, with focus on agricultural crops that are attractive to pollinators.

Pursuant to 40 CFR 155.53(c), EPA is providing an opportunity, through this notice of availability, for interested parties to provide comments and input concerning the Agency's draft pollinator-only ecological risk assessment for imidacloprid. Such comments and input could address, among other things, the Agency's risk assessment methodologies and assumptions, as applied to this draft pollinator-only risk assessment. The Agency will consider all comments received during the public comment period and make changes, as appropriate, to the draft pollinator-only risk assessment. EPA will then issue a revised pollinator risk assessment, explain any changes to the draft risk assessment, and respond to comments. In the **Federal Register** notice announcing the availability of the revised risk assessment, if the revised risk assessment indicates risks of concern, the Agency may provide a comment period for the public to submit suggestions for mitigating the risk identified in the revised risk assessment before developing a proposed registration review decision on imidacloprid. Additionally, the revised risk assessment will also address ecological risks for all other taxa, as well as a comprehensive draft human health risk assessment.

1. Other related information.

Additional information on imidacloprid is available on the Pesticide Registration Review Status Web page. Information on the Agency's registration review program and its implementing regulation is available at http://www.epa.gov/oppsrrd1/registration_review.

2. Information submission

requirements. Anyone may submit data or information in response to this document. To be considered during a pesticide's registration review, the submitted data or information must meet the following requirements:

- To ensure that EPA will consider data or information submitted, interested persons must submit the data or information during the comment period. The Agency may, at its discretion, consider data or information submitted at a later date.
- The data or information submitted must be presented in a legible and useable form. For example, an English translation must accompany any material that is not in English and a

written transcript must accompany any information submitted as an audiographic or videographic record. Written material may be submitted in paper or electronic form.

- Submitters must clearly identify the source of any submitted data or information.

- Submitters may request the Agency to reconsider data or information that the Agency rejected in a previous review. However, submitters must explain why they believe the Agency should reconsider the data or information in the pesticide's registration review.

As provided in 40 CFR 155.58, the registration review docket for each pesticide case will remain publicly accessible through the duration of the registration review process; that is, until all actions required in the final decision on the registration review case have been completed.

Authority: 7 U.S.C. 136 *et seq.*

Dated: January 8, 2016.

Michael Goodis,

Acting Director, Pesticide Re-Evaluation Division, Office of Pesticide Programs.

[FR Doc. 2016-00740 Filed 1-14-16; 8:45 am]

BILLING CODE 6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-OPP-2015-0231; FRL-9936-04-OEI]

Information Collection Request Submitted to OMB for Review and Approval; Comment Request; Foreign Purchaser Acknowledgement Statement of Unregistered Pesticides

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: EPA has submitted the following information collection request (ICR) to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act (PRA): "Foreign Purchaser Acknowledgement Statement of Unregistered Pesticides" (FPAS) and identified by EPA ICR No. 0161.13 and OMB Control No. 2070-0027. The ICR, which is available in the docket along with other related materials, provides a detailed explanation of the collection activities and the burden estimate that is only briefly summarized in this document. EPA has addressed the comments received in response to the previously provided public review opportunity issued in the **Federal Register** on May 8, 2015 (80 FR 26554).

With this submission, EPA is providing an additional 30 days for public review.

DATES: Comments must be received on or before February 16, 2016.

ADDRESSES: Submit your comments, identified by docket identification (ID) number EPA-HQ-OPP-2015-0231, to both EPA and OMB as follows:

- To EPA online using <http://www.regulations.gov> (our preferred method) or by mail to: EPA Docket Center, Environmental Protection Agency, Mail Code 28221T, 1200 Pennsylvania Ave. NW., Washington, DC 20460.
- To OMB via email to oir_submission@omb.eop.gov. Address comments to OMB Desk Officer for EPA.

EPA's policy is that all comments received will be included in the docket without change, including any personal information provided, unless the comment includes profanity, threats, information claimed to be Confidential Business Information (CBI), or other information whose disclosure is restricted by statute. Do not submit electronically any information you consider to be CBI or other information whose disclosure is restricted by statute.

FOR FURTHER INFORMATION CONTACT:

Scott Drewes, Field and External Affairs, (7506P), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave. NW., Washington, DC 20460-0001; telephone number: (703) 347-0107; email address: drewes.scott@epa.gov.

SUPPLEMENTARY INFORMATION:

Docket: Supporting documents, including the ICR that explains in detail the information collection activities and the related burden and cost estimates that are summarized in this document, are available in the docket for this ICR. The docket can be viewed online at <http://www.regulations.gov> or in person at the EPA Docket Center, West William Jefferson Clinton Bldg., Rm. 3334, 1301 Constitution Ave. NW., Washington, DC. The telephone number for the Docket Center is (202) 566-1744. For additional information about EPA's public docket, visit <http://www.epa.gov/dockets>.

ICR status: This ICR is currently scheduled to expire on January 31, 2016. Under OMB regulations, the Agency may continue to conduct or sponsor the collection of information while this submission is pending at OMB.

Under PRA, 44 U.S.C. 3501 *et seq.*, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information, unless it displays a currently valid OMB control number. The OMB control numbers are

displayed either by publication in the **Federal Register** or by other appropriate means, such as on the related collection instrument or form, if applicable. The display of OMB control numbers for certain EPA regulations is consolidated in 40 CFR part 9.

Abstract: This information collection request is designed to enable the EPA to provide notice to foreign purchasers of unregistered pesticides exported from the United States that the pesticide product cannot be sold in the United States. Section 17(a)(2) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requires an exporter of any pesticide not registered under FIFRA section 3 or sold under FIFRA section 6(a)(1) to obtain a signed statement from the foreign purchaser acknowledging that the purchaser is aware that the pesticide is not registered for use in, and cannot be sold in, the United States. A copy of this FPAS must be transmitted to an appropriate official of the government in the importing country. This information is submitted in the form of annual or per-shipment statements to the EPA, which maintains original records and transmits copies thereof to appropriate government officials of the countries which are importing the pesticide. This information collection request also includes the burden imposed by export labeling requirements, which meet the definition of third-party disclosure. In addition to the export notification for unregistered pesticides, FIFRA requires that all pesticides include appropriate labeling. There are different requirements for registered and unregistered products. This information collection has been constant since the implementation of the 1993 pesticide export policy governing the export of pesticides, devices, and active ingredients used in producing pesticides.

Respondents/Affected Entities: Entities potentially affected by this ICR are individuals or entities that produce and export pesticides.

Respondent's obligation to respond: Mandatory.

Estimated total number of potential respondents: 50.

Frequency of response: Annual or on occasion.

Estimated total burden: 17,993 hours (per year). Burden is defined at 5 CFR 1320.3(b).

Estimated total costs: \$ 1,224,655 (per year), includes no annualized capital investment or maintenance and operational costs.

Changes in the estimates: There is a decrease of 6,477 hours in the total estimated respondent burden compared

with that identified in the ICR currently approved by OMB. This decrease reflects EPA's updating of burden estimates for this collection based upon historical information on the number of responses per year. Based upon revised estimates, the number of exported products has decreased from 3,600 to 2,411, with a corresponding decrease in the associated burden. This change is an adjustment.

Courtney Kerwin,

Acting Director, Collection Strategies Division.

[FR Doc. 2016-00744 Filed 1-14-16; 8:45 am]

BILLING CODE 6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

[**ER-FRL-9024-9**]

Environmental Impact Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564-7146 or <http://www2.epa.gov/nepa>. Weekly receipt of Environmental Impact Statements (EISs) Filed 01/04/2016 through 01/08/2016 Pursuant to 40 CFR 1506.9.

Notice

Section 309(a) of the Clean Air Act requires that EPA make public its comments on EISs issued by other Federal agencies. EPA's comment letters on EISs are available at: <https://cdxnodengn.epa.gov/cdx-nepa-public/action/eis/search>.

EIS No. 20160000, Draft, BIA, CA., Wilton Rancheria Fee-to-Trust and Casino Project, Comment Period Ends: 02/29/2016, Contact: John Rydzik 916-978-6051.

EIS No. 20160001, Final, FHWA, CO, I- 70 East Project, Review Period Ends: 02/16/2016, Contact: Chris Horn, P.E. 720-963-3017.

EIS No. 20160002, Final, USACE, CT, Programmatic—Long Island Sound Dredged Material Management Plan, Review Period Ends: 02/16/2016, Contact: Meghan Quinn 978-318-8179.

EIS No. 20160003, Final, NOAA, FL, Red Snapper Allocation Amendment 28 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico, Review Period Ends: 02/16/2016, Contact: Roy E. Crabtree 727-824-5301.

EIS No. 20160004, Final Supplement, GSA, VA, Federal Bureau of Investigation Central Records Complex, Review Period Ends:

02/16/2016, Contact: Courtenay Hoernemann 215-446-4710.

EIS No. 20160005, Draft, BR, NPS, AZ, Glen Canyon Dam Long-Term Experimental and Management Plan, Comment Period Ends: 04/07/2016, Contact: Beverley Heffernan 801-524-3712 The U.S. Department of the Interior's Bureau of Reclamation and the U.S. Department of the Interior's National Park Service are joint lead agencies for this project.

EIS No. 20160006, Final, USFS, ID, Johnson Bar Fire Salvage Project, Review Period Ends: 02/16/2016, Contact: Sheila Lehman 208-935-4256.

EIS No. 20160007, Draft, USFS, CA, Elk Late-Successional Reserve Enhancement Project, Comment Period Ends: 02/29/2016, Contact: Cindy Diaz 530-926-9647.

EIS No. 20160008, Draft, USFS, WY, Bear Lodge Project, Comment Period Ends: 02/29/2016, Contact: Jeanette Timm 307-283-1361.

EIS No. 20160009, Final Supplement, USFS, OR, Wallowa-Whitman National Forest Invasive Plants Treatment Project, Review Period Ends: 02/16/2016, Contact: Gene Yates 541-523-1290.

EIS No. 20160010, Final, FHWA, UT, 1800 North (SR-37) Project, Contact: Paul Ziman 801-955-3525 Under MAP-21 Section 1319, FHWA has issued a single FEIS and ROD. Therefore, the 30-day wait/review period under NEPA does not apply to this action.

Amended Notices

EIS No. 20150322, Draft Supplement, USFS, CO, Rulemaking for Colorado Roadless Areas, Comment Period Ends: 01/15/2016, Contact: Ken Tu 303-275-5156 Revision to FR Notice Published 11/20/2015; Extending the Comment Period from 01/04/2016 to 01/15/2016.

EIS No. 20150338, Draft, BLM, NM, Copper Flat Copper Mine, Comment Period Ends: 03/04/2016, Contact: Doug Haywood 575-525-4498 Revision to FR Notice Published 12/04/2015; Extending Comment Period from 01/19/2016 to 03/04/2016.

Dated: January 12, 2016.

Dawn Roberts,

Management Analyst, NEPA Compliance Division, Office of Federal Activities.

[FR Doc. 2016-00732 Filed 1-14-16; 8:45 am]

BILLING CODE 6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-RCRA-2015-0605; FRL-9941-34-OEI]

Information Collection Request Submitted to OMB for Review and Approval; Comment Request; Standardized Permit for RCRA Hazardous Waste Management Facilities (Renewal)**AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Notice.

SUMMARY: The Environmental Protection Agency has submitted an information collection request (ICR), "Standardized Permit for RCRA Hazardous Waste Management Facilities (Renewal)" (EPA ICR No. 1935.05, OMB Control No. 2050-0182) to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). This is a proposed extension of the ICR, which is currently approved through January 31, 2016. Public comments were previously requested via the **Federal Register** (80 FR 55618) on September 16, 2015 during a 60-day comment period. This notice allows for an additional 30 days for public comments. A fuller description of the ICR is given below, including its estimated burden and cost to the public. An Agency may not conduct or sponsor and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number.

DATES: Additional comments may be submitted on or before February 16, 2016.

ADDRESSES: Submit your comments, referencing Docket ID No. EPA-HQ-RCRA-2015-0605, to (1) EPA online using www.regulations.gov (our preferred method), by email to rcra-docket@epa.gov, or by mail to: EPA Docket Center, Environmental Protection Agency, Mail Code 28221T, 1200 Pennsylvania Ave. NW., Washington, DC 20460, and (2) OMB via email to oira_submission@omb.eop.gov. Address comments to OMB Desk Officer for EPA.

EPA's policy is that all comments received will be included in the public docket without change including any personal information provided, unless the comment includes profanity, threats, information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute.

FOR FURTHER INFORMATION CONTACT: Jeff Gaines, Office of Resource Conservation and Recovery, (5303P), Environmental Protection Agency, 1200 Pennsylvania Ave. NW., Washington, DC 20460; telephone number: 703-308-8655; fax number: 703-308-8617; email address: gaines.jeff@epa.gov.

SUPPLEMENTARY INFORMATION:

Supporting documents which explain in detail the information that the EPA will be collecting are available in the public docket for this ICR. The docket can be viewed online at www.regulations.gov or in person at the EPA Docket Center, WJC West, Room 3334, 1301 Constitution Ave. NW., Washington, DC. The telephone number for the Docket Center is 202-566-1744. For additional information about EPA's public docket, visit <http://www.epa.gov/dockets>.

Abstract: Under the authority of sections 3004, 3005, 3008 and 3010 of the Resource Conservation and Recovery Act (RCRA), as amended, EPA revised the RCRA hazardous waste permitting program to allow a "standardized permit". The standardized permit is available to facilities that generate hazardous waste and routinely manage the waste on-site in non-thermal units such as tanks, containers, and containment buildings. In addition, the standardized permit is available to facilities that receive hazardous waste generated off-site by a generator under the same ownership as the receiving facility, and then store or non-thermally treat the hazardous waste in containers, tanks, or containment buildings. The RCRA standardized permit consists of two components: A uniform portion that is included in all cases, and a supplemental portion that the Director of a regulatory agency includes at his or her discretion. The uniform portion consists of terms and conditions, relevant to the unit(s) at the permitted facility, and is established on a national basis. The Director, at his or her discretion, may also issue a supplemental portion on a case-by-case basis. The supplemental portion imposes site-specific permit terms and conditions that the Director determines necessary to institute corrective action under section 264.101 (or State equivalent), or otherwise necessary to protect human health and the environment. Owners and operators have to comply with the terms and conditions in the supplemental portion, in addition to those in the uniform portion.

Form Numbers: None.

Respondents/affected entities: Private hazardous waste facilities.

Respondent's obligation to respond: Voluntary (40 CFR 270.275).

Estimated number of respondents: 86 (total).

Frequency of response: On occasion.
Total estimated burden: 13,948 hours (per year). Burden is defined at 5 CFR 1320.03(b).

Total estimated cost: \$1,242,205 (per year), includes \$579,727 annualized capital or operation & maintenance costs.

Changes in the Estimates: There is no change in the total estimated respondent burden compared with the ICR currently approved by OMB.

Courtney Kerwin,

Acting Director, Collection Strategies Division.

[FR Doc. 2016-00745 Filed 1-14-16; 8:45 am]

BILLING CODE 6560-50-P

FEDERAL COMMUNICATIONS COMMISSION

[OMB 3060-1178]

Information Collection Being Submitted for Review and Approval to the Office of Management and Budget

AGENCY: Federal Communications Commission.

ACTION: Notice and request for comments.

SUMMARY: As part of its continuing effort to reduce paperwork burdens, and as required by the Paperwork Reduction Act (PRA) of 1995 (44 U.S.C. 3501-3520), the Federal Communications Commission (FCC or Commission) invites the general public and other Federal agencies to take this opportunity to comment on the following information collections. Comments are requested concerning: Whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; the accuracy of the Commission's burden estimate; ways to enhance the quality, utility, and clarity of the information collected; ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology; and ways to further reduce the information collection burden on small business concerns with fewer than 25 employees. The FCC may not conduct or sponsor a collection of information unless it displays a currently valid OMB control number. No person shall be subject to

any penalty for failing to comply with a collection of information subject to the PRA that does not display a valid OMB control number.

DATES: Written comments should be submitted on or before February 16, 2016. If you anticipate that you will be submitting comments, but find it difficult to do so within the period of time allowed by this notice, you should advise the contacts below as soon as possible.

ADDRESSES: Direct all PRA comments to Nicholas A. Fraser, OMB, via email Nicholas.A.Fraser@omb.eop.gov; and to Cathy Williams, FCC, via email PRA@fcc.gov and to Cathy.Williams@fcc.gov. Include in the comments the OMB control number as shown in the **SUPPLEMENTARY INFORMATION** section below.

FOR FURTHER INFORMATION CONTACT: For additional information or copies of the information collection, contact Cathy Williams at (202) 418–2918. To view a copy of this information collection request (ICR) submitted to OMB: (1) Go to the Web page <http://www.reginfo.gov/public/do/PRAMain>, (2) look for the section of the Web page called “Currently Under Review,” (3) click on the downward-pointing arrow in the “Select Agency” box below the “Currently Under Review” heading, (4) select “Federal Communications Commission” from the list of agencies presented in the “Select Agency” box, (5) click the “Submit” button to the right of the “Select Agency” box, (6) when the list of FCC ICRs currently under review appears, look for the OMB control number of this ICR and then click on the ICR Reference Number. A copy of the FCC submission to OMB will be displayed.

SUPPLEMENTARY INFORMATION:

OMB Control No.: 3060–1178.

Title: TV Broadcaster Relocation Fund Reimbursement Form, FCC Form 2100, Schedule 399; Section 73.3700(e), Reimbursement Rules.

Form No.: FCC Form 2100, Schedule 399.

Type of Review: Revision of an existing information collection.

Respondents: Business or other for-profit entities; Not for profit institutions.

Number of Respondents and Responses: 1,900 respondents and 22,800 responses.

Estimated Time per Response: 1–4 hours.

Frequency of Response: One-time reporting requirement; On occasion reporting requirement; Recordkeeping requirement.

Obligation to Respond: Required to obtain or retain benefits. The statutory

authority for this collection is contained in 47 U.S.C. 151, 154(i), 157 and 309(j) as amended; and Middle Class Tax Relief and Job Creation Act of 2012, Public Law 112–96, §§ 6402 (codified at 47 U.S.C. 309(j)(8)(G)), 6403 (codified at 47 U.S.C. 1452), 126 Stat. 156 (2012) (Spectrum Act).

Total Annual Burden: 31,100 hours.

Annual Cost Burden: \$5,625,000.

Privacy Act Impact Assessment: No impact(s).

Nature and Extent of Confidentiality: There is some need for confidentiality with this collection of information. Invoices, receipts, contracts and other cost documentation submitted along with the form will be kept confidential in order to protect the identification of vendors and the terms of private contracts between parties. Vendor name and Employer Identification Numbers (EIN) or Taxpayer Identification Number (TIN) will not be disclosed to the public.

Needs and Uses: The collection is being made to the Office of Management (OMB) for the approval of information collection requirements contained in the Commission’s Incentive Auction Order, FCC 14–50, which adopted rules for holding an Incentive Auction, as required by the Middle Class Tax Relief and Job Creation Act of 2012 (Spectrum Act). The information gathered in this collection will be used to provide reimbursement to television broadcast stations that are relocated to a new channel following the Federal Communications Commission’s Incentive Auction, and to multichannel video programming distributors (MVPDs) that incur costs in carrying the signal of relocated television broadcast stations. Relocated television broadcasters and MVPDs (“eligible entities”) will be reimbursed for their reasonable costs incurred as a result of relocation from the TV Broadcaster Relocation Fund. Eligible entities will use the TV Broadcaster Relocation Fund Reimbursement Form (FCC Form 2100, Schedule 399) to submit an estimate of their eligible relocation costs; to submit actual cost documentation (such as receipts and invoices) throughout the construction period, as they incur expenses; and to account for the total expenses incurred at the end of the project.

Federal Communications Commission.

Marlene H. Dortch,

Secretary, Office of the Secretary.

[FR Doc. 2016–00680 Filed 1–14–16; 8:45 am]

BILLING CODE 6712–01–P

FEDERAL COMMUNICATIONS COMMISSION

[OMB 3060–0856]

Information Collection Being Reviewed by the Federal Communications Commission

AGENCY: Federal Communications Commission.

ACTION: Notice and request for comments.

SUMMARY: As part of its continuing effort to reduce paperwork burdens, and as required by the Paperwork Reduction Act (PRA) of 1995 (44 U.S.C. 3501–3520), the Federal Communications Commission (FCC or the Commission) invites the general public and other Federal agencies to take this opportunity to comment on the following information collection. Comments are requested concerning: Whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; the accuracy of the Commission’s burden estimate; ways to enhance the quality, utility, and clarity of the information collected; ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology; and ways to further reduce the information collection burden on small business concerns with fewer than 25 employees. The FCC may not conduct or sponsor a collection of information unless it displays a currently valid control number. No person shall be subject to any penalty for failing to comply with a collection of information subject to the PRA that does not display a valid Office of Management and Budget (OMB) control number.

DATES: Written PRA comments should be submitted on or before March 15, 2016. If you anticipate that you will be submitting comments, but find it difficult to do so within the period of time allowed by this notice, you should advise the contact listed below as soon as possible.

ADDRESSES: Direct all PRA comments to Nicole Ongele, FCC, via email PRA@fcc.gov and to Nicole.Ongele@fcc.gov.

FOR FURTHER INFORMATION CONTACT: For additional information about the information collection, contact Nicole Ongele at (202) 418–2991.

SUPPLEMENTARY INFORMATION:

OMB Control Number: 3060–0856.

Title: Universal Service—Schools and Libraries Universal Service.

Program Reimbursement Forms.

Form Number: FCC Forms 472, 473 and 474.

Type of Review: Revision of a currently approved collection.

Respondents: Business or other for-profit entities, and state, local, or tribal government.

Number of Respondents and Responses: 24,700 respondents; 168,900 responses.

Estimated Time per Response: 1 hour per form.

Frequency of Response: On occasion, annual reporting requirement, and recordkeeping requirements.

Obligation to Respond: Required to obtain or retain benefits. Statutory authority for this information collection is contained in 47 U.S.C. sections 1, 4(i), 4(j), 201–205, 214, 254, 312(d), 312(f), 403, and 503(b) of the Communications Act of 1934, as amended.

Total Annual Burden: 168,900 hours.

Total Annual Cost: No cost.

Privacy Impact Assessment: No impact(s).

Nature and Extent of Confidentiality: The Commission does not request that respondents submit confidential information to the Commission. If the Commission requests applicants to submit information that the respondents believe is confidential, respondents may request confidential treatment under 47 CFR 0.459 of the Commission's rules.

Needs and Uses: The Commission seeks to revise OMB 3060–0856 to conform this information collection to changes implemented in the Report and Order and Further Notice of Proposed Rulemaking (*E-Rate Modernization Order*) (WC Docket No. 13–184, FCC 14–99, 79 FR 49160, August 19, 2014).

Collection of the information on FCC Form 472 is necessary to establish the process and procedure for an eligible applicant to seek reimbursement from the E-rate program for the discounts on services paid in full to a service provider. The Universal Service Administrative Company (USAC) reviews the information collected on FCC Form 472, along with invoices from the service provider, to verify the eligibility of the services for E-rate support, approve the amount that should be reimbursed, ensure that each service provider has provided discounted services within the current funding year for which it submits an invoice to USAC, and confirm that invoices submitted from service providers for the costs of discounted eligible services do not exceed the amount that has been approved.

Collection of information on FCC Form 473 is necessary to establish that the participating service provider is eligible to participate in the E-rate program, confirm that the invoice forms submitted by the service provide are in compliance with the Federal Communications Commission's E-rate rules, and enable the service provider to certify its compliance with the E-rate rules. The FCC Form 473 is also used by USAC to assure that the dollars paid out by the universal service fund go to eligible providers.

Collection of information on FCC Form 474 is necessary to establish the process and procedure for a service provider to seek payment for the discounted costs of services it provided to billed entities for eligible services. After receiving an invoice from the service provider, together with an FCC Form 474, USAC is able to verify that the eligible and approved amounts can be paid. The FCC Form 474 is also used to ensure that each service provider has provided discounted services within the current funding year for which it submits an invoice to USAC and that invoices submitted from service providers for the costs of discounted eligible services do not exceed the amount that has been approved.

This information collection is being revised pursuant to program and rule changes in the *E-Rate Modernization Order* that require the collection of information necessary to allow USAC to make direct payments to applicants, and add service provider certifications to the FCC Form 473, the Service Provider Annual Certification Form. The information collection is also being revised to accommodate USAC's new online portal and the *E-Rate Modernization Order* requirement that the forms in this collection be filed electronically.

All of the requirements contained in this information collection are necessary for the Commission to ensure compliance by applicants and/or vendors with the requirement of the E-rate program, to protect the program from waste, fraud and abuse and to evaluate the extent to which the E-rate program is meeting the statutory objectives specified in section 254(h) of the 1996 Act, and the Commission's own performance goals established in the *E-rate Modernization Order*.

Federal Communications Commission.

Marlene H. Dortch,
Secretary.

[FR Doc. 2016–00679 Filed 1–14–16; 8:45 am]

BILLING CODE 6712–01–P

FEDERAL DEPOSIT INSURANCE CORPORATION

Notice to All Interested Parties of the Termination of the Receivership of 10328, CommunitySouth Bank and Trust Easley, SC

Notice is hereby given that the Federal Deposit Insurance Corporation (“FDIC”) as Receiver for CommunitySouth Bank and Trust, Easley, SC (“the Receiver”) intends to terminate its receivership for said institution. The FDIC was appointed receiver of CommunitySouth Bank and Trust on January 21, 2011. The liquidation of the receivership assets has been completed. To the extent permitted by available funds and in accordance with law, the Receiver will be making a final dividend payment to proven creditors.

Based upon the foregoing, the Receiver has determined that the continued existence of the receivership will serve no useful purpose. Consequently, notice is given that the receivership shall be terminated, to be effective no sooner than thirty days after the date of this Notice. If any person wishes to comment concerning the termination of the receivership, such comment must be made in writing and sent within thirty days of the date of this Notice to: Federal Deposit Insurance Corporation, Division of Resolutions and Receiverships, Attention: Receivership Oversight Department 32.1, 1601 Bryan Street, Dallas, TX 75201.

No comments concerning the termination of this receivership will be considered which are not sent within this time frame.

Dated: January 12, 2016.

Federal Deposit Insurance Corporation.

Robert E. Feldman,
Executive Secretary.

[FR Doc. 2016–00728 Filed 1–14–16; 8:45 am]

BILLING CODE 6714–01–P

FEDERAL RESERVE SYSTEM

Formations of, Acquisitions by, and Mergers of Bank Holding Companies

The companies listed in this notice have applied to the Board for approval, pursuant to the Bank Holding Company Act of 1956 (12 U.S.C. 1841 *et seq.*) (BHC Act), Regulation Y (12 CFR part 225), and all other applicable statutes and regulations to become a bank holding company and/or to acquire the assets or the ownership of, control of, or the power to vote shares of a bank or bank holding company and all of the banks and nonbanking companies

owned by the bank holding company, including the companies listed below.

The applications listed below, as well as other related filings required by the Board, are available for immediate inspection at the Federal Reserve Bank indicated. The applications will also be available for inspection at the offices of the Board of Governors. Interested persons may express their views in writing on the standards enumerated in the BHC Act (12 U.S.C. 1842(c)). If the proposal also involves the acquisition of a nonbanking company, the review also includes whether the acquisition of the nonbanking company complies with the standards in section 4 of the BHC Act (12 U.S.C. 1843). Unless otherwise noted, nonbanking activities will be conducted throughout the United States.

Unless otherwise noted, comments regarding each of these applications must be received at the Reserve Bank indicated or the offices of the Board of Governors not later than February 11, 2016.

A. Federal Reserve Bank of Chicago (Colette A. Fried, Assistant Vice President) 230 South LaSalle Street, Chicago, Illinois 60690-1414:

1. *First Busey Corporation*, Champaign, Illinois; to merge with Pulaski Financial Corp., Saint Louis, Missouri, and thereby indirectly acquire Pulaski Bank, National Association, Creve Coeur, Missouri.

B. Federal Reserve Bank of Dallas (Robert L. Triplett III, Senior Vice President) 2200 North Pearl Street, Dallas, Texas 75201-2272:

1. *First Commercial Financial Corp.*, Seguin Texas; to acquire by merger 100 percent of Jourdanon Bancshares, Inc., and indirectly, Jourdanon State Bank, both of Jourdanon, Texas.

Board of Governors of the Federal Reserve System, January 12, 2016.

Michael J. Lewandowski,

Associate Secretary of the Board.

[FR Doc. 2016-00752 Filed 1-14-16; 8:45 am]

BILLING CODE 6210-01-P

GENERAL SERVICES ADMINISTRATION

[Notice-2015-PM-04; Docket No. 2015-0002; Sequence No. 32]

Notice of Availability of the Final Supplemental Draft Environmental Impact Statement for the Federal Bureau of Investigation Central Records Complex in Winchester County, Virginia

AGENCY: General Services Administration (GSA).

ACTION: Notice of availability.

SUMMARY: Pursuant to the National Environmental Policy Act (NEPA) of 1969, as implemented by the Council on Environmental Quality regulations, the GSA has prepared and filed with the Environmental Protection Agency (EPA), a Supplement to the Final Environmental Impact Statement (SEIS), from May 2007, analyzing the environmental impacts of site acquisition and development of the Federal Bureau of Investigation (FBI), Central Records Complex (CRC), in Frederick County, Virginia.

DATES: *Effective Date:* The Final SEIS is now available for review. The GSA Record of Decision will be released no sooner than 30 days after EPA publishes its Notice of Availability of the Final SEIS in the **Federal Register**.

ADDRESSES: The Final SEIS may be viewed online at <http://www.fbicrc-seis.com>. Paper copies may be viewed at the repositories listed under **SUPPLEMENTARY INFORMATION**.

FOR FURTHER INFORMATION CONTACT: Ms. Courtenay Hoernemann, Project Environmental Planner, 100 S Independence Mall West, Philadelphia PA 19106; or email frederick.va.siteacquisition@gsa.gov.

SUPPLEMENTARY INFORMATION: The proposed FBI facility would consolidate the FBI's records currently housed within the Washington DC area, in addition to field offices and information technology centers nationwide. The project requirements are for an overall square footage of 256,425 gross square feet, and will include the records storage building, support area, visitor's screening facility, service center, and guard booth. Parking is proposed at 427 spaces.

A Notice of Intent to prepare a Supplemental Draft EIS was published in the **Federal Register** at 80 FR 8311 on February 17, 2015. A public scoping comment period was held for 30 days following publication of the Notice of Intent. GSA published the Notice of Availability of the Supplemental Draft EIS on August 20, 2015 at 80 FR 50631, which began a 45 day public comment period ending on October 5, 2015. A public meeting was held on September 10, 2015 from 6:00 p.m. to 8:00 p.m., Eastern Standard Time (EST), at the War Memorial Building Social Hall at Jim Barnett Park, War Memorial Drive, Winchester, VA.

The Supplemental Draft EIS incorporated by reference and built upon the analyses presented in the 2007 Final EIS, and documented the section 106 process under the National Historic Preservation Act (NHPA) of 1966, as amended (36 CFR part 800). The

Supplemental Draft EIS addressed changes to the proposed action relevant to environmental concerns and assessed any new circumstances or information relevant to potential environmental impacts. The alternatives fully evaluated in the Supplemental Draft EIS include the No Action Alternative, the Arcadia Route 50 property, and Whitehall Commerce Center.

The Final Supplemental EIS identifies XXX as the preferred alternative. The proposed action at XXX will result in impacts to water resources, traffic and transportation, biological resources, and geology/topography/soils. Changes between the Final and Draft Supplemental EIS include conclusion on consultation under section 106 of the NHPA, conclusion of consultation under section 7 of the Endangered Species Act with the U.S. Fish & Wildlife Service, and agreement with Virginia Department of Transportation on the Revised Traffic Impact Analysis and site access. The Final Supplemental EIS addresses and responds to agency and public comments on the Supplemental Draft EIS.

The Final Supplemental EIS has been distributed to various federal, state, and local agencies. The Final Supplemental EIS is available for review on the project Web site <http://www.fbicrc-seis.com>. A printed copy of the document is available for viewing at the following libraries:

- Handley Library, 100 West Piccadilly Street, P.O. Box 58, Winchester, VA 22604
- Bowman Library, 871 Tasker Road, P.O. Box 1300, Stephens City, VA 22655
- Smith Library, Shenandoah University, 718 Wade Miller Drive, Winchester, VA 22601

Dated: January 6, 2016.

John Hofmann,

Division Director, Facilities Management & Services Programs Division, General Services Administration, Mid-Atlantic Region.

[FR Doc. 2016-00330 Filed 1-14-16; 8:45 am]

BILLING CODE 6820-89-P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Administration for Community Living

Agency Information Collection Activities; Submission for OMB Review; Comment Request; Semi-Annual and Final Reporting Requirements for the Older Americans Act Title IV Discretionary Grants Program

AGENCY: Administration for Community Living, HHS.

ACTION: Notice.

SUMMARY: The Administration for Community Living (ACL) is announcing that the proposed collection of information listed below has been submitted to the Office of Management and Budget (OMB) for review and clearance under the Paperwork Reduction Act of 1995.

DATES: Submit written comments on the collection of information by February 16, 2016.

ADDRESSES: Submit written comments on the collection of information by email to OIRA_submission@omb.eop.gov Attn: OMB Desk Officer for ACL, or by fax 202-395-6974, Office of Information and Regulatory Affairs, OMB.

FOR FURTHER INFORMATION CONTACT: Lori Stalbaum at (202) 357-3452, or lori.stalbaum@acl.hhs.gov.

SUPPLEMENTARY INFORMATION: In compliance with 44 U.S.C. 3507, ACL has submitted the following proposed collection of information to OMB for review and clearance.

Describe Collection of Information

ACL is requesting to continue an existing approved collection of information for semi-annual and final reports pursuant to the requirements of its discretionary grant programs. ACL estimates the burden of this collection of information as follows: *Frequency:* Semi-annually with the Final report taking the place of the semi-annual report at the end of the final year of the grant. *Respondents:* States, public agencies, private nonprofit agencies, institutions of higher education, and organizations including tribal organizations. *Estimated Number of Responses:* 600. *Total Estimated Burden Hours:* 12,000.

Dated: January 12, 2016.

Kathy Greenlee,
Administrator and Assistant Secretary for Aging.

[FR Doc. 2016-00762 Filed 1-14-16; 8:45 am]

BILLING CODE 4154-01-P

DEPARTMENT OF HEALTH AND HUMAN SERVICES**Food and Drug Administration**

[Docket No. FDA-2015-N-0001]

Navigating the Center for Drug Evaluation and Research: What You Should Know for Effective Engagement; Public Workshop

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice of public workshop.

SUMMARY: The Food and Drug Administration (FDA) Center for Drug Evaluation and Research (CDER), is sponsoring a public workshop entitled “Navigating CDER: What You Should Know for Effective Engagement.” The purpose of this public workshop is to help the public and patient advocacy groups gain a better understanding of how to effectively engage CDER.

DATES: The public workshop will be held on March 31, 2016, from 8:30 a.m. to 5 p.m.

ADDRESSES: The public workshop will be held at FDA’s White Oak campus, 10903 New Hampshire Ave., Building 31 (The Great Room A, B, and C), Silver Spring, MD 20993. Entrance for the public workshop participants (non-FDA employees) is through Building 1 where routine security check procedures will be performed. For parking and security information, please refer to <http://www.fda.gov/AboutFDA/WorkingatFDA/BuildingsandFacilities/WhiteOakCampusInformation/ucm241740.htm>.

FOR FURTHER INFORMATION CONTACT:

Shawn Brooks, Center for Drug Evaluation and Research, Food and Drug Administration, 10903 New Hampshire Ave., Silver Spring, MD 20993-0002, 240-402-6509, email: NAV-CDER@fda.hhs.gov.

SUPPLEMENTARY INFORMATION: FDA is announcing a public workshop entitled “Navigating CDER: What You Should Know for Effective Engagement.” This public workshop is intended to enhance the public and advocacy groups’ ability to effectively engage FDA’s CDER. The presentations are intended to provide information on how best to interact with CDER. There will be an opportunity for questions and answers following each presentation.

Registration: There is no registration fee to attend the public workshop. Early registration is recommended because seating is limited, and registration will be on a first-come, first-served basis. There will be no onsite registration. Persons interested in attending this workshop must register online at <http://www.fda.gov/Drugs/NewsEvents/ucm472604.htm> before March 24, 2016. For those without Internet access, please contact Shawn Brooks (see **FOR FURTHER INFORMATION CONTACT**) to register.

If you need special accommodations due to a disability, please contact Shawn Brooks (see **FOR FURTHER INFORMATION CONTACT**) at least 7 days in advance.

Transcripts: A transcript of the workshop will be available for review at

the Division of Dockets Management (HFA-305), Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852, and on the Internet at <http://www.regulations.gov> approximately 30 days after the workshop. Transcripts will also be available in either hard copy or on CD-ROM, after submission of a Freedom of Information request. The Freedom of Information office address is available on the Agency’s Web site at <http://www.fda.gov>.

Dated: January 8, 2016.

Leslie Kux,

Associate Commissioner for Policy.

[FR Doc. 2016-00694 Filed 1-14-16; 8:45 am]

BILLING CODE 4164-01-P

DEPARTMENT OF HEALTH AND HUMAN SERVICES**Food and Drug Administration**

[Docket No. FDA-2016-N-0001]

Advisory Committee: Vaccines and Related Biological Products Advisory Committee, Renewal

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice; renewal of advisory committee.

SUMMARY: The Food and Drug Administration (FDA) is announcing the renewal of the Vaccines and Related Biological Products Advisory Committee by the Commissioner of Food and Drugs (the Commissioner). The Commissioner has determined that it is in the public interest to renew the Vaccines and Related Biological Products Advisory Committee for an additional 2 years beyond the charter expiration date. The new charter will be in effect until December 31, 2017.

DATES: Authority for the Vaccines and Related Biological Products Advisory Committee will expire on December 31, 2017, unless the Commissioner formally determines that renewal is in the public interest.

FOR FURTHER INFORMATION CONTACT:

Sujata Vijh, Division of Scientific Advisors and Consultants, Center for Biologics Evaluation and Research, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 71, Rm. 6128, Silver Spring, MD 20993-0002, 240-402-7107, Sujata.vijh@fda.hhs.gov.

SUPPLEMENTARY INFORMATION: Pursuant to 41 CFR 102-3.65 and approval by the Department of Health and Human Services pursuant to 45 CFR part 11 and by the General Services Administration, FDA is announcing the renewal of the

Vaccines and Related Biological Products Advisory Committee. The committee is a discretionary Federal advisory committee established to provide advice to the Commissioner. The Vaccines and Related Biological Products Advisory Committee advises the Commissioner or designee in discharging responsibilities as they relate to helping to ensure safe and effective vaccines and related biological products for human use and, as required, any other product for which the Food and Drug Administration has regulatory responsibility.

The Committee reviews and evaluates data concerning the safety, effectiveness, and appropriate use of vaccines and related biological products which are intended for use in the prevention, treatment, or diagnosis of human diseases, and, as required, any other products for which the Food and Drug Administration has regulatory responsibility. The Committee also considers the quality and relevance of FDA's research program which provides scientific support for the regulation of these products and makes appropriate recommendations to the Commissioner of Food and Drugs.

The Committee shall consist of a core of 15 voting members including the Chair. Members and the Chair are selected by the Commissioner or designee from among authorities knowledgeable in the fields of immunology, molecular biology, rDNA, virology; bacteriology, epidemiology or biostatistics, vaccine policy, vaccine safety science, federal immunization activities, vaccine development including translational and clinical evaluation programs, allergy, preventive medicine, infectious diseases, pediatrics, microbiology, and biochemistry. Members will be invited to serve for overlapping terms of up to four years. Almost all non-Federal members of this committee serve as Special Government Employees. Ex Officio voting members one each from the Department of Health and Human Services, the Centers for Disease Control and Prevention, and the National Institutes of Health may be included. The core of voting members may include one technically qualified member, selected by the Commissioner or designee, who is identified with consumer interests and is recommended by either a consortium of consumer-oriented organizations or other interested persons. In addition to the voting members, the Committee may include one non-voting member who is identified with industry interests. There may also be an alternate industry representative.

The Commissioner or designee shall have the authority to select members of other scientific and technical FDA advisory committees (normally not to exceed 10 members) to serve temporarily as voting members and to designate consultants to serve temporarily as voting members when: (1) Expertise is required that is not available among current voting standing members of the Committee (when additional voting members are added to the Committee to provide needed expertise, a quorum will be based on the combined total of regular and added members), or (2) to comprise a quorum when, because of unforeseen circumstances, a quorum is or will be lacking. Because of the size of the Committee and the variety in the types of issues that it will consider, FDA may, in connection with a particular committee meeting, specify a quorum that is less than a majority of the current voting members. The Agency's regulations (21 CFR 14.22(d)) authorize a committee charter to specify quorum requirements. If functioning as a medical device panel, a non-voting representative of consumer interests and a non-voting representative of industry interests will be included in addition to the voting members.

Further information regarding the most recent charter and other information can be found at <http://www.fda.gov/AdvisoryCommittees/CommitteesMeetingMaterials/BloodVaccinesandOtherBiologics/VaccinesandRelatedBiologicalProductsAdvisoryCommittee/ucm129571.htm> or by contacting the Designated Federal Officer (see **FOR FURTHER INFORMATION CONTACT**). In light of the fact that no change has been made to the committee name or description of duties, no amendment will be made to 21 CFR 14.100.

This document is issued under the Federal Advisory Committee Act (5 U.S.C. app.). For general information related to FDA advisory committees, please visit us at <http://www.fda.gov/AdvisoryCommittees/default.htm>.

Dated: January 11, 2016.

Jill Hartzler Warner,

Associate Commissioner for Special Medical Programs.

[FR Doc. 2016-00675 Filed 1-14-16; 8:45 am]

BILLING CODE 4164-01-P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA-2012-N-1203]

Agency Information Collection Activities; Proposed Collection; Comment Request; Information To Accompany Humanitarian Device Exemption Applications and Annual Distribution Number Reporting Requirements

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice.

SUMMARY: The Food and Drug Administration (FDA) is announcing an opportunity for public comment on the proposed collection of certain information by the Agency. Under the Paperwork Reduction Act of 1995 (the PRA), Federal Agencies are required to publish notice in the **Federal Register** concerning each proposed collection of information, including each proposed extension of an existing collection of information, and to allow 60 days for public comment in response to the notice. This notice solicits comments on information to accompany humanitarian device exemption (HDE) applications and the collection of information regarding the annual distribution number (ADN).

DATES: Submit either electronic or written comments on the collection of information by March 15, 2016.

ADDRESSES: You may submit comments as follows:

Electronic Submissions

Submit electronic comments in the following way:

- **Federal eRulemaking Portal:** <http://www.regulations.gov>. Follow the instructions for submitting comments. Comments submitted electronically, including attachments, to <http://www.regulations.gov> will be posted to the docket unchanged. Because your comment will be made public, you are solely responsible for ensuring that your comment does not include any confidential information that you or a third party may not wish to be posted, such as medical information, your or anyone else's Social Security number, or confidential business information, such as a manufacturing process. Please note that if you include your name, contact information, or other information that identifies you in the body of your comments, that information will be posted on <http://www.regulations.gov>.

- If you want to submit a comment with confidential information that you

do not wish to be made available to the public, submit the comment as a written/paper submission and in the manner detailed (see “Written/Paper Submissions” and “Instructions”).

Written/Paper Submissions

Submit written/paper submissions as follows:

- *Mail/Hand delivery/Courier (for written/paper submissions):* Division of Dockets Management (HFA-305), Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.
- For written/paper comments submitted to the Division of Dockets Management, FDA will post your comment, as well as any attachments, except for information submitted, marked and identified, as confidential, if submitted as detailed in “Instructions.”

Instructions: All submissions received must include the Docket No. FDA-2012-N-1203 for “Agency Information Collection Activities; Proposed Collection; Comment Request; Information to Accompany Humanitarian Device Exemption Applications and Annual Distribution Number Reporting Requirements”. Received comments will be placed in the docket and, except for those submitted as “Confidential Submissions,” publicly viewable at <http://www.regulations.gov> or at the Division of Dockets Management between 9 a.m. and 4 p.m., Monday through Friday.

- **Confidential Submissions**—To submit a comment with confidential information that you do not wish to be made publicly available, submit your comments only as a written/paper submission. You should submit two copies total. One copy will include the information you claim to be confidential with a heading or cover note that states “THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION”. The Agency will review this copy, including the claimed confidential information, in its consideration of comments. The second copy, which will have the claimed confidential information redacted/blacked out, will be available for public viewing and posted on <http://www.regulations.gov>. Submit both copies to the Division of Dockets Management. If you do not wish your name and contact information to be made publicly available, you can provide this information on the cover sheet and not in the body of your comments and you must identify this information as “confidential.” Any information marked as “confidential” will not be disclosed except in accordance with 21 CFR 10.20 and other

applicable disclosure law. For more information about FDA’s posting of comments to public dockets, see 80 FR 56469, September 18, 2015, or access the information at: <http://www.fda.gov/regulatoryinformation/dockets/default.htm>.

Docket: For access to the docket to read background documents or the electronic and written/paper comments received, go to <http://www.regulations.gov> and insert the docket number, found in brackets in the heading of this document, into the “Search” box and follow the prompts and/or go to the Division of Dockets Management, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.

FOR FURTHER INFORMATION CONTACT: FDA PRA Staff, Office of Operations, Food and Drug Administration, 8455 Colesville Rd., COLE-14526, Silver Spring, MD 20993-0002, PRASStaff@fda.hhs.gov.

SUPPLEMENTARY INFORMATION: Under the PRA (44 U.S.C. 3501–3520), Federal Agencies must obtain approval from the Office of Management and Budget (OMB) for each collection of information they conduct or sponsor. “Collection of information” is defined in 44 U.S.C. 3502(3) and 5 CFR 1320.3(c) and includes Agency requests or requirements that members of the public submit reports, keep records, or provide information to a third party. Section 3506(c)(2)(A) of the PRA (44 U.S.C. 3506(c)(2)(A)) requires Federal Agencies to provide a 60-day notice in the **Federal Register** concerning each proposed collection of information, including each proposed extension of an existing collection of information, before submitting the collection to OMB for approval. To comply with this requirement, FDA is publishing notice of the proposed collection of information set forth in this document.

With respect to the following collection of information, FDA invites comments on these topics: (1) Whether the proposed collection of information is necessary for the proper performance of FDA’s functions, including whether the information will have practical utility; (2) the accuracy of FDA’s estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used; (3) ways to enhance the quality, utility, and clarity of the information to be collected; and (4) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques, when appropriate, and other forms of information technology.

Information To Accompany Humanitarian Device Exemption Applications and Annual Distribution Number Reporting Requirements—OMB Control Number 0910-0661—Extension

Under section 520(m) of the Federal Food, Drug, and Cosmetic Act (the FD&C Act) (21 U.S.C. 360j(m)), FDA is authorized to exempt a humanitarian use device (HUD) from the effectiveness requirements in sections 514 and 515 of the FD&C Act (21 U.S.C. 360d and 360e) provided that the device: (1) Is used to treat or diagnose a disease or condition that affects fewer than 4,000 individuals in the United States; (2) would not be available to a person with such a disease or condition unless the exemption is granted, and there is no comparable device, other than another HUD approved under this exemption, available to treat or diagnose the disease or condition; (3) the device will not expose patients to an unreasonable or significant risk of illness or injury; and (4) the probable benefit to health from using the device outweighs the risk of injury or illness from its use, taking into account the probable risks and benefits of currently available devices or alternative forms of treatment.

HUDs approved under an HDE cannot be sold for an amount that exceeds the costs of research and development, fabrication, and distribution of the device (*i.e.*, for profit), except in narrow circumstances. Section 613 of the Food and Drug Administration Safety and Innovation Act (FDASIA) (Pub. L. 112–144), signed into law on July 9, 2012, amended section 520(m) of the FD&C Act. Under section 520(m)(6)(A)(i) of the FD&C Act, as amended by FDASIA, a HUD approved under an HDE is eligible to be sold for profit if the device meets the following criteria: The device is intended for the treatment or diagnosis of a disease or condition that occurs in pediatric patients or in a pediatric subpopulation, and such device is labeled for use in pediatric patients or in a pediatric subpopulation in which the disease or condition occurs; or the device is intended for the treatment or diagnosis of a disease or condition that does not occur in pediatric patients, or that occurs in pediatric patients in such numbers that the development of the device for such patients is impossible, highly impracticable, or unsafe.

Section 520(m)(6)(A)(ii) of the FD&C Act, as amended by FDASIA, provides that the Secretary of Health and Human Services will assign an ADN for devices that meet the eligibility criteria to be permitted to be sold for profit. The ADN is defined as the number of devices

“reasonably needed to treat, diagnose, or cure a population of 4,000 individuals in the United States”, and therefore shall be based on the following information in a HDE application: The number of devices reasonably necessary to treat such individuals.

Section 520(m)(6)(A)(iii) of the FD&C Act (<http://www.fda.gov/RegulatoryInformation/Legislation/FederalFoodDrugandCosmeticAct/FDCAAct/FDCAChapterVDrugsandDevices/default.htm>) provides that an HDE holder immediately notify the Agency if the number of devices distributed during any calendar year exceeds the ADN. Section 520(m)(6)(C) of the FD&C Act provides that an HDE holder may

petition to modify the ADN if additional information arises.

On August 5, 2008, FDA issued a guidance entitled “Guidance for HDE Holders, Institutional Review Boards (IRBs), Clinical Investigators, and Food and Drug Administration Staff—Humanitarian Device Exemption (HDE) Regulation: Questions and Answers” (<http://www.fda.gov/downloads/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm110203.pdf>). The guidance was developed and issued prior to the enactment of FDASIA, and certain sections of this guidance may no longer be current as a result of FDASIA. In the **Federal Register** of March 18, 2014 (79 FR 15130), FDA announced the

availability of the draft guidance entitled “Humanitarian Device Exemption: Questions and Answers; Draft Guidance for Humanitarian Device Exemption Holders, Institutional Review Boards, Clinical Investigators, and Food and Drug Administration Staff”, that when finalized, will represent FDA’s current thinking on this topic.

FDA is requesting the extension of OMB approval for the collection of information required under the statutory mandate of sections 515A (21 U.S.C. 360e–1) and 520(m) of the FD&C Act as amended.

FDA estimates the burden of this collection of information as follows:

TABLE 1—ESTIMATED ANNUAL REPORTING BURDEN

Activity/section of FD&C Act (as amended) or FDASIA	Number of respondents	Number of responses per respondent	Total annual responses	Average burden per response	Total hours
Pediatric Subpopulation and Patient Information—515A(a)(2) of the FD&C Act	6	1	6	100	600
Exemption from Profit Prohibition Information—520(m)(6)(A)(i) and (ii) of the FD&C Act	3	1	3	50	150
Request for Determination of Eligibility Criteria—613(b) of FDASIA	2	1	2	10	20
ADN Notification—520(m)(6)(A)(iii) of the FD&C Act	1	1	1	100	100
ADN Modification—520(m)(6)(C) of the FD&C Act	5	1	5	100	500
Total					1,370

¹ There are no capital costs or operating and maintenance costs associated with this collection of information.

FDA’s Center for Devices and Radiological Health receives an estimated average of six HDE applications per year. FDA estimates that three of these applications will be indicated for pediatric use. We estimate that we will receive approximately two requests for determination of eligibility criteria per year. FDA estimates that very few or no HDE holders will notify the Agency that the number of devices distributed in the year has exceeded the ADN. FDA estimates that five HDE holders will petition to have the ADN modified due to additional information on the number of individuals affected by the disease or condition.

Dated: January 11, 2016.

Leslie Kux,

Associate Commissioner for Policy.

[FR Doc. 2016–00691 Filed 1–14–16; 8:45 am]

BILLING CODE 4164–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA–2008–D–0128 (formerly Docket No. 2007D–0396)]

How Should Liver Injury and Dysfunction Caused by Drugs Be Measured, Evaluated, and Acted Upon in Clinical Trials?

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice of public conference.

SUMMARY: The Food and Drug Administration (FDA) is announcing a public conference entitled “How Should Liver Injury and Dysfunction Caused by Drugs Be Measured, Evaluated, and Acted Upon in Clinical Trials?” This conference will be cosponsored with the Critical Path Institute (C-Path). The purpose of the conference is to discuss, debate, and share views among stakeholders in academia, patient groups, regulatory bodies, and the health care and pharmaceutical industries on how best to measure, evaluate, and act upon liver injury and

dysfunction caused by drugs used during clinical trials.

DATES: This public conference will be held on March 23, 2016, from 8 a.m. to 6 p.m., and on March 24, 2016, from 8 a.m. to 4 p.m.

ADDRESSES: This public conference will be held at the College Park Marriott Hotel & Conference Center, 3501 University Blvd., East Hyattsville, MD 20783. The hotel’s phone number is 301–985–7300.

FOR FURTHER INFORMATION CONTACT:

Lana L. Pauls, Center for Drug Evaluation and Research, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 22, Rm. 4478, Silver Spring, MD 20993–0002, 301–796–0518, lane.pauls@fda.hhs.gov.

SUPPLEMENTARY INFORMATION:

I. Background

In July 2009, FDA announced the availability of a guidance for industry entitled “Drug-Induced Liver Injury: Premarketing Clinical Evaluation” (74 FR 38035, July 30, 2009, <https://www.gpo.gov/fdsys/pkg/FR-2009-07-30/pdf/E9-18135.pdf>). First, this guidance explains that drug-induced liver injury (DILI) has been the most frequent cause

of safety-related drug marketing withdrawals over the past 50 years and that hepatotoxicity has both limited the use of many drugs that have been approved and prevented the approval of others. Second, this guidance discusses methods of detecting DILI by periodic tests of serum enzyme activities and of bilirubin concentration and how changes in the results of these laboratory tests over time, along with symptoms and physical findings, may be used to estimate the severity of the injury. Third, this guidance suggests some “stopping rules” for interrupting drug treatment and mentions the need to obtain sufficient clinical information to assess causation. FDA published a draft of this guidance in 2006, and comments on that draft were taken into consideration when issuing the final guidance in July 2009.

II. Conference Information

The purpose of the 2016 conference is to invite participants to present their data and views and to hold an open discussion. The meetings in recent years have been attended by members of industry, regulatory bodies, and academic consultants, and the topics discussed have included several unresolved issues on which consensus was sought.

Registration: A registration fee (\$650 for industry registrants and \$325 for Federal government and academic registrants) will be charged to help defray the cost of renting the meeting space, providing meals and snacks, and covering the travel fees incurred by invited academic (but not government or industry) speakers, as well as any other expenses. The registration process will be handled by C-Path, an independent, nonprofit organization established in 2005 with public and private philanthropic support from the southern Arizona community, Science Foundation Arizona, and FDA.

Additional information on the conference, program, and registration procedures may be obtained on the Internet at <http://www.c-path.org>, and at <http://www.fda.gov> by typing “liver toxicity” into the search box. (FDA has verified the Web site addresses but is not responsible for any subsequent changes to the Web sites after this document publishes in the **Federal Register**.)

Transcripts: Please be advised that as soon as a transcript is available, it will be accessible at <http://www.regulations.gov>. It may be viewed at the Division of Dockets Management, Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD. A transcript will also be available in

either hardcopy or on CD-ROM, after submission of a Freedom of Information request. The Freedom of Information office address is available on the Agency’s Web site at <http://www.fda.gov>.

Materials presented at past programs (from 2007 to 2015) (including copies of slides shown, comments made about the slides, and discussions following the slides) may be accessed at <http://www.aasld.org/events-professional-development/drug-induced-liver-injury-2015-program>. (FDA has verified this Web site address but is not responsible for any subsequent changes to it after this document publishes in the **Federal Register**.)

Dated: January 8, 2016.

Leslie Kux,

Associate Commissioner for Policy.

[FR Doc. 2016–00690 Filed 1–14–16; 8:45 am]

BILLING CODE 4164–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Meeting Notice for the President’s Advisory Council on Faith-Based and Neighborhood Partnerships

In accordance with section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92–463), the President’s Advisory Council on Faith-based and Neighborhood Partnerships announces the following meetings:

Name: President’s Advisory Council on Faith-based and Neighborhood Partnerships Council Meetings.

Time and Date: Monday, February 1st, 2016 1:00 p.m.–5:00 p.m. (EST) and Tuesday, February 2nd, 2016 10:00 a.m.–1:00 p.m. (EST).

Place: Meeting will be held at a location to be determined in the White House complex, 1600 Pennsylvania Ave NW., Washington, DC. Space is extremely limited. Photo ID and RSVP by January 25, 2016 are required to attend the event. Please RSVP to Ben O’Dell at partnerships@hhs.gov.

The meeting will be available to the public through a conference call line. Register to participate in the conference call on Monday, February 1st at the Web site <https://attendee.gotowebinar.com/register/7321886895235169026>. Register to participate in the conference call on Tuesday, February 2nd at the Web site <https://attendee.gotowebinar.com/register/4788059050490531842>.

Status: Open to the public, limited only by space available. Conference call limited only by lines available.

Purpose: The Council brings together leaders and experts in fields related to the work of faith-based and

neighborhood organizations in order to: Identify best practices and successful modes of delivering social services; evaluate the need for improvements in the implementation and coordination of public policies relating to faith-based and other neighborhood organizations; and make recommendations for changes in policies, programs, and practices.

Contact Person for Additional

Information: Please contact Ben O’Dell for any additional information about the President’s Advisory Council meeting at partnerships@hhs.gov.

Agenda: For February 1, the agenda will begin with an Opening and Welcome from the Chairperson and Executive Director for the President’s Advisory Council for Faith-based and Neighborhood Partnership. Then there will be presentation of any Recommendations for deliberation and vote. Lastly, there will be a discussion of subgroup deliberation as well as elements being considered for recommendations. For February 2, there will be presentations on work to address poverty and income inequality after a welcome and opening from the Chairperson and Executive Director for the President’s Advisory Council.

Public Comment: There will be an opportunity for public comment at the end of the meeting. Comments and questions can be sent in advance to partnerships@hhs.gov.

Dated: January 11, 2016.

Ben O’Dell,

Associate Director for Center for Faith-based and Neighborhood Partnerships at U.S. Department of Health and Human Services.

[FR Doc. 2016–00767 Filed 1–14–16; 8:45 am]

BILLING CODE 4154–07–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Center for Scientific Review; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which

would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: Center for Scientific Review Special Emphasis Panel; RFA-15-319 Biomedical and Behavioral Research Innovations to Ensure Equity (BRITE).

Date: February 3, 2016.

Time: 1:00 p.m. to 2:30 p.m.

Agenda: To review and evaluate grant applications.

Place: San Diego Marriott Mission Valley, 8757 Rio San Diego Drive, San Diego, CA 92108.

Contact Person: Delia Olufokunbi Sam, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3158, MSC 7770, Bethesda, MD 20892, 301-435-0684, olufokunbisamd@csr.nih.gov.

Name of Committee: Center for Scientific Review Special Emphasis Panel; RFA-15-279 Strategies to Increase Delivery of Guideline-Based Care to Populations with Health Disparities.

Date: February 3, 2016.

Time: 2:30 p.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: San Diego Marriott Mission Valley, 8757 Rio San Diego Drive, San Diego, CA 90108.

Contact Person: Delia Olufokunbi Sam, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3158, MSC 7770, Bethesda, MD 20892, 301-435-0684, olufokunbisamd@csr.nih.gov.

Name of Committee: Healthcare Delivery and Methodologies Integrated Review Group; Health Disparities and Equity Promotion Study Section.

Date: February 4-5, 2016.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: San Diego Marriott Mission Valley, 8757 Rio San Diego Drive, San Diego, CA 92108.

Contact Person: Delia Olufokunbi Sam, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3158, MSC 7770, Bethesda, MD 20892, 301-435-0684, olufokunbisamd@csr.nih.gov.

Name of Committee: Center for Scientific Review Special Emphasis Panel; Physical Activity and Weight Control Interventions Among Cancer Survivors: Effects on Biomarkers of Prognosis.

Date: February 4, 2016.

Time: 1:30 p.m. to 5:30 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Denise Wiesch, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3138, MSC 7770, Bethesda, MD 20892, (301) 437-3478, wieschd@csr.nih.gov.

Name of Committee: Center for Scientific Review Special Emphasis Panel; Academic Research Enhancement Award.

Date: February 9, 2016.

Time: 1:00 p.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Bahia Resort Hotel, 998 West Mission Bay Drive, San Diego, CA 92109.

Contact Person: Inna Gorshkova, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20892, 301-435-1784, gorshkoi@csr.nih.gov.

Name of Committee: Bioengineering Sciences & Technologies Integrated Review Group; Modeling and Analysis of Biological Systems Study Section.

Date: February 10-11, 2016.

Time: 8:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Renaissance Long Beach Hotel, 111 East Ocean Blvd., Long Beach, CA 90802.

Contact Person: Craig Giroux, Ph.D., Scientific Review Officer, BST IRG, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5150, Bethesda, MD 20892, 301-435-2204, girouxcn@csr.nih.gov.

Name of Committee: Digestive, Kidney and Urological Systems Integrated Review Group; Xenobiotic and Nutrient Disposition and Action Study Section.

Date: February 10, 2016.

Time: 8:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Embassy Suites at the Chevy Chase Pavilion, 4300 Military Road, NW., Washington, DC 20015.

Contact Person: Martha Garcia, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 2186, Bethesda, MD 20892, 301-435-1243, garciamc@nih.gov.

Name of Committee: Digestive, Kidney and Urological Systems Integrated Review Group; Kidney Molecular Biology and Genitourinary Organ Development.

Date: February 10, 2016.

Time: 8:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Crowne Plaza National Airport, 1480 Crystal Drive, Arlington, VA 22202.

Contact Person: Ryan G. Morris, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4205, MSC 7814, Bethesda, MD 20892, 301-435-1501, morrisr@csr.nih.gov.

Name of Committee: Infectious Diseases and Microbiology Integrated Review Group; Vector Biology Study Section.

Date: February 10, 2016.

Time: 8:30 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Marines Memorial Club & Hotel, 609 Sutter Street, San Francisco, CA 94102.

Contact Person: Liangbiao Zheng, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3214, MSC 7808, Bethesda, MD 20892, 301-402-5671, zhengli@csr.nih.gov.

Name of Committee: Center for Scientific Review Special Emphasis Panel; Musculoskeletal, Oral and Skin Sciences AREA review.

Date: February 10, 2016.

Time: 9:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Yanming Bi, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4214, MSC 7814, Bethesda, MD 20892, 301-451-0996, ybi@csr.nih.gov.

Name of Committee: Oncology 1-Basic Translational Integrated Review Group; Tumor Cell Biology Study Section.

Date: February 11-12, 2016.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Hotel Nikko San Francisco, 222 Mason Street, San Francisco, CA 94102.

Contact Person: Charles Morrow, MD, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 6202, MSC 7804, Bethesda, MD 20892, 301-408-9850, morrowcs@csr.nih.gov.

(Catalogue of Federal Domestic Assistance Program Nos. 93.306, Comparative Medicine; 93.333, Clinical Research, 93.306, 93.333, 93.337, 93.393-93.396, 93.837-93.844, 93.846-93.878, 93.892, 93.893, National Institutes of Health, HHS)

Dated: January 11, 2016.

Melanie J. Gray,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2016-00650 Filed 1-14-16; 8:45 am]

BILLING CODE 4140-01-P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Center for Scientific Review; Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: Center for Scientific Review Special Emphasis Panel; PAR-14-

264 Global “Omics” Approaches Targeting Adverse Pregnancy and Neonatal Outcomes Utilizing Existing Cohorts.

Date: January 25, 2016.

Time: 11:00 a.m. to 5:30 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Lisa Steele, Ph.D., Scientific Review Officer, PSE IRG, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3139, MSC 7770, Bethesda, MD 20892, 301-594-6594, steeleln@csr.nih.gov.

This notice is being published less than 15 days prior to the meeting due to the timing limitations imposed by the review and funding cycle.

(Catalogue of Federal Domestic Assistance Program Nos. 93.306, Comparative Medicine; 93.333, Clinical Research, 93.306, 93.333, 93.337, 93.393-93.396, 93.837-93.844, 93.846-93.878, 93.892, 93.893, National Institutes of Health, HHS)

Dated: January 11, 2016.

Melanie J. Gray,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2016-00649 Filed 1-14-16; 8:45 am]

BILLING CODE 4140-01-P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute on Alcohol Abuse and Alcoholism; Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute on Alcohol Abuse and Alcoholism Special Emphasis Panel; NIAAA Pre and Post-Doctoral Fellowship Applications.

Date: March 30, 2016.

Time: 8:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health—NIAAA; Terrace Conference Room T508, 5635 Fishers Lane, Rockville, MD 20892.

Contact Person: Richard A. Rippe, Ph.D., Scientific Review Officer, National Institute

on Alcohol Abuse and Alcoholism, 5635 Fishers Lane, Room 2109 Rockville, MD 20852, 301-443-8599 ripper@niih.gov.

(Catalogue of Federal Domestic Assistance Program Nos. 93.271, Alcohol Research Career Development Awards for Scientists and Clinicians; 93.272, Alcohol National Research Service Awards for Research Training; 93.273, Alcohol Research Programs; 93.891, Alcohol Research Center Grants; 93.701, ARRA Related Biomedical Research and Research Support Awards, National Institutes of Health, HHS)

Dated: January 11, 2016.

Melanie J. Gray,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2016-00651 Filed 1-14-16; 8:45 am]

BILLING CODE 4140-01-P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Center for Scientific Review; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: Surgical Sciences, Biomedical Imaging and Bioengineering Integrated Review Group; Clinical Molecular Imaging and Probe Development.

Date: February 8-9, 2016.

Time: 8:00 a.m. to 12:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Hilton Alexandria Mark Center, 5000 Seminary Road, Alexandria, VA 22311.

Contact Person: David L. Williams, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5110, MSC 7854, Bethesda, MD 20892, (301) 435-1174, williamsdl2@csr.nih.gov.

Name of Committee: Risk, Prevention and Health Behavior Integrated Review Group; Addiction Risks and Mechanisms Study Section.

Date: February 8-9, 2016.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Hotel Monaco, 480 King Street, Alexandria, VA 22314.

Contact Person: Kristen Prentice, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3112, MSC 7808, Bethesda, MD 20892, (301) 496-0726, prenticekj@mail.nih.gov.

Name of Committee: Vascular and Hematology Integrated Review Group; Molecular and Cellular Hematology Study Section.

Date: February 8-9, 2016.

Time: 8:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Doubletree Guest Suites Santa Monica, 1707 Fourth Street, Santa Monica, CA 90401.

Contact Person: Luis Espinoza, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 6183, MSC 7804, Bethesda, MD 20892, 301-495-1213, espinozala@mail.nih.gov.

Name of Committee: Cell Biology Integrated Review Group; Cellular Signaling and Regulatory Systems Study Section.

Date: February 9-10, 2016.

Time: 7:00 a.m. to 6:30 p.m.

Agenda: To review and evaluate grant applications.

Place: Villa Florence Hotel, 225 Powell Street, San Francisco, CA 94102.

Contact Person: Elena Smirnova, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5187, MSC 7840, Bethesda, MD 20892, 301-357-9112, smirnov@csr.nih.gov.

Name of Committee: Biological Chemistry and Macromolecular Biophysics Integrated Review Group; Biochemistry and Biophysics of Membranes Study Section.

Date: February 9-10, 2016.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Bethesda North Marriott Hotel & Conference Center, 5701 Marinelli Road, Bethesda, MD 20852.

Contact Person: Nuria E. Assa-Munt, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4164, MSC 7806, Bethesda, MD 20892, (301) 451-1323, assamunu@csr.nih.gov.

Name of Committee: Molecular, Cellular and Developmental Neuroscience Integrated Review Group; Biophysics of Neural Systems Study Section.

Date: February 9, 2016.

Time: 8:00 a.m. to 7:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Melrose Hotel, 2430 Pennsylvania Avenue NW., Washington, DC 20037.

Contact Person: Geoffrey G. Schofield, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4040-A, MSC 7850, Bethesda, MD 20892, 301-435-1235, geoffreys@csr.nih.gov.

Name of Committee: Emerging Technologies and Training Neurosciences Integrated Review Group; Bioengineering of Neuroscience, Vision and Low Vision Technologies Study Section.

Date: February 9–10, 2016.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Pier 2620 Hotel Fisherman's Wharf, 2620 Jones Street, San Francisco, CA 94133.

Contact Person: Robert C. Elliott, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5190, MSC 7846, Bethesda, MD 20892, 301–435–3009, elliottro@csr.nih.gov.

Name of Committee: Biological Chemistry and Macromolecular Biophysics Integrated Review Group; Synthetic and Biological Chemistry A Study Section.

Date: February 9–10, 2016.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Hilton San Diego Mission Valley, 901 Camino Del Rio South, San Diego, CA 92108.

Contact Person: Mike Radtke, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4176, MSC 7806, Bethesda, MD 20892, 301–435–1728, rادتke@csr.nih.gov.

Name of Committee: Center for Scientific Review Special Emphasis Panel; Development and Application of PET and SPECT Imaging Ligands as Biomarkers for Drug Discovery and for Pathophysiological Studies of CNS Disorders (R21).

Date: February 9, 2016.

Time: 12:00 p.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Hilton Alexandria Mark Center, 5000 Seminary Road, Alexandria, VA 22311.

Contact Person: David L. Williams, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5110, MSC 7854, Bethesda, MD 20892, (301) 435–1174, williamsdl2@csr.nih.gov.

(Catalogue of Federal Domestic Assistance Program Nos. 93.306, Comparative Medicine; 93.333, Clinical Research, 93.306, 93.333, 93.337, 93.393–93.396, 93.837–93.844, 93.846–93.878, 93.892, 93.893, National Institutes of Health, HHS)

Dated: January 11, 2016.

Anna Snouffer,

Deputy Director, Office of Federal Advisory Committee Policy.

[FR Doc. 2016–00648 Filed 1–14–16; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute of Neurological Disorders and Stroke Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute of Neurological Disorders and Stroke Special Emphasis Panel; Program Project.

Date: February 26, 2016.

Time: 7:30 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: JW Marriott New Orleans, 614 Canal Street, New Orleans, LA 70130.

Contact Person: Birgit Neuhuber, Ph.D., Scientific Review Officer, Scientific Review Branch Division of Extramural Research, NINDS/NIH/DHHS/Neuroscience Center, 6001 Executive Boulevard, Suite 3208, MSC 9529, Bethesda, MD 20892–9529, neuhuber@ninds.gov.

(Catalogue of Federal Domestic Assistance Program Nos. 93.853, Clinical Research Related to Neurological Disorders; 93.854, Biological Basis Research in the Neurosciences, National Institutes of Health, HHS)

Dated: January 11, 2016.

Sylvia Neal,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2016–00647 Filed 1–14–16; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute on Aging; Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute on Aging Special Emphasis Panel Prevention Trial.

Date: February 5, 2016.

Time: 8:00 a.m. to 9:00 a.m.

Agenda: To review and evaluate grant applications.

Place: Bethesda North Marriott Hotel & Conference Center, 5701 Marinelli Road, Bethesda, MD 20852.

Contact Person: Jeannette L. Johnson, Ph.D., National Institutes on Aging, National Institutes of Health, 7201 Wisconsin Avenue, Suite 2c212, Bethesda, Md 20892, 301–402–7705, johnsonj9@nia.nih.gov.

(Catalogue of Federal Domestic Assistance Program Nos. 93.866, Aging Research, National Institutes of Health, HHS)

Dated: January 11, 2016.

Melanie J. Gray,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2016–00652 Filed 1–14–16; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HOMELAND SECURITY

U.S. Customs and Border Protection

Accreditation and Approval of Camin Cargo Control, Inc., as a Commercial Gauger and Laboratory

AGENCY: U.S. Customs and Border Protection, Department of Homeland Security.

ACTION: Notice of accreditation and approval of Camin Cargo Control, Inc., as a commercial gauger and laboratory.

SUMMARY: Notice is hereby given, pursuant to CBP regulations, that Camin Cargo Control, Inc., has been approved to gauge and accredited to test petroleum and certain petroleum products for customs purposes for the next three years as of December 2, 2014.

DATES: Effective dates: The accreditation and approval of Camin Cargo Control, Inc., as commercial gauger and laboratory became effective on December 2, 2014. The next triennial inspection date will be scheduled for December 2017.

FOR FURTHER INFORMATION CONTACT: Approved Gauger and Accredited Laboratories Manager, Laboratories and Scientific Services Directorate, U.S. Customs and Border Protection, 1300 Pennsylvania Avenue NW., Suite 1500N, Washington, DC 20229, tel. 202–344–1060.

SUPPLEMENTARY INFORMATION: Notice is hereby given pursuant to 19 CFR 151.12 and 19 CFR 151.13, that Camin Cargo Control, Inc., 1301 Metropolitan Ave., Thorofare, NJ 08086, has been approved to gauge and accredited to test petroleum and certain petroleum products for customs purposes, in

accordance with the provisions of 19 CFR 151.12 and 19 CFR 151.13. Camin Cargo Control, Inc., is approved for the following gauging procedures for petroleum and certain petroleum products set forth by the American Petroleum Institute (API):

API Chapters	Title
3	Tank gauging.
7	Temperature Determination.
8	Sampling.
12	Calculations.
17	Maritime Measurements.

Camin Cargo Control, Inc., is accredited for the following laboratory analysis procedures and methods for petroleum and certain petroleum products set forth by the U.S. Customs and Border Protection Laboratory Methods (CBPL) and American Society for Testing and Materials (ASTM):

CBPL No.	ASTM	Title
27-08	ASTM D-86	Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure.
27-48	ASTM D-4052	Standard test method for density and relative density of liquids by digital density meter.
27-58	ASTM D-5191	Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure.
N/A	ASTM D1319	Standard Test Method for Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Adsorption.
N/A	ASTM D-3606	Standard Test Method for Determination of Benzene and Toluene in Finished Motor and Aviation Gasoline by Gas Chromatography.
N/A	ASTM D-5769	Determination of Benzene, Toluene, and Total Aromatics in Finished Gasolines by Gas Chromatography/Mass Spectrometry.
N/A	ASTM D-2699	Standard Test Method for Research Octane Number of Spark-Ignition Engine Fuel.
N/A	ASTM D-2700	Standard Test Method for Motor Octane Number of Spark-Ignition Engine Fuel.
N/A	ASTM D-4815	Standard Test Method for Determination of MTBE, ETBE, TAME, DIPE, tertiary-Amyl Alcohol and C1 to C4 Alcohols in Gasoline by Gas Chromatography.

Anyone wishing to employ this entity to conduct laboratory analyses and gauger services should request and receive written assurances from the entity that it is accredited or approved by the U.S. Customs and Border Protection to conduct the specific test or gauger service requested. Alternatively, inquiries regarding the specific test or gauger service this entity is accredited or approved to perform may be directed to the U.S. Customs and Border Protection by calling (202) 344-1060. The inquiry may also be sent to cbp.labhq@dhs.gov. Please reference the Web site listed below for the current CBP Approved Gaugers and Accredited Laboratories List.

<http://www.cbp.gov/about/labs-scientific/commercial-gaugers-and-laboratories>.

Dated: January 8, 2016.

Ira S. Reese,

Executive Director, Laboratories and Scientific Services Directorate.

[FR Doc. 2016-00696 Filed 1-14-16; 8:45 am]

BILLING CODE 9111-14-P

DEPARTMENT OF HOMELAND SECURITY

United States Immigration and Customs Enforcement

Agency Information Collection Activities: Comment Request; Extension of an Information Collection

ACTION: 60-Day Notice of Information Collection for review; I-395; Affidavit in Lieu of Lost Receipt of United States ICE

for Collateral Accepted as Security; OMB Control No. 1653-0045.

The Department of Homeland Security, U.S. Immigration and Customs Enforcement (USICE), is submitting the following information collection request for review and clearance in accordance with the Paperwork Reduction Act of 1995. The information collection is published in the **Federal Register** to obtain comments from the public and affected agencies. Comments are encouraged and will be accepted for sixty day until March 15, 2016.

Written comments and suggestions regarding items contained in this notice and especially with regard to the estimated public burden and associated response time should be directed to the Office of Chief Information Office, Forms Management Office, U.S. Immigrations and Customs Enforcement, 801 I Street NW., Mailstop 5800, Washington, DC 20536-5800.

Written comments and suggestions from the public and affected agencies concerning the proposed collection of information should address one or more of the following four points:

(1) Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(2) Evaluate the accuracy of the agencies estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;

(3) Enhance the quality, utility, and clarity of the information to be collected; and

(4) Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses.

Overview of This Information Collection

(1) *Type of Information Collection:* Extension of a currently approved information collection.

(2) *Title of the Form/Collection:* Affidavit in Lieu of Lost Receipt of United States ICE for Collateral Accepted as Security.

(3) *Agency form number, if any, and the applicable component of the Department of Homeland Security sponsoring the collection:* I-395; U.S. Immigration and Customs Enforcement.

(4) *Affected public who will be asked or required to respond, as well as a brief abstract:* Primary: State, Local, or Tribal Government. Section 404(b) of the Immigration and Nationality Act (8 U.S.C. 1101 note) provides for the reimbursement of States and localities for assistance provided in meeting an immigration emergency. This collection of information allows for State or local governments to request reimbursement.

(5) *An estimate of the total number of respondents and the amount of time estimated for an average respondent to respond:* 10 responses at 30 minutes (.50 hours) per response.

(6) *An estimate of the total public burden (in hours) associated with the collection:* 300 annual burden hours.

Dated: January 12, 2016.

Scott Elmore,

*Program Manager, Forms Management Office,
Office of the Chief Information Officer, U.S.
Immigration and Customs Enforcement,
Department of Homeland Security.*

[FR Doc. 2016-00695 Filed 1-14-16; 8:45 am]

BILLING CODE 9111-28-P

DEPARTMENT OF HOMELAND SECURITY

U.S. Citizenship and Immigration Services

[OMB Control Number 1615-0080]

Agency Information Collection Activities: USCIS Case Status Online; Extension of an Existing Information Collection; Comment Request

AGENCY: U.S. Citizenship and Immigration Services, Department of Homeland Security.

ACTION: 30-Day notice.

SUMMARY: The Department of Homeland Security (DHS), U.S. Citizenship and Immigration Services (USCIS) will be submitting the following information collection request to the Office of Management and Budget (OMB) for review and clearance in accordance with the Paperwork Reduction Act of 1995. The information collection notice was previously published in the **Federal Register** on October 19, 2015, at 80 FR 63243, allowing for a 60-day public comment period. USCIS did receive two comments in connection with the 60-day notice.

DATES: The purpose of this notice is to allow an additional 30 days for public comments. Comments are encouraged and will be accepted until February 16, 2016. This process is conducted in accordance with 5 CFR 1320.10.

ADDRESSES: Written comments and/or suggestions regarding the item(s) contained in this notice, especially regarding the estimated public burden and associated response time, must be directed to the OMB USCIS Desk Officer via email at oir_submission@omb.eop.gov. Comments may also be submitted via fax at (202) 395-5806 (This is not a toll-free number). All submissions received must include the agency name and the OMB Control Number [1615-0080].

You may wish to consider limiting the amount of personal information that you provide in any voluntary submission you make. For additional information please read the Privacy Act notice that is available via the link in the footer of <http://www.regulations.gov>.

FOR FURTHER INFORMATION CONTACT:

USCIS, Office of Policy and Strategy, Regulatory Coordination Division, Samantha Deshombres, Acting Chief, 20 Massachusetts Avenue NW., Washington, DC 20529-2140, Telephone number (202) 272-8377 (This is not a toll-free number.

Comments are not accepted via telephone message). Please note contact information provided here is solely for questions regarding this notice. It is not for individual case status inquiries. Applicants seeking information about the status of their individual cases can check Case Status Online, available at the USCIS Web site at <http://www.uscis.gov>, or call the USCIS National Customer Service Center at (800) 375-5283; TTY (800) 767-1833.

SUPPLEMENTARY INFORMATION:

Comments

You may access the information collection instrument with instructions, or additional information by visiting the Federal eRulemaking Portal site at: <http://www.regulations.gov> and enter USCIS-2005-0033 in the search box. Written comments and suggestions from the public and affected agencies should address one or more of the following four points:

- (1) Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;
- (2) Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;
- (3) Enhance the quality, utility, and clarity of the information to be collected; and
- (4) Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses.

Overview of This Information Collection

(1) *Type of Information Collection Request:* Extension, Without Change, of a Currently Approved Collection.

(2) *Title of the Form/Collection:* USCIS Case Status Online.

(3) *Agency form number, if any, and the applicable component of the DHS sponsoring the collection:* No Agency Form Number (File No. OMB-33); USCIS.

(4) *Affected public who will be asked or required to respond, as well as a brief abstract:* Primary: Individuals or households, for-profit organizations, and not-for-profit organizations. This system allows individuals or their representatives to request case status of their pending application through USCIS' Web site.

(5) *An estimate of the total number of respondents and the amount of time estimated for an average respondent to respond:* The estimated total number of respondents for the information collection USCIS Case Status Online is 7,020,000 and the estimated hour burden per response is 0.075 hours (4.5 minutes).

(6) *An estimate of the total public burden (in hours) associated with the collection:* The total estimated annual hour burden associated with this collection is 526,500 hours.

(7) *An estimate of the total public burden (in cost) associated with the collection:* The estimated total annual cost burden associated with this collection of information is \$0.

Dated: January 11, 2016.

Samantha Deshombres,

Acting Chief, Regulatory Coordination Division, Office of Policy and Strategy, U.S. Citizenship and Immigration Services, Department of Homeland Security.

[FR Doc. 2016-00673 Filed 1-14-16; 8:45 am]

BILLING CODE 9111-97-P

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

[Docket No. FR-5907-N-03]

Federal Property Suitable as Facilities To Assist the Homeless

AGENCY: Office of the Assistant Secretary for Community Planning and Development, HUD.

ACTION: Notice.

SUMMARY: This Notice identifies unutilized, underutilized, excess, and surplus Federal property reviewed by HUD for suitability for use to assist the homeless.

FOR FURTHER INFORMATION CONTACT:

Juanita Perry, Department of Housing and Urban Development, 451 Seventh Street SW., Room 7266, Washington, DC 20410; telephone (202) 402-3970; TTY number for the hearing- and speech-impaired (202) 708-2565 (these telephone numbers are not toll-free), or call the toll-free Title V information line at 800-927-7588.

SUPPLEMENTARY INFORMATION: In accordance with 24 CFR part 581 and section 501 of the Stewart B. McKinney

Homeless Assistance Act (42 U.S.C. 11411), as amended, HUD is publishing this Notice to identify Federal buildings and other real property that HUD has reviewed for suitability for use to assist the homeless. The properties were reviewed using information provided to HUD by Federal landholding agencies regarding unutilized and underutilized buildings and real property controlled by such agencies or by GSA regarding its inventory of excess or surplus Federal property. This Notice is also published in order to comply with the December 12, 1988 Court Order in *National Coalition for the Homeless v. Veterans Administration*, No. 88–2503–OG (D.D.C.).

Properties reviewed are listed in this Notice according to the following categories: Suitable/available, suitable/unavailable, and suitable/to be excess, and unsuitable. The properties listed in the three suitable categories have been reviewed by the landholding agencies, and each agency has transmitted to HUD: (1) Its intention to make the property available for use to assist the homeless, (2) its intention to declare the property excess to the agency's needs, or (3) a statement of the reasons that the property cannot be declared excess or made available for use as facilities to assist the homeless.

Properties listed as suitable/available will be available exclusively for homeless use for a period of 60 days from the date of this Notice. Where property is described as for "off-site use only" recipients of the property will be required to relocate the building to their own site at their own expense. Homeless assistance providers interested in any such property should send a written expression of interest to HHS, addressed to: Ms. Theresa M. Ritta, Chief Real Property Branch, the Department of Health and Human Services, Room 5B–17, Parklawn Building, 5600 Fishers Lane, Rockville, MD 20857, (301) 443–2265 (This is not a toll-free number.) HHS will mail to the interested provider an application packet, which will include instructions for completing the application. In order to maximize the opportunity to utilize a suitable property, providers should submit their written expressions of interest as soon as possible. For complete details concerning the processing of applications, the reader is encouraged to refer to the interim rule governing this program, 24 CFR part 581.

For properties listed as suitable/to be excess, that property may, if subsequently accepted as excess by GSA, be made available for use by the homeless in accordance with applicable

law, subject to screening for other Federal use. At the appropriate time, HUD will publish the property in a Notice showing it as either suitable/available or suitable/unavailable.

For properties listed as suitable/unavailable, the landholding agency has decided that the property cannot be declared excess or made available for use to assist the homeless, and the property will not be available.

Properties listed as unsuitable will not be made available for any other purpose for 20 days from the date of this Notice. Homeless assistance providers interested in a review by HUD of the determination of unsuitability should call the toll free information line at 1–800–927–7588 for detailed instructions or write a letter to Ann Marie Oliva at the address listed at the beginning of this Notice. Included in the request for review should be the property address (including zip code), the date of publication in the **Federal Register**, the landholding agency, and the property number.

For more information regarding particular properties identified in this Notice (*i.e.*, acreage, floor plan, existing sanitary facilities, exact street address), providers should contact the appropriate landholding agencies at the following addresses: NAVY: Mr. Steve Matteo, Department of the Navy, Asset Management; Division, Naval Facilities Engineering Command, Washington Navy Yard, 1330 Patterson Ave. SW., Suite 1000, Washington, DC 20374; (202)685–9426. (This is not a toll-free number)

Dated: January 7, 2016.

Brian P. Fitzmaurice,

*Director, Division of Community Assistance,
Office of Special Needs Assistance Programs.*

Unsuitable Properties

Building

Louisiana

6 Buildings

NAS JRB, New Orleans

New Orleans LA 70143

Landholding Agency: Navy

Property Number: 77201610001

Status: Excess

Directions: 300, 301, 301A, 301B, 305, 305A

Comments: public access denied and no alternative method to gain access without compromising national security.

Reasons: Secured Area.

[FR Doc. 2016–00486 Filed 1–14–16; 8:45 am]

BILLING CODE 4210–67–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

**[Docket No. FWS–HQ–ES–2015–0169;
4500030113]**

Draft Methodology for Prioritizing Status Reviews and Accompanying 12-Month Findings on Petitions for Listing Under the Endangered Species Act

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), announce a draft methodology for prioritizing status reviews and accompanying 12-month findings on petitions for listing species under the Endangered Species Act. This draft methodology is intended to allow us to address outstanding workload strategically as our resources allow and to provide transparency to our partners and other stakeholders as to how we establish priorities within our upcoming workload.

DATES: We will accept comments from all interested parties until February 16, 2016. Please note that if you are using the Federal eRulemaking Portal (see **ADDRESSES** section, below), the deadline for submitting an electronic comment is 11:59 p.m. Eastern Time on this date.

ADDRESSES: You may submit comments by one of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>. In the Search box, enter the FWS–HQ–ES–2015–0169, which is the docket number for this draft policy. Then click on the Search button. You may enter a comment by clicking on "Comment Now!" Please ensure that you have found the correct document before submitting your comment.

- *U.S. mail or hand delivery:* Public Comments Processing, Attn: Docket No. FWS–HQ–ES–2015–0169, U.S. Fish and Wildlife Service, MS: BPHC, 5275 Leesburg Pike, Falls Church, VA 22041–3803.

We will post all comments on <http://www.regulations.gov>. This generally means that we will post any personal information you provide us (see the Request for Information section, below, for more information).

FOR FURTHER INFORMATION CONTACT: Douglas Krofta, U.S. Fish and Wildlife Service, Division of Conservation and Classification, MS: ES, 5275 Leesburg Pike, Falls Church, VA 22041–3803; telephone 703/358–2171; facsimile 703/358–1735. If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800–877–8339.

SUPPLEMENTARY INFORMATION:**Background**

Under the Endangered Species Act, as amended (Act; 16 U.S.C. 1531 *et seq.*), the public can petition the Service to list, delist, or reclassify a species as an endangered species or a threatened species. The Act sets forth specific timeframes in which to complete initial findings on petitions: The Service has, to the maximum extent practicable, 90 days from receiving a petition to make a finding on whether the petition presents substantial information indicating that the petitioned action may be warranted; and subsequently 12 months from receiving a petition for which the Service has made a positive initial finding to make a finding on whether the petitioned action is warranted. However, these statutory deadlines have often proven not to be achievable given the workload in the listing program and the available resources.

Recently, as a result of petitions to list a large number of species under the Act, our workload includes more than 500 unresolved status reviews and accompanying 12-month findings on those petitions to complete. At the same time, our resources to complete these findings are limited. Over the last several years, we have streamlined, and continue to find efficiencies in, our procedures for evaluating petitions and conducting listing actions, but these efforts are not sufficient to keep up with the demands of our workload. This draft methodology is intended to allow us to address the outstanding workload of status reviews and accompanying 12-month findings strategically as our resources allow and to provide transparency to our partners and other stakeholders as to how we establish priorities within our upcoming workload.

To balance and manage this existing and anticipated future status review and accompanying 12-month finding workload in the most efficient manner, we have developed a draft methodology to help us use our resources wisely by working on the highest-priority status reviews and accompanying 12-month petition findings first. The draft methodology consists of identifying five prioritization categories for these actions, determining where (into which category) each action belongs, and using that information to establish the order in which we plan to complete status reviews and accompanying 12-month findings on petitions to list species under the Act. This prioritization of petition findings will inform a multi-year National Listing Workplan for

completing all types of actions in the listing program workload—including not only status reviews and accompanying 12-month findings, but also status reviews initiated by the Service, proposed and final listing determinations, and proposed and final critical habitat designations. We intend to make the National Listing Workplan publically available on our Web site (www.fws.gov/endangered/) and periodically update it as circumstances warrant. This draft methodology for prioritizing petitions to list species does not apply to actions to downlist a species from an endangered species to a threatened species or to delist a species. Further, this methodology does not replace our 1983 Endangered and Threatened Species Listing and Recovery Priority Guidelines (September 21, 1983; 48 FR 43098), which applies to species that have already been determined to warrant a listing proposal; rather, it complements it and can be used in conjunction with it. As with the 1983 guidelines, this draft methodology must be viewed as a guide and should not be looked upon as an inflexible framework for determining resource allocations (See 48 FR 43098). It is not intended to be binding. The draft methodology to be used in prioritizing actions and identified herein incorporates numerous objectives—including acting on the species that are most in need of, and that would most benefit from, listing under the Act first, and maximizing the efficiency of the listing program.

We plan to evaluate unresolved status reviews and accompanying 12-month findings for upcoming listing actions and prioritize them using the prioritization categories and additional considerations identified in this draft methodology to assign each action to one of five priority categories, or “bins,” as described below. In prioritizing status reviews and accompanying 12-month findings, we will consider information from the 90-day finding, any petitions, and any other information in our files. We recognize that we may not always have in our files the information necessary to assign an action to the correct bin, so we plan to also work with State fish and wildlife agencies, Native American Tribes, and other appropriate conservation partners who have management responsibility for these species or relevant scientific data to obtain the information necessary to allow us to accurately prioritize specific actions.

This priority system will assist us in compiling outstanding workload into a multi-year National Listing Workplan designed to address the species with the

highest need first. It is our intention that the National Listing Workplan balance addressing the large backlog of status reviews and accompanying 12-month findings with making progress on other listing actions, such as making final listing determinations for candidate species and designating critical habitat. While this draft methodology was developed primarily to prioritize the outstanding status reviews and accompanying 12-month petition findings, the considerations raised in our prioritization categories may also be useful in prioritizing other actions in the listing program as we develop the National Listing Workplan each year. Prior to the start of each fiscal year, we will update the National Listing Workplan as new information is obtained. We will share the National Listing Workplan with other Federal agencies, State fish and wildlife agencies, Native American Tribes, and other stakeholders and the public at large through posting on our Web site (www.fws.gov/endangered/).

Priority Bins

Below we describe the categories we have identified for prioritizing listing actions and the information that factors into placing specific actions into the appropriate priority bin. Note that an action need not meet every facet of a particular bin in order to be placed in that bin. If an action meets the conditions for more than one bin, the Service will seek to prioritize that action by taking into consideration any case-specific information relevant to determining what prioritization would, overall, best advance the objectives of this draft methodology—including protecting the species that are most in need of, and that would benefit most from, listing under the Act first, and maximizing the efficiency of the listing program.

(1) *Highest Priority—Critically Imperiled*: Highest priority will be given to a species experiencing severe threat levels across a majority of its range, resulting in severe population-level impacts. Species that are critically imperiled and need immediate listing action in order to prevent extinction will be given highest priority.

(2) *Strong Data Already Available on Status*: Species for which we currently have strong information concerning the species' status will receive next highest priority. We acknowledge that the Act requires that we base our decisions on the best available information at the time we make a determination, and we will continue to adhere to that requirement. Our experience implementing the Act has shown us that

high-quality scientific information leads to stronger, more defensible decisions that have increased longevity. Therefore, we will generally place species for which we have particularly strong scientific data supporting a clear decision on status—either a decision that the species warrants listing or does not warrant listing—at a higher priority than species in Bins 3, 4, and 5, discussed below.

(3) *New Science Underway to Inform Key Uncertainties:* As stated previously, a higher quality of scientific information leads to better decision-making, which focuses our resources on providing protections associated with endangered and threatened species listing on species most in need. Scientific uncertainty regarding a species' status is often encountered in listing decisions. For circumstances when that uncertainty can be resolved within a reasonable timeframe because emerging science (e.g., taxonomy, genetics, threats) is underway to answer key questions that may influence the listing determination, those species will be prioritized for action next after those with existing strong information bases. This bin is appropriate when the emerging science or study is already underway, or a report is expected soon, or the data exist, but they need to be compiled and analyzed. Placing a species in this bin does not put off working on the listing action; it just prioritizes work on species in Bins 1 and 2 for completion first. Moreover, species do not remain in this bin indefinitely; a species for which ongoing research is not expected to produce results in the near future would not be placed in this bin, and any species that is placed in this bin will be moved to another bin after the research results become available. With the new, emerging information, a more informed decision could be made (e.g., a species' status could be determined fairly readily through surveys or other research).

(4) *Conservation Opportunities in Development or Underway:* Where efforts to conserve species are organized, underway, and likely to address the threats to the species, we will consider these species as our fourth highest priority. In order for a species to be appropriately placed in this bin, conservation agreements and commitments should be completed in time for consideration in the status review and accompanying 12-month finding and in an amount of time that provides landowners or other entities adequate opportunity to enroll prior to any listing decision. Placing a species in this bin does not put off working on the listing action; it just prioritizes work on

species in Bins 1, 2, and 3 for completion first.

(5) *Limited Data Currently Available:* Species for which we know almost nothing about its threats or status will be given fifth highest priority. If we do not have much information about a species without conducting research or further analysis, the species would be suitably placed in this bin. Placing a species in this bin does not put off working on the listing action; it just prioritizes work on species in Bins 1, 2, 3, and 4 for completion first.

According to the standard under the Act, we need to make listing decisions based on the best available scientific and commercial data. Because the best available data for species in this bin may be very limited, even if the Service conducts further research, we will place a higher priority on work for those species for which we have more and better data already available.

Additional Considerations

The following considerations will also be used to inform implementation of the prioritization process, development of the National Listing Workplan, and any necessary internal ranking within each bin (i.e., as tie-breakers within a bin):

- The level of complexity surrounding the status review and accompanying 12-month finding, such as the degree of controversy, biological complexity, or whether the status review and accompanying 12-month finding covers multiple species or spans multiple regions of the Service.
- The extent to which the protections of the Act would be able to improve conditions for that species and its habitat or also provide benefits to many other species. For example, a species primarily under threat due to sea level rise from the effects of climate change is unlikely to have its condition much improved by the protections of the Act. By contrast, a species primarily under threat due to habitat destruction from grazing practices on public lands would more directly benefit from the protections of the Act.

- Whether there are opportunities to maximize efficiency by batching multiple species for the purpose of status reviews, petition findings, or listing determinations. For example, actions could be batched by taxon, by species with like threats, by similar geographic location, or other similar circumstances. Batching may result in lower-priority actions that are tied to higher-priority actions being completed earlier than they would otherwise.

- Whether there are any special circumstances whereby an action should be bumped up (or down) in

priority when internally ranking actions within a bin or developing the National Listing Workplan. One limitation that might result in divergence from priority order is when the current highest priorities are clustered in a geographic area, such that our scientific expertise at the field office level is fully occupied with their existing workload. We recognize that the geographic distribution of our scientific expertise will in some cases require us to balance workload across geographic areas.

Request for Information

Section 4(h) of the ESA requires that, when the Secretary establishes guidelines to insure that the purposes of Section 4 are achieved efficiently and effectively, the Secretary provide to the public notice of, and opportunity to submit written comments on, those guidelines. In addition, we intend that a final methodology for prioritizing status reviews and accompanying 12-month findings for listing will consider information and recommendations from all interested parties. We therefore solicit comments, information, and recommendations from governmental agencies, Native American Tribes, the scientific community, industry groups, environmental interest groups, and any other interested parties. All comments and materials we receive by the date listed above in **DATES** will be considered prior to the adoption of a final methodology.

If you submit information via <http://www.regulations.gov>, your entire submission—including any personal identifying information—will be posted on the Web site. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on <http://www.regulations.gov>.

We seek comments and recommendations in particular on:

(1) Whether this draft methodology sets out clearly defined conditions for the prioritization bins. If not, please provide detailed comments so that we can clarify our methodology.

(2) Whether there may be other factors or considerations that should be incorporated into our methodology.

(3) Whether our draft methodology makes logical sense and will result in an appropriate use of our limited resources.

Determinations Under Other Authorities

As mentioned above, we intend to use this methodology to prioritize work on

status reviews and accompanying 12-month findings and to assist with prioritizing actions in order to develop the National Listing Workplan for each fiscal year. Below we make determinations provided for under several Executive Orders and statutes that may apply where a Federal action is not a binding rule or regulation.

National Environmental Policy Act (NEPA)

We are analyzing this draft methodology in accordance with the criteria of the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*), the Department of the Interior regulations on Implementation of the National Environmental Policy Act (43 CFR 46.10–46.450), and the Department of the Interior Manual (516 DM 1–6 and 8). We invite the public to comment on the extent to which this draft methodology may have a significant impact on the human environment, or fall within one of the categorical exclusions for actions that have no individual or cumulative effect on the quality of the human environment. We will complete our analysis, in compliance with NEPA, before finalizing this methodology.

Paperwork Reduction Act of 1995

This draft methodology does not contain any collections of information that require approval by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). This draft methodology will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. We may not conduct or sponsor and you are not required to respond to a collection of information unless it displays a currently valid OMB control number.

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments" (59 FR 22951), Executive Order 13175 "Consultation and Coordination with Indian Tribal Governments," and the Department of the Interior Manual at 512 DM 2, and the Department of Commerce *American Indian and Alaska Native Policy* (March 30, 1995), we have considered possible effects on federally recognized Indian tribes and have preliminarily determined that there are no potential adverse effects of issuing this draft methodology. Our intent with this draft methodology is to provide transparency

to Tribes and other stakeholders in the prioritization of our upcoming workload. We will continue to work with Tribes as we finalize this draft methodology and obtain the information necessary to accurately bin specific actions and develop our National Listing Workplan.

Authors

The primary authors of this draft policy are the staff members of the Division of Conservation and Classification, U.S. Fish and Wildlife Service, 5275 Leesburg Pike, Falls Church, VA 22041.

Authority

The authority for this action is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: January 6, 2016.

Stephen Guertin,

Acting Director, U.S. Fish and Wildlife Service.

[FR Doc. 2016–00616 Filed 1–14–16; 8:45 am]

BILLING CODE 4333–15–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–NER–19995, PPNEHATUC0, PPMRSCR1Y.CU0000 (166)]

Proposed Information Collection; National Underground Railroad Network to Freedom Program

AGENCY: National Park Service, Interior.

ACTION: Notice; request for comments.

SUMMARY: We (National Park Service) will ask the Office of Management and Budget (OMB) to approve the information collection described below. As required by the Paperwork Reduction Act of 1995 and as part of our continuing efforts to reduce paperwork and respondent burden, we invite the general public and other Federal agencies to take this opportunity to comment on this IC. This IC is scheduled to expire on July 31, 2016. We may not conduct or sponsor and a person is not required to respond to a collection of information unless it displays a valid OMB control number.

DATES: To ensure we are able to consider your comments, we must receive them on or before March 15, 2016.

ADDRESSES: Please send your comments on the ICR to Madonna L. Baucum, Information Collection Clearance Officer, National Park Service, 12201 Sunrise Valley Drive, Room 2C114, Mail Stop 242, Reston, VA 20192 (mail); or

madonna_baucum@nps.gov (email). Please reference OMB Control Number "1024–0232, NPS National Underground Railroad Network to Freedom" in the subject line of your comments.

FOR FURTHER INFORMATION CONTACT:

Diane Miller, National Manager, National Underground Railroad Network to Freedom Program, National Park Service, c/o Blackwater National Wildlife Refuge, 2145 Key Wallace Drive, Cambridge, Maryland 21613; or via email at *diane_miller@nps.gov*.

SUPPLEMENTARY INFORMATION:

I. Abstract

Public Law 105–203 (National Underground Railroad Network to Freedom Act of 1998) authorizes the Secretary of the Interior to establish the Network to Freedom (Network). The Network is a collection of sites, facilities, and programs, both governmental and nongovernmental, around the United States. All entities must have a verifiable association with the historic Underground Railroad movement. The National Park Service administers the National Underground Railroad Network to Freedom Program. The program coordinates preservation and education efforts Nationwide and integrates local historical places, museums, and interpretive programs associated with the Underground Railroad into a mosaic of community, regional, and national stories.

Individuals; businesses; organizations; State, tribal and local governments; and Federal agencies that want to join the Network must complete an application form. The application and instructions are available on our Web site at <http://www.nps.gov/subjects/ugrr/index.htm>. Respondents must (1) verify associations and characteristics through descriptive texts that are the result of historical research and (2) submit supporting documentation; e.g., copies of rare documents, photographs, and maps. Much of the information is submitted in electronic format and used to determine eligibility to become part of the Network.

Upon approval by OMB of this extension request, the NPS will begin developing a HTML version of the 10–946, "National Park Service National Underground Railroad Network to Freedom Application Form" on the Department of the Interior's Enterprise Forms System (EFS) Web site. The EFS will consolidate all internal forms used by the Department and external forms used by the public into a centralized automated forms program. This will

increase efficiency and responsiveness through the centralization and automation of all Departmental forms. In addition, the forms process will be modernized through the implementation of a completely digital workflow, the integration of digital and electronic signatures, and the ability to utilize real-time workflow through the use of unified messaging.

One of the principal components of the Network to Freedom Program is to validate the efforts of local and regional organizations, and to make it easier for them to share expertise and communicate with us and each other. The vehicle through which this can happen is for these local entities to

become Network Partners. Partners of the Network to Freedom Program work alongside and often in cooperation with us to fulfill the program's mission. Prospective partners must submit a letter with the following information:

- Name and address of the agency, company or organization;
- Name, address, and phone, fax, and email information of principal contact;
- Abstract not to exceed 200 words describing the partner's activity or mission statement; and
- Brief description of the entity's association to the Underground Railroad.

II. Data

OMB Number: 1024-0232.

Title: National Underground Railroad Network to Freedom Program.

Form(s): NPS Form 10-946, "National Park Service National Underground Railroad Network to Freedom Application Form".

Type of Request: Extension of a currently approved collection of information.

Description of Respondents: Individuals; businesses; nonprofit organizations; and Federal, State, tribal, and local governments.

Respondent's Obligation: Required to obtain or retain a benefit.

Frequency of Collection: On occasion.

Activity	Number of respondents	Number of responses	Completion time per response (hours)	Total annual burden hours
Network Applications	35	35	25	875
Partner Requests	2	2	.5	1
Totals	37	37	26	876

Estimated Annual Nonhour Burden Cost: None.

III. Comments

We invite comments concerning this information collection on:

- Whether or not the collection of information is necessary, including whether or not the information will have practical utility;
- The accuracy of the burden for this collection of information;
- Ways to enhance the quality, utility, and clarity of the information to be collected; and
- Ways to minimize the burden to respondents, including use of automated information techniques or other forms of information technology.

Please note that the comments submitted in response to this notice are a matter of public record. We will include or summarize each comment in our request to OMB to approve this IC. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that it will be done.

Dated: January 11, 2016.

Madonna L. Baucum,

*Information Collection Clearance Officer,
National Park Service.*

[FR Doc. 2016-00713 Filed 1-14-16; 8:45 am]

BILLING CODE 4310-EH-P

DEPARTMENT OF THE INTERIOR

National Park Service

**[NPS-WASO-ADIR-PMSP-20103;
PPWOIRADC1, PPMPAS1Y.YP0000 (166)]**

Proposed Information Collection; Case Incident Report Request

AGENCY: National Park Service, Interior.

ACTION: Notice; request for comments.

SUMMARY: We (National Park Service, NPS) will ask the Office of Management and Budget (OMB) to approve the information collection (IC) described below. As required by the Paperwork Reduction Act of 1995 and as part of our continuing efforts to reduce paperwork and respondent burden, we invite the general public and other Federal agencies to take this opportunity to comment on this IC. We may not conduct or sponsor and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number.

DATES: You must submit comments on or before March 15, 2016.

ADDRESSES: Send your comments on the IC to Madonna L. Baucum, Information

Collection Clearance Officer, National Park Service, 12201 Sunrise Valley Drive (Room 2C114, Mail Stop 242), Reston, VA 20192 (mail); or madonna_baucum@nps.gov (email). Please include "1024—New Case Incident Report Request" in the subject line of your comments.

FOR FURTHER INFORMATION CONTACT: To request additional information about this IC, contact Charis Wilson, National Park Service, 12795 W. Alameda Parkway, P.O. Box 25287, Denver, CO 80225-0287 (mail); (303) 969-2959 (phone), or charis_wilson@nps.gov (email).

SUPPLEMENTARY INFORMATION:

I. Abstract

The NPS maintains law enforcement incident reports in the Department of the Interior's Incident and Management Reporting System (IMARS), which is a Privacy Act System of Records (DOI-10). In accordance with the Privacy Act (5 U.S.C. 552a(b)), the NPS is barred from releasing copies of records contained within IMARS, including but not limited to motor vehicle accident reports, without the prior written request and/or consent of the individual to whom the record pertains unless authorized under appropriate routine-use exceptions.

The NPS requires the submission of NPS Form 10-945, "Case Incident Report Request" in order to verify a requester's identity and retrieve responsive records in order to respond

to requests for copies of incident records from persons involved or injured in incidents, owners of property damaged in such incidents, or these individuals' duly verified insurance companies, representatives, and/or attorneys. The information collected via NPS Form 10–945 includes:

- Full name of Requester;
- Case Number;

- Social Security Number;
- Current Address;
- Date of Birth; and
- Place of birth.

II. Data

OMB Control Number: 1024–New.
Title: Case Incident Report Request.
Service Form Number(s): NPS Form 10–945, “Case Incident Report Request”.

Type of Request: New.

Description of Respondents: Individuals requesting copies of NPS case incident reports that are maintained within the Department of Interior's Incident Management and Reporting System (IMARS), which is a Privacy Act system of records (DOI–10).

Respondent's Obligation: Voluntary.

Frequency of Collection: On occasion.

Activity	Estimated annual number of responses	Estimated completion time per response (minutes)	Estimated total annual burden hours
NPS Form 10–945, “Case Incident Report Request”	3,000	3	150
Totals	3,000	.....	150

Estimated Annual Nonhour Burden Cost: None.

III. Comments

We invite comments concerning this information collection on:

- Whether or not the collection of information is necessary, including whether or not the information will have practical utility;
- The accuracy of our estimate of the burden for this collection of information;
- Ways to enhance the quality, utility, and clarity of the information to be collected; and
- Ways to minimize the burden of the collection of information on respondents.

Comments that you submit in response to this notice are a matter of public record. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask OMB in your comment to withhold your personal identifying information from public review, we cannot guarantee that it will be done.

Dated: January 11, 2016.

Madonna L. Baucum,

Information Collection Clearance Officer,
National Park Service.

[FR Doc. 2016–00714 Filed 1–14–16; 8:45 am]

BILLING CODE 4310–EH–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–HAFE–20082; PPWOWMADL3, PPMPAS1Y.TD0000 (166)]

Proposed Information Collection; National Park Service Common Learning Portal

AGENCY: National Park Service, Interior.

ACTION: Notice; request for comments.

SUMMARY: We (National Park Service, NPS) will ask the Office of Management and Budget (OMB) to approve the information collection (IC) described below. As required by the Paperwork Reduction Act of 1995 and as part of our continuing efforts to reduce paperwork and respondent burden, we invite the general public and other Federal agencies to take this opportunity to comment on this IC. This is a new collection. We may not conduct or sponsor and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number.

DATES: To ensure that we are able to consider your comments on this IC, we must receive them by March 15, 2016.

ADDRESSES: Send your comments on the IC to Madonna L. Baucum, Information Collection Clearance Officer, National Park Service, 12201 Sunrise Valley Dr., MS–242, Rm. 2C114, Reston, VA 20192 (mail); or madonna_baucum@nps.gov (email). Please include “1024–HAFE CLP” in the subject line of your comments.

FOR FURTHER INFORMATION CONTACT: To request additional information about this IC, please contact Dale Carpenter at telephone (304) 535–6401 or via email at dale_carpenter@nps.gov.

SUPPLEMENTARY INFORMATION:

I. Abstract

The NPS Common Learning Portal (CLP) will serve as a common location for advertising national, regional, and park specific training events to NPS employees. The CLP is focused on increasing the visibility of training available to NPS employees and is also making the site available to the public to allow NPS partners, retired NPS employees, and other interested persons not directly affiliated with the NPS access. The CLP also establishes communities of practice using interest groups and forums in order to increase communication among the NPS training community. The CLP includes an Ask the Expert feature where industry experts or retired NPS employees who are experts in their field can field questions from NPS employees. Individuals may visit the Common Learning Portal to learn about upcoming training events without providing any information. However, in order to participate in community forum discussions, an account on the site must be created. Registering for an account requires the user provide the following information for use in the community discussion forums:

- Name,
- Email address, and
- Username.

Once registered, the user has the opportunity to voluntarily provide additional information on their portal profile, to include:

- Photo (optional)
- Title
- Location,
- Expertise,
- Duties, and
- Additional personal information such as hobbies or activities.

Additional information provided by the individual in these text fields such

as hobbies or activities in general are unbeknownst to us; however we reserve the right to remove offending information from the portal at any time.

II. Data

OMB Control Number: None.
Title: National Park Service Common Learning Portal.
Service Form Number(s): None.

Type of Request: New.
Description of Respondents: Individuals.
Respondent's Obligation: Voluntary.
Frequency of Collection: One time.

Activity	Number of respondents	Number of annual responses	Completion time per response (mins)	Total annual burden hours
Common Learning Portal Account Registration	6,000	6,000	5	500
Totals	6,000	6,000	.....	500

Estimated Annual Nonhour Burden Cost: None.

III. Comments

We invite comments concerning this information collection on:

- Whether or not the collection of information is necessary, including whether or not the information will have practical utility;
- The accuracy of our estimate of the burden for this collection of information;
- Ways to enhance the quality, utility, and clarity of the information to be collected; and
- Ways to minimize the burden of the collection of information on respondents.

Comments that you submit in response to this notice are a matter of public record. We will include or summarize each comment in our request to OMB to approve this IC. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Dated: January 11, 2016.

Madonna L. Baucum,

Information Collection Clearance Officer,
National Park Service.

[FR Doc. 2016-00716 Filed 1-14-16; 8:45 am]

BILLING CODE 4310-EH-P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS-WASO-NRNL-20036;
PPWOCRADIO, PCU00RP14.R50000]

National Register of Historic Places; Notification of Pending Nominations and Related Actions

AGENCY: National Park Service, Interior.
ACTION: Notice.

SUMMARY: The National Park Service is soliciting comments on the significance of properties nominated before December 19, 2015, for listing or related actions in the National Register of Historic Places.

DATES: Comments should be submitted by February 1, 2016.

ADDRESSES: Comments may be sent via U.S. Postal Service to the National Register of Historic Places, National Park Service, 1849 C St. NW., MS 2280, Washington, DC 20240; by all other carriers, National Register of Historic Places, National Park Service, 1201 Eye St. NW., 8th floor, Washington, DC 20005; or by fax, 202-371-6447.

SUPPLEMENTARY INFORMATION: The properties listed in this notice are being considered for listing or related actions in the National Register of Historic Places. Nominations for their consideration were received by the National Park Service before December 19, 2015. Pursuant to section 60.13 of 36 CFR part 60, written comments are being accepted concerning the significance of the nominated properties under the National Register criteria for evaluation.

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we

cannot guarantee that we will be able to do so.

COLORADO

Phillips County

Harms Farm, (Phillips County, Colorado MPS), Cty. Rd. 21 between Cty. Rds. 30 & 32, Haxtun, 15001010

Oltjenbruns Farm, (Phillips County, Colorado MPS), Cty. Rd. 49 between CO 23 & Cty. Rd. 34, Amherst, 15001011

GEORGIA

Gordon County

New Echota, Address Restricted, Calhoun, 15001012

LOUISIANA

Orleans Parish

Meyer, Adolph, School, 2013 General Meyer Ave., New Orleans, 15001013

U.S. Army Supply Base New Orleans, 4400 Dauphine St., New Orleans, 15001014

Rapides Parish

Byram, J.E., House, 915 City Park Blvd., Alexandria, 15001015

MINNESOTA

Hennepin County

Bridge No. 90646, (Iron and Steel Bridges in Minnesota MPS), Wooddale Ave. over Minnehaha Cr., Edina, 15001016

MISSOURI

Cape Girardeau County

Broadway—Middle Commercial Historic District (Boundary Increase II), (Cape Girardeau, Missouri MPS) 600, 700 & 800 blks. of Broadway & 210 N. Ellis St., Cape Girardeau, 15001017

Jackson County

Heim, Ferd., Brewing Company Bottling Plant, 507 N. Montgall Ave., Kansas City, 15001018

St. Louis Independent city

American Furnace Company, 1300 Hampton Ave., St. Louis (Independent City), 15001019

NEVADA**Douglas County**

It-goom-mum teh-weh-weh ush-shah-ish,
Address Restricted, Dresslerville Washoe
Indian Comm., 15001029

NEW JERSEY**Salem County**

Wistar, John and Charlotte, Farm, 120 Harris
Rd., Mannington Township, 15001021

Wister, Caspar & Rebecca, Farm, 84
Pointers—Auburn Rd., Mannington
Township, 15001020

NEW YORK**Albany County**

Conkling—Boardman—Eldridge Farm, 348
Albany Hill Rd., Rensselaerville, 15001022

Dutchess County

Bain, FR, House, 57 Montgomery St.,
Poughkeepsie, 15001023

Erie County

Fargo Estate Historic District, Portions of
Fargo, Normal, Plymouth, Porter, Prospect
& West Aves., Jersey & Pennsylvania Sts.,
Cobb Alley, Buffalo, 15001024

Sinclair, Rooney & Co. Building, 465
Washington St., Buffalo, 15001025

Rensselaer County

Wilbur—Campbell—Stephens Company Cuff
and Collar Factory, 599 River St., Troy,
15001026

Suffolk County

Old Field Club and Farm, 86 W. Meadow
Rd., East Setauket, 15001027

Quogue Historic District, Roughly along
Quogue St., Quogue, 15001028

PENNSYLVANIA**Allegheny County**

Pittsburgh Brass Manufacturing Company
Building, 3147–3155 Penn Ave.,
Pittsburgh, 15001030

Salvation Army Building, The, 425–435
Boulevard of the Allies, Pittsburgh,
15001031

Fayette County

Temple Ohave Israel, 210 2nd St.,
Brownsville Borough, 15001032

Washington County

Nesbit—Walker Farm, (Agricultural
Resources of Pennsylvania c1700–1960
MPS), 173 Mulberry Hill, Canton
Township, 15001033

Plantation Plenty (Boundary Increase),
(Agricultural Resources of Pennsylvania
c1700–1960 MPS), 52 Manchester Ln.,
Independence Township, 15001034

Slusher, David, Farm, (Agricultural
Resources of Pennsylvania c1700–1960
MPS), 546 Lone Pine Rd., Amwell
Township, 15001035

Westmoreland County

Loyalhanna Lodge No. 275, 221 Spring St.,
Latrobe, 15001036

VERMONT**Chittenden County**

Hinesburg Town Forest, Hayden Hill Rd.,
Hinesburg, 15001037

VIRGINIA**Fauquier County**

Oakwood, 7433 Oakwood Dr., Warrenton,
15001038

Loudoun County

Oakham Farm, 23226 Oakham Farm Ln.,
Middleburg, 15001039

Nelson County

Riverside Farm, 6840 Patrick Henry Hwy.,
Roseland, 15001040

Norfolk Independent city

Talbot Hall, 600 Talbot Hall Rd., 6601
Caroline St., 6651 Talbot Hall Ct., Norfolk
(Independent City), 15001041

Rappahannock County

Ben Venue Rural Historic District, Ben Venue
Rd., Williams Farm, Fogg Mountain,
Hickerson Mountain and Points of View
Lns., Flint Hill, 15001042

Richmond Independent city

Byrd Park Court Historic District, 701, 703,
735 Lake Rd., 705–733 Byrd Park Ct.,
Richmond (Independent City), 15001043

Byrd, William, Park, 600 South Blvd.,
Richmond (Independent City), 15001044

Carillon Neighborhood Historic District,
Belmont, Blanton, Maplewood, Rendale &
Sunset Aves., Carrolton, Condie, French,
Garrett, Rueger & Sheppard Sts., Richmond
(Independent City), 15001045

Jerman House, 24 Hampton Hills Ln.,
Richmond, 15001046

Rockbridge County

Natural Bridge Historic District, US 11 & VA
130, Natural Bridge, 15001047

WISCONSIN**Winnebago County**

Fraternal Reserve Association, 105
Washington Ave., Oshkosh, 15001048

A request to move has been received
for the following resource:

MINNESOTA**Meeker County**

Bridge No. 5388, (Iron and Steel Bridges in
Minnesota MPS) Wooddale Ave. over
Minnehaha Cr., Kingston, 98000718

A request to remove has been received
for the following resource:

CONNECTICUT**New London County**

Ashland Mill Bridge, Over Pachaug R., near
Ashland St., Griswold, 99000407

Authority: 60.13 of 36 CFR part 60

Dated: December 24, 2015.

J. Paul Loether,

*Chief, National Register of Historic Places/
National Historic Landmarks Program.*

[FR Doc. 2016–00676 Filed 1–14–16; 8:45 am]

BILLING CODE 4312–52–P

**INTERNATIONAL TRADE
COMMISSION**

**[Investigation Nos. 701–TA–551–553 and
731–TA–1307–1308 (Preliminary)]**

**Certain New Pneumatic Off-the-Road-
Tires From China, India, and Sri Lanka;
Institution of Antidumping and
Countervailing Duty Investigations and
Scheduling of Preliminary Phase
Investigations**

AGENCY: United States International
Trade Commission.

ACTION: Notice.

SUMMARY: The Commission hereby gives notice of the institution of investigations and commencement of preliminary phase antidumping and countervailing duty investigation Nos. 701–TA–551–553 and 731–TA–1307–1308 (Preliminary) pursuant to the Tariff Act of 1930 (“the Act”) to determine whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of certain imports of new pneumatic off-the-road-tires from China, India and Sri Lanka provided for in subheadings 4011.20.10, 4011.20.50, 4011.61.00, 4011.62.00, 4011.63.00, 4011.69.00, 4011.92.00, 4011.93.40, 4011.93.80, 4011.94.40, 4011.94.80, 8431.49.90, 8709.90.00, and 8716.90.10 of the Harmonized Tariff Schedule of the United States.¹ The petitioners allege that these products are imported from China and India and sold in the United States at less-than-fair-value and that these imports are allegedly subsidized by the governments of China, India, and Sri Lanka. Unless the Department of Commerce extends the time for initiation, the Commission must reach preliminary determinations in antidumping and countervailing duty investigations in 45 days, or in this case by February 22, 2016. The Commission’s views must be transmitted to Commerce within five

¹ Certain new pneumatic off-the-road-tires may also enter under the following HTS subheadings: 4011.99.45, 4011.99.85, 8424.90.90, 8431.20.00, 8431.39.00, 8431.49.10, 8431.49.90, 8432.90.00, 8433.90.50, 8503.00.95, 8708.70.05, 8708.70.25, 8708.70.45, and 8716.90.50.

business days thereafter, or by February 29, 2016.

DATES: *Effective date:* January 8, 2016.

FOR FURTHER INFORMATION CONTACT:

Michael Szustakowski (202–205–3169), Office of Investigations, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436. Hearing-impaired persons can obtain information on this matter by contacting the Commission's TDD terminal on 202–205–1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202–205–2000. General information concerning the Commission may also be obtained by accessing its internet server (<http://www.usitc.gov>). The public record for these investigations may be viewed on the Commission's electronic docket (EDIS) at <http://edis.usitc.gov>.

SUPPLEMENTARY INFORMATION:

Background. These investigations are being instituted, pursuant to sections 703(a) and 733(a) of the Tariff Act of 1930 (19 U.S.C. 1671b(a) and 1673b(a)), in response to petitions filed on January 8, 2016, by Titan Tire Corporation of Des Moines, Iowa and the United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union, AFL–CIO, CLC of Pittsburgh, Pennsylvania.

For further information concerning the conduct of these investigations and rules of general application, consult the Commission's Rules of Practice and Procedure, part 201, subparts A and B (19 CFR part 201), and part 207, subparts A and B (19 CFR part 207).

Participation in the investigation and public service list. Persons (other than petitioners) wishing to participate in the investigations as parties must file an entry of appearance with the Secretary to the Commission, as provided in sections 201.11 and 207.10 of the Commission's rules, not later than seven days after publication of this notice in the **Federal Register**. Industrial users and (if the merchandise under investigation is sold at the retail level) representative consumer organizations have the right to appear as parties in Commission antidumping duty and countervailing duty investigations. The Secretary will prepare a public service list containing the names and addresses of all persons, or their representatives, who are parties to these investigations upon the expiration of the period for filing entries of appearance.

Limited disclosure of business proprietary information (BPI) under an administrative protective order (APO)

and BPI service list. Pursuant to section 207.7(a) of the Commission's rules, the Secretary will make BPI gathered in these investigations available to authorized applicants representing interested parties (as defined in 19 U.S.C. 1677(9)) who are parties to the investigations under the APO issued in the investigations, provided that the application is made not later than seven days after the publication of this notice in the **Federal Register**. A separate service list will be maintained by the Secretary for those parties authorized to receive BPI under the APO.

Conference. The Commission's Director of Investigations has scheduled a conference in connection with these investigations for 9:30 a.m. on Friday, January 29, 2016, at the U.S. International Trade Commission Building, 500 E Street SW., Washington, DC. Requests to appear at the conference should be emailed to William.bishop@usitc.gov and Sharon.bellamy@usitc.gov (do not file on EDIS) on or before January 27, 2016. Parties in support of the imposition of countervailing and antidumping duties in these investigations and parties in opposition to the imposition of such duties will each be collectively allocated one hour within which to make an oral presentation at the conference. A nonparty who has testimony that may aid the Commission's deliberations may request permission to present a short statement at the conference.

Written submissions. As provided in sections 201.8 and 207.15 of the Commission's rules, any person may submit to the Commission on or before February 3, 2016, a written brief containing information and arguments pertinent to the subject matter of the investigations. Parties may file written testimony in connection with their presentation at the conference. If briefs or written testimony contain BPI, they must conform with the requirements of sections 201.6, 207.3, and 207.7 of the Commission's rules. Please consult the Commission's rules, as amended, 76 FR 61937 (Oct. 6, 2011) and the Commission's Handbook on Filing Procedures, 76 FR 62092 (Oct. 6, 2011), available on the Commission's Web site at <http://edis.usitc.gov>.

In accordance with sections 201.16(c) and 207.3 of the rules, each document filed by a party to the investigations must be served on all other parties to the investigations (as identified by either the public or BPI service list), and a certificate of service must be timely filed. The Secretary will not accept a document for filing without a certificate of service.

Authority: These investigations are being conducted under authority of title VII of the Tariff Act of 1930; this notice is published pursuant to section 207.12 of the Commission's rules.

By order of the Commission.

Issued: January 11, 2016.

Lisa R. Barton,

Secretary to the Commission.

[FR Doc. 2016–00618 Filed 1–14–16; 8:45 am]

BILLING CODE 7020–02–P

INTERNATIONAL TRADE COMMISSION

[USITC SE–16–001]

Government in the Sunshine Act Meeting Notice

AGENCY HOLDING THE MEETING: United States International Trade Commission.

TIME AND DATE: January 20, 2016 at 11:00 a.m.

PLACE: Room 101, 500 E Street SW., Washington, DC 20436, Telephone: (202) 205–2000.

STATUS: Open to the public.

MATTERS TO BE CONSIDERED:

1. Agendas for future meetings: None.
2. Minutes.
3. Ratification List.
4. Vote in Inv. No. 731–TA–125 (Fourth Review) (Potassium Permanganate from China). The Commission is currently scheduled to complete and file its determination and views of the Commission on January 29, 2016.
5. Outstanding action jackets: None.

In accordance with Commission policy, subject matter listed above, not disposed of at the scheduled meeting, may be carried over to the agenda of the following meeting.

By order of the Commission.

Issued: January 11, 2016.

William R. Bishop,

Supervisory Hearings and Information Officer.

[FR Doc. 2016–00831 Filed 1–13–16; 4:15 pm]

BILLING CODE 7020–02–P

DEPARTMENT OF JUSTICE

Drug Enforcement Administration

[Docket No. DEA–392]

Manufacturer of Controlled Substances Registration: Cambridge Isotope Lab

ACTION: Notice of registration.

SUMMARY: Cambridge Isotope Lab applied to be registered as a

manufacturer of a certain basic class of controlled substance. The Drug Enforcement Administration (DEA) grants Cambridge Isotope Lab registration as a manufacturer of this controlled substance.

SUPPLEMENTARY INFORMATION: By notice dated October 2, 2015, and published in the **Federal Register** on October 13, 2015, 80 FR 61470, Cambridge Isotope Lab, 50 Frontage Road, Andover, Massachusetts 01810 applied to be registered as a manufacturer of a certain basic class of controlled substance. No comments or objections were submitted for this notice.

The DEA has considered the factors in 21 U.S.C. 823(a) and determined that the registration of Cambridge Isotope Lab to manufacture the basic class of controlled substance is consistent with the public interest and with United States obligations under international treaties, conventions, or protocols in effect on May 1, 1971. The DEA investigated the company's maintenance of effective controls against diversion by inspecting and testing the company's physical security systems, verifying the company's compliance with state and local laws, and reviewing the company's background and history.

Therefore, pursuant to 21 U.S.C. 823(a), and in accordance with 21 CFR 1301.33, the above-named company is granted registration as a bulk manufacturer of morphine (9300), a basic class of controlled substance listed in schedule II.

The company plans to utilize small quantities of the listed controlled substance in the preparation of analytical standards.

Dated: January 11, 2016.

Louis J. Milione,

Deputy Assistant Administrator.

[FR Doc. 2016-00782 Filed 1-14-16; 8:45 am]

BILLING CODE 4410-09-P

DEPARTMENT OF JUSTICE

Notice of Filing of Proposed Stipulation and Settlement Agreement Under the Resource Conservation and Recovery Act

On January 12, 2016, a proposed Stipulation and Settlement Agreement establishing an Environmental Response Trust for the Gulfport, Mississippi Facility ("Gulfport Settlement Agreement") was filed with the United States Bankruptcy Court for the District of Delaware in the bankruptcy proceeding entitled *In re Reichhold Holdings US, Inc.*, No. 14-12237-MFW (Bankr. D. Del.).

Under the proposed Gulfport Settlement Agreement, an Environmental Response Trust will be created to take title to certain property owned by Reichhold Inc., located in Gulfport, Mississippi. The Environmental Response Trust will perform certain environmental actions with respect to the property. The Environmental Response Trust will receive the proceeds of a letter of credit in the approximate amount of \$3.5 million and \$750,000 provided by the Debtor. The Gulfport Settlement Agreement includes covenants not to sue under the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. 6901 *et seq.*

The publication of this notice opens a period for public comment on the Gulfport Settlement Agreement. Comments should be addressed to the Assistant Attorney General, Environment and Natural Resources Division, and should refer to *In re Reichhold Holdings US, Inc.*—Gulfport Environmental Response Trust—D.J. Ref. No. 90-11-2-11196. All comments must be submitted so that they are received no later than midnight (Eastern Time) January 29, 2016. Comments may be submitted either by email or by mail:

<i>To submit comments:</i>	<i>Send them to:</i>
By e-mail	pubcomment-ees.enrd@usdoj.gov .
By mail	Assistant Attorney General, U.S. DOJ—ENRD, P.O. Box 7611, Washington, DC 20044-7611.

Under section 7003(d) of RCRA, a commenter may request an opportunity for a public meeting in the affected area.

During the public comment period, the Settlement Agreement may be examined and downloaded at this Justice Department Web site: <http://www.justice.gov/enrd/consent-decrees>. We will provide a paper copy of the Settlement Agreement—Gulfport upon written request and payment of reproduction costs. Please mail your request and payment to: Consent Decree Library, U.S. DOJ—ENRD, P.O. Box 7611, Washington, DC 20044-7611.

Please enclose a check or money order for \$15.00 (25 cents per page reproduction cost) payable to the United States Treasury.

Henry Friedman,

Assistant Section Chief, Environmental Enforcement Section, Environment and Natural Resources Division.

[FR Doc. 2016-00742 Filed 1-14-16; 8:45 am]

BILLING CODE 4410-15-P

DEPARTMENT OF JUSTICE

Notice of Filing of Proposed Stipulation and Settlement Agreement Under The Comprehensive Environmental Response, Compensation, and Liability Act

On January 12, 2016, a proposed Settlement Agreement between the United States and the Debtors ("Settlement Agreement") was filed with the United States Bankruptcy Court for the District of Delaware in the bankruptcy proceeding entitled *In re Reichhold Holdings US, Inc.*, No. 14-12237-MFW (Bankr. D. Del.).

The proposed Settlement Agreement will resolve certain proofs of claim asserted against Debtor Reichhold Inc. under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. 9601-9675, for costs incurred and to be incurred by the United States in connection with certain sites, and for natural resource damages and costs of assessment at or in connection with certain sites.

Under the proposed Settlement Agreement the United States will have the following allowed general unsecured claims in the above referenced bankruptcy proceeding: 1) With respect to the Peterson/Puritan, Inc. Superfund Site in Rhode Island, the United States on behalf of EPA shall have an Allowed General Unsecured Claim of \$205,211; 2) With respect to the Berry's Creek Study Area operable unit of the Ventron/Velsicol Superfund Site in New Jersey, the United States on behalf of EPA shall have an Allowed General Unsecured Claim of \$400,000; 3) With respect to the Lower Passaic River Study Area of the Diamond Alkali Superfund Site in New Jersey, the United States on behalf of EPA shall have an Allowed General Unsecured Claim of \$8,000,000; 4) With respect to the Yosemite Slough Superfund Site in California, the United States on behalf of EPA shall have an Allowed General Unsecured Claim of \$268,000; 5) With respect to the Lower Duwamish Waterway Superfund Site in Washington: (i) The United States on behalf of EPA shall have an Allowed General Unsecured Claim of \$4,300,000; (ii) the United States on behalf of National Oceanic and Atmospheric Administration ("NOAA") shall have an Allowed General Unsecured Claim of \$5,937; and (iii) the United States on behalf of the Department of Interior ("DOI") shall have an Allowed General Unsecured Claim of \$558,897.74 (which includes DOI assessment costs of \$3,897.74); 6) With respect to the Kin-

Buc Landfill Superfund Site in New Jersey, the United States on behalf of NOAA shall have an Allowed General Unsecured Claim of \$29,487.47; 7) With respect to the Picketville Landfill Site in Florida, the United States, on behalf of EPA, shall have no allowed claim; 8) With respect to the Omega Chemical Site in California, the Omega PRP Organized Group ("OPOG") and the Debtors are attempting to negotiate a written agreement prior to the effective date of Debtors' Plan of Liquidation, providing that OPOG's proof of claim shall be allowed as a general unsecured claim in the amount of \$4,000,000. The United States on behalf of EPA shall have an contingent allowed general unsecured claim of \$4,000,000 with respect to the Omega Site, which contingent allowed general unsecured claim shall only be entitled to a distribution from the Debtors in the event that no settlement agreement is reached between the Debtors and OPOG prior to the effective date of the Debtors' Plan of Liquidation; 9) With respect to the Baldwin Park Operable Unit Site ("BPOU") in California, certain proofs of claim were filed by various PRPs. The Debtors are attempting to negotiate and enter into a written agreement with the BPOU PRP Group prior to the effective date of Debtors' Plan of Liquidation, providing that the BPOU Proofs of Claim shall be merged into a single proof of claim and shall be Allowed as a General Unsecured Claim in the amount of \$3,000,000. The United States on behalf of EPA shall have a contingent allowed general unsecured claim of \$3,000,000 with respect to the BPOU Site, which contingent allowed general unsecured claim shall only be entitled to a distribution from the Debtors in the event that no settlement agreement is reached between the Debtors and the BPOU PRP Group prior to the effective date of Debtors' Plan of Liquidation.

The Settlement Agreement includes certain covenants not to sue under Sections 106 and 107 of CERCLA, 42 U.S.C. 9606 or 9607, with respect to the above referenced Sites. DOI and NOAA are providing a covenant not to sue under Section 107 of CERCLA, 42 U.S.C. 9607 with respect to each Site for which they are receiving an allowed claim.

The publication of this notice opens a period for public comment on the Settlement Agreement—Gulfport. Comments should be addressed to the Assistant Attorney General, Environment and Natural Resources Division, and should refer to *In re Reichhold Holdings US, INC., et al.*,—D.J. Ref. No. 90–11–2–11196. All comments must be submitted so that

they are received by no later than midnight (Eastern Time) January 29, 2016. Comments may be submitted either by email or by mail:

<i>To submit comments:</i>	<i>Send them to:</i>
By email	pubcomment-ees.enrd@usdoj.gov
By mail	Assistant Attorney General, U.S. DOJ—ENRD, P.O. Box 7611, Washington, DC 20044–7611.

During the public comment period, the Settlement Agreement may be examined and downloaded at this Justice Department Web site: <http://www.justice.gov/enrd/consent-decrees>. We will provide a paper copy of the Settlement Agreement upon written request and payment of reproduction costs. Please mail your request and payment to: Consent Decree Library, U.S. DOJ—ENRD, P.O. Box 7611, Washington, DC 20044–7611. Please enclose a check or money order for \$ 9.75 (25 cents per page reproduction cost) payable to the United States Treasury.

Henry Friedman,

Assistant Section Chief, Environmental Enforcement Section, Environment and Natural Resources Division.

[FR Doc. 2016–00746 Filed 1–14–16; 8:45 am]

BILLING CODE 4410–15–P

DEPARTMENT OF JUSTICE

[OMB Number 1140–0016]

Agency Information Collection Activities; Proposed eCollection eComments Requested; Application for Registration of Firearms Acquired by Certain Government Entities

AGENCY: Bureau of Alcohol, Tobacco, Firearms and Explosives, Department of Justice.

ACTION: 30-day notice.

SUMMARY: The Department of Justice (DOJ), Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), will submit the following information collection request to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act of 1995. The proposed information collection was previously published in the **Federal Register** 80 FR 69699, on November 10, 2015, allowing for a 60-day comment period.

DATES: Comments are encouraged and will be accepted for an additional 30 days until February 16, 2016.

FOR FURTHER INFORMATION CONTACT: If you have additional comments especially on the estimated public burden or associated response time, suggestions, or need a copy of the proposed information collection instrument with instructions or additional information, please contact Andrew Ashton, NFA Branch Specialist, 244 Needy Road, Martinsburg, WV 25402, at: 304–616–4501 or Andrew.Ashton@atf.gov.

SUPPLEMENTARY INFORMATION: Written comments and suggestions from the public and affected agencies concerning the proposed collection of information are encouraged. Your comments should address one or more of the following four points:

- Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;
- Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;
- Evaluate whether and if so how the quality, utility, and clarity of the information to be collected can be enhanced; and
- Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses.

Overview of This Information Collection

1. *Type of Information Collection:* Extension of a currently approved collection.

2. *The Title of the Form/Collection:* Application for Registration of Firearms Acquired by Certain Government Entities.

3. *The agency form number, if any, and the applicable component of the Department sponsoring the collection:*

Form number: ATF F 10 (5320.10).
Component: Bureau of Alcohol, Tobacco, Firearms and Explosives, U.S. Department of Justice.

4. *Affected public who will be asked or required to respond, as well as a brief abstract:*

Primary: State Local or Tribal Governments.

Other: None.

Abstract: The form is required to be submitted by State and local government entities wishing to register

an abandoned or seized and previously unregistered National Firearms Act weapon. The form is required whenever application for such a registration is made.

5. *An estimate of the total number of respondents and the amount of time estimated for an average respondent to respond:* An estimated 1909 respondents will take 30 minutes to complete the questionnaire.

6. *An estimate of the total public burden (in hours) associated with the collection:* The estimated annual public burden associated with this collection is 955 hours.

If additional information is required contact: Jerri Murray, Department Clearance Officer, United States Department of Justice, Justice Management Division, Policy and Planning Staff, Two Constitution Square, 145 N Street NE., Room 3E-405B, Washington, DC 20530.

Dated: January 12, 2016.

Jerri Murray,

Department Clearance Officer for PRA, U.S. Department of Justice.

[FR Doc. 2016-00722 Filed 1-14-16; 8:45 am]

BILLING CODE 4410-FY-P

DEPARTMENT OF JUSTICE

[OMB Number 1117-0031]

Agency Information Collection Activities; Proposed eCollection, eComments Requested; Extension Without Change of a Previously Approved Collection Application for Registration Under Domestic Chemical Diversion Control Act of 1993, Renewal Application for Registration Under Domestic Chemical Diversion Control Act of 1993 DEA Forms 510, 510A

AGENCY: Drug Enforcement Administration, Department of Justice

ACTION: 60-day notice.

SUMMARY: The Department of Justice (DOJ), Drug Enforcement Administration (DEA), will be submitting the following information collection request to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act of 1995.

DATES: Comments are encouraged and will be accepted for 60 days until March 15, 2016.

FOR FURTHER INFORMATION CONTACT: If you have comments on the estimated public burden or associated response time, suggestions, or need a copy of the proposed information collection instrument with instructions or additional information, please contact Barbara J. Boockholdt, Office of Diversion Control, Drug Enforcement Administration; Mailing Address: 8701 Morrisette Drive, Springfield, Virginia 22152; Telephone: (202) 598-6812.

SUPPLEMENTARY INFORMATION: Written comments and suggestions from the public and affected agencies concerning the proposed collection of information are encouraged. Your comments should address one or more of the following four points:

- Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;
- Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used; Evaluate whether and if so how the quality, utility, and clarity of the information proposed to be collected can be enhanced; and

—Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other forms of information technology, e.g., permitting electronic submission of responses.

Overview of This Information Collection

1. *Type of Information Collection:* Extension of a currently approved collection.

2. *Title of the Form/Collection:* Application for Registration under Domestic Chemical Diversion Control Act of 1993; Renewal Application for Registration under Domestic Chemical Diversion Control Act of 1993.

3. *The agency form number, if any, and the applicable component of the Department sponsoring the collection:* DEA Forms: 510, 510A. The applicable component within the Department of Justice is the Drug Enforcement Administration, Office of Diversion Control.

4. *Affected public who will be asked or required to respond, as well as a brief abstract:*

Affected public (Primary): Business or other for-profit.

Affected public (Other): None.

Abstract: The DEA implements the Controlled Substances Act (CSA) which requires that every person who manufactures or distributes a list I chemical shall annually obtain a registration for that purpose.

5. *An estimate of the total number of respondents and the amount of time estimated for an average respondent to respond:*

	Number of annual respondents	Average time per response	Total annual burden hours
DEA-510 (paper)	14	0.20 hours (12 minutes)	2.80
DEA-510 (electronic)	116	0.17 hours (8 minutes)	15.47
DEA-510A (paper)	97	0.2 hours (10 minutes)	16.17
DEA-510A (electronic)	827	0.07 hours (4 minutes)	55.13
Total	1,054	.....	89.57

6. *An estimate of the total public burden (in hours) associated with the proposed collection:* The DEA estimates that this collection takes 89.57 annual burden hours.

If additional information is required please contact: Jerri Murray, Department Clearance Officer, United States

Department of Justice, Justice Management Division, Policy and Planning Staff, Two Constitution

Square, 145 N Street NE., Suite 3E.405B, Washington, DC 20530.

Jerri Murray,

Department Clearance Officer for PRA, U.S. Department of Justice.

[FR Doc. 2016-00759 Filed 1-14-16; 8:45 am]

BILLING CODE 4410-09-P

DEPARTMENT OF JUSTICE**Office of Justice Programs****[OJP (BJA) Docket No. 1705]****Meeting of the Department of Justice's (DOJ's) National Motor Vehicle Title Information System (NMVTIS) Federal Advisory Committee****AGENCY:** Office of Justice Programs (OJP), Justice.**ACTION:** Notice of meeting.

SUMMARY: This is an announcement of a meeting of DOJ's National Motor Vehicle Title Information System (NMVTIS) Federal Advisory Committee to discuss various issues relating to the operation and implementation of NMVTIS.

DATES: The meeting will take place on Tuesday, February 9, 2016, from 9:00 a.m. to 4:00 p.m. ET.

ADDRESSES: The meeting will take place at the Office of Justice Programs, 810 7th Street NW., Washington, DC 20531.

FOR FURTHER INFORMATION CONTACT: Todd Brighton, Designated Federal Employee (DFE), Bureau of Justice Assistance, Office of Justice Programs, 810 7th Street NW., Washington, DC 20531; Phone: (202) 616-3879 [note: this is not a toll-free number]; Email: Todd.Brighton@usdoj.gov

SUPPLEMENTARY INFORMATION: This meeting is open to the public. Members of the public who wish to attend this meeting must register with Mr. Brighton at the above address at least seven (7) days in advance of the meeting. Registrations will be accepted on a space available basis. Access to the meeting will not be allowed without registration. Please bring photo identification and allow extra time prior to the meeting. Interested persons whose registrations have been accepted may be permitted to participate in the discussions at the discretion of the meeting chairman and with approval of the DFE.

Anyone requiring special accommodations should notify Mr. Brighton at least seven (7) days in advance of the meeting.

Purpose

The NMVTIS Federal Advisory Committee will provide input and recommendations to OJP regarding the operations and administration of NMVTIS. The primary duties of the NMVTIS Federal Advisory Committee will be to advise the Bureau of Justice Assistance Director on NMVTIS-related issues, including but not limited to: Implementation of a system that is self-

sustainable with user fees; options for alternative revenue-generating opportunities; determining ways to enhance the technological capabilities of the system to increase its flexibility; and options for reducing the economic burden on current and future reporting entities and users of the system.

Todd Brighton,*NMVTIS Enforcement Coordinator, Bureau of Justice Assistance, Office of Justice Programs.*

[FR Doc. 2016-00730 Filed 1-14-16; 8:45 am]

BILLING CODE 4410-18-P**OFFICE OF MANAGEMENT AND BUDGET****2015 Statutory Pay-As-You-Go Act Annual Report****AGENCY:** Office of Management and Budget (OMB).**ACTION:** Notice.

SUMMARY: This report is being published as required by the Statutory Pay-As-You-Go (PAYGO) Act of 2010, 2 U.S.C. 931 *et seq.* The Act requires that OMB issue (1) an annual report as specified in 2 U.S.C. 934(a) and (2) a sequestration order, if necessary.

FOR FURTHER INFORMATION CONTACT: Patrick Locke. 202-395-3672.

SUPPLEMENTARY INFORMATION: This report and additional information about the PAYGO Act can be found at http://www.whitehouse.gov/omb/paygo_default.

Authority: 2 U.S.C. 934**Courtney Timberlake,***Assistant Director for Budget.*

This Report is being published pursuant to section 5 of the Statutory Pay-As-You-Go (PAYGO) Act of 2010, Public Law 111-139, 124 Stat. 8, 2 U.S.C. 934, which requires that OMB issue an annual PAYGO report, including a sequestration order if necessary, no later than 14 working days after the end of a congressional session.

This Report describes the budgetary effects of all PAYGO legislation enacted during the first session of the 114th Congress, including legislative provisions designated as emergency requirements under section 4(g) of the PAYGO Act, and presents the 5-year and 10-year PAYGO scorecards maintained by OMB. Because neither the 5-year nor 10-year scorecard shows a debit for the budget year, which for purposes of this Report is fiscal year 2016,¹ a sequestration order under

subsection 5(b) of the PAYGO Act, 2 U.S.C. § 934(b), is not necessary.

During the first session of the 114th Congress, one law was enacted with emergency requirements under section 4(g) of the PAYGO Act, 2 U.S.C. 933(g) and one law was enacted that authorized a new purpose for prior emergency funding. The scorecards include no current policy adjustments made under section 4(c) of the PAYGO Act, 2 U.S.C. 933(c). The authority for current policy adjustments expired as of December 31, 2011, so the Report does not contain any information about or descriptions of any current policy adjustments.

I. PAYGO Legislation with Budgetary Effects

PAYGO legislation is authorizing legislation that affects direct spending or revenues, and appropriations legislation that affects direct spending in the years beyond the budget year or affects revenues in any year.² For a more complete description of the Statutory PAYGO Act, see the OMB Web site, http://www.whitehouse.gov/omb/paygo_description, and Chapter 9, "Budget Concepts," of the *Analytical Perspectives* volume of the 2016 Budget, https://www.whitehouse.gov/sites/default/files/omb/budget/fy2016/assets/ap_9_concepts.pdf.

The 5-year and 10-year PAYGO scorecards for each congressional session begin with the balances of costs or savings carried over from previous sessions and then tally the costs or savings of PAYGO laws enacted in that session. The 5-year PAYGO scorecard for the first session of the 114th Congress began with balances of costs of \$440 million in 2016, and balances of savings of \$1,440 million in 2017, \$601 million in 2018, and \$626 million in 2019. The completed 5-year scorecard for the session shows that PAYGO legislation enacted during the session was estimated to have PAYGO budgetary effects that reduced the deficit by an average of \$3,456 million each year from 2016 through 2020.³

² Provisions in appropriations acts that affect direct spending in the years beyond the budget year (also known as "outyears") or affect revenues in any year are considered to be budgetary effects for the purposes of the PAYGO scorecards except if the provisions produce outlay changes that net to zero over the current year, budget year, and the four subsequent years. As specified in section 3 of the PAYGO Act, off-budget effects are not counted as budgetary effects. Off-budget effects refer to effects on the Social Security trust funds (Old-Age and Survivors Insurance and Disability Insurance) and the Postal Service.

³ As provided in section 4(d) of the PAYGO Act, 2 U.S.C. § 933(d), budgetary effects on the PAYGO scorecards are based on congressional estimates for

Continued

¹ References to years on the PAYGO scorecards are to fiscal years.

These new savings on the scorecard eliminated the debit in 2016, increased the balances of savings in 2017 through 2019, and created new savings in 2020.

The 10-year PAYGO scorecard for the first session of the 114th Congress began with balances of savings of \$9,730 million in each year from 2016 to 2020, \$3,359 million in 2021, \$2,649 million in 2022, \$1,514 million in 2023, and \$1,521 million in 2024. The completed 10-year scorecard for the session shows that PAYGO legislation for the session reduced the deficit by an average of \$5,718 million each year from 2016 through 2025. These new savings increased the balances of savings in each year on the 10-year scorecard from 2016 through 2024, and created new savings in 2025.

In the first session of the 114th Congress, 35 laws were enacted that were determined to constitute PAYGO legislation. Of the 35 enacted PAYGO laws, 15 laws were estimated to have PAYGO budgetary effects (costs or savings) in excess of \$500,000 over one or both of the 5-year or 10-year PAYGO windows. These were:

- Terrorism Risk Insurance Program Reauthorization Act of 2015, Public Law 114–1;
- Construction Authorization and Choice Improvement Act, Public Law 114–19;
- Justice for Victims of Trafficking Act of 2015, Public Law 114–22;
- A bill to extend the authorization to carry out the replacement of the existing medical center of the Department of Veterans Affairs in Denver, Colorado, to authorize transfers of amounts to carry out the replacement of such medical center, and for other purposes, Public Law 114–25;
- Trade Preferences Extension Act of 2015, Public Law 114–27;
- Steve Gleason Act of 2015, Public Law 114–40;
- Surface Transportation and Veterans Health Care Choice Improvement Act of 2015, Public Law 114–41;
- Department of Veterans Affairs Expiring Authorities Act of 2015, Public Law 114–58;
- Protecting Affordable Coverage for Employees Act, Public Law 114–60;
- Adoptive Family Relief Act, Public Law 114–70;
- Bipartisan Budget Act of 2015, Public Law 114–74;
- National Defense Authorization Act for Fiscal Year 2016, Public Law 114–92;

bills including a reference to a congressional estimate in the Congressional Record, and for which such a reference is indeed present in the Record. Absent such a congressional cost estimate, OMB is

- Federal Perkins Loan Program Extension Act of 2015, Public Law 114–105;
- Consolidated Appropriations Act of 2016, Public Law 114–113; and
- Patient Access and Medicare Protection Act, Public Law 114–115.

In addition to the laws identified above, 20 laws enacted in this session were estimated to have negligible budgetary effects on the PAYGO scorecards—costs or savings of less than \$500,000 over both the 5-year and 10-year PAYGO windows.

II. Budgetary Effects Excluded from the Scorecard Balances

A. Legislation Designated as Emergency Requirements

As shown on the scorecards, one law was enacted in the first session of the 114th Congress with an emergency designation under the Statutory PAYGO Act: the Surface Transportation and Veterans Health Care Choice Improvement Act of 2015, Public Law 114–41. The effects of the provisions in this law that are designated as emergency requirements appear on the scorecard, but the effects are subtracted before computing the scorecard totals.

B. Repurposing of Prior Emergency Spending

Scorekeeping guidelines adopted by the Office of Management and Budget, the Congressional Budget Office, and the congressional budget committees preclude scoring savings for the subsequent repurposing of spending that was designated as emergency spending when enacted. Although the laws repurposing the emergency spending are reported on the PAYGO scorecards maintained by OMB, the associated savings are not included in the balances on the scorecards that are used to determine the need for a sequestration. In this congressional session, the Construction Authorization and Choice Improvement Act, Public Law 114–19, repurposed spending in the VA Choice program by expanding the eligibility for the program to additional veterans. This adjustment resulted in excluding \$47 million in savings over 2015–2020 from the scorecard totals.

C. Statutory Provisions Excluding Legislation from the Scorecards

Four laws enacted in the first session of the 114th Congress had estimated budgetary effects on direct spending and

required to use its own estimate for the scorecard. None of the bills enacted during the first session of the 114th Congress had such a congressional estimate and therefore OMB was required to

revenues that are not included in the calculations for the PAYGO scorecards due to provisions in law excluding all or part of the law from section 4(d) of the Statutory Pay-As-You-Go Act of 2010. Three laws included provisions excluding their budgetary effects from the PAYGO scorecards entirely: Public Law 114–10, the Medicare Access and CHIP Reauthorization Act of 2015; Public Law 114–26, the Defending Public Safety Employees' Retirement Act; and Public Law 114–94, the FAST Act. In addition, one law included a provision excluding certain portions of the law from the scorecards: Public Law 114–113, Consolidated Appropriations Act of 2016, for which Divisions M, N, O, P, and Q were excluded from the scorecards.

III. The Bipartisan Budget Act of 2015

The Bipartisan Budget Act of 2015 (BBA 2015), Public Law 114–74, increased the limits on discretionary spending for 2016 and 2017, reduced direct spending and increased revenues in a number of programs, extended to 2025 the sequestration of direct spending under the Joint Committee enforcement procedures of the Budget Control Act of 2011, and temporarily suspended the statutory limit on Federal debt. The PAYGO effects shown on the scorecard for BBA 2015 are limited to those effects stemming from changes in the authorizations for direct spending programs and revenues. The revised limits on discretionary appropriations and the extension of Joint Committee sequestration of direct spending are not included in the effects on the scorecard. Because the revisions to the discretionary spending limits apply only to future levels of discretionary appropriations and did not change the level of appropriations at the point that BBA 2015 was enacted, OMB determined that these provisions of BBA 2015 do not have budgetary effects under the PAYGO Act. Similarly, because future sequestration of direct spending is triggered one year at a time under the Joint Committee enforcement procedures, providing an opportunity for future congressional action to avoid these enforcement measures, OMB does not include future direct spending sequestration in the baseline it uses to estimate budgetary effects under the PAYGO Act and extension of direct spending sequestration therefore does not have a budgetary effect for purposes of OMB's PAYGO estimates.

provide an estimate for all PAYGO laws enacted during the session.

IV. PAYGO Scorecards

STATUTORY PAY-AS-YOU-GO SCORECARDS

[In millions of dollars, negative amounts portray decreases in deficits]

	2016	2017	2018	2019	2020					
Balances from Previous Sessions	440	-1,440	-601	-626	0	.....	.....	.....	.....	.....
Budgetary effects for First session of the 114th Congress	-3,456	-3,456	-3,456	-3,456	-3,456	.....	.....	.....	.....	.....
Total, 5-year PAYGO Scorecard	-3,016	-4,896	-4,057	-4,082	-3,456	.....	.....	.....	.....	.....

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Balances from Previous Sessions	-9,730	-9,730	-9,730	-9,730	-9,730	-3,359	-2,649	-1,514	-1,521	0
Budgetary Effects for First session of the 114th Congress	-5,718	-5,718	-5,718	-5,718	-5,718	-5,718	-5,718	-5,718	-5,718	-5,718
Total, 10-year PAYGO Scorecard	-15,448	-15,448	-15,448	-15,448	-15,448	-9,077	-8,367	-7,232	-7,239	-5,718

The total net budgetary effects of all PAYGO legislation enacted during the first session of the 114th Congress on the 5-year scorecard reduce the deficit by \$17,280 million. This total is averaged over the years 2016 to 2020 on the 5-year PAYGO scorecard, resulting in savings of \$3,456 million in each year. Combining these savings with balances carried over from prior sessions of the Congress creates total net savings in 2016 of \$3,016 million, \$4,896 million in 2017, \$4,057 million in 2018, and \$4,082 million in 2019. The 5-year PAYGO window extended only through 2019 in the second session of the 113th Congress, so there were no 5-year scorecard balances in 2020 to carry over and the 5-year scorecard total is the average \$3,456 million savings from this session.

The total 10-year net impact of legislation enacted during the first session of the 114th Congress was savings of \$57,183 million. The 10-year PAYGO scorecard shows the total net impact averaged over the 10-year period, resulting in savings of \$5,718 million in each year. Combining these savings with balances from prior sessions results in net savings of \$15,448 million in 2016 through 2020, \$9,077 million in 2021, \$8,367 million in 2022, \$7,232 million in 2023, and \$7,239 million in 2024. The 10-year PAYGO window extended only through 2024 in the second session of the 113th Congress, so there were no 10-year scorecard balances in 2025 to carry over and the 10-year scorecard total is the average \$5,718 million savings from this session.

V. Sequestration Order

As shown on the scorecards, the budgetary effects of PAYGO legislation enacted in the first session of the 114th Congress, combined with the balances left on the scorecard from previous sessions of the Congress, resulted in net savings on both the 5-year and the 10-

year scorecard in the budget year, which is 2016 for the purposes of this Report. Because the costs for the budget year, as shown on the scorecards, do not exceed savings for the budget year, there is no "debit" on either scorecard under section 3 of the PAYGO Act, 2 U.S.C. § 932, and there is no need for a sequestration order.

The savings shown on the scorecards for 2016 will be removed from the scorecards that are used to record the budgetary effects of PAYGO legislation enacted in the second session of the 114th Congress. The totals shown in 2017 through 2025 will remain on the scorecards and will be used in determining whether a sequestration order will be necessary in the future. All of the years of the 5-year and 10-year scorecards that will carry over into the second session of the 114th Congress will show balances of savings.

[FR Doc. 2016-00721 Filed 1-14-16; 8:45 am]

BILLING CODE 3110-01-P

MARINE MAMMAL COMMISSION

Notice of Public Meetings in Alaska

AGENCY: Marine Mammal Commission.

ACTION: Notice of public meetings.

SUMMARY: The Marine Mammal Commission (Commission) will hold a series of public meetings pursuant to the Government in the Sunshine Act and the Federal Advisory Committee Act in various locations in Alaska from February 3–February 11, 2016. This notice announces the date, time, and location of the public meetings.

DATES: Four public meetings will be held: February 3, 2016, 3 p.m.–5 p.m. (Barrow, AK); February 5, 2016, 1 p.m.–5 p.m. (Kotzebue, AK); February 9, 2016, 3 p.m.–6 p.m. (Nome, AK); February 11, 2016, 8 a.m.–1 p.m. (Anchorage, AK).

ADDRESSES: The public meetings will be held at the following locations: February 3, 2016, Inupiat Heritage Center, 5421 North Star Street, Barrow, AK 99723; February 5, 2016, Northwest Arctic Borough Assembly Room, 163 Lagoon St, Kotzebue, AK 99752; February 9, 2016, University of Alaska Fairbanks Northwest Campus, 400 East Front Street, Nome, AK 99762, Main Building, Nagozruk Conference Room; February 11, 2016, Bureau of Ocean Energy Management, 3801 Centerpoint Drive, Anchorage, AK 99503. The Anchorage meeting will also be accessible via webinar. Information for accessing the webinar will be posted at www.mmc.gov at least one week before the Anchorage meeting.

FOR FURTHER INFORMATION CONTACT: Luis Leandro, Program Specialist, Marine Mammal Commission, 301-504-0087, Luis.Leandro@mmc.gov.

SUPPLEMENTARY INFORMATION: The Marine Mammal Commission (Commission) will meet in Barrow, Kotzebue, and Nome to solicit information from these communities and surrounding Native villages regarding environmental changes being observed in these areas, changes in the availability of marine mammals for subsistence and handicraft purposes, and Alaska Native concerns regarding marine mammal and related issues in general. All of these meetings will be open to the public.

Following these meetings, the Commission and its Committee of Scientific Advisors on Marine Mammals will meet in Anchorage, and via webinar, to review the information and views provided at the other public meetings and discuss possible actions by the Commission. This meeting will be open to attendance by the public. The public may also participate in the Anchorage meeting via webinar. The meeting will include an opportunity for comments by the public. Detailed

information on how to access and participate in the webinar will be posted on the Commission's Web site (www.mmc.gov) at least one week in advance of the meeting.

These meetings are designed to further implementation of the Commission's Strategic Plan, which recognizes that the Arctic warrants special attention because its marine mammals, ecosystems, and marine mammal dependent coastal communities are being impacted profoundly by climate change. The Commission's focus on Alaska and the Arctic includes current work to promote effective consultation procedures between Alaska Native Tribes and federal agencies, efforts to improve understanding of the cumulative impacts of climate change and human activities on Arctic marine mammals, and engagement in domestic and international science and management programs for polar bears, walrus, ice seals, and beluga and bowhead whales.

A proposed agenda for the Anchorage meeting is posted on the Commission's Web site at www.mmc.gov, and may be subject to change based on the information provided by participants during the Barrow, Kotzebue, and Nome meetings.

Additional information about the Marine Mammal Commission, the Alaska meetings, and documents related to the Commission's consultations with Native communities can be found at www.mmc.gov.

Dated: January 11, 2016.

Rebecca J. Lent,
Executive Director.

[FR Doc. 2016-00692 Filed 1-14-16; 8:45 am]

BILLING CODE 6820-31-P

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

[Notice (15-118)]

Privacy Act of 1974; Privacy Act System of Records

AGENCY: National Aeronautics and Space Administration (NASA).

ACTION: Notice of proposed revisions to existing Privacy Act systems of records.

SUMMARY: Pursuant to the provisions of the Privacy Act of 1974 (5 U.S.C. 552a), the National Aeronautics and Space Administration is issuing public notice of its proposal to modify two of its previously noticed system of records. This notice publishes updates to systems of records as set forth below under the caption **SUPPLEMENTARY INFORMATION**.

DATES: Submit comments within 30 calendar days from the date of this publication. The changes will take effect at the end of that period, if no adverse comments are received.

ADDRESSES: Patti F. Stockman, Privacy Act Officer, Office of the Chief Information Officer, National Aeronautics and Space Administration Headquarters, Washington, DC 20546-0001, (202) 358-4787, [NASA-PAOfficer@nasa.gov](mailto:PAOfficer@nasa.gov).

FOR FURTHER INFORMATION CONTACT: NASA Privacy Act Officer, Patti F. Stockman, (202) 358-4787, [NASA-PAOfficer@nasa.gov](mailto:PAOfficer@nasa.gov).

SUPPLEMENTARY INFORMATION: Pursuant to the provisions of the Privacy Act of 1974, 5 U.S.C. 552a, and as part of its biennial System of Records review, NASA is making modifications to two human resource related systems of records including: Update of Locations and Categories of records; addition of Purpose statements; and elaboration of Safeguards sections. Changes for specific NASA systems of records are set forth below:

NASA Personnel and Payroll Systems/NASA 10NPPS: Updating Locations of Records, adding a Purpose section and elaborating the Safeguards section to be more precise. Special Personnel Records/NASA 10SPER: Updating Locations and Categories of Records, adding a Purpose section and elaborating the Safeguards section to be more complete.

Submitted by:

Renee P. Wynn,
NASA Chief Information Officer.

NASA 10NPPS

SYSTEM NAME: NASA PERSONNEL AND PAYROLL SYSTEMS.

SYSTEM LOCATION:

Locations 9 and 18, as set forth in Appendix A; in the Federal Personnel and Payroll System of the Department of Interior Federal agency Human Resources Shared Service Center located at National Business Center, 7301 W. Mansfield, Denver, Co. 80235; and in the Office of Personnel Management's Electronic Official Personnel File located at the National Business Center 7301 W. Mansfield, Denver, Co. 80235.

CATEGORIES OF INDIVIDUALS COVERED BY THE SYSTEM:

This system maintains information on present and former NASA employees.

CATEGORIES OF RECORDS IN THE SYSTEM:

The data contained in this system of records includes payroll, employee leave, insurance, labor and human

resource distribution and overtime information.

PURPOSE(S):

Records in this system are used to facilitate NASA administration of payroll functions and personnel decisions.

AUTHORITY FOR MAINTENANCE OF THE SYSTEM:

51 U.S.C. 20113(a); 44 U.S.C. 3101; 5 U.S.C. 5501 *et seq.*; 5 U.S.C. 6301 *et seq.*

ROUTINE USES OF RECORDS MAINTAINED IN THE SYSTEM, INCLUDING CATEGORIES OF USERS AND THE PURPOSE OF SUCH USES:

Any disclosures of information will be compatible with the purpose for which the Agency collected the information. The following are routine uses: (1) To furnish to a third party a verification of an employee's status upon written request of the employee; (2) to facilitate the verification of employee contributions and insurance data with carriers and collection agents; (3) to report to the Office of Personnel Management (a) withholdings of premiums for life insurance, health benefits, and retirements, and (b) separated employees subject to retirement; (4) to furnish the U.S. Treasury magnetic tape reports and/or electronic files on net pay, net savings allotments and bond transmittal pertaining to each employee; (5) to provide the Internal Revenue Service with details of wages taxable under the Federal Insurance Contributions Act and to furnish a magnetic tape listing on Federal tax withholdings; (6) to furnish various financial institutions itemized listings of employee's pay and savings allotments transmitted to the institutions in accordance with employee requests; (7) to provide various Federal, State, and local taxing authorities itemized listings of withholdings for individual income taxes; (8) to respond to requests for State employment security agencies and the U.S. Department of Labor for employment, wage, and separation data on former employees for the purpose of determining eligibility for unemployment compensation; (9) to report to various Combined Federal Campaign offices total contributions withheld from employee wages; (10) to furnish leave balances and activity to the Office of Personnel Management upon request; (11) to furnish data to labor organizations in accordance with negotiated agreements; (12) to furnish pay data to the Department of State for certain NASA employees located outside the United States; (13) to furnish data to a consumer reporting agency or bureau, private collection contractor or

debt collection center in accordance with section 3711 of Title 31 of the United States Code; (14) to forward delinquent debts, and all relevant information related thereto, to the U.S. Department of Treasury, for collection; (15) to the Office of Child Support Enforcement (OCSE), Administration for Children and Families, Department of Health and Human Services (DHHS), National Directory of New Hires, part of the Federal Parent Locator Service and the Federal Tax Offset System, DHHS/OCSE No. 09–90–0074, for the purpose of locating individuals to establish paternity, establishing and modifying orders of child support, identifying sources of income, and for other child support enforcement actions as required by the Personal Responsibility and Work Opportunity Reconciliation act (Pub. L. 104–193); (16) to consumer reporting agencies as required by the Fair Credit Reporting Act (15 U.S.C. 1681a(f)); (17) to private collection contractors as required by the Federal Claims Collection Act of 1966, as amended by the Debt Collection Improvement Act of 1966 (31 U.S.C. 3701, *et seq.*); and (18) NASA standard routine uses as set forth in Appendix B.

POLICIES AND PRACTICES FOR STORING, RETRIEVING, ACCESSING,

RETAINING, AND DISPOSING OF RECORDS IN THE SYSTEM:

STORAGE:

Records are maintained in electronic format.

RETRIEVABILITY:

Records are retrieved from the system by the individual's name, unique personal identification code and/or Social Security Number.

SAFEGUARDS:

Electronic records are maintained on secure NASA servers and protected in accordance with all Federal standards. Additionally, NASA server and data management environments employ infrastructure encryption technologies both in data transmission and at rest on servers. Electronic messages sent within and outside of the Agency that convey sensitive data are encrypted and transmitted by staff via pre-approved electronic encryption systems as required by NASA policy. Approved security plans are in place for information systems containing the records in accordance with FISMA and OMB Circular A–130, Management of Federal Information Resources. Only authorized personnel requiring information in the official discharge of their duties are authorized access to records through approved access or

authentication methods. Access to electronic records is achieved only from workstations within the NASA Intranet or via a secure Virtual Private Network (VPN) connection that requires two-factor hardware token authentication or via employee PIV badge authentication from NASA-issued computers. The Department of Interior and Office of Personnel Management Federal agency servers in Denver are also compliant with the FISMA and OMB Circular A–130 security standards and requirements.

RETENTION AND DISPOSAL:

Records are maintained and transferred to the National Personnel Records Center (NPRC) in accordance with NASA Records Retention Schedules, Schedule 3 Item 47. Records transferred to NPRC will be destroyed when 10 years old by NPRC.

SYSTEM MANAGERS AND ADDRESSES:

Director, Financial Management Division, Office of the Chief Financial Officer, and Assistant Administrator for Human Capital Management, Office of Human Capital Management, Location 1.

Subsystem Managers: Chief Financial Officers and Human Capital Officers, Locations 2 through 9, and 11, Director, Financial Management Division, and Director, Human Resources Division, Location 18. Locations are as set forth in Appendix A.

NOTIFICATION PROCEDURE:

Information may be obtained from the cognizant system or subsystem manager listed above.

RECORD ACCESS PROCEDURE:

Requests from individuals should be addressed to the same address as identified in the Notification section above.

CONTESTING RECORD PROCEDURES:

The NASA regulations for access to records and for contesting contents and appealing initial determinations by the individual concerned appear at 14 CFR part 1212.

RECORD SOURCE CATEGORIES:

Individual on whom the record is maintained, personnel office(s), and the individual's supervisor.

EXEMPTIONS:

None.

NASA 10SPER

SYSTEM NAME:

Special Personnel Records.

SECURITY CLASSIFICATION:

None.

SYSTEM LOCATION:

Locations 1 through 9 inclusive, and locations 11 and 18 as set forth in Appendix A, and at the Department of Interior Federal Agency Human Resources Shared Service Center located at National Business Center 7301 W. Mansfield, Denver Co, 80235.

CATEGORIES OF INDIVIDUALS COVERED BY THE SYSTEM:

This system maintains information on candidates for and recipients of awards or NASA training; civilian and active duty military detailees to NASA; participants in enrollee programs; Faculty, Science, National Research Council and other Fellows, associates and guest workers including those at NASA Centers but not on NASA rolls; NASA contract and grant awardees and their associates having access to NASA premises and records; individuals with interest in NASA matters including Advisory Committee Members; NASA employees and family members, prospective employees and former employees; former and current participants in existing and future educational programs, including the Summer High School Apprenticeship Research Program (SHARP).

CATEGORIES OF RECORDS IN THE SYSTEM:

Special Program Files including: (1) Foreign National Scientist files; (2) Applications for, and issuance of, passports and visas together with other information for international government travel; (3) Award files; (4) Counseling files, Life and Health Insurance, Retirement, Upward Mobility, and Work Injury Counseling files; (5) Military and Civilian detailee files; (6) Personnel Development files such as nominations for and records of training or education, Upward Mobility Program files, Intern Program files, Apprentice files, and Enrollee Program files; (7) Special Employment files such as Federal Junior Fellowship Program files, Pathways Program files, Summer Employment files, Worker-Trainee Opportunity Program files, NASA Executive Position files, Expert and Consultant files, and Cooperative Education Program files; (8) Welfare to Work files; and (9) Supervisory Appraisals under Competitive Placement Plan. Correspondence and related information including: (1) Claims correspondence and records about insurance such as life, health, and travel; (2) Congressional and other Special Interest correspondence, including employment inquiries; (3) Correspondence and records concerning travel related to permanent change of address; (4) Debt complaint

correspondence; (5) Employment interview records; (6) Information related to outside employment and activities of NASA employees; (7) Placement follow-ups; (8) Preemployment inquiries and reference checks; (9) Preliminary records related to possible adverse actions; (10) Records related to reductions in force; (11) Records under administrative as well as negotiated grievance procedures; (12) Separation information including exit interview records, death certificates and other information concerning death, retirement records, and other information pertaining to separated employees; (13) Special planning analysis and administrative information; (14) Performance appraisal records; (15) Working papers for prospective or pending retirements.

Special Records and Rosters including: (1) Locator files, (2) Ranking lists of employees; (3) Promotion candidate lists; (4) Retired military employee records; (5) Retiree records; (6) Follow-up records for educational programs, such as the SHARP and other existing or future programs. Agencywide and Center automated personnel information: Rosters, applications, recommendations, assignment information and evaluations of Faculty, Science, National Research Council and other Fellows, associates and guest workers including those at NASA Centers but not on NASA rolls; also, information about NASA contract and grant awardees and their associates having access to NASA premises and records.

Information about members of advisory committees and similar organizations: All NASA-maintained information of the same types as, but not limited to, that information required in systems of records for which the Office of Personnel Management and other Federal personnel-related agencies publish Government wide Privacy Act Notices in the **Federal Register**.

PURPOSE

Records in this system enable NASA to manage Personnel records used to make personnel employment decisions and to facilitate decisions regarding employees' rights and benefits of employees, and other special personnel associated with NASA and listed in Categories of Individuals of this system notice.

AUTHORITY FOR MAINTENANCE OF THE SYSTEM:

51 U.S.C. 20113(a); 44 U.S.C. 3101.

ROUTINE USES OF RECORDS MAINTAINED IN THE SYSTEM, INCLUDING CATEGORIES OF USERS AND THE PURPOSE OF SUCH USES:

Any disclosures of information will be compatible with the purpose for which the Agency collected the information. The following are routine uses: (1) Disclosures to organizations or individuals having contract, legal, administrative or cooperative relationships with NASA, including labor unions, academic organizations, governmental organizations, non-profit organizations, and contractors and to organizations or individuals seeking or having available a service or other benefit or advantage. The purpose of such disclosures is to satisfy a need or needs, further cooperative relationships, offer information, or respond to a request; (2) disclosures to Federal agencies developing statistical or data presentations having need of information about individuals in the records; (3) responses to other Federal agencies and other organizations having legal or administrative responsibilities related to programs and individuals in the records; and (4) NASA standard routine uses as set forth in Appendix B.

POLICIES AND PRACTICES FOR STORING, RETRIEVING, ACCESSING, RETAINING, AND DISPOSING OF RECORDS IN THE SYSTEM:

STORAGE:

Records in this system are maintained as hard-copy documents and on electronic media.

RETRIEVABILITY:

Records are retrieved from the system by any one or a combination of name, birth date, Social Security Number, or NASA unique identification number.

SAFEGUARDS:

Electronic records are maintained on secure NASA servers and protected in accordance with all Federal standards and those established in NASA regulations at 14 CFR 1212.605. Additionally, NASA server and data management environments employ infrastructure encryption technologies both in data transmission and at rest on servers. Electronic messages sent within and outside of the Agency that convey sensitive data are encrypted and transmitted by staff via pre-approved electronic encryption systems as required by NASA policy. Approved security plans are in place for information systems containing the records in accordance with the Federal Information Security Management Act of 2002 (FISMA) and OMB Circular A-130, Management of Federal Information Resources. Only authorized personnel requiring information in the

official discharge of their duties are authorized access to records through approved access or authentication methods. Access to electronic records is achieved only from workstations within the NASA Intranet or via a secure Virtual Private Network (VPN) connection that requires two-factor hardware token authentication or via employee PIV badge authentication from NASA-issued computers. The Department of Interior Federal agency Human Resources Shared Service Center in Denver is also compliant with the FISMA and OMB Circular A-130 security standards and requirements.

Non-electronic records are secured in locked rooms or locked file cabinets. For information systems maintained by NASA partners, who collect, store and process records on behalf of NASA, NASA requires documentation and verification of commensurate safeguards in accordance with FISMA, NASA Procedural Requirements (NPR) 2810.1A, and NASA ITS-HBK-2810.02-05.

RETENTION AND DISPOSAL:

Records are maintained and dispositioned in accordance with NASA Records Retention Schedules (NRRS) 3, Item 19.

SYSTEM MANAGERS AND ADDRESSES:

Associate Administrator for Human Capital Management, Location 1. Subsystem Managers: Director, Personnel Division, Office of Inspector General, and Chief, Elementary and Secondary Programs Branch, Educational Division, Location 1; Director of Personnel, Locations 1, 3, 4, 6, and 8; Director of Human Resources, Location 2, 5, and 9; Director, Office of Human Resources, Location 7; Human Resources Officer, Location 11; Director, Human Resources Services Division, Location 18. Locations are as set forth in Appendix A.

NOTIFICATION PROCEDURE:

Apply to the System or Subsystem Manager at the appropriate location above. In addition to personal identification (name, Social Security Number), indicate the specific type of record, the appropriate date or period of time, and the specific category of individual applying (e.g., employee, former employee, contractor employee).

RECORD ACCESS PROCEDURE:

Same as Notification procedures above.

CONTESTING RECORD PROCEDURES:

The NASA regulations pertaining to access to records and for contesting contents and appealing initial

determinations by individual concerned are set forth in 14 CFR part 1212.

RECORD SOURCE CATEGORIES:

Individual on whom the record is maintained and Personnel Office(s).

EXEMPTIONS:

None.

[FR Doc. 2016-00689 Filed 1-14-16; 8:45 am]

BILLING CODE 7510-13-P

NUCLEAR REGULATORY COMMISSION

[Docket Nos. 50-003, 50-247, 50-286, 72-51, 50-333, 72-12, 50-220, 50-410, 72-1036, 50-244, 72-67, 50-275, 50-323, 72-26, 50-361, 50-362, and 72-41; EA-14-137, EA-14-135, EA-14-136, EA-14-138, EA-14-139, EA-14-134, and EA-14-140; NRC-2016-0007]

In the Matter of Entergy Nuclear Operations, Inc., Indian Point Nuclear Generating Unit Nos. 1, 2, and 3, and James A. Fitzpatrick Nuclear Power Plant; Exelon Generation Company, LLC, Nine Mile Point Nuclear Station, Units 1 and 2, and R.E. Ginna Nuclear Power Plant; Pacific Gas and Electric Company, Diablo Canyon Power Plant, Units 1 and 2; and Southern California Edison Company, San Onofre Nuclear Generating Station, Units 2 and 3, including Independent Spent Fuel Storage Installations for All Facilities

AGENCY: Nuclear Regulatory Commission.

ACTION: Confirmatory order; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is authorizing the licensees to transfer, receive, possess, transport, import, and use certain firearms and large-capacity ammunition feeding devices not previously permitted to be owned or possessed under Commission authority, notwithstanding certain local, State, or Federal firearms laws, including regulations that prohibit such actions, as reflected in the confirmatory orders for the nuclear plant facilities listed above.

DATES: Each confirmatory order was issued to the licensees on January 5, 2016. The effective dates are reflected in the attached orders.

ADDRESSES: Please refer to Docket ID: NRC-2016-0007 when contacting the NRC about the availability of information regarding this document. You may obtain publicly-available information related to this document using any of the following methods:

- *Federal Rulemaking Web site:* Go to <http://www.regulations.gov> and search for Docket ID: NRC-2016-0007. Address

questions about NRC dockets to Carol Gallagher; telephone: 301-415-3463; email: Carol.Gallagher@nrc.gov. For technical questions, contact the individual listed in the **FOR FURTHER INFORMATION CONTACT** section of this document.

- *NRC's Agencywide Documents Access and Management System (ADAMS):* You may obtain publicly-available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "ADAMS Public Documents" and then select "Begin Web-based ADAMS Search." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by email to pdr.resource@nrc.gov. Orders EA-14-135, EA-14-136, EA-14-137, EA-14-138, EA-14-139, EA-14-134, and EA-14-140 are available in ADAMS under Accession Nos. ML15176A264, ML15176A028, ML15176A306, ML15176A256, ML15174A020, and ML15174A102, respectively.

- *NRC's PDR:* You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

FOR FURTHER INFORMATION CONTACT: Siva P. Lingam, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-1564, email: Siva.Lingam@nrc.gov.

SUPPLEMENTARY INFORMATION: The text of each Order is attached.

Dated at Rockville, Maryland, this 7th day of January 2016.

For the Nuclear Regulatory Commission.

Anne T. Boland,

Director, Division of Operating Reactor Licensing, Office of Nuclear Reactor Regulation.

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

In the Matter of Entergy Nuclear Operations, Inc., Entergy Nuclear Indian Point 2, LLC, and Entergy Nuclear Indian Point 3, LLC

(Indian Point Nuclear Generating Unit Nos. 1, 2, and 3)

Docket Nos. 50-003, 50-247, 50-286, AND 72-51

License Nos. DPR-5, DPR-26, and DPR-64

EA-14-135 and EA-14-136

CONFIRMATORY ORDER MODIFYING LICENSE

I.

Entergy Nuclear Indian Point 2, LLC, is the owner of Indian Point Nuclear Generating Unit Nos. 1 and 2; Entergy Nuclear Indian Point 3, LLC, is the owner of Indian Point Nuclear Generating Unit No. 3, and Entergy Nuclear Operations, Inc. ("Entergy" or "the licensee") is the operator of Indian Point Nuclear Generating Unit Nos. 1, 2, and 3, including the general-licensed Independent Spent Fuel Storage Installation (hereinafter "Indian Point" or "the facility"), and holder of Provisional Operating License No. DPR-5, Facility Operating License Nos. DPR-26 and DPR-64, and Docket No. 72-51 issued by the U.S. Nuclear Regulatory Commission ("NRC" or "Commission") under Title 10, "Energy," of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities"; Part 70, "Domestic Licensing of Special Nuclear Material"; and Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste." The licenses authorize the operation of Indian Point with the conditions specified therein. The facilities are located on the owner's site in Westchester County, New York.

II.

By application dated August 20, 2013 as supplemented by letters dated November 21, 2013, and May 13 and July 24, 2014, and citing letters dated April 27 and October 27, 2011, and January 4, 2012, Entergy requested, under Commission Order EA-13-092, that under the provisions of Section 161A of the Atomic Energy Act of 1954, as amended, the Commission permit the transfer, receipt, possession, transport, import, and use of certain firearms and large-capacity ammunition-feeding devices by security personnel who protect a facility owned or operated by a licensee or certificate holder of the Commission that is designated by the Commission. Section 161A confers on the Commission the authority to permit a licensee's security personnel to possess and use firearms, ammunition or devices, notwithstanding local, State, and certain Federal firearms laws (including regulations) that may prohibit such possession and use.

On review of the Entergy application for Commission authorization to use Section 161A preemption authority at Indian Point, the NRC staff has found the following:

(1) Entergy's application complies with the standards and requirements of Section 161A and the Commission's rules and regulations set forth in 10 CFR part 73, "Physical Protection of Plants and Materials";

(2) There is reasonable assurance that the facilities will operate in conformance to the application; the provisions of the Atomic Energy Act of 1954, as amended; and the rules and regulations of the Commission;

(3) There is reasonable assurance that the activities permitted by the proposed Commission authorization to use Section 161A preemption authority are consistent with the protection of public health and safety, and that such activities will be conducted in compliance with the Commission's regulations and the requirements of this confirmatory order;

(4) The issuance of Commission authorization to use Section 161A preemption authority will not be inimical to the common defense and security or to the health and safety of the public; and

(5) The issuance of this Commission authorization to use Section 161A preemption authority will be in accordance with the Commission's regulations in 10 CFR part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions."

The findings, set forth above, are supported by an NRC staff safety evaluation under Agencywide Documents Access and Management System (ADAMS) Accession No. ML14259A209.

III.

To carry out the statutory authority discussed above, the Commission has determined that the licenses for Indian Point must be modified to include provisions with respect to the Commission authorization to use Section 161A preemption authority as identified in Section II of this confirmatory order. The requirements needed to exercise the foregoing are set forth in Section IV below.

The NRC staff has found that the license modifications set forth in Section IV are acceptable and necessary. It further concluded that, with the effective implementation of these provisions, the licensee's physical protection program will meet the specific physical protection program requirements set forth in 10 CFR 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage" (for nuclear power reactors); and in 10 CFR 72.212(b)(9), "Conditions of the

General License Issued Under § 72.210," and portions of 10 CFR 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage" (for general-license independent spent fuel storage installations co-located with a reactor at the reactor site).

On January 16, 2015, Entergy consented to the issuance of this order. The licensee further agreed that this order will be effective 20 days after the date of issuance and that it has waived its right to a hearing on this order.

IV.

Accordingly, under Sections 53, 103 and/or 104b, 161b, 161i, 161o, 161A, 182, and 186 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR 2.202, "Orders"; 10 CFR part 50; 10 CFR part 70; and 10 CFR part 72, IT IS HEREBY ORDERED that:

1. The Entergy application for Commission authorization to use Section 161A preemption authority at Indian Point is approved and permission for security personnel to possess and use weapons, devices, ammunition, or other firearms, notwithstanding local, State, and certain Federal firearms laws (including regulations) that may prohibit such possession and use, is granted.

2. The licensee shall review and revise its NRC-approved security plans, as necessary, to describe how the requirements of this confirmatory order and other applicable requirements of 10 CFR part 73, "Physical Protection of Plants and Materials," to include those of the appendices to 10 CFR part 73, will be met.

3. The licensee shall establish and maintain a program consistent with Commission Order EA-13-092 such that all security personnel who require access to firearms in the discharge of their official duties are subject to a firearms background check.

The Commission is engaged in an ongoing rulemaking to implement the Commission's authority under Section 161A. Subsequent to the effective date of that final rulemaking, the Director, Office of Nuclear Reactor Regulation (NRR), and the Director, Office of Nuclear Material Safety and Safeguards (NMSS) may take action to relax or rescind any or all of the requirements set forth in this confirmatory order.

The Director, NRR, and the Director, NMSS, may, in writing, relax or rescind this confirmatory order on demonstration by the licensee of good cause.

This confirmatory order is effective 20 days after the date of its issuance.

For further details with respect to this confirmatory order, see the staff's safety evaluation contained in a letter dated January 5, 2016 (ADAMS Accession No. ML14259A209), which is available for public inspection at the Commission's Public Document Room (PDR) located at One White Flint North, Public File Area 01 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available documents created or received at the NRC are accessible electronically through ADAMS in the NRC Library at <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents stored in ADAMS should contact the NRC PDR reference staff by telephone at 1-800-397-4209 or 301-415-4737 or by email to pdr.resource@nrc.gov.

In accordance with 10 CFR 2.202, any other person adversely affected by this order may submit an answer to this order within 20 days of its publication in the **Federal Register**. In addition, any other person adversely affected by this order may request a hearing on this order within 20 days of its publication in the **Federal Register**. Where good cause is shown, consideration will be given to extending the time to answer or request a hearing. A request for extension of time must be directed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, and must include a statement of good cause for the extension.

If a hearing is requested by a person whose interest is adversely affected, the Commission will issue an order designating the time and place of any hearings. If a hearing is held, the issue to be considered at such hearing shall be whether this order should be sustained.

All documents filed in NRC adjudicatory proceedings (including a request for hearing, a petition for leave to intervene, any motion or other document filed in the proceeding before the submission of a request for hearing or petition to intervene, and documents filed by interested governmental entities participating under 10 CFR 2.315(c)) must be filed in accordance with the NRC E-Filing rule (published at 72 FR 49139 on August 28, 2007). The E-Filing process requires participants to submit and serve all adjudicatory documents over the internet or (in some cases) to mail copies on electronic storage media. Participants may not submit paper copies of their filings unless they seek an exemption in accordance with the procedures described below.

To comply with the procedural requirements of E-Filing, the participant should contact the Office of the Secretary (at least 10 days before the

filing deadline) by email to hearing.docket@nrc.gov or by telephone at (301) 415-1677 to (1) request a digital ID certificate, which allows the participants (or its counsel or representative) to digitally sign documents and access the E-Submittal server for any proceeding in which it is participating; and (2) advise the Secretary that the participant will be submitting a request or petition for hearing (even in instances in which the participant, or its counsel or representative, already holds an NRC-issued digital ID certificate). Based on this information, the Secretary will establish an electronic docket for the hearing in this proceeding if the Secretary has not already established an electronic docket.

Information about applying for a digital ID certificate is available on NRC's public Web site at <http://www.nrc.gov/site-help/e-submittals/getting-started.html>. System requirements for accessing the E-Submittal server are detailed in NRC's "Guidance for Electronic Submission," which is available on the agency's public Web site at <http://www.nrc.gov/site-help/e-submittals.html>. Participants may attempt to use other software not listed on the Web site to file documents, but should note that the NRC's E-Filing system does not support unlisted software and that the NRC Meta System Help Desk will not be able to offer assistance in using unlisted software.

If a participant is electronically submitting a document to the NRC in accordance with the E-Filing rule, the participant must file the document using the NRC's Web-based online submission form. In order to serve documents through the Electronic Information Exchange, users will be required to install a web browser plug-in from the NRC Web site. Further information on the Web-based submission form, including the installation of the Web browser plug-in, is available on the NRC's public Web site at <http://www.nrc.gov/site-help/e-submittals.html>.

Once a participant has obtained a digital ID certificate and a docket has been created, the participant can then submit a request for hearing or petition for leave to intervene. Submissions should be Portable Document Format (PDF) documents in accordance with NRC guidance available on the NRC public Web site at <http://www.nrc.gov/site-help/e-submittals.html>. A filing is considered complete at the time the documents are submitted through the NRC's E-Filing system. To be timely, an electronic filing must be submitted to the E-Filing system no later than 11:59

p.m. eastern time on the due date. On receipt of a transmission, the E-Filing system time-stamps the document and sends the submitter an email notice confirming receipt of the document. The E-Filing system also distributes an email notice that provides access to the document to the NRC's Office of the General Counsel and any others who have advised the Office of the Secretary that they wish to participate in the proceeding, so that the filer need not serve the documents on those participants separately. Therefore, applicants and other participants (or their counsel or representative) must apply for and receive a digital ID certificate before a hearing request or petition to intervene is filed so that they can obtain access to the filed documents through the E-Filing system.

A person filing electronically using the agency's adjudicatory E-Filing system may seek assistance by contacting the NRC Meta System Help Desk through the "Contact Us" link located on the NRC Web site at <http://www.nrc.gov/site-help/e-submittals.html>, by email to MSHD.Resource@nrc.gov, or by a toll-free call to (866) 672-7640. The NRC Meta System Help Desk is available between 8 a.m. and 8 p.m. eastern time, Monday through Friday, excluding Government holidays.

Participants who believe that they have a good cause for not submitting documents electronically must file an exemption request, in accordance with 10 CFR 2.302(g), with their initial paper filing requesting authorization to continue to submit documents in paper format. Such filings must be submitted by: (1) First Class mail addressed to the Office of the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemaking and Adjudications Staff; or (2) courier, express mail, or expedited delivery service to the Office of the Secretary, Sixteenth Floor, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852, Attention: Rulemaking and Adjudications Staff. Participants filing a document in this manner are responsible for serving the document on all other participants. Filing is considered complete by First Class mail as of the time of deposit in the mail, or by courier, express mail, or expedited delivery service on depositing the document with the provider of the service. A presiding officer, having granted an exemption request from using E-Filing, may require a participant or party to use E-Filing if the presiding officer subsequently determines that the

reason for granting the exemption from use of E-Filing no longer exists.

Documents submitted in adjudicatory proceedings will appear in the NRC's electronic hearing docket, available to the public at <http://ehd1.nrc.gov/ehd/>, unless they are excluded under an order of the Commission or by the presiding officer. Participants are requested not to include personally private information such as social security numbers, home addresses, or home phone numbers in their filings unless an NRC regulation or other law requires submission of such information. With respect to copyrighted works, except for limited excerpts that serve the purpose of the adjudicatory filings and would constitute a Fair Use application, participants are requested not to include copyrighted materials in their submission.

If a person other than the licensee requests a hearing, that person shall set forth with particularity the manner in which his or her interest is adversely affected by this order and shall address the criteria set forth in 10 CFR 2.309(d) and (f).

In the absence of any request for hearing or of written approval of an extension of time in which to request a hearing, the provisions specified in Section IV above shall be final 20 days from the date of this order without further order or proceedings. If an extension of time for requesting a hearing has been approved, the provisions specified in Section IV shall be final when the extension expires if a hearing request has not been received.

Dated at Rockville, Maryland, this 5th day of January 2016.

FOR THE NUCLEAR REGULATORY COMMISSION.

/RA/

William M. Dean,
Director, Office of Nuclear Reactor Regulation.

/RA/

Scott W. Moore,
Acting Director, Office of Nuclear Material Safety and Safeguards.

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

**In the Matter of Entergy Nuclear
FitzPatrick, LLC, and Entergy Nuclear
Operations, Inc. (James A. Fitzpatrick
Nuclear Power Plant)**

Docket Nos. 50-333 and 72-12

License No. DPR-59

EA-14-137

**CONFIRMATORY ORDER
MODIFYING LICENSE****I.**

Entergy Nuclear FitzPatrick, LLC, is the owner and Entergy Nuclear Operations, Inc. ("Entergy" or "the licensee") is the operator of the James A. Fitzpatrick Nuclear Power Plant, including the general-licensed Independent Spent Fuel Storage Installation (hereinafter "JAFNPP" or "the facility"), and holder of Provisional Renewed Facility Operating License No. DPR-59 and Docket No. 72-12 issued by the U.S. Nuclear Regulatory Commission ("NRC" or "Commission") under Title 10, "Energy," of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities"; Part 70, "Domestic Licensing of Special Nuclear Material"; and Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste." The license authorizes the operation of JAFNPP with the conditions specified therein. The facility is located on the owner's site in Oswego County, New York.

II.

By application dated August 30, 2013, as supplemented by letters dated November 12, 2013, and May 14 and July 11, 2014, Entergy requested, under Commission Order EA-13-092, that under the provisions of Section 161A of the Atomic Energy Act of 1954, as amended, the Commission permit the transfer, receipt, possession, transport, import, and use of certain firearms and large-capacity ammunition-feeding devices by security personnel who protect a facility owned or operated by a licensee or certificate holder of the Commission that is designated by the Commission. Section 161A confers on the Commission the authority to permit a licensee's security personnel to possess and use firearms, ammunition or devices, notwithstanding local, State, and certain Federal firearms laws (including regulations) that may prohibit such possession and use.

On review of the Entergy application for Commission authorization to use Section 161A preemption authority at JAFNPP, the NRC staff has found the following:

(1) Entergy's application complies with the standards and requirements of Section 161A and the Commission's rules and regulations set forth in 10 CFR part 73, "Physical Protection of Plants and Materials";

(2) There is reasonable assurance that the facilities will operate in conformance to the application; the provisions of the Atomic Energy Act of 1954, as amended; and the rules and regulations of the Commission;

(3) There is reasonable assurance that the activities permitted by the proposed Commission authorization to use Section 161A preemption authority are consistent with the protection of public health and safety, and that such activities will be conducted in compliance with the Commission's regulations and the requirements of this confirmatory order;

(4) The issuance of Commission authorization to use Section 161A preemption authority will not be inimical to the common defense and security or to the health and safety of the public; and

(5) The issuance of this Commission authorization to use Section 161A preemption authority will be in accordance with the Commission's regulations in 10 CFR part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions."

The findings, set forth above, are supported by an NRC staff safety evaluation under Agencywide Documents Access and Management System (ADAMS) Accession No. ML14259A164.

III.

To carry out the statutory authority discussed above, the Commission has determined that the license for JAFNPP must be modified to include provisions with respect to the Commission authorization to use Section 161A preemption authority as identified in Section II of this confirmatory order. The requirements needed to exercise the foregoing are set forth in Section IV below.

The NRC staff has found that the license modifications set forth in Section IV are acceptable and necessary. It further concluded that, with the effective implementation of these provisions, the licensee's physical protection program will meet the specific physical protection program requirements set forth in 10 CFR 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage" (for nuclear power reactors); and in 10 CFR 72.212(b)(9), "Conditions of the General License Issued Under § 72.210," and portions of 10 CFR 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage" (for general-license independent spent

fuel storage installations co-located with a reactor at the reactor site).

On January 15, 2015, Entergy consented to the issuance of this order. The licensee further agreed that this order will be effective 20 days after the date of issuance and that it has waived its right to a hearing on this order.

IV.

Accordingly, under Sections 53, 103 and/or 104b, 161b, 161i, 161o, 161A, 182, and 186 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR 2.202, "Orders"; 10 CFR part 50; 10 CFR part 70; and 10 CFR part 72, IT IS HEREBY ORDERED that:

1. The Entergy application for Commission authorization to use Section 161A preemption authority at JAFNPP is approved and permission for security personnel to possess and use weapons, devices, ammunition, or other firearms, notwithstanding local, State, and certain Federal firearms laws (including regulations) that may prohibit such possession and use, is granted.

2. The licensee shall review and revise its NRC-approved security plans, as necessary, to describe how the requirements of this confirmatory order and other applicable requirements of 10 CFR part 73, "Physical Protection of Plants and Materials," to include those of the appendices to 10 CFR part 73, will be met.

3. The licensee shall establish and maintain a program consistent with Commission Order EA-13-092 such that all security personnel who require access to firearms in the discharge of their official duties are subject to a firearms background check.

The Commission is engaged in an ongoing rulemaking to implement the Commission's authority under Section 161A. Subsequent to the effective date of that final rulemaking, the Director, Office of Nuclear Reactor Regulation (NRR) may take action to relax or rescind any or all of the requirements set forth in this confirmatory order.

The Director, NRR, may, in writing, relax or rescind this confirmatory order on demonstration by the licensee of good cause.

This confirmatory order is effective 20 days after the date of its issuance.

For further details with respect to this confirmatory order, see the staff's safety evaluation contained in a letter dated January 5, 2016 (ADAMS Accession No. ML14259A164), which is available for public inspection at the Commission's Public Document Room (PDR), located at One White Flint North, Public File

Area 01 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available documents created or received at the NRC are accessible electronically through ADAMS in the NRC Library at <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents stored in ADAMS should contact the NRC PDR reference staff by telephone at 1-800-397-4209 or 301-415-4737, or by email to pdr.resource@nrc.gov.

In accordance with 10 CFR 2.202, any other person adversely affected by this order may submit an answer to this order within 20 days of its publication in the **Federal Register**. In addition, any other person adversely affected by this order may request a hearing on this order within 20 days of its publication in the **Federal Register**. Where good cause is shown, consideration will be given to extending the time to answer or request a hearing. A request for extension of time must be directed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, and must include a statement of good cause for the extension.

If a hearing is requested by a person whose interest is adversely affected, the Commission will issue an order designating the time and place of any hearings. If a hearing is held, the issue to be considered at such hearing shall be whether this order should be sustained.

All documents filed in NRC adjudicatory proceedings, including a request for hearing, a petition for leave to intervene, any motion or other document filed in the proceeding before the submission of a request for hearing or petition to intervene, and documents filed by interested governmental entities participating under 10 CFR 2.315(c), must be filed in accordance with the NRC E-Filing rule (published at 72 FR 49139, on August 28, 2007). The E-Filing process requires participants to submit and serve all adjudicatory documents over the internet, or in some cases to mail copies on electronic storage media. Participants may not submit paper copies of their filings unless they seek an exemption in accordance with the procedures described below.

To comply with the procedural requirements of E-Filing, the participant should contact the Office of the Secretary (at least 10 days before the filing deadline) by email to hearing.docket@nrc.gov or by telephone at (301) 415-1677 to (1) request a digital ID certificate, which allows the participants (or its counsel or representative) to digitally sign documents and access the E-Submittal

server for any proceeding in which it is participating; and (2) advise the Secretary that the participant will be submitting a request or petition for hearing (even in instances in which the participant, or its counsel or representative, already holds an NRC-issued digital ID certificate). Based on this information, the Secretary will establish an electronic docket for the hearing in this proceeding if the Secretary has not already established an electronic docket.

Information about applying for a digital ID certificate is available on NRC's public Web site at <http://www.nrc.gov/site-help/e-submittals/getting-started.html>. System requirements for accessing the E-Submittal server are detailed in NRC's "Guidance for Electronic Submission," which is available on the agency's public Web site at <http://www.nrc.gov/site-help/e-submittals.html>. Participants may attempt to use other software not listed on the Web site to file documents, but should note that the NRC's E-Filing system does not support unlisted software and that the NRC Meta System Help Desk will not be able to offer assistance in using unlisted software.

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Once a participant has obtained a digital ID certificate and a docket has been created, the participant can then submit a request for hearing or petition for leave to intervene. Submissions should be Portable Document Format (PDF) documents in accordance with NRC guidance available on the NRC public Web site at <http://www.nrc.gov/site-help/e-submittals.html>. A filing is considered complete at the time the documents are submitted through the NRC's E-Filing system. To be timely, an electronic filing must be submitted to the E-Filing system no later than 11:59 p.m. eastern time on the due date. On receipt of a transmission, the E-Filing system time-stamps the document and sends the submitter an email notice confirming receipt of the document. The E-Filing system also distributes an email notice that provides access to the

document to the NRC's Office of the General Counsel and any others who have advised the Office of the Secretary that they wish to participate in the proceeding, so that the filer need not serve the documents on those participants separately. Therefore, applicants and other participants (or their counsel or representative) must apply for and receive a digital ID certificate before a hearing request or petition to intervene is filed so that they can obtain access to the filed documents through the E-Filing system.

A person filing electronically using the agency's adjudicatory E-Filing system may seek assistance by contacting the NRC Meta System Help Desk through the "Contact Us" link located on the NRC Web site at <http://www.nrc.gov/site-help/e-submittals.html>, by email to MSHD.Resource@nrc.gov, or by a toll-free call to (866) 672-7640. The NRC Meta System Help Desk is available between 8 a.m. and 8 p.m. eastern time, Monday through Friday, excluding Government holidays.

Participants who believe that they have a good cause for not submitting documents electronically must file an exemption request, in accordance with 10 CFR 2.302(g), with their initial paper filing requesting authorization to continue to submit documents in paper format. Such filings must be submitted by: (1) First Class mail addressed to the Office of the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemaking and Adjudications Staff; or (2) courier, express mail, or expedited delivery service to the Office of the Secretary, Sixteenth Floor, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852, Attention: Rulemaking and Adjudications Staff. Participants filing a document in this manner are responsible for serving the document on all other participants. Filing is considered complete by First Class mail as of the time of deposit in the mail, or by courier, express mail, or expedited delivery service on depositing the document with the provider of the service. A presiding officer, having granted an exemption request from using E-Filing, may require a participant or party to use E-Filing if the presiding officer subsequently determines that the reason for granting the exemption from use of E-Filing no longer exists.

Documents submitted in adjudicatory proceedings will appear in the NRC's electronic hearing docket, available to the public at <http://ehd1.nrc.gov/ehd/>, unless they are excluded under an order of the Commission or by the presiding

officer. Participants are requested not to include personally private information such as social security numbers, home addresses, or home phone numbers in their filings unless an NRC regulation or other law requires submission of such information. With respect to copyrighted works, except for limited excerpts that serve the purpose of the adjudicatory filings and would constitute a Fair Use application, participants are requested not to include copyrighted materials in their submission.

If a person other than the licensee requests a hearing, that person shall set forth with particularity the manner in which his or her interest is adversely affected by this order and shall address the criteria set forth in 10 CFR 2.309(d) and (f).

In the absence of any request for hearing or of written approval of an extension of time in which to request a hearing, the provisions specified in Section IV above shall be final 20 days from the date of this order without further order or proceedings. If an extension of time for requesting a hearing has been approved, the provisions specified in Section IV shall be final when the extension expires if a hearing request has not been received.

Dated at Rockville, Maryland, this 5th day of January 2016.

FOR THE NUCLEAR REGULATORY COMMISSION.

/RA/

William M. Dean,
Director, Office of Nuclear Reactor Regulation.

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY
COMMISSION**

**In the Matter of Exelon Generation
Company, LLC (Nine Mile Point
Nuclear Station, Units 1 and 2)**

**Docket Nos. 50–220, 50–410, and 72–
1036**

**License Nos. DPR–63 and NPF–69
EA–14–138**

**CONFIRMATORY ORDER
MODIFYING LICENSE**

I.

Exelon Generation Company, LLC (Exelon, or the licensee) is the owner and operator of Nine Mile Point Nuclear Station, Units 1 and 2, including the general-licensed Independent Spent Fuel Storage Installation (hereinafter NMPNS or the facility), and holder of Provisional Facility Operating Licenses Nos. DPR–63, NPR–69, and Docket No.

72–1036 issued by the U.S. Nuclear Regulatory Commission (NRC or Commission) under Title 10 “Energy,” of the *Code of Federal Regulations* (10 CFR) Part 50, “Domestic Licensing of Production and Utilization Facilities,” Part 70, “Domestic Licensing of Special Nuclear Material;” and Part 72, “Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste.” The licenses authorize the operation of NMPNS with the conditions specified therein. The facility is located on the owner’s site in Oswego County, New York.

II.

By application dated August 14, 2013, as supplemented by letters dated September 10, 2013, and May 14, 2014, Exelon requested, under Commission Order EA–13–092, that under the provisions of Section 161A of the Atomic Energy Act of 1954, as amended, the Commission permit the transfer, receipt, possession, transport, import, and use of certain firearms and large-capacity ammunition-feeding devices by security personnel who protect a facility owned or operated by a licensee or certificate holder of the Commission that is designated by the Commission. Section 161A confers on the Commission the authority to permit a licensee’s security personnel to possess and use firearms, ammunition or devices, notwithstanding local, State, and certain Federal firearms laws (including regulations) that may prohibit such possession and use.

On review of the Exelon application for Commission authorization to use Section 161A preemption authority at NMPNS, the NRC staff has found the following:

(1) The Exelon application complies with the standards and requirements of Section 161A and the Commission’s rules and regulations set forth in 10 CFR part 73, “Physical Protection of Plants and Materials”;

(2) There is reasonable assurance that the facilities will operate in conformance to the application; the provisions of the Atomic Energy Act of 1954, as amended; and the rules and regulations of the Commission;

(3) There is reasonable assurance that the activities permitted by the proposed Commission authorization to use Section 161A preemption authority are consistent with the protection of public health and safety, and that such activities will be conducted in compliance with the Commission’s regulations and the requirements of this confirmatory order;

(4) The issuance of Commission authorization to use Section 161A preemption authority will not be inimical to the common defense and security or to the health and safety of the public; and

(5) The issuance of this Commission authorization to use Section 161A preemption authority will be in accordance with the Commission’s regulations in 10 CFR part 51, “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions.”

The findings set forth above are supported by an NRC staff safety evaluation under Agencywide Documents Access and Management System (ADAMS) Accession No. ML14254A450.

III.

To carry out the statutory authority discussed above, the Commission has determined that the license for NMPNS must be modified to include provisions with respect to the Commission authorization to use Section 161A preemption authority as identified in Section II of this confirmatory order. The requirements needed to exercise the foregoing are set forth in Section IV below.

The NRC staff has found that the license modifications set forth in Section IV are acceptable and necessary. It further concluded that, with the effective implementation of these provisions, the licensee’s physical protection program will meet the specific physical protection program requirements set forth in 10 CFR 73.55, “Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage” (for nuclear power reactors); and in 10 CFR 72.212(b)(9), “Conditions of the General License Issued Under § 72.210,” and portions of 10 CFR 73.55, “Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage” (for general-license independent spent fuel storage installations co-located with a reactor at the reactor site).

On January 16, 2015, Exelon consented to the issuance of this order. The licensee further agreed that this order will be effective 20 days after the date of issuance and that it has waived its right to a hearing on this order.

IV.

Accordingly, under Sections 53, 103 and/or 104b, 161b, 161i, 161o, 161A, 182, and 186 of the Atomic Energy Act of 1954, as amended, and the Commission’s regulations in 10 CFR 2.202, “Orders”; 10 CFR part 50; 10 CFR

part 70; and 10 CFR part 72, IT IS HEREBY ORDERED that:

1. The Exelon application for Commission authorization to use Section 161A preemption authority at NMPNS is approved and permission for security personnel to possess and use weapons, devices, ammunition, or other firearms, notwithstanding local, State, and certain Federal firearms laws (including regulations) that may prohibit such possession and use, is granted.

2. The licensee shall review and revise its NRC-approved security plans, as necessary, to describe how the requirements of this confirmatory order and other applicable requirements of 10 CFR part 73, "Physical Protection of Plants and Materials," to include those of the appendices to 10 CFR part 73, will be met.

3. The licensee shall establish and maintain a program consistent with Commission Order EA-13-092 such that all security personnel who require access to firearms in the discharge of their official duties are subject to a firearms background check.

The Commission is engaged in an ongoing rulemaking to implement the Commission's authority under Section 161A. Subsequent to the effective date of that final rulemaking, the Director, Office of Nuclear Reactor Regulation (NRR), may take action to relax or rescind any or all of the requirements set forth in this confirmatory order.

The Director, NRR, may, in writing, relax or rescind this confirmatory order on demonstration by the licensee of good cause.

This confirmatory order is effective 20 days after the date of its issuance.

For further details with respect to this confirmatory order, see the staff's safety evaluation contained in a letter dated January 5, 2016 (ADAMS Accession No. ML14254A450), which is available for public inspection at the Commission's Public Document Room (PDR), located at One White Flint North, Public File Area 01 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available documents created or received at the NRC are accessible electronically through ADAMS in the NRC Library at <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents stored in ADAMS should contact the NRC PDR reference staff by telephone at 1-800-397-4209 or 301-415-4737, or by email to pdr.resource@nrc.gov.

In accordance with 10 CFR 2.202, any other person adversely affected by this order may submit an answer to this order within 20 days of its publication

in the **Federal Register**. In addition, any other person adversely affected by this order may request a hearing on this order within 20 days of its publication in the **Federal Register**. Where good cause is shown, consideration will be given to extending the time to answer or request a hearing. A request for extension of time must be directed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, and must include a statement of good cause for the extension.

If a hearing is requested by a person whose interest is adversely affected, the Commission will issue an order designating the time and place of any hearings. If a hearing is held, the issue to be considered at such hearing shall be whether this order should be sustained.

All documents filed in NRC adjudicatory proceedings, including a request for hearing, a petition for leave to intervene, any motion or other document filed in the proceeding before the submission of a request for hearing or petition to intervene, and documents filed by interested governmental entities participating under 10 CFR 2.315(c), must be filed in accordance with the NRC E-Filing rule (published at 72 FR 49139, on August 28, 2007). The E-Filing process requires participants to submit and serve all adjudicatory documents over the internet, or in some cases to mail copies on electronic storage media. Participants may not submit paper copies of their filings unless they seek an exemption in accordance with the procedures described below.

To comply with the procedural requirements of E-Filing, the participant should contact the Office of the Secretary (at least 10 days before the filing deadline) by email to hearing.docket@nrc.gov or by telephone at (301) 415-1677 to (1) request a digital ID certificate, which allows the participants (or its counsel or representative) to digitally sign documents and access the E-Submittal server for any proceeding in which it is participating; and (2) advise the Secretary that the participant will be submitting a request or petition for hearing (even in instances in which the participant, or its counsel or representative, already holds an NRC-issued digital ID certificate). Based on this information, the Secretary will establish an electronic docket for the hearing in this proceeding if the Secretary has not already established an electronic docket.

Information about applying for a digital ID certificate is available on NRC's public Web site at <http://www.nrc.gov/site-help/e-submittals/>

[getting-started.html](http://www.nrc.gov/site-help/e-submittals.html). System requirements for accessing the E-Submittal server are detailed in NRC's "Guidance for Electronic Submission," which is available on the agency's public Web site at <http://www.nrc.gov/site-help/e-submittals.html>. Participants may attempt to use other software not listed on the Web site to file documents, but should note that the NRC's E-Filing system does not support unlisted software and that the NRC Meta System Help Desk will not be able to offer assistance in using unlisted software.

If a participant is electronically submitting a document to the NRC in accordance with the E-Filing rule, the participant must file the document using the NRC's Web-based online submission form. In order to serve documents through the Electronic Information Exchange, users will be required to install a web browser plug-in from the NRC Web site. Further information on the Web-based submission form, including the installation of the Web browser plug-in, is available on the NRC's public Web site at <http://www.nrc.gov/site-help/e-submittals.html>.

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A person filing electronically using the agency's adjudicatory E-Filing system may seek assistance by

contacting the NRC Meta System Help Desk through the "Contact Us" link located on the NRC Web site at <http://www.nrc.gov/site-help/e-submittals.html>, by email to MSHD.Resource@nrc.gov, or by a toll-free call to (866) 672-7640. The NRC Meta System Help Desk is available between 8 a.m. and 8 p.m. eastern time, Monday through Friday, excluding Government holidays.

Participants who believe that they have a good cause for not submitting documents electronically must file an exemption request, in accordance with 10 CFR 2.302(g), with their initial paper filing requesting authorization to continue to submit documents in paper format. Such filings must be submitted by: (1) First Class mail addressed to the Office of the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemaking and Adjudications Staff; or (2) courier, express mail, or expedited delivery service to the Office of the Secretary, Sixteenth Floor, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852, Attention: Rulemaking and Adjudications Staff. Participants filing a document in this manner are responsible for serving the document on all other participants. Filing is considered complete by First Class mail as of the time of deposit in the mail, or by courier, express mail, or expedited delivery service on depositing the document with the provider of the service. A presiding officer, having granted an exemption request from using E-Filing, may require a participant or party to use E-Filing if the presiding officer subsequently determines that the reason for granting the exemption from use of E-Filing no longer exists.

Documents submitted in adjudicatory proceedings will appear in the NRC's electronic hearing docket, available to the public at <http://ehd1.nrc.gov/ehd/>, unless they are excluded under an order of the Commission or by the presiding officer. Participants are requested not to include personally private information such as social security numbers, home addresses, or home phone numbers in their filings unless an NRC regulation or other law requires submission of such information. With respect to copyrighted works, except for limited excerpts that serve the purpose of the adjudicatory filings and would constitute a Fair Use application, participants are requested not to include copyrighted materials in their submission.

If a person other than the licensee requests a hearing, that person shall set forth with particularity the manner in

which his or her interest is adversely affected by this order and shall address the criteria set forth in 10 CFR 2.309(d) and (f).

In the absence of any request for hearing or of written approval of an extension of time in which to request a hearing, the provisions specified in Section IV above shall be final 20 days from the date of this order without further order or proceedings. If an extension of time for requesting a hearing has been approved, the provisions specified in Section IV shall be final when the extension expires if a hearing request has not been received.

Dated at Rockville, Maryland, this 5th day of January 2016.

FOR THE NUCLEAR REGULATORY COMMISSION.

/RA/

William M. Dean,

Director, Office of Nuclear Reactor Regulation.

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY
COMMISSION**

**In the Matter of Exelon Generation
Company, LLC (R.E. Ginna Nuclear
Power Plant)**

Docket Nos. 50-244 and 72-67

License No. DPR-18

EA-14-139

**CONFIRMATORY ORDER
MODIFYING LICENSE**

I.

Exelon Generation Company, LLC (Exelon, or the licensee) is the owner and operator of R.E. Ginna Nuclear Power Plant (Ginna), including the general-licensed Independent Spent Fuel Storage Installation (hereinafter Ginna or the facility), and holder of Provisional Renewed Facility Operating Licenses No. DPR-18 and Docket No. 72-67 issued by the U.S. Nuclear Regulatory Commission (NRC or Commission) under Title 10, "Energy," of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," Part 70, "Domestic Licensing of Special Nuclear Material;" and Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste." The license authorizes the operation of Ginna with the conditions specified therein. The facility is located on the owner's site in Wayne County, New York.

II.

By application dated August 14, 2013, as supplemented by letters dated November 4, 2013, and May 14, 2014, Exelon requested, under Commission Order (EA-13-092), that under the provisions of Section 161A of the Atomic Energy Act of 1954, as amended, the Commission permit the transfer, receipt, possession, transport, import, and use of certain firearms and large capacity ammunition feeding devices, by security personnel who protect a facility owned or operated by a licensee or certificate holder of the Commission that is designated by the Commission. Section 161A confers on the Commission the authority to permit a licensee's security personnel to possess and use firearms, ammunition or devices, notwithstanding local, State, and certain Federal firearms laws (including regulations) that may prohibit such possession and use.

On review of the Exelon application for Commission authorization to use Section 161A preemption authority at Ginna, the NRC staff has found the following:

(1) The Exelon application complies with the standards and requirements of Section 161A and the Commission's rules and regulations set forth in 10 CFR part 73, "Physical Protection of Plants and Materials;"

(2) There is reasonable assurance that the facilities will operate in conformance to the application; the provisions of the Atomic Energy Act of 1954, as amended; and the rules and regulations of the Commission;

(3) There is reasonable assurance that the activities permitted by the proposed Commission authorization to use Section 161A preemption authority are consistent with the protection of public health and safety, and that such activities will be conducted in compliance with the Commission's regulations and the requirements of this confirmatory order;

(4) The issuance of Commission authorization to use Section 161A preemption authority will not be inimical to the common defense and security or to the health and safety of the public; and

(5) The issuance of this Commission authorization to use Section 161A preemption authority will be in accordance with the Commission's regulations in 10 CFR part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions."

The findings, set forth above, are supported by an NRC staff safety evaluation under Agencywide

Documents Access and Management System (ADAMS) Accession No. ML14260A166.

III.

To carry out the statutory authority discussed above, the Commission has determined that the license for Ginna, must be modified to include provisions with respect to the Commission authorization to use Section 161A preemption authority as identified in Section II of this confirmatory order. The requirements needed to exercise the foregoing are set forth in Section IV below.

The NRC staff has found that the license modifications set forth in Section IV are acceptable and necessary. It further concluded that, with the effective implementation of these provisions, the licensee's physical protection program will meet the specific physical protection program requirements set forth in 10 CFR 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage" (for nuclear power reactors); and in 10 CFR 72.212(b)(9), "Conditions of the General License Issued Under § 72.210," and portions of 10 CFR 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage" (for general-license independent spent fuel storage installations co-located with a reactor at the reactor site).

On January 16, 2015, Exelon consented to the issuance of this order. The licensee further agreed that this order will be effective 20 days after the date of issuance and that it has waived its right to a hearing on this order.

IV.

Accordingly, under Sections 53, 103 and/or 104b, 161b, 161i, 161o, 161A, 182, and 186 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR 2.202, "Orders"; 10 CFR part 50; 10 CFR part 70; and 10 CFR part 72, IT IS HEREBY ORDERED that:

1. The Exelon application for Commission authorization to use Section 161A preemption authority at Ginna is approved and permission for security personnel to possess and use weapons, devices, ammunition, or other firearms, notwithstanding local, State, and certain Federal firearms laws (including regulations) that may prohibit such possession and use, is granted.

2. The licensee shall review and revise its NRC-approved security plans, as necessary, to describe how the requirements of this confirmatory order

and other applicable requirements of 10 CFR part 73, "Physical Protection of Plants and Materials," to include those of the appendices to 10 CFR part 73, will be met.

3. The licensee shall establish and maintain a program consistent with Commission Order EA-13-092 such that all security personnel who require access to firearms in the discharge of their official duties are subject to a firearms background check.

The Commission is engaged in an ongoing rulemaking to implement the Commission's authority under Section 161A. Subsequent to the effective date of that final rulemaking, the Director, Office of Nuclear Reactor Regulation (NRR) may take action to relax or rescind any or all of the requirements set forth in this confirmatory order.

The Director, NRR, may, in writing, relax or rescind this confirmatory order on demonstration by the licensee of good cause.

This confirmatory order is effective 20 days after the date of its issuance.

For further details with respect to this confirmatory order, see the staff's safety evaluation contained in a letter dated January 5, 2016 (ADAMS Accession Nos. ML14260A166 and ML14260A151), which is available for public inspection at the Commission's Public Document Room (PDR), located at One White Flint North, Public File Area 01 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available documents created or received at the NRC are accessible electronically through ADAMS in the NRC Library at <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents stored in ADAMS should contact the NRC PDR reference staff by telephone at 1-800-397-4209 or 301-415-4737, or by email to pdr.resource@nrc.gov.

In accordance with 10 CFR 2.202, any other person adversely affected by this order may submit an answer to this order within 20 days of its publication in the **Federal Register**. In addition, any other person adversely affected by this order may request a hearing on this order within 20 days of its publication in the **Federal Register**. Where good cause is shown, consideration will be given to extending the time to answer or request a hearing. A request for extension of time must be directed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, and must include a statement of good cause for the extension.

If a hearing is requested by a person whose interest is adversely affected, the Commission will issue an order

designating the time and place of any hearings. If a hearing is held, the issue to be considered at such hearing shall be whether this order should be sustained.

All documents filed in NRC adjudicatory proceedings, including a request for hearing, a petition for leave to intervene, any motion or other document filed in the proceeding before the submission of a request for hearing or petition to intervene, and documents filed by interested governmental entities participating under 10 CFR 2.315(c), must be filed in accordance with the NRC E-Filing rule (published at 72 FR 49139, on August 28, 2007). The E-Filing process requires participants to submit and serve all adjudicatory documents over the internet, or in some cases to mail copies on electronic storage media. Participants may not submit paper copies of their filings unless they seek an exemption in accordance with the procedures described below.

To comply with the procedural requirements of E-Filing, the participant should contact the Office of the Secretary (at least 10 days before the filing deadline) by email to hearing.docket@nrc.gov or by telephone at (301) 415-1677 to (1) request a digital ID certificate, which allows the participants (or its counsel or representative) to digitally sign documents and access the E-Submittal server for any proceeding in which it is participating; and (2) advise the Secretary that the participant will be submitting a request or petition for hearing (even in instances in which the participant, or its counsel or representative, already holds an NRC-issued digital ID certificate). Based on this information, the Secretary will establish an electronic docket for the hearing in this proceeding if the Secretary has not already established an electronic docket.

Information about applying for a digital ID certificate is available on NRC's public Web site at <http://www.nrc.gov/site-help/e-submittals/getting-started.html>. System requirements for accessing the E-Submittal server are detailed in NRC's "Guidance for Electronic Submission," which is available on the agency's public Web site at <http://www.nrc.gov/site-help/e-submittals.html>. Participants may attempt to use other software not listed on the Web site to file documents, but should note that the NRC's E-Filing system does not support unlisted software and that the NRC Meta System Help Desk will not be able to offer assistance in using unlisted software.

If a participant is electronically submitting a document to the NRC in

accordance with the E-Filing rule, the participant must file the document using the NRC's Web-based online submission form. In order to serve documents through the Electronic Information Exchange, users will be required to install a web browser plug-in from the NRC Web site. Further information on the Web-based submission form, including the installation of the Web browser plug-in, is available on the NRC's public Web site at <http://www.nrc.gov/site-help/e-submittals.html>.

Once a participant has obtained a digital ID certificate and a docket has been created, the participant can then submit a request for hearing or petition for leave to intervene. Submissions should be Portable Document Format (PDF) documents in accordance with NRC guidance available on the NRC public Web site at <http://www.nrc.gov/site-help/e-submittals.html>. A filing is considered complete at the time the documents are submitted through the NRC's E-Filing system. To be timely, an electronic filing must be submitted to the E-Filing system no later than 11:59 p.m. eastern time on the due date. On receipt of a transmission, the E-Filing system time-stamps the document and sends the submitter an email notice confirming receipt of the document. The E-Filing system also distributes an email notice that provides access to the document to the NRC's Office of the General Counsel and any others who have advised the Office of the Secretary that they wish to participate in the proceeding, so that the filer need not serve the documents on those participants separately. Therefore, applicants and other participants (or their counsel or representative) must apply for and receive a digital ID certificate before a hearing request or petition to intervene is filed so that they can obtain access to the filed documents through the E-Filing system.

A person filing electronically using the agency's adjudicatory E-Filing system may seek assistance by contacting the NRC Meta System Help Desk through the "Contact Us" link located on the NRC Web site at <http://www.nrc.gov/site-help/e-submittals.html>, by email to MSHD.Resource@nrc.gov, or by a toll-free call to (866) 672-7640. The NRC Meta System Help Desk is available between 8 a.m. and 8 p.m. eastern time, Monday through Friday, excluding Government holidays.

Participants who believe that they have a good cause for not submitting documents electronically must file an exemption request, in accordance with 10 CFR 2.302(g), with their initial paper

filing requesting authorization to continue to submit documents in paper format. Such filings must be submitted by: (1) First Class mail addressed to the Office of the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemaking and Adjudications Staff; or (2) courier, express mail, or expedited delivery service to the Office of the Secretary, Sixteenth Floor, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852, Attention: Rulemaking and Adjudications Staff. Participants filing a document in this manner are responsible for serving the document on all other participants. Filing is considered complete by First Class mail as of the time of deposit in the mail, or by courier, express mail, or expedited delivery service on depositing the document with the provider of the service. A presiding officer, having granted an exemption request from using E-Filing, may require a participant or party to use E-Filing if the presiding officer subsequently determines that the reason for granting the exemption from use of E-Filing no longer exists.

Documents submitted in adjudicatory proceedings will appear in the NRC's electronic hearing docket, available to the public at <http://ehd1.nrc.gov/ehd/>, unless they are excluded under an order of the Commission or by the presiding officer. Participants are requested not to include personally private information such as social security numbers, home addresses, or home phone numbers in their filings unless an NRC regulation or other law requires submission of such information. With respect to copyrighted works, except for limited excerpts that serve the purpose of the adjudicatory filings and would constitute a Fair Use application, participants are requested not to include copyrighted materials in their submission.

If a person other than the licensee requests a hearing, that person shall set forth with particularity the manner in which his or her interest is adversely affected by this order and shall address the criteria set forth in 10 CFR 2.309(d) and (f).

In the absence of any request for hearing or of written approval of an extension of time in which to request a hearing, the provisions specified in Section IV above shall be final 20 days from the date of this order without further order or proceedings. If an extension of time for requesting a hearing has been approved, the provisions specified in Section IV shall be final when the extension expires if a hearing request has not been received.

Dated at Rockville, Maryland, this 5th day of January 2016.

FOR THE NUCLEAR REGULATORY COMMISSION.

/RA/

William M. Dean,
Director, Office of Nuclear Reactor Regulation.

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of Pacific Gas and Electric Company (Diablo Canyon Nuclear Power Plant, Units 1 and 2, and DCPPI Independent Spent Fuel Storage Installation)

Docket Nos. 50-275, 50-323, and 72-26

License Nos. DPR-80, DPR-82, and SNM-2511

EA-14-140

**CONFIRMATORY ORDER
MODIFYING LICENSE**

I.

Pacific Gas and Electric Company (PG&E), is the owner and operator of Diablo Canyon Nuclear Power Plant Units 1 and 2, including the specific-license Independent Spent Fuel Storage Installation (hereinafter "DCNPP" or "the facility"), and holder of Facility Operating License Nos. DPR-80, DPR-82, and SNM-2511 issued by the U.S. Nuclear Regulatory Commission ("NRC" or "Commission") under Title 10, "Energy," of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities"; Part 70, "Domestic Licensing of Special Nuclear Material"; and Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste." The licenses authorize the operation of DCNPP with the conditions specified therein. The facilities are located on the owner's site in San Luis Obispo County, California.

II.

By application dated September 24, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13268A398), as supplemented by letters dated December 18, 2013 (security-related), May 15, 2014 (ADAMS Accession No. ML14135A379), and March 26, 2015 (ADAMS Accession No. ML15090A278), PG&E requested, under Commission Order EA-13-092, that under the provisions of Section 161A of the Atomic Energy Act of 1954, as amended, the Commission permit the transfer,

receipt, possession, transport, import, and use of certain firearms and large-capacity ammunition-feeding devices by security personnel who protect a facility owned or operated by a licensee or certificate holder of the Commission that is designated by the Commission. Section 161A confers on the Commission the authority to permit a licensee's security personnel to possess and use firearms, ammunition, or devices, notwithstanding State, local, and certain Federal firearms laws that may prohibit such possession and use.

On review of the PG&E application for Commission authorization to use Section 161A Preemption authority at DCNPP, the NRC staff has found the following:

(1) PG&E's application complies with the standards and requirements of Section 161A and the Commission's rules and regulations set forth in 10 CFR part 73, "Physical Protection of Plants and Materials."

(2) There is reasonable assurance that the facilities will operate in conformance to the application; the provisions of the Atomic Energy Act of 1954, as amended; and the rules and regulations of the Commission.

(3) There is reasonable assurance that the activities permitted by the proposed Commission authorization to use Section 161A preemption authority is consistent with the protection of public health and safety, and that such activities will be conducted in compliance with the Commission's regulations and the requirements of this confirmatory order.

(4) The issuance of Commission authorization to use Section 161A preemption authority will not be inimical to the common defense and security or to the health and safety of the public, and

(5) The issuance of this Commission authorization to use Section 161A preemption authority will be in accordance with the Commission's regulations in 10 CFR part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions."

The findings set forth above are supported by an NRC staff safety evaluation under Accession Number ML15029A249.

III.

To carry out the statutory authority discussed above, the Commission has determined that the licenses for DCNPP must be modified to include provisions with respect to the Commission authorization to use Section 161A preemption authority as identified in Section II of this confirmatory order.

The requirements needed to exercise the foregoing are set forth in Section IV below.

The NRC staff has found that the license modifications set forth in Section IV are acceptable and necessary. It further concluded that, with the effective implementation of these provisions, the licensee's physical protection program will meet the specific physical protection program requirements set forth in 10 CFR 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage" (for nuclear power reactors) and 10 CFR 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage" (for specific-license independent spent fuel storage installations co-located with a reactor at the reactor site).

On March 26, 2015, PG&E consented to the issuance of this order. The licensee further agreed that this order will be effective 20 days after the date of issuance and that it has waived its right to a hearing on this order.

IV.

Accordingly, under Sections 53, 103 and/or 104b, 161b, 161i, 161o, 161A, 182, and 186 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR 2.202, "Orders"; 10 CFR part 50; 10 CFR part 70; and 10 CFR part 72, IT IS HEREBY ORDERED that:

1. The PG&E application for Commission authorization to use Section 161A preemption authority at DCNPP is approved, and permission for security personnel to possess and use weapons, devices, ammunition, or other firearms, notwithstanding local, State, and certain Federal firearms laws (including regulations) that may prohibit such possession and use, is granted.

2. The licensee shall review and revise its NRC-approved security plans, as necessary, to describe how the requirements of this confirmatory order and other applicable requirements of 10 CFR part 73 (including the related appendices) will be met.

3. The licensee shall establish and maintain a program consistent with Commission Order EA-13-092 such that all security personnel who require access to firearms in the discharge of their official duties are subject to a firearms background check.

The Commission is engaged in an ongoing rulemaking to implement the Commission's authority under Section 161A. Subsequent to the effective date of that final rulemaking, the Director,

Office of Nuclear Reactor Regulation, and the Director, Office of Nuclear Material Safety and Safeguards may take action to relax or rescind any or all of the requirements set forth in this confirmatory order.

The Directors of the Office of Nuclear Reactor Regulation and the Office of Nuclear Materials Safety and Safeguards may, in writing, relax or rescind this confirmatory order on demonstration by the licensee of good cause.

This confirmatory order is effective 20 days after the date of its issuance.

For further details with respect to this confirmatory order, see the staff's safety evaluation contained in a letter dated January 5, 2016 (ADAMS Accession No. ML15029A249), which is available for public inspection at the Commission's Public Document Room (PDR) located at One White Flint North, Public File Area 01 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available documents created or received at the NRC are accessible electronically through ADAMS in the NRC Library at <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents stored in ADAMS should contact the NRC PDR reference staff by telephone at 1-800-397-4209 or 301-415-4737 or by email to pdr.resource@nrc.gov.

In accordance with 10 CFR 2.202, any other person adversely affected by this order may submit an answer to this order within 20 days of its publication in the **Federal Register**. In addition, any other person adversely affected by this order may request a hearing on this order within 20 days of its publication in the **Federal Register**. Where good cause is shown, consideration will be given to extending the time to answer or request a hearing. A request for extension of time must be directed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, and must include a statement of good cause for the extension.

If a hearing is requested by a person whose interest is adversely affected, the Commission will issue an order designating the time and place of any hearings. If a hearing is held, the issue to be considered at such hearing shall be whether this order should be sustained.

All documents filed in NRC adjudicatory proceedings (including a request for hearing, a petition for leave to intervene, any motion or other document filed in the proceeding before the submission of a request for hearing or petition to intervene, and documents filed by interested governmental entities participating under 10 CFR 2.315(c)) must be filed in accordance with the

NRC E-Filing rule (published at 72 FR 49139 on August 28, 2007). The E-Filing process requires participants to submit and serve all adjudicatory documents over the Internet or (in some cases) to mail copies on electronic storage media. Participants may not submit paper copies of their filings unless they seek an exemption in accordance with the procedures described below.

To comply with the procedural requirements of E-Filing, the participant should contact the Office of the Secretary (at least 10 days before the filing deadline) by email to hearing.docket@nrc.gov or by telephone at 301-415-1677 to (1) request a digital identification (ID) certificate, which allows the participant (or his or her counsel or representative) to digitally sign documents and access the E-Submittal server for any proceeding in which it is participating; and (2) advise the Secretary that the participant will be submitting a request or petition for hearing (even in instances in which the participant, or his or her counsel or representative, already holds an NRC-issued digital ID certificate). Based on this information, the Secretary will establish an electronic docket for the hearing in this proceeding if the Secretary has not already established an electronic docket.

Information about applying for a digital ID certificate is available on the NRC's public Web site at <http://www.nrc.gov/site-help/e-submittals/getting-started.html>. System requirements for accessing the E-Submittal server are detailed in the NRC's "Guidance for Electronic Submission," which is available on the agency's public Web site at <http://www.nrc.gov/site-help/e-submittals.html>. Participants may attempt to use other software not listed on the Web site to file documents, but they should note that the NRC's E-Filing system does not support unlisted software and that the NRC Meta System Help Desk will not be able to offer assistance in using unlisted software.

If a participant is electronically submitting a document to the NRC in accordance with the E-Filing rule, the participant must file the document using the NRC's Web-based online submission form. To serve documents through the Electronic Information Exchange, users will be required to install a Web browser plug-in from the NRC Web site. Further information on the Web-based submission form, including the installation of the Web browser plug-in, is available on the NRC's public Web site at <http://www.nrc.gov/site-help/e-submittals.html>.

Once a participant has obtained a digital ID certificate and a docket has been created, the participant can then submit a request for hearing or petition for leave to intervene. Submissions should be Portable Document Format (PDF) documents in accordance with NRC guidance available on the NRC public Web site at <http://www.nrc.gov/site-help/e-submittals.html>. A filing is considered complete at the time the documents are submitted through the NRC's E-Filing system. To be timely, an electronic filing must be submitted to the E-Filing system no later than 11:59 p.m. eastern time on the due date. On receipt of a transmission, the E-Filing system time-stamps the document and sends the submitter an email notice confirming receipt of the document. The E-Filing system also distributes an email notice that provides access to the document to the NRC's Office of the General Counsel and any others who have advised the Office of the Secretary that they wish to participate in the proceeding, so that the filer need not serve the documents on those participants separately. Therefore, applicants and other participants (or their counsel or representative) must apply for and receive a digital ID certificate before a hearing request or petition to intervene is filed so that they can obtain access to the filed documents through the E-Filing system.

A person filing electronically using the agency's adjudicatory E-Filing system may seek assistance by contacting the NRC Meta System Help Desk through the "Contact Us" link located on the NRC Web site at <http://www.nrc.gov/site-help/e-submittals.html>, by email to MSHD.Resource@nrc.gov, or by a toll-free call to (866) 672-7640. The NRC Meta System Help Desk is available between 8 a.m. and 8 p.m. eastern time, Monday through Friday, excluding Government holidays.

Participants who believe that they have a good cause for not submitting documents electronically must file an exemption request, in accordance with 10 CFR 2.302(g), with their initial paper filing requesting authorization to continue to submit documents in paper format. Such filings must be submitted by: (1) First Class mail addressed to the Office of the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemaking and Adjudications Staff; or (2) courier, express mail, or expedited delivery service to the Office of the Secretary, 16th Floor, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852, Attention: Rulemaking and

Adjudications Staff. Participants filing a document in this manner are responsible for serving the document on all other participants. Filing is considered complete by First Class mail as of the time of deposit in the mail, or by courier, express mail, or expedited delivery service on depositing the document with the provider of the service. A presiding officer, having granted an exemption request from using E-Filing, may require a participant or party to use E-Filing if the presiding officer subsequently determines that the reason for granting the exemption from use of E-Filing no longer exists.

Documents submitted in adjudicatory proceedings will appear in the NRC's electronic hearing docket, available to the public at <http://ehd1.nrc.gov/ehd/>, unless they are excluded under an order of the Commission or by the presiding officer. Participants are requested not to include personally private information such as social security numbers, home addresses, or home phone numbers in their filings unless an NRC regulation or other law requires submission of such information. With respect to copyrighted works, except for limited excerpts that serve the purpose of the adjudicatory filings and would constitute a Fair Use application, participants are requested not to include copyrighted materials in their submission.

If a person other than the licensee requests a hearing, that person shall set forth with particularity the manner in which his or her interest is adversely affected by this order and shall address the criteria set forth in 10 CFR 2.309(d) and (f).

In the absence of any request for hearing or of written approval of an extension of time in which to request a hearing, the provisions specified in Section IV above shall be final 20 days from the date of this order without further order or proceedings. If an extension of time for requesting a hearing has been approved, the provisions specified in Section IV shall be final when the extension expires if a hearing request has not been received.

Dated at Rockville, Maryland, this 5th day of January 2016.

FOR THE NUCLEAR REGULATORY COMMISSION.

/RA/

William M. Dean,
Director, Office of Nuclear Reactor Regulation.

/RA/

Scott W. Moore,
Acting Director, Office of Nuclear Material Safety and Safeguards.

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY
COMMISSION**

**In the Matter of Southern California
Edison Company (San Onofre Nuclear
Generating Station, Units 2 and 3, and
Independent Spent Fuel Storage
Installation)**

Docket Nos. 50–361, 50–362, and 72–41

License Nos. NPF–10 and NPF–15

EA–14–140

**CONFIRMATORY ORDER
MODIFYING LICENSE**

I.

Southern California Edison Company (SCE), is the owner and operator of the San Onofre Nuclear Generating Station, Units 2 and 3, including the general-license Independent Spent Fuel Storage Installation (hereinafter “SONGS” or “the facility”), and holder of Facility Operating License Nos. NPF–10, NPF–15, and Docket No. 72–41, issued by the U.S. Nuclear Regulatory Commission (“NRC” or “Commission”) under Title 10, “Energy,” of the *Code of Federal Regulations* (10 CFR) Part 50, “Domestic Licensing of Production and Utilization Facilities”; Part 70, “Domestic Licensing of Special Nuclear Material”; and Part 72, “Licensing Requirements for the Independent Storage of Spent Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste.” The licenses authorize the operation of SONGS with the conditions specified therein. The facilities are located on the owner’s site in San Diego County, California.

II.

By application dated August 28, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13242A277), as supplemented by letters dated December 31, 2013 (ADAMS Accession No. ML14007A496), May 15, 2014 (ADAMS Accession No. ML14139A424), and February 10, 2015 (ADAMS Accession No. ML15044A047), SCE requested, under Commission Order EA–13–092, that under the provisions of Section 161A of the Atomic Energy Act of 1954, as amended, the Commission permit the transfer, receipt, possession, transport, import, and use of certain firearms and large-capacity ammunition-feeding devices by security personnel who protect a facility owned or operated by a licensee or certificate holder of the Commission that is designated by the Commission. Section 161A confers on the Commission the authority to permit a licensee’s security

personnel to possess and use firearms, ammunition, or devices, notwithstanding local, State, and certain Federal firearms laws (including regulations) that may prohibit such possession and use.

On review of the SCE application for Commission authorization to use Section 161A preemption authority at SONGS, the NRC staff has found the following:

(1) SCE’s application complies with the standards and requirements of Section 161A and the Commission’s rules and regulations set forth in 10 CFR part 73, “Physical Protection of Plants and Materials.”

(2) There is reasonable assurance that the facilities will operate in conformance to the application; the provisions of the Atomic Energy Act of 1954, as amended; and the rules and regulations of the Commission.

(3) There is reasonable assurance that the activities permitted by the proposed Commission authorization to use Section 161A preemption authority is consistent with the protection of public health and safety, and that such activities will be conducted in compliance with the Commission’s regulations and the requirements of this confirmatory order.

(4) The issuance of Commission authorization to use Section 161A preemption authority will not be inimical to the common defense and security or to the health and safety of the public.

(5) The issuance of this Commission authorization to use Section 161A preemption authority will be in accordance with the Commission’s regulations in 10 CFR part 51, “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions.”

The findings set forth above are supported by an NRC staff safety evaluation under ADAMS Accession No. ML15027A221.

III.

To carry out the statutory authority discussed above, the Commission has determined that the licenses for SONGS must be modified to include provisions with respect to the Commission authorization to use Section 161A preemption authority as identified in Section II of this confirmatory order. The requirements needed to exercise the foregoing are set forth in Section IV below.

The NRC staff has found that the license modifications set forth in Section IV are acceptable and necessary. It further concluded that, with the effective implementation of these

provisions, the licensee’s physical protection program will meet the specific physical protection program requirements set forth in 10 CFR 73.55, “Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage” (for nuclear power reactors); in 10 CFR 72.212(b)(9), “Conditions of the General License Issued Under § 72.210,” and portions of 10 CFR 73.55, “Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage” (for general-license independent spent fuel storage installations co-located with a reactor at the reactor site).

On March 31, 2015 (ADAMS Accession No. ML15092A132) SCE consented to the issuance of this order. The licensee further agreed that this order will be effective 20 days after the date of issuance and that it has waived its right to a hearing on this order.

IV.

Accordingly, under Sections 53, 103 and/or 104b, 161b, 161i, 161o, 161A, 182, and 186 of the Atomic Energy Act of 1954, as amended, and the Commission’s regulations in 10 CFR 2.202, “Orders”; 10 CFR part 50; 10 CFR part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants”; 10 CFR part 70; and 10 CFR part 72, IT IS HEREBY ORDERED that:

1. The SCE application for Commission authorization to use Section 161A preemption authority at SONGS is approved, and permission for security personnel to possess and use weapons, devices, ammunition, or other firearms, notwithstanding local, State, and certain Federal firearms laws (including regulations) that may prohibit such possession and use, is granted.

2. The licensee shall review and revise its NRC-approved security plans, as necessary, to describe how the requirements of this confirmatory order and other applicable requirements of 10 CFR part 73, “Physical Protection of Plants and Materials,” to include those of the appendices of Part 73, will be met.

3. The licensee shall establish and maintain a program consistent with Commission Order EA–13–092 such that all security personnel who require access to firearms in the discharge of their official duties are subject to a firearms background check.

The Commission is engaged in an ongoing rulemaking to implement the Commission’s authority under Section 161A. Subsequent to the effective date of that final rulemaking, the Director, Office of Nuclear Material Safety and

Safeguards (NMSS) may take action to relax or rescind any or all of the requirements set forth in this confirmatory order.

The Director, NMSS, may, in writing, relax or rescind this confirmatory order on demonstration by the licensee of good cause.

This confirmatory order is effective 20 days after the date of its issuance.

For further details with respect to this confirmatory order, see the staff's safety evaluation contained in a letter dated January 5, 2016 (ADAMS Accession No. ML15027A221), which is available for public inspection at the Commission's Public Document Room (PDR) located at One White Flint North, Public File Area 01-F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available documents created or received at the NRC are accessible electronically through ADAMS in the NRC Library at <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents stored in ADAMS should contact the NRC PDR reference staff by telephone at 1-800-397-4209 or 301-415-4737 or by email to pdr.resource@nrc.gov.

In accordance with 10 CFR 2.202, any other person adversely affected by this order may submit an answer to this order within 20 days of its publication in the **Federal Register**. In addition, any other person adversely affected by this order may request a hearing on this order within 20 days of its publication in the **Federal Register**. Where good cause is shown, consideration will be given to extending the time to answer or request a hearing. A request for extension of time must be directed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, and must include a statement of good cause for the extension.

If a hearing is requested by a person whose interest is adversely affected, the Commission will issue an order designating the time and place of any hearings. If a hearing is held, the issue to be considered at such hearing shall be whether this Order should be sustained.

All documents filed in NRC adjudicatory proceedings, including a request for hearing, a petition for leave to intervene, any motion or other document filed in the proceeding prior to the submission of a request for hearing or petition to intervene, and documents filed by interested governmental entities participating under 10 CFR 2.315(c), must be filed in accordance with the NRC's E-Filing rule (72 FR 49139; August 28, 2007). The E-Filing process requires participants to submit and serve all adjudicatory

documents over the internet, or in some cases to mail copies on electronic storage media. Participants may not submit paper copies of their filings unless they seek an exemption in accordance with the procedures described below.

To comply with the procedural requirements of E-Filing, at least 10 days prior to the filing deadline, the participant should contact the Office of the Secretary by email at hearing.docket@nrc.gov, or by telephone at 301-415-1677, to (1) request a digital identification (ID) certificate, which allows the participant (or its counsel or representative) to digitally sign documents and access the E-Submittal server for any proceeding in which it is participating; and (2) advise the Secretary that the participant will be submitting a request or petition for hearing (even in instances in which the participant, or its counsel or representative, already holds an NRC-issued digital ID certificate). Based upon this information, the Secretary will establish an electronic docket for the hearing in this proceeding if the Secretary has not already established an electronic docket.

Information about applying for a digital ID certificate is available on the NRC's public Web site at <http://www.nrc.gov/site-help/e-submittals/getting-started.html>. System requirements for accessing the E-Submittal server are detailed in the NRC's "Guidance for Electronic Submission," which is available on the agency's public Web site at <http://www.nrc.gov/site-help/e-submittals.html>. Participants may attempt to use other software not listed on the Web site, but should note that the NRC's E-Filing system does not support unlisted software, and the NRC Meta System Help Desk will not be able to offer assistance in using unlisted software.

If a participant is electronically submitting a document to the NRC in accordance with the E-Filing rule, the participant must file the document using the NRC's online, Web-based submission form. In order to serve documents through the Electronic Information Exchange System, users will be required to install a Web browser plug-in from the NRC's Web site. Further information on the Web-based submission form, including the installation of the Web browser plug-in, is available on the NRC's public Web site at <http://www.nrc.gov/site-help/e-submittals.html>.

Once a participant has obtained a digital ID certificate and a docket has been created, the participant can then

submit a request for hearing or petition for leave to intervene. Submissions should be in Portable Document Format (PDF) in accordance with NRC guidance available on the NRC's public Web site at <http://www.nrc.gov/site-help/e-submittals.html>. A filing is considered complete at the time the documents are submitted through the NRC's E-Filing system. To be timely, an electronic filing must be submitted to the E-Filing system no later than 11:59 p.m. Eastern Time on the due date. Upon receipt of a transmission, the E-Filing system time-stamps the document and sends the submitter an email notice confirming receipt of the document. The E-Filing system also distributes an email notice that provides access to the document to the NRC's Office of the General Counsel and any others who have advised the Office of the Secretary that they wish to participate in the proceeding, so that the filer need not serve the documents on those participants separately. Therefore, applicants and other participants (or their counsel or representative) must apply for and receive a digital ID certificate before a hearing request/petition to intervene is filed so that they can obtain access to the document via the E-Filing system.

A person filing electronically using the NRC's adjudicatory E-Filing system may seek assistance by contacting the NRC Meta System Help Desk through the "Contact Us" link located on the NRC's public Web site at <http://www.nrc.gov/site-help/e-submittals.html>, by email to MSHD.Resource@nrc.gov, or by a toll-free call at 1-866-672-7640. The NRC Meta System Help Desk is available between 8 a.m. and 8 p.m., Eastern Time, Monday through Friday, excluding government holidays.

Participants who believe that they have a good cause for not submitting documents electronically must file an exemption request, in accordance with 10 CFR 2.302(g), with their initial paper filing requesting authorization to continue to submit documents in paper format. Such filings must be submitted by: (1) first class mail addressed to the Office of the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemaking and Adjudications Staff; or (2) courier, express mail, or expedited delivery service to the Office of the Secretary, Sixteenth Floor, One White Flint North, 11555 Rockville Pike, Rockville, Maryland, 20852, Attention: Rulemaking and Adjudications Staff. Participants filing a document in this manner are responsible for serving the

document on all other participants. Filing is considered complete by first-class mail as of the time of deposit in the mail, or by courier, express mail, or expedited delivery service upon depositing the document with the provider of the service. A presiding officer, having granted an exemption request from using E-Filing, may require a participant or party to use E-Filing if the presiding officer subsequently determines that the reason for granting the exemption from use of E-Filing no longer exists.

Documents submitted in adjudicatory proceedings will appear in the NRC's electronic hearing docket which is available to the public at <http://ehd1.nrc.gov/ehd/>, unless excluded pursuant to an order of the Commission, or the presiding officer. Participants are requested not to include personal privacy information, such as social security numbers, home addresses, or home phone numbers in their filings, unless an NRC regulation or other law requires submission of such information. With respect to copyrighted works, except for limited excerpts that serve the purpose of the adjudicatory filings and would constitute a Fair Use application, participants are requested not to include copyrighted materials in their submission.

If a person other than the licensee requests a hearing, that person shall set forth with particularity the manner in which his or her interest is adversely affected by this order and shall address the criteria set forth in 10 CFR 2.309(d) and (f).

In the absence of any request for hearing or of written approval of an extension of time in which to request a hearing, the provisions specified in Section IV above shall be final 20 days from the date of this order without further order or proceedings. If an extension of time for requesting a hearing has been approved, the provisions specified in Section IV shall be final when the extension expires if a hearing request has not been received.

Dated at Rockville, Maryland, this 5th day of January 2016.

FOR THE NUCLEAR REGULATORY COMMISSION.

/RA/

Scott Moore,

Acting Director, Office of Nuclear Material Safety and Safeguards.

[FR Doc. 2016-00720 Filed 1-14-16; 8:45 am]

BILLING CODE 7590-01-P

NUCLEAR REGULATORY COMMISSION

[NRC-2016-0001]

Sunshine Act Meeting Notice

DATE: January 18, 25, February 1, 8, 15, 22, 2016.

PLACE: Commissioners' Conference Room, 11555 Rockville Pike, Rockville, Maryland.

STATUS: Public and Closed.

Week of January 18, 2016

There are no meetings scheduled for the week of January 18, 2016.

Week of January 25, 2016—Tentative

There are no meetings scheduled for the week of January 25, 2016.

Week of February 1, 2016—Tentative

There are no meetings scheduled for the week of February 1, 2016.

Week of February 8, 2016—Tentative

There are no meetings scheduled for the week of February 8, 2016.

Week of February 15, 2016—Tentative

There are no meetings scheduled for the week of February 15, 2016.

Week of February 22, 2016—Tentative

Tuesday, February 23, 2016

9:30 a.m. Discussion of Management Issues (Closed—Ex. 2).

Thursday, February 25, 2016

9:00 a.m. Strategic Programmatic Overview of the Fuel Facilities and the Nuclear Material Users Business Lines (Public Meeting); (Contact: Anita Gray: 301-415-7036).

This meeting will be webcast live at the Web address—<http://www.nrc.gov/>.

* * * * *

The schedule for Commission meetings is subject to change on short notice. For more information or to verify the status of meetings, contact Denise McGovern at 301-415-0681 or via email at Denise.McGovern@nrc.gov.

* * * * *

The NRC Commission Meeting Schedule can be found on the Internet at <http://www.nrc.gov/public-involve/public-meetings/schedule.html>.

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The NRC provides reasonable accommodation to individuals with disabilities where appropriate. If you need a reasonable accommodation to participate in these public meetings, or need this meeting notice or the transcript or other information from the public meetings in another format (e.g.

braille, large print), please notify Kimberly Meyer, NRC Disability Program Manager, at 301-287-0739, by videophone at 240-428-3217, or by email at Kimberly.Meyer-Chambers@nrc.gov. Determinations on requests for reasonable accommodation will be made on a case-by-case basis.

* * * * *

Members of the public may request to receive this information electronically. If you would like to be added to the distribution, please contact the Nuclear Regulatory Commission, Office of the Secretary, Washington, DC 20555 (301-415-1969), or email Brenda.Akstulewicz@nrc.gov or Patricia.Jimenez@nrc.gov.

Dated: January 13, 2016.

Denise L. McGovern,

Policy Coordinator, Office of the Secretary.

[FR Doc. 2016-00868 Filed 1-13-16; 4:15 pm]

BILLING CODE 7590-01-P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-76871; File No. SR-NYSEArca-2015-114]

Self-Regulatory Organizations; NYSE Arca, Inc.; Notice of Filing of Amendment No. 1 and Order Granting Accelerated Approval of a Proposed Rule Change, as Modified by Amendment No. 1, To List and Trade Shares of the Market Vectors Dynamic Put Write ETF Under NYSE Arca Equities Rule 8.600

January 11, 2016.

I. Introduction

On November 16, 2015, NYSE Arca, Inc. ("Exchange" or "NYSE Arca") filed with the Securities and Exchange Commission ("Commission"), pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 ("Act")¹ and Rule 19b-4 thereunder,² a proposed rule change to list and trade shares ("Shares") of the Market Vectors Dynamic Put Write ETF (the "Fund") under NYSE Arca Equities Rule 8.600. The proposed rule change was published for comment in the **Federal Register** on December 4, 2015.³ On December 11, 2015, the Exchange filed Amendment No. 1 to the proposed rule change.⁴ The Commission received no

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

³ See Securities Exchange Act Release No. 76530 (Nov. 30, 2015), 80 FR 75883.

⁴ In Amendment No. 1, the Exchange clarified: (1) That the Fund may sell or invest in other U.S. exchange-traded put options on stock indexes, put

Continued

comments on the proposed rule change. The Commission is publishing this notice to solicit comments on Amendment No. 1 from interested persons, and is approving the proposed rule change, as modified by Amendment No. 1, on an accelerated basis.

II. The Exchange's Description of the Proposed Rule Change⁵

The Exchange proposes to list and trade the Shares under NYSE Arca Equities Rule 8.600, which governs the listing and trading of Managed Fund Shares. The Shares will be offered by Market Vectors ETF Trust ("Trust"), which is registered with the Commission as an investment company.⁶ Van Eck Absolute Return Advisers Corporation ("Adviser") will serve as the investment adviser of the Fund. Van Eck Absolute Return Advisers will also serve as the administrator for the Fund, and The Bank of New York Mellon will serve as the custodian for the Fund. Van Eck Securities Corporation will serve as the distributor of the Shares.

Principal Investments

The Fund's investment objective will be to seek a positive total return and income. Under normal circumstances,⁷

options on stock index futures contracts, put options on the Fund (if available), or put options on exchange-traded pooled investment vehicles (rather than shares of such vehicles); (2) how the Fund's put options, U.S. Treasuries, and cash equivalents generally would be valued to calculate the Fund's net asset value ("NAV"); Amendment No. 1 superseded the original filing in its entirety. Amendment No. 1 is available at: <http://www.sec.gov/comments/sr-nysearca-2015-114/nysearca2015114-1.pdf>.

⁵ The Commission notes that additional information regarding the Trust, the Fund, its investments, and the Shares, including investment strategies, risks, creation and redemption procedures, fees, portfolios holding disclosure policies, calculation of NAV, distribution, and taxes, among other things, can be found in Amendment No. 1, *supra* note 4, and the Registration Statement, *infra* note 6, as applicable.

⁶ The Exchange states that the Trust is registered under the Investment Company Act of 1940 (15 U.S.C. 80a-1) ("1940 Act"). On August 19, 2015, the Trust filed with the Commission a registration statement on Form N-1A under the Securities Act of 1933 (15 U.S.C. 77a), and under the 1940 Act relating to the Fund (File Nos. 333-123257 and 811-10325) ("Registration Statement"). The Exchange states that the Commission has issued an order granting certain exemptive relief to the Trust under the 1940 Act. See Investment Company Act Release No. 29496 (November 3, 2010) (File No. 812-13605).

⁷ The term "under normal circumstances" includes, but is not limited to, the absence of extreme volatility or trading halts in the domestic equity markets or the financial markets generally; operational issues causing dissemination of inaccurate market information; or force majeure type events such as systems failure, natural or man-made disaster, act of God, armed conflict, act of terrorism, riot or labor disruption or any similar intervening circumstance. For temporary defensive

the Fund will seek to achieve its investment objective by selling only exchange-listed, uncovered out-of-the-money put options, which typically expire between 30 and 60 days, on: (i) The S&P 500 Index; (ii) futures on the S&P 500 Index; and (iii) e-mini futures on the S&P 500 Index.⁸ The aggregate notional value (i.e., the underlying value) of the Fund's put option contracts (including those described below) will be approximately 200% of the Fund's net assets.⁹

Other Investments

Cash and cash equivalents, in which the Fund may hold, include U.S. Treasury Bills, repurchase agreements, money market instruments, or investment companies and exchange-traded funds ("ETFs")¹⁰ that invest principally in money market instruments. The Fund also may invest in other U.S. exchange-traded put options on stock indexes, put options on stock index futures contracts, put options on the Fund (if available) or put options exchange-traded pooled investment vehicles,¹¹ to the extent such investments are considered suitable for the Fund by the Adviser.

III. Discussion and Commission's Findings

After careful review, the Commission finds that the proposed rule change is consistent with the requirements of Section 6 of the Act¹² and the rules and regulations thereunder applicable to a

purposes, the Fund may hold cash and cash equivalents, including U.S. Treasury bills and/or invest without limit in money market instruments, repurchase agreements, or other funds which invest exclusively in money market instruments, as described further below. The Fund may take temporary defensive positions in anticipation of or in an attempt to respond to adverse market, economic, political or other conditions.

⁸ Options on the S&P 500 Index are traded on the Chicago Board Options Exchange. Options on futures on the S&P 500 Index and options on e-mini futures on the S&P 500 Index are traded on the Chicago Mercantile Exchange.

⁹ See Amendment No. 1, *supra* note 4, at 7.

¹⁰ The ETFs in which the Fund may invest will be registered under the 1940 Act and include Investment Company Units (as described in NYSE Arca Equities Rule 5.2(j)(3)); Portfolio Depositary Receipts (as described in NYSE Arca Equities Rule 8.100); and Managed Fund Shares (as described in NYSE Arca Equities Rule 8.600). All ETFs in which the Fund invests will be listed and traded in the U.S. on registered exchanges.

¹¹ Exchange-traded pooled investment vehicles include Trust Issued Receipts (as described in NYSE Arca Equities Rule 8.200); Commodity-Based Trust Shares (as described in NYSE Arca Equities Rule 8.201); Currency Trust Shares (as described in NYSE Arca Equities Rule 8.202); Commodity Index Trust Shares (as described in NYSE Arca Equities Rule 8.203); and Trust Units (as described in NYSE Arca Equities Rule 8.500).

¹² 15 U.S.C. 78f.

national securities exchange.¹³ In particular, the Commission finds that the proposed rule change is consistent with Section 6(b)(5) of the Act,¹⁴ which requires, among other things, that the Exchange's rules be designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest. The Commission notes that the Fund and the Shares must comply with the requirements of NYSE Arca Equities Rule 8.600 for the Shares to be listed and traded on the Exchange.

The Commission also finds that the proposal to list and trade the Shares on the Exchange is consistent with Section 11A(a)(1)(C)(iii) of the Act,¹⁵ which sets forth Congress's finding that it is in the public interest and appropriate for the protection of investors and the maintenance of fair and orderly markets to assure the availability to brokers, dealers, and investors of information with respect to quotations for, and transactions in, securities. According to the Exchange, quotation and last sale information for the Shares, ETFs and pooled investment vehicles will be available via the Consolidated Tape Association high-speed line. Quotation and last sale information for exchange-listed options cleared via the Options Clearing Corporation will be available via the Options Price Reporting Authority. Intra-day and closing price information regarding exchange-traded options (including options on futures) will be available from the exchange on which these instruments are traded. Intra-day and closing price information regarding money market instruments, repurchase agreements, and cash equivalents, including U.S. Treasuries, will be available from major market data vendors. Price information for non-exchange-traded investment company securities will be available from major market data vendors and from the Web site of the applicable investment company. In addition, the Indicative Per Share Portfolio Value will be disseminated every 15 seconds during the Exchange's Core Trading Session by major market data vendors. On each business day, before commencement of trading in Shares in the Core Trading Session (as defined in NYSE Arca

¹³ In approving this proposed rule change, the Commission notes that it has considered the proposed rule's impact on efficiency, competition, and capital formation. See 15 U.S.C. 78c(f).

¹⁴ 15 U.S.C. 78f(b)(5).

¹⁵ 15 U.S.C. 78k-1(a)(1)(C)(iii).

Equities Rule 7.34(a)(2)), the Fund will disclose on its Web site the Disclosed Portfolio (as defined in NYSE Arca Equities Rule 8.600(c)(2)) that will form the basis for the Fund's calculation of NAV at the end of the business day.¹⁶ The Fund's NAV per Share will be calculated daily every day the NYSE is open. A basket composition file, which will include the security names and share quantities, if applicable, required to be delivered in exchange for the Shares, together with estimates and actual cash components, will be publicly disseminated daily prior to the opening of the Exchange via the National Securities Clearing Corporation. Information regarding market price and trading volume of the Shares will be continually available on a real-time basis throughout the day on brokers' computer screens and other electronic services. Information regarding the previous day's closing price and trading volume information for the Shares will be published daily in the financial section of newspapers. The Web site for the Fund will include a form of the prospectus for the Fund and additional quantitative information.

The Commission further believes that the proposal to list and trade the Shares is reasonably designed to promote fair disclosure of information that may be necessary to price the Shares appropriately and to prevent trading when a reasonable degree of transparency cannot be assured. The Commission notes that the Exchange will obtain a representation from the issuer of the Shares that the NAV per Share will be calculated daily and that the NAV and the Disclosed Portfolio will be made available to all market participants at the same time.¹⁷ In addition, trading in the Shares will be subject to NYSE Arca Equities Rule 8.600(d)(2)(D), which sets forth circumstances under which trading in the Shares may be halted. The Exchange may halt trading in the Shares if the Indicative Per Share Portfolio Value is not being disseminated as required, if

the Exchange becomes aware that the NAV for the Fund is not being disseminated to all market participants at the same time, if trading is not occurring in the securities and/or the financial instruments comprising the Disclosed Portfolio of the Fund, or if other unusual conditions or circumstances detrimental to the maintenance of a fair and orderly market are present.¹⁸ Further, the Commission notes that the Reporting Authority that provides the Disclosed Portfolio of the Fund must implement and maintain, or be subject to, procedures designed to prevent the use and dissemination of material, non-public information regarding the actual components of the portfolio.¹⁹ The Commission notes that the Financial Industry Regulatory Authority ("FINRA"), on behalf of the Exchange,²⁰ will communicate as needed regarding trading in the Shares, options contracts and options on futures contracts with other markets and other entities that are members of the Intermarket Surveillance Group ("ISG"), and FINRA, on behalf of the Exchange, may obtain trading information regarding trading in the Shares, options contracts, and options on futures contracts from such markets and other entities. In addition, the Exchange may obtain information regarding trading in the Shares, options contracts, and options on futures contracts from markets and other entities that are members of ISG or with which the Exchange has in place a comprehensive surveillance sharing agreement. The Exchange states that it has a general policy prohibiting the distribution of material, non-public information by its employees. According to the Exchange, the Adviser is not a registered broker-dealer but is affiliated with a broker-dealer whose primary function is to serve as distributor and placement agent for its products. The Exchange states that the Adviser has implemented a fire wall with respect to its broker-dealer affiliate

regarding access to information concerning the composition and/or changes to the portfolio. In the event (a) the Adviser or any sub-adviser becomes registered as a broker-dealer or newly affiliated with a broker-dealer, or (b) any new adviser or sub-adviser is a registered broker-dealer or becomes affiliated with a broker-dealer, the Exchange states that such Adviser, new adviser or sub-adviser, as applicable will implement a fire wall with respect to its relevant personnel or broker-dealer affiliate regarding access to information concerning the composition of or changes to the portfolio and will be subject to procedures designed to prevent the use and dissemination of material non-public information regarding the portfolio.

The Exchange deems the Shares to be equity securities, which subjects trading in the Shares to the Exchange's existing rules governing the trading of equity securities.²¹

In support of this proposal, the Exchange has made additional representations, including:

(1) The Shares will conform to the initial and continued listing criteria under NYSE Arca Equities Rule 8.600.²²

(2) The Exchange has appropriate rules to facilitate transactions in the Shares during all trading sessions.²³

(3) The Exchange represents that the trading in the Shares will be subject to the existing trading surveillances, administered by the Exchange or FINRA on behalf of the Exchange, which are designed to detect violations of Exchange rules and applicable federal securities laws. The Exchange represents that these procedures are adequate to properly monitor Exchange trading of the Shares in all trading sessions and to deter and detect violations of Exchange rules and federal securities laws applicable to trading on the Exchange.²⁴

(4) Prior to the commencement of trading, the Exchange will inform its Equity Trading Permit ("ETP") Holders in an Information Bulletin of the special characteristics and risks associated with trading the Shares. Specifically, the Bulletin will discuss the following: (a) The procedures for purchases and redemptions of Shares in Creation Unit (and that Shares are not individually redeemable); (b) NYSE Arca Equities Rule 9.2(a), which imposes a duty of due diligence on its ETP Holders to learn the essential facts relating to every customer prior to trading the Shares; (c)

¹⁶ On a daily basis, the Fund will disclose on the Fund's Web site the following information regarding each portfolio holding, as applicable to the type of holding: Ticker symbol, CUSIP number or other identifier, if any; a description of the holding (including the type of holding, such as the type of option); the identity of the security, commodity, index or other asset or instrument underlying the holding, if any; for options, the option strike price; quantity held (as measured by, for example, par value, notional value or number of shares, contracts or units); maturity date, if any; coupon rate, if any; effective date, if any; market value of the holding; and the percentage weighting of the holding in the Fund's portfolio. This information will be publicly available at no charge. See Amendment No. 1, *supra* note 4, at 13.

¹⁷ See NYSE Arca Equities Rule 8.600(d)(1)(B).

¹⁸ See NYSE Arca Equities Rule 8.600(d)(2)(C) (providing additional considerations for the suspension of trading in or removal from listing of Managed Fund Shares on the Exchange). With respect to trading halts, the Exchange may consider all relevant factors in exercising its discretion to halt or suspend trading in the Shares. Trading in the Shares will be halted if the circuit breaker parameters in NYSE Arca Equities Rule 7.12 have been reached. Trading also may be halted because of market conditions or for reasons that, in the view of the Exchange, make trading in the Shares inadvisable.

¹⁹ See NYSE Arca Equities Rule 8.600(d)(2)(B)(ii).

²⁰ The Exchange states that, while FINRA surveils trading on the Exchange pursuant to a regulatory services agreement, the Exchange is responsible for FINRA's performance under this regulatory services agreement.

²¹ See Amendment No. 1, *supra* note 4, at 15.

²² See *id.*

²³ See *id.*

²⁴ See *id.*

the risks involved in trading the Shares during the Opening and Late Trading Sessions when an updated Intraday Indicative Value ("IIV") or Index value will not be calculated or publicly disseminated; (d) how information regarding the IIV and the Disclosed Portfolio will be disseminated; (e) the requirement that ETP Holders deliver a prospectus to investors purchasing newly issued Shares prior to or concurrently with the confirmation of a transaction; and (f) trading information.²⁵

(5) For initial and continued listing, the Fund will be in compliance with Rule 10A-3²⁶ under the Act, as provided by NYSE Arca Equities Rule 5.3.

(6) A minimum of 100,000 Shares for the Fund will be outstanding at the commencement of trading on the Exchange.²⁷

This approval order is based on all of the Exchange's representations.

For the foregoing reasons, the Commission finds that the proposed rule change, as modified by Amendment No. 1, is consistent with Section 6(b)(5) of the Act²⁸ and the rules and regulations thereunder applicable to a national securities exchange.

IV. Solicitation of Comments on Amendment No. 1

Interested persons are invited to submit written data, views, and arguments concerning whether Amendment No. 1 is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (<http://www.sec.gov/rules/sro.shtml>); or
- Send an Email to rule-comments@sec.gov. Please include File Number SR-NYSEArca-2015-114 on the subject line.

Paper Comments

- Send paper comments in triplicate to Brent J. Fields, Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549-1090. All submissions should refer to File Number SR-NYSEArca-2015-114. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's

Internet Web site (<http://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR-NYSEArca-2015-114 and should be submitted on or before February 5, 2016.

V. Accelerated Approval of Proposed Rule Change as Modified by Amendment No. 1

The Commission finds good cause to approve the proposed rule change, as modified by Amendment No. 1, prior to the thirtieth day after the date of publication of notice in the **Federal Register**. Amendment No. 1 supplements the proposed rule change by, among other things, clarifying the scope of the Fund's permitted investments and adding additional information about the availability of prices for the Shares and underlying assets. This clarifying information aided the Commission in evaluating the likelihood of effective arbitrage in the Shares. Accordingly, the Commission finds good cause, pursuant to Section 19(b)(2) of the Act,²⁹ to approve the proposed rule change, as modified by Amendment No. 1, on an accelerated basis.

VI. Conclusion

It is therefore ordered, pursuant to Section 19(b)(2) of the Act,³⁰ that the proposed rule change (SR-NYSEArca-2015-114), as modified by Amendment No. 1, be, and it hereby is, approved on an accelerated basis.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.³¹

Robert W. Errett,
Deputy Secretary.

[FR Doc. 2016-00661 Filed 1-14-16; 8:45 am]

BILLING CODE 8011-01-P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-76865; File No. SR-NYSE-2016-06]

Self-Regulatory Organizations; New York Stock Exchange LLC; Notice of Filing and Immediate Effectiveness of Proposed Rule Change To Adopt a Trading License Fee for Calendar Year 2016, Effective January 4, 2016

January 11, 2016.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 ("Act"),¹ and Rule 19b-4 thereunder,² notice is hereby given that on January 4, 2016, New York Stock Exchange LLC ("NYSE" or the "Exchange") filed with the Securities and Exchange Commission ("SEC" or "Commission") the proposed rule change as described in Items I, II, and III below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange proposes to adopt a trading license fee for calendar year 2016. The Exchange proposes to make the rule change operative on January 4, 2016. The proposed rule change is available on the Exchange's Web site at www.nyse.com, at the principal office of the Exchange, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the self-regulatory organization included statements concerning the purpose of, and basis for, the proposed rule change and discussed any comments it received on the proposed rule change. The text of those statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below,

²⁵ See *id.* at 16.

²⁶ 17 CFR 240.10A-3.

²⁷ See Amendment No. 1, *supra* note 4, at 15.

²⁸ 15 U.S.C. 78f(b)(5).

²⁹ 15 U.S.C. 78s(b)(2).

³⁰ 15 U.S.C. 78s(b)(2).

³¹ 17 CFR 200.30-3(a)(12).

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

of the most significant parts of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and the Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to amend its Price List to adopt a trading license fee for calendar year 2016. The Exchange proposes to make the rule change operative on January 4, 2016.

NYSE Rule 300(b) provides that, in each annual offering, up to 1366 trading licenses for the following calendar year will be sold annually at a price per trading license to be established each year by the Exchange pursuant to a rule filing submitted to the Securities and Exchange Commission ("Commission") and that the price per trading license will be published each year in the Exchange's price list.

The Exchange proposes to leave the current trading license fees in place for 2016: \$50,000 for the first license held by a member organization and \$15,000 for each additional license held by a member organization. Such trading license fees have been in place since March 1, 2015.³ Fees will continue to be prorated for any portion of the year that a license may be outstanding. For a trading license that is in place for 10 calendar days or less in a calendar month, proration for that month will continue to be at a flat rate of \$100 per day with no tier pricing involved. For a trading license that is in place for 11 calendar days or more in a calendar month, proration for that month will continue to be computed based on the number of days as applied to the applicable annual fee for the license.

The proposed changes are not otherwise intended to address any other problem, and the Exchange is not aware of any significant problem that the affected market participants would have in complying with the proposed changes.

2. Statutory Basis

The Exchange believes that the proposed rule change is consistent with

Section 6(b) of the Act,⁴ in general, and Section 6(b)(4) of the Act,⁵ in particular, in that it is designed to provide for the equitable allocation of reasonable dues, fees, and other charges among its members and other persons using its facilities. The Exchange believes that the trading license fee is reasonable because it maintains the existing fee schedule, which has been in place since March 1, 2015. The Exchange also believes that the proposal to maintain the current fee schedule is equitable and not unfairly discriminatory because all similarly situated member organizations would continue to be subject to the same trading license fee structure and because access to the Exchange's market would continue to be offered on fair and non-discriminatory terms. The Exchange also believes that the proposal to maintain the current fee schedule is equitable and not unfairly discriminatory because all member organizations would continue to have the opportunity to enjoy the benefits of the fee relief with respect to additional trading licenses.

The Exchange believes that it is subject to significant competitive forces, as described below in the Exchange's statement regarding the burden on competition.

For the foregoing reasons, the Exchange believes that the proposal is consistent with the Exchange Act.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. The proposed rule change will keep trading license fees the same as they have been since March 1, 2015. As a result, the Exchange does not believe that the proposed rule change will place an unreasonable burden on current members because their trading license fees will remain the same. In addition, the Exchange does not believe that the proposed rule change will place an unreasonable burden on potential members because a potential member's fees will be the same as for a current member and pro-rated for licenses held for less than a year.

Finally, the Exchange notes that it operates in a highly competitive market in which market participants can readily favor competing venues if they deem fee levels at a particular venue to be excessive or rebate opportunities available at other venues to be more

favorable. In such an environment, the Exchange must continually adjust its fees and rebates to remain competitive with other exchanges and with alternative trading systems that have been exempted from compliance with the statutory standards applicable to exchanges. Because competitors are free to modify their own fees and credits in response, and because market participants may readily adjust their order routing practices, the Exchange believes that the degree to which fee changes in this market may impose any burden on competition is extremely limited. As a result of all of these considerations, the Exchange does not believe that the proposed changes will impair the ability of member organizations or competing order execution venues to maintain their competitive standing in the financial markets.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

No written comments were solicited or received with respect to the proposed rule change.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

The foregoing rule change is effective upon filing pursuant to Section 19(b)(3)(A)⁶ of the Act and subparagraph (f)(2) of Rule 19b-4⁷ thereunder, because it establishes a due, fee, or other charge imposed by the Exchange.

At any time within 60 days of the filing of such proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings under Section 19(b)(2)(B)⁸ of the Act to determine whether the proposed rule change should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act.

³ See Securities Exchange Act Release No. 74407 [sic] (March 2, 2015), 80 FR 12228 (March 6, 2015) (SR-NYSE-2015-08). The trading license fee was initially set at \$40,000 in January 2009. See Securities Exchange Act Release No. 59140, 73 FR 80488 (December 31, 2008) (SR-NYSE-2008-130). In June 2011, the fee was changed to \$40,000 per license for the first two licenses and \$25,000 per license for any additional trading licenses. See Securities Exchange Act Release Nos. 64582 (June 2, 2011), 76 FR 33390 (June 8, 2011) (SR-NYSE-2011-23) and 66108 (January 5, 2012), 77 FR 1768 (January 11, 2012) (SR-NYSE-2011-71).

⁴ 15 U.S.C. 78f(b).

⁵ 15 U.S.C. 78f(b)(4).

⁶ 15 U.S.C. 78s(b)(3)(A).

⁷ 17 CFR 240.19b-4(f)(2).

⁸ 15 U.S.C. 78s(b)(2)(B).

Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (<http://www.sec.gov/rules/sro.shtml>); or
- Send an email to rule-comments@sec.gov. Please include File Number SR-NYSE-2016-06 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549-1090.

All submissions should refer to File Number SR-NYSE-2016-06. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (<http://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal offices of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR-NYSE-2016-06, and should be submitted on or before February 5, 2016.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.⁹

Robert W. Errett,

Deputy Secretary.

[FR Doc. 2016-00642 Filed 1-14-16; 8:45 am]

BILLING CODE 8011-01-P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-76864; File No. SR-BATS-2015-122]

Self-Regulatory Organizations; BATS Exchange, Inc.; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change to Rules 27.1, Definitions, and 27.4, Temporary Rule Governing Phase-Out of P and P/A Orders

January 11, 2016.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (the "Act"),¹ and Rule 19b-4 thereunder,² notice is hereby given that on December 28, 2015, BATS Exchange, Inc. (the "Exchange" or "BATS") filed with the Securities and Exchange Commission ("Commission") the proposed rule change as described in Items I and II below, which Items have been prepared by the Exchange. The Exchange has designated this proposal as a "non-controversial" proposed rule change pursuant to Section 19(b)(3)(A) of the Act³ and Rule 19b-4(f)(6)(iii) thereunder,⁴ which renders it effective upon filing with the Commission. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange filed a proposal to authorize the BATS Options Market ("BATS Options") to delete its rule entitled "Temporary Rule Governing Phase-Out of P and P/A Orders" and amend any references in the rules to the Plan for the Purpose of Creating and Operating an Intermarket Linkage ("Linkage Plan").⁵

The text of the proposed rule change is available at the Exchange's Web site at www.batstrading.com, at the principal office of the Exchange, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the

proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in Sections A, B, and C below, of the most significant parts of such statements.

(A) Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The purpose of the proposed rule change is to eliminate existing references to the Linkage Plan and also replace any references to the Linkage Plan with references to the Options Order Protection and Locked/Crossed Market Plan ("Plan") in order to clarify the current rules in effect.

On February 4, 2010, the Exchange filed the Plan, joining all other approved options exchanges in adopting the Plan.⁶ The Plan required each options exchange to adopt rules implementing various requirements specified in the Plan. The Plan replaced the former Linkage Plan. The Linkage Plan required Participating Exchanges⁷ to operate a standalone system or "Linkage" for sending order-flow between exchanges to limit trade-throughs.⁸ The Options Clearing Corporation ("OCC") operated the Linkage system (the "System").⁹ The Exchange adopted various rules in connection with the Plan to avoid trade-throughs and locked markets, among other things.¹⁰ The Exchange currently offers private routing directly to away markets.

The Exchange adopted a temporary rule entitled "Temporary Rule Governing Phase-Out of P and P/A Orders" ("Temporary Rule"),¹¹ in order to facilitate the participation of certain Participating Exchanges who may require the use of Principal Acting as Agent Orders ("P/A Orders")¹² and

⁶ See Securities Exchange Act Release Nos. 61546 (February 19, 2010), 75 FR 8762 (February 25, 2010) (Notice of Filing and Immediate Effectiveness of Amendment to the Options Order Protection and Locked/Crossed Markets Plan to Add the BATS Exchange, Inc. as a Participant).

⁷ The term "Participating Exchanges" refers to all options exchanges that had been approved to participate in the Linkage Plan.

⁸ See footnote 6.

⁹ See footnote 6.

¹⁰ See footnote 6.

¹¹ See Chapter XXVII, Intermarket Linkage Rules, Rule 27.4, "Temporary Rule Governing Phase-Out of P and P/A Orders".

¹² A P/A Order is an order for the principal account of a Primary Market Maker (or equivalent entity on another Eligible Exchange that is authorized to represent Public Customer orders), reflecting the terms of a related unexecuted Public Customer order for which the Primary Market

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

³ 15 U.S.C. 78s(b)(3)(A).

⁴ 17 CFR 240.19b-4(f)(6)(iii).

⁵ See Chapter XXVII, Intermarket Linkage Rules, Rule 27.4., Temporary Rule Governing Phase-Out of P and P/A Orders.

⁹ 17 CFR 200.30-3(a)(12).

Principal Orders (“P”) ¹³ after implementation of the Plan. Certain Participating Exchanges required a temporary transition period during which they continued to utilize these order types that existed under the Linkage Plan. The Exchange proposed substantially similar rules with that of the other Participating Exchanges to accommodate the possibility of continued use of P/A Orders and P Orders. At this time all Participating Exchanges have discontinued use of the Linkage Plan. The Exchange proposes at this time to delete this Temporary Rule because it is no longer necessary in light of the discontinued use of the Linkage Plan. Additionally, the Exchange proposes to amend Section 17, *Definitions*, in Chapter XXVII, *Intermarket Linkage Rules*, to redefine “Plan” to comport with the Plan.

In addition to the changes set forth above, the Exchange proposes to add the letter “(a)” to Rule 27.1 to conform with the typical numbering used in Exchange rules.

2. Statutory Basis

The Exchange believes that its proposal is consistent with the requirements of the Act and the rules and regulations thereunder that are applicable to a national securities exchange, and, in particular, with the requirements of Section 6(b) of the Act.¹⁴ In particular, the proposal is consistent with Section 6(b)(5) of the Act¹⁵ because it is designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in facilitating transactions in securities, to remove impediments to, and perfect the mechanism of, a free and open market and a national market system and, in general, to protect investors and the public interest by proposing the elimination of the Temporary Rule, which reflects usage of the former Linkage Plan that has been replaced by the Plan. The Exchange believes that elimination of the reference to the Temporary Rule will help to avoid potential confusion by Members and other market participants because the Linkage Plan is and has been in full effect for some time, and, therefore, the

Temporary Rule is outdated and unnecessary.

(B) Self-Regulatory Organization’s Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. The proposal will simply eliminate the Temporary Rule, which is outdated and no longer necessary for the reasons described above. Accordingly, the Exchange does not believe that the proposal has any competitive effect.

(C) Self-Regulatory Organization’s Statement on Comments on the Proposed Rule Change Received From Members, Participants or Others

The Exchange has not solicited, and does not intend to solicit, comments on this proposed rule change. The Exchange has not received any written comments from members or other interested parties.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

The Exchange has filed the proposed rule change pursuant to Section 19(b)(3)(A)(iii) of the Act¹⁶ and Rule 19b-4(f)(6) thereunder.¹⁷ Because the proposed rule change does not: (i) Significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, the proposed rule change has become effective pursuant to Section 19(b)(3)(A) of the Act and Rule 19b-4(f)(6) thereunder.¹⁸

A proposed rule change filed under Rule 19b-4(f)(6) normally does not become operative for 30 days after the date of filing. However, Rule 19b-4(f)(6)(iii) permits the Commission to designate a shorter time if such action is consistent with the protection of investors and the public interest. The Exchange has asked the Commission to waive the 30-day operative delay so that the Exchange may eliminate its Temporary Rule, which has been

replaced by the Plan. The Commission believes that removal of the obsolete rule could avoid potential confusion by Members and other market participants. Based on the foregoing, the Commission believes that waiving the 30-day operative delay is consistent with the protection of investors and the public interest.¹⁹ The Commission hereby grants the Exchange’s request and designates the proposal operative upon filing.

At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission’s Internet comment form (<http://www.sec.gov/rules/sro.shtml>); or
- Send an email to rule-comments@sec.gov. Please include File No. SR-BATS-2015-122 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549-1090.
- All submissions should refer to File No. SR-BATS-2015-122. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission’s Internet Web site (<http://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the

Maker is acting as agent. See Chapter XXVII, Rule 27.4(d)(4)(A).

¹³ A Principal Order is an order for the principal account of a market maker (or equivalent entity on another Eligible Exchange) and is not a P/A Order. See Chapter XXVII, Rule 27.4(d)(4)(B).

¹⁴ 15 U.S.C. 78f(b).

¹⁵ 15 U.S.C. 78f(b)(5).

¹⁶ 15 U.S.C. 78s(b)(3)(A)(iii).

¹⁷ 17 CFR 240.19b-4(f)(6).

¹⁸ In addition, Rule 19b-4(f)(6)(iii) requires the Exchange to give the Commission written notice of the Exchange’s intent to file the proposed rule change, along with a brief description and text of the proposed rule change, at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission. The Exchange has satisfied this requirement.

¹⁹ For purposes only of waiving the 30-day operative delay, the Commission has also considered the proposed rule’s impact on efficiency, competition, and capital formation. See 15 U.S.C. 78c(f).

proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of such filing will also be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File No. SR-BATS-2015-122 and should be submitted on or before February 5, 2016.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.²⁰

Robert W. Errett,
Deputy Secretary.

[FR Doc. 2016-00641 Filed 1-14-16; 8:45 am]

BILLING CODE 8011-01-P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-76868; File No. SR-BX-2015-087]

Self-Regulatory Organizations; NASDAQ OMX BX, Inc.; Notice of Filing and Immediate Effectiveness of Proposed Rule Change To Amend Rule 7015

January 11, 2016.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 ("Act"),¹ and Rule 19b-4 thereunder,² notice is hereby given that on December 29, 2015, NASDAQ OMX BX, Inc. ("BX" or "Exchange") filed with the Securities and Exchange Commission ("SEC" or "Commission") the proposed rule change as described in Items I, II, and III, below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange proposes to amend BX Rule 7015 to clarify the connectivity

options and application of the fees assessed thereunder.

The text of the proposed rule change is available on the Exchange's Web site at <http://nasdaqomxbx.cchwallstreet.com>, at the principal office of the Exchange, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

Rule 7015 provides the charges BX assesses for equity securities market connectivity to systems operated by BX. BX is amending Rule 7015 in three ways: (1) To clarify the term "port pair"; (2) to clarify the connectivity options available under the rule; and (3) to eliminate internet ports as a connectivity option.

First, BX is proposing to clarify the use of the term "port pair." For certain ports under Rule 7015 that are used for either trading or data, BX additionally provides a disaster recovery port at no cost. Such a disaster recovery port provides connectivity to BX's disaster recovery location in the event of a failure of BX's primary trading infrastructure. BX has provided disaster recovery ports at no cost since 2009 to encourage member firms to maintain such connectivity in the event of a market disruption so that the market as a whole could continue to operate. In the interest of clarity, the Exchange is proposing to eliminate the term port pair and to separately list disaster recovery ports as a connectivity option available at no cost under the rule.

Second, BX is reorganizing and adding language to Rule 7015 to list all connectivity provided by BX under the rule, which is currently subsumed in a connectivity option and related fee. Specifically, the Exchange currently offers connectivity for \$500 per port, per

month for each port pair other than Multicast ITCH data feed pairs and TCP ITCH data feed pairs. Under the \$500 per port, per month connectivity option a member firm may subscribe to an OUCH protocol trading port, a FIX Trading Port (either a FIX or FIX Lite protocol),³ RASH protocol trading port, and DROP ports. BX is listing separately each of the options available under the rule. BX also offers trading ports that may be used only in test mode. Member firms may subscribe to these test mode trading ports at no cost, which are exclusively used for testing purposes and may not be used for trading in securities in the System. The Exchange is adding rule text noting that these test ports may be subscribed to under the rule. The Exchange also provides data retransmission ports at no cost. Data retransmission ports allow a subscriber to replay market data, in the event the data was missed in a live feed or for verification purposes. Data retransmission ports only allow replay of the current trading day and do not provide data concerning prior trading days' data. The Exchange is adding rule text noting that data retransmission ports may be subscribed to under the rule.

Third, BX is proposing to eliminate Internet Ports. Internet ports are based on outdated technology and BX does not have any subscribers to this connectivity method.

2. Statutory Basis

The Exchange believes the proposed rule change is consistent with Section 6(b) of the Act,⁴ in general, and furthers the objectives of Sections 6(b)(4) and 6(b)(5) of the Act,⁵ in particular, in that it provides for the equitable allocation of reasonable dues, fees and other charges among members and issuers and other persons using any facility or system which BX operates or controls, and is designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, to

³ A FIX port is a trading port using a FIX-based telecommunication protocol. FIX, an abbreviation for Financial Information eXchange, is a standard message protocol that defines an electronic message exchange for communicating securities transactions between two parties. BX offers two FIX-based trading ports, which vary based on messaging formats and capability. BX is proposing to list these two protocols as options under the rule that a member firm may select when subscribing to a FIX trading port.

⁴ 15 U.S.C. 78f(b).

⁵ 15 U.S.C. 78f(b)(4) and (5).

²⁰ 17 CFR 200.30-3(a)(12).

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest; and are not designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

The Exchange believes that the clarifying changes to the rule protect investors and the public interest because they explicitly describe the fees assessed for all ports under the rule. Describing all services covered by the rule will serve to avoid investor confusion over the scope of what connectivity options are available, and the costs of such options. The Exchange notes that it is not adding new connectivity options or functionality, but is rather describing more specifically what is currently offered under the rule. In this regard, the Exchange is adding new rule text that describes all functionality available under each subparagraph of the rule and is reorganizing some rule text under the rule in an effort to make the rule clearer. The Exchange notes that much of the new text concerns testing ports and ports used in the event of a disaster or hardware failure. These ports help ensure that a fair and orderly market is maintained by allowing member firms to test their systems prior to connecting to the live trading environment and to provide backup connectivity in the event of a failure or disaster. Thus, the Exchange believes the proposed clarifying changes are consistent with the protection of investors and the public interest.

The Exchange believes that the proposed deletion of the Internet Port connectivity option is reasonable, equitably allocated, and not unfairly discriminatory because there are no subscribers to this connectivity option, which is based on outdated means of connecting to the Exchange. As a consequence, no member firms will be impacted by deletion of the connectivity option. The Exchange notes that it is not altering the charges assessed for the remaining connectivity options under Rule 7015.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. Specifically, BX is making clarifying changes to Rule 7015, which does not impose any burden on competition whatsoever. To the contrary, the proposed change facilitates competition by clarifying what connectivity options are provided

by the Exchange, thereby informing other market venues a better understanding of what connectivity options are available for BX. With that better understanding, other market venues may improve existing connectivity options or offer new connectivity options to compete with BX. Accordingly, the proposed changes do not inhibit market participants' ability to compete among each other, nor do they impose any burden on competition among market venues, but rather may promote competition among market venues.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

No written comments were either solicited or received.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Because the foregoing proposed rule change does not: (i) Significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, it has become effective pursuant to Section 19(b)(3)(A)(ii) of the Act⁶ and subparagraph (f)(6) of Rule 19b-4 thereunder.⁷ At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is: (i) Necessary or appropriate in the public interest; (ii) for the protection of investors; or (iii) otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

⁶ 15 U.S.C. 78s(b)(3)(a)(ii).

⁷ 17 CFR 240.19b-4(f)(6). In addition, Rule 19b-4(f)(6) requires a self-regulatory organization to give the Commission written notice of its intent to file the proposed rule change at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission. The Exchange has satisfied this requirement.

Electronic Comments

- Use the Commission's Internet comment form (<http://www.sec.gov/rules/sro.shtml>); or
- Send an email to rule-comments@sec.gov. Please include File Number SR-BX-2015-087 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549-1090.

All submissions should refer to File Number SR-BX-2015-087. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (<http://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR-BX-2015-087 and should be submitted on or before February 5, 2016.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.⁸

Robert W. Errett,
Deputy Secretary.

[FR Doc. 2016-00644 Filed 1-14-16; 8:45 am]

BILLING CODE 8011-01-P

⁸ 17 CFR 200.30-3(a)(12).

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-76870; File No. SR-DTC-2016-001]

Self-Regulatory Organizations; The Depository Trust Company; Notice of Filing and Immediate Effectiveness of Proposed Rule Change To Amend the DTC Custody Service Guide To Codify Its Current Procedures for Assigning a Value to Custody Service Securities for Shipping Insurance Valuation Purposes

January 11, 2016.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”)¹ and Rule 19b-4 thereunder,² notice is hereby given that on January 4, 2016, The Depository Trust Company (“DTC”) filed with the Securities and Exchange Commission (“Commission”) the proposed rule change as described in Items I, II and III below, which Items have been prepared by DTC. DTC filed the proposed rule change pursuant to Section 19(b)(3)(A) of the Act³ and subparagraph (f)(1) of Rule 19b-4 thereunder.⁴ The proposed rule change was effective upon filing with the Commission. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Clearing Agency’s Statement of the Terms of Substance of the Proposed Rule Change

The proposed rule change would update DTC’s Custody Service Guide (“Custody Guide”) to codify DTC’s current procedures for assigning a value to securities held in DTC’s Custody Service for shipping insurance valuation purposes, as more fully described below.⁵ The text of the proposed rule change to update the Custody Guide is set forth in Section II(A)(1) below.

II. Clearing Agency’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, DTC included statements concerning the purpose of, and basis for, the proposed rule change and discussed any comments it received on the proposed

rule change. The text of these statements may be examined at the places specified in Item IV below. DTC has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

(A) Clearing Agency’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The purpose of the proposed rule filing submitted by DTC is to update the text of the Custody Guide to codify its current procedures for assigning a value to securities held in DTC’s Custody Service for shipping insurance valuation purposes only, as described below.

The Custody Service enables Participants that hold physical securities that are not presently eligible for book-entry services at DTC to deposit those securities with DTC for safekeeping and certain limited depository services.⁶ Generally, DTC does not price securities held in DTC’s Custody Service.⁷ However, DTC applies pricing when instructed by a Participant to ship a Custody Service security from DTC to the Participant or to the Participant’s customers or agents, to ensure that its applicable insurance coverage limit is not exceeded. In response to internal review and to be more transparent with respect to its current procedures for assigning a value to securities held in its Custody Service, DTC is proposing to codify its current practice with respect to assigning such values. Following is an excerpt from the applicable section in the Custody Guide, text which is in bold and underlined indicates additions to the Custody Guide pursuant to the proposed rule change:

Insurance and Replacement of Certificates

DTC carries insurance relating to the replacement of certificates lost in transit or on its premises. Based on DTC’s insurance coverage, it is recommended that the depositing Participant review its holdings and, when possible, submit these high value certificates for breakdowns so that the dollar value remains within DTC’s insurance limits.

Prior to shipping high value certificates, when possible, arrangements are made with transfer agents or issuers to cancel these

certificates before shipment. DTC limits its liability for loss with respect to high-value certificates to the Limit, as defined below; however DTC’s liability for loss is not limited to the Limit to the extent that such loss is caused directly by DTC’s gross negligence or willful misconduct; provided that in no event shall DTC be liable for any special, consequential, exemplary, incidental, or punitive damages in this regard. The “Limit” is defined as DTC’s insurance coverage at the time of the loss in question, provided that with respect to a loss during shipment, the Limit is the lesser of DTC’s insurance coverage at the time of the loss in question and \$100 million. Participants may request from time to time information regarding the Limit.

DTC has internal procedures to control, safeguard and limit the risk of potential loss of a high value certificate. For example, DTC staff will work with the depositing Participant’s staff to breakdown the deposit into smaller workable denominations so that they fall within a more acceptable range of value. In addition, where possible, arrangements will be made with transfer agents/issuers to cancel these certificates prior to their shipment.

Shipping Insurance Valuation

Securities held by Participants through the Custody Service are segregated from DTC’s fungible mass held by Cede & Co., are not eligible for book-entry services, and cannot be used as collateral for DTC transactions.

DTC does not generally price securities held in the Custody Service. However, when DTC is instructed by a Participant to ship securities held in the Custody Service, DTC assigns a price to the securities being shipped to ensure that DTC’s Limit is not exceeded when shipping certificates. If a security being shipped is also a full depository eligible security, DTC will assign the full depository eligible security’s previous day’s closing price, to ensure that its Limit is not being exceeded. When DTC does not have a price for a Custody Service security based on the price of a full depository eligible security, and DTC is instructed by its Participant to ship the security, DTC will assign a price as follows:

- *DTC will use a default price of \$1.00 per share for equity issues and face value for debt issues (each, “Default Pricing”).*
- *Where Default Pricing would otherwise apply, Participants may instead provide DTC with a price for DTC to assign to the security for shipping insurance valuation purposes. DTC’s assignment of that price for*

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

³ 15 U.S.C. 78s(b)(3)(A).

⁴ 17 CFR 240.19b-4(f)(1).

⁵ Each term not otherwise defined herein has its respective meaning as set forth in the DTC Rules, By-laws, and Organization Certificate (the “Rules”), available at <http://www.dtcc.com/legal/rules-and-procedures.aspx>, and the DTC Custody Service Guide, available at <http://www.dtcc.com/~media/Files/Downloads/legal/service-guides/Custody.pdf>.

⁶ See Custody Guide at pp. 5 and 12 for the types of securities and assets eligible for deposit to the Custody Service, *supra* note 5. DTC holds certain non-standard assets in its Custody Service, however, those are not the subject of this proposed rule change.

⁷ DTC typically only prices securities that are eligible for book-entry services.

shipping insurance valuation purposes shall not be deemed as an agreement to the price or valuation of the security, and in no event shall DTC be bound or required to use such price for this or any other purpose.

Default Pricing and Participant-provided pricing are subject to DTC's internal procedures to control, safeguard and limit the risk of potential loss of a high value certificate, as set forth above. Participants should consider use of their own insurance for high value certificates in excess of the Limit or in appropriate circumstances they deem to be appropriate, in their discretion.

Implementation Date

The proposed rule change would become effective immediately.

2. Statutory Basis

Section 17A(b)(3)(F) of the Act requires that the rules of the clearing agency be designed, *inter alia*, to assure the safeguarding of securities and funds which are in the custody or control of the clearing agency or for which it is responsible.⁸ By codifying DTC's current Default Pricing practice and the option for Participants to provide their own pricing, the proposed rule change provides transparency to DTC's shipping insurance valuation procedure for Custody Service securities, facilitating Participants' consideration of their insurance options for such securities. Therefore, DTC believes that the proposed rule change would aid in assuring the safeguarding of Custody Service securities and is consistent with the requirements of the Act, in particular, Section 17A(b)(3)(F) of the Act, cited above.

Rule 17Ad-22(d)(15) promulgated under the Act requires, *inter alia*, that a clearing agency establish, implement, maintain and enforce written policies and procedures reasonably designed to state to its participants the clearing agency's obligations with respect to physical deliveries and identify and manage the risks from these obligations.⁹ DTC believes the proposed rule change is consistent with this provision because codifying DTC's current practice would provide transparency with respect to DTC's procedures for assigning a value to physical securities held in the Custody Service for shipping insurance valuation purposes, and therefore is reasonably designed to identify and manage risks

associated with shipments of Custody Service securities.

(B) Clearing Agency's Statement on Burden on Competition

DTC does not believe that the proposed rule change would have any impact, or impose any burden, on competition because it merely codifies DTC's current practice with respect to shipping insurance valuation of Custody Service securities and DTC's identification and management of the risks therein and does not otherwise impact users of DTC's services.

(C) Clearing Agency's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

Written comments relating to the proposed rule change have not been solicited or received. DTC will notify the Commission of any written comments received by DTC.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

The foregoing rule change has become effective pursuant to Section 19(b)(3)(A) of the Act¹⁰ and subparagraph (f)(1) of Rule 19b-4 thereunder.¹¹ At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (<http://www.sec.gov/rules/sro.shtml>); or
- Send an email to rule-comments@sec.gov. Please include File Number SR-DTC-2016-001 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549-1090. All submissions should refer to File Number SR-DTC-2016-001. This file

number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (<http://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of DTC and on DTCC's Web site (<http://dtcc.com/legal/sec-rule-filings.aspx>). All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR-DTC-2016-001 and should be submitted on or before February 5, 2016.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.¹²

Robert W. Errett,
Deputy Secretary.

[FR Doc. 2016-00646 Filed 1-14-16; 8:45 am]

BILLING CODE 8011-01-P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-76867; File No. SR-PHLX-2015-115]

Self-Regulatory Organizations; NASDAQ OMX PHLX LLC; Notice of Filing and Immediate Effectiveness of Proposed Rule Change To Amend Chapter VIII of the Pricing Schedule

January 11, 2016.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 ("Act"),¹ and Rule 19b-4 thereunder,² notice is hereby given that on December 29, 2015, NASDAQ OMX PHLX LLC

⁸ 15 U.S.C. 78q-1(b)(3)(F).

⁹ 17 CFR 240.17Ad-22(d)(15).

¹⁰ 15 U.S.C. 78s(b)(3)(A).

¹¹ 17 CFR 240.19b-4(f)(1).

¹² 17 CFR 200.30-3(a)(12).

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

("Phlx" or "Exchange") filed with the Securities and Exchange Commission ("SEC" or "Commission") the proposed rule change as described in Items I, II, and III, below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange proposes to amend Chapter VIII of the Pricing Schedule to clarify the connectivity options and application of the fees assessed thereunder.

The text of the proposed rule change is available on the Exchange's Web site at <http://nasdaqomxphlx.cchwallstreet.com/>, at the principal office of the Exchange, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

Chapter VIII of the Pricing Schedule provides the charges Phlx assesses for equity securities market connectivity to systems operated by Phlx. Phlx is amending Chapter VIII of the Pricing Schedule in four ways: (1) To clarify the term "port pair"; (2) to clarify the connectivity options available under the rule; (3) to eliminate internet ports as a connectivity option; and (4) to eliminate rule text concerning a waiver of fees of limited duration that has since expired.

First, Phlx is proposing to clarify the use of the term "port pair." For certain ports under Chapter VIII of the Pricing Schedule that are used for either trading or data, Phlx additionally provides a disaster recovery port at no cost. Such a disaster recovery port provides connectivity to Phlx's disaster recovery

location in the event of a failure of Phlx's primary trading infrastructure. Phlx has provided disaster recovery ports at no cost since 2010 to encourage member organization to maintain such connectivity in the event of a market disruption so that the market as a whole could continue to operate. In the interest of clarity, the Exchange is proposing to eliminate the term port pair and to separately list disaster recovery ports as a connectivity option available at no cost under the rule.

Second, Phlx is reorganizing and adding language to Chapter VIII of the Pricing Schedule to list all connectivity provided by Phlx under the rule, which is currently subsumed in a connectivity option and related fee. Specifically, the Exchange currently offers connectivity for \$400 per port, per month for each port pair other than Multicast ITCH data feed pairs. Under the \$400 per port, per month connectivity option a member organization may subscribe to an OUCH protocol trading port, a FIX Trading Port (either a FIX or FIX Lite protocol),³ RASH protocol trading port, and DROP ports. Phlx is listing separately each of the options available under the rule.⁴

Similarly, Phlx offers trading ports that may be used only in test mode. Member organizations may subscribe to these test mode trading ports at no cost, which are exclusively used for testing purposes and may not be used for trading in securities in the System. The Exchange is adding rule text noting that these test ports may be subscribed to under the rule. The Exchange also provides data retransmission ports at no cost. Data retransmission ports allow a subscriber to replay market data, in the event the data was missed in a live feed or for verification purposes. Data retransmission ports only allow replay of the current trading day and do not provide data concerning prior trading days' data. The Exchange is adding rule text noting that data retransmission ports may be subscribed to under the rule.

Third, Phlx is proposing to eliminate Internet Ports. Internet ports are based on outdated technology and Phlx does

³ A FIX port is a trading port using a FIX-based telecommunication protocol. FIX, an abbreviation for Financial Information eXchange, is a standard message protocol that defines an electronic message exchange for communicating securities transactions between two parties. Phlx offers two FIX-based trading ports, which vary based on messaging formats and capability. Phlx is proposing to list these two protocols as options under the rule that a member organization may select when subscribing to a FIX trading port.

⁴ The Exchange is also deleting rule text concerning a port fee waiver of this connectivity option, which has since expired.

not have any subscribers to this connectivity method.

Fourth, the Exchange is proposing to eliminate rule text concerning a fee waiver of all Access Services fees for the first full six months during which Phlx's equities trading market, NASDAQ OMX PSX, operates. NASDAQ OMX PSX began operations in October, 2010.⁵ Thus, the Exchange is proposing to eliminate the unneeded text.

2. Statutory Basis

The Exchange believes the proposed rule change is consistent with Section 6(b) of the Act,⁶ in general, and furthers the objectives of Sections 6(b)(4) and 6(b)(5) of the Act,⁷ in particular, in that it provides for the equitable allocation of reasonable dues, fees and other charges among members and issuers and other persons using any facility or system which Phlx operates or controls, and is designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest; and are not designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

The Exchange believes that the clarifying changes to the rule protect investors and the public interest because they explicitly describe the fees assessed for all ports under the rule. Describing all services covered by the rule will serve to avoid investor confusion over the scope of what connectivity options are available, and the costs of such options. The Exchange notes that it is not adding new connectivity options or functionality, but is rather describing more specifically what is currently offered under the rule. In this regard, the Exchange is adding new rule text that describes all functionality available under each subparagraph of the rule, and is reorganizing some rule text under the rule in an effort to make the rule clearer. The Exchange notes that much of the new text concerns testing ports, and ports used in the event of a disaster or hardware failure. These ports help ensure that a fair and orderly market is

⁵ Securities Exchange Act Release No. 62877 (September 9, 2010), 75 FR 56633 (September 16, 2010) (SR-Phlx-2010-79).

⁶ 15 U.S.C. 78f (b).

⁷ 15 U.S.C. 78f(b)(4) and (5).

maintained by allowing member organizations to test their systems prior to connecting to the live trading environment, and to provide backup connectivity in the event of a failure or disaster. Thus, the Exchange believes the proposed clarifying changes are consistent with the protection of investors and the public interest.

The Exchange believes that the proposed deletion of the Internet Port connectivity option is reasonable, equitably allocated, and not unfairly discriminatory because there are no subscribers to this connectivity option, which is based on outdated means of connecting to the Exchange. As a consequence, no member organizations will be impacted by deletion of the connectivity option. Likewise, the Exchange believes that the proposed deletion of the expired Access Services fee waiver rule text is reasonable, equitably allocated, and not unfairly discriminatory because the waiver is no longer in effect and therefore no member organizations will be impacted by the deletion. The Exchange notes that it is not altering the charges assessed for the remaining connectivity options under Chapter VIII of the Pricing Schedule.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. Specifically, Phlx is making clarifying changes to Chapter VIII of the Pricing Schedule, which does not impose any burden on competition whatsoever. To the contrary, the proposed change facilitates competition by clarifying what connectivity options are provided by the Exchange, thereby informing other market venues a better understanding of what connectivity options are available for Phlx. With that better understanding, other market venues may improve existing connectivity options or offer new connectivity options to compete with Phlx. Accordingly, the proposed changes do not inhibit market participants' ability to compete among each other, nor do they impose any burden on competition among market venues, but rather may promote competition among market venues.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

No written comments were either solicited or received.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Because the foregoing proposed rule change does not: (i) Significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, it has become effective pursuant to Section 19(b)(3)(A)(iii) of the Act⁸ and subparagraph (f)(6) of Rule 19b-4 thereunder.⁹ At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is: (i) Necessary or appropriate in the public interest; (ii) for the protection of investors; or (iii) otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (<http://www.sec.gov/rules/sro.shtml>); or
- Send an email to rule-comments@sec.gov. Please include File Number SR-Phlx-2015-115 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549-1090. All submissions should refer to File Number SR-Phlx-2015-115. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (<http://www.sec.gov/rules/sro.shtml>). Copies of the

⁸ 15 U.S.C. 78s(b)(3)(a)(iii).

⁹ 17 CFR 240.19b-4(f)(6). In addition, Rule 19b-4(f)(6) requires a self-regulatory organization to give the Commission written notice of its intent to file the proposed rule change at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission. The Exchange has satisfied this requirement.

submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR-Phlx-2015-115 and should be submitted on or before February 5, 2016.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.¹⁰

Robert W. Errett,
Deputy Secretary.

[FR Doc. 2016-00643 Filed 1-14-16; 8:45 am]

BILLING CODE 8011-01-P

SECURITIES AND EXCHANGE COMMISSION

[Investment Company Act Release No. 31954; 812-14478]

Investment Managers Series Trust, et al.; Notice of Application

January 11, 2016.

AGENCY: Securities and Exchange Commission ("Commission").

ACTION: Notice of an application under section 6(c) of the Investment Company Act of 1940 ("Act") for an exemption from section 15(a) of the Act and rule 18f-2 under the Act, as well as from certain disclosure requirements in rule 20a-1 under the Act, Item 19(a)(3) of Form N-1A, Items 22(c)(1)(ii), 22(c)(1)(iii), 22(c)(8) and 22(c)(9) of Schedule 14A under the Securities Exchange Act of 1934, and Sections 6-07(2)(a), (b), and (c) of Regulation S-X ("Disclosure Requirements"). The requested exemption would permit an investment adviser to hire and replace certain sub-advisers without shareholder approval and grant relief

¹⁰ 17 CFR 200.30-3(a)(12).

from the Disclosure Requirements as they relate to fees paid to the sub-advisers.

APPLICANTS: Investment Managers Series Trust (the “Trust”), a Delaware statutory trust registered under the Act as an open-end management investment company with multiple series, on behalf of its series, the State Street/Ramius Managed Futures Strategy Fund (the “SS/R Fund”), Ramius Trading Strategies MF Ltd., a Cayman Islands corporation wholly owned by the SS/R Fund (the “SS/R Subsidiary”), and Ramius Trading Strategies LLC, a Delaware limited liability company registered as an investment adviser under the Investment Advisers Act of 1940 (“Ramius” or the “Advisor,” and collectively with the Trust and the SS/R Subsidiary, the “Applicants”).

DATES: *Filing Dates:* The application was filed June 3, 2015, and amended on September 10, 2015, November 3, 2015, December 18, 2015 and January 8, 2016.

HEARING OR NOTIFICATION OF HEARING: An order granting the application will be issued unless the Commission orders a hearing. Interested persons may request a hearing by writing to the Commission’s Secretary and serving applicants with a copy of the request, personally or by mail. Hearing requests should be received by the Commission by 5:30 p.m. on February 5, 2016, and should be accompanied by proof of service on the applicants, in the form of an affidavit or, for lawyers, a certificate of service. Pursuant to rule 0–5 under the Act, hearing requests should state the nature of the writer’s interest, any facts bearing upon the desirability of a hearing on the matter, the reason for the request, and the issues contested. Persons who wish to be notified of a hearing may request notification by writing to the Commission’s Secretary.

ADDRESSES: Secretary, U.S. Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090. Applicants: Gregory S. Rowland, Esq., Davis Polk & Wardwell LLP, 450 Lexington Avenue, New York, NY 10017.

FOR FURTHER INFORMATION CONTACT: Robert Shapiro, Senior Counsel, at (202) 551–7758, or Mary Kay Frech, Branch Chief, at (202) 551–6821 (Division of Investment Management, Chief Counsel’s Office).

SUPPLEMENTARY INFORMATION: The following is a summary of the application. The complete application may be obtained via the Commission’s Web site by searching for the file number, or an applicant using the Company name box, at [http://](http://www.sec.gov/search/search.htm)

www.sec.gov/search/search.htm or by calling (202) 551–8090.

Summary of the Application

1. The Advisor will serve as the investment adviser to the Funds pursuant to an investment advisory agreement with the Trust (the “Advisory Agreement”).¹ The Advisor will provide the Funds with continuous and comprehensive investment management services subject to the supervision of, and policies established by, each Fund’s board of trustees (“Board”). The Advisory Agreement permits the Advisor, subject to the approval of the Board, to delegate to one or more sub-advisers (each, a “Subadvisor” and collectively, the “Subadvisors”) the responsibility to provide the day-to-day portfolio investment management of each Fund (either directly or through such Fund’s direct or indirect wholly-owned subsidiary), subject to the supervision and direction of the Advisor. The primary responsibility for managing the Funds will remain vested in the Advisor. The Advisor will hire, evaluate, allocate assets to and oversee the Subadvisors, including determining whether a Subadvisor should be terminated, at all times subject to the authority of the Board.

2. Each Fund may pursue its investment strategies by investing through a direct wholly-owned subsidiary (each such subsidiary, including the SS/R Subsidiary, a “Subsidiary”) or an indirect wholly-owned subsidiary (each, a “Trading Entity”).² Ramius has entered into an investment advisory agreement with the SS/R Subsidiary (the “SS/R Subsidiary Advisory Agreement”), and any future Subsidiary will enter into an investment advisory agreement with the respective Advisor (together with the SS/R Subsidiary Advisory Agreement, the “Subsidiary Advisory Agreements”).³

¹ Applicants request relief with respect to any existing and any future series of the Trust and any other registered open-end management company or series thereof that: (a) Is advised by Ramius or its successor or by a person controlling, controlled by, or under common control with Ramius or its successor (each, also an “Advisor”); (b) uses the manager of managers structure described in the application; and (c) complies with the terms and conditions of the application (any such series, including the SS/R Fund, a “Fund” and collectively, the “Funds”). For purposes of the requested order, “successor” is limited to an entity that results from a reorganization into another jurisdiction or a change in the type of business organization.

² For purposes of the application, a Subadvisor to a Trading Entity is referred to as a “Trading Advisor.”

³ The SS/R Subsidiary Advisory Agreement has been, and any future Subsidiary Advisory Agreement will be, approved by the Board, including a majority of the trustees who are not

The Subsidiary may pursue its investment strategy by investing some or all of its assets in wholly-owned Trading Entities managed by Trading Advisors and overseen by the Advisor. In all cases, an Advisor will be the entity providing general management services to each Fund, including overall supervisory responsibility for the general management and investment of the Fund’s assets (either directly or through such Fund’s Subsidiary or Trading Entities), and, subject to review and approval of the Board, will: (a) Set such Fund’s (including its Subsidiary’s and Trading Entities’) overall investment strategies; (b) evaluate, select and recommend Subadvisors to manage all or a part of the Fund’s assets (directly or through its Subsidiary and Trading Entities); (c) allocate and, when appropriate, reallocate the Fund’s assets among one or more Subadvisors (including by allocating and reallocating assets between and among the Fund, the Subsidiary and the Trading Entities); (d) monitor and evaluate the performance of Subadvisors; and (e) implement procedures reasonably designed to ensure that the Subadvisors comply with the investment objective, policies and restrictions of the Subsidiary, Trading Entity and the Fund.

3. Applicants request an order exempting Applicants from section 15(a) of the Act and rule 18f–2 thereunder to permit the Trust, on behalf of a Fund, and/or its Advisor, subject to the approval of the Board, to enter into and materially amend investment subadvisory agreements with Subadvisors (“Subadvisory Agreements”) without obtaining shareholder approval.⁴ Applicants also seek an exemption from the Disclosure Requirements to permit a Fund to disclose (as both a dollar amount and a percentage of the Fund’s net assets): (a) The aggregate fees paid to the Advisor and any Excluded Subadvisor; and (b) the aggregate fees paid to Subadvisors other than Excluded Subadvisors

“interested persons” (as defined in section 2(a)(19) of the Act) of the Trust or the Advisor, and the Fund’s shareholders.

⁴ The requested relief will not extend to (i) any sub-adviser who is an affiliated person, as defined in section 2(a)(3) of the Act, of a Fund, the Trust or the Advisor, other than by reason of serving as a sub-adviser to one or more Funds (or the Subsidiary or Trading Entity) or as an investment adviser or sub-adviser to any series of the Trust other than the Funds (“Affiliated Subadvisor”), or (ii) to SSGA Funds Management, Inc., a non-affiliated sub-adviser of the SS/R Fund, which manages a portion of the assets of the SS/R Fund and provides services to Ramius with respect to selecting, monitoring, evaluating and allocating assets among the other Subadvisors of the SS/R Fund (collectively with any Affiliated Subadvisor, “Excluded Subadvisors”).

(collectively, “Aggregate Fee Disclosure”). For any Fund that employs an Excluded Subadvisor, the Fund will provide separate disclosure of any fees paid to the Excluded Subadvisor.

4. Applicants agree that any order granting the requested relief will be subject to the terms and conditions stated in the application. Such terms and conditions provide for, among other safeguards, appropriate disclosure to Fund shareholders and notification about sub-advisory changes and enhanced Board oversight to protect the interests of the Funds’ shareholders.

5. Section 6(c) of the Act provides that the Commission may exempt any person, security, or transaction or any class or classes of persons, securities, or transactions from any provisions of the Act, or any rule thereunder, if such relief is necessary or appropriate in the public interest and consistent with the protection of investors and purposes fairly intended by the policy and provisions of the Act. Applicants believe that the requested relief meets this standard because, as further explained in the application, the Advisory Agreements will remain subject to shareholder approval, while the role of the Subadvisors is substantially similar to that of individual portfolio managers, so that requiring shareholder approval of Subadvisory Agreements would impose unnecessary delays and expenses on the Funds. Applicants believe that the requested relief from the Disclosure Requirements meets this standard because it will improve the Advisor’s ability to negotiate fees paid to the Subadvisors that are more advantageous for the Funds.

For the Commission, by the Division of Investment Management, under delegated authority.

Robert W. Errett,

Deputy Secretary.

[FR Doc. 2016-00662 Filed 1-14-16; 8:45 am]

BILLING CODE 8011-01-P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-76863; File No. SR-BATS-2015-120]

Self-Regulatory Organizations; BATS Exchange, Inc.; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change Related to Fees for Use of BATS Exchange, Inc.

January 11, 2016.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (the

“Act”),¹ and Rule 19b-4 thereunder,² notice is hereby given that on December 29, 2015, BATS Exchange, Inc. (the “Exchange” or “BATS”) filed with the Securities and Exchange Commission (“Commission”) the proposed rule change as described in Items I, II and III below, which Items have been prepared by the Exchange. The Exchange has designated the proposed rule change as one establishing or changing a member due, fee, or other charge imposed by the Exchange under Section 19(b)(3)(A)(ii) of the Act³ and Rule 19b-4(f)(2) thereunder,⁴ which renders the proposed rule change effective upon filing with the Commission. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization’s Statement of the Terms of Substance of the Proposed Rule Change

The Exchange filed a proposal to amend the fee schedule applicable to Members⁵ and non-members of the Exchange pursuant to BATS Rules 15.1(a) and (c). The change to the fee schedule pursuant to this proposal is effective upon filing.

The text of the proposed rule change is available at the Exchange’s Web site at www.batstrading.com, at the principal office of the Exchange, and at the Commission’s Public Reference Room.

II. Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in Sections A, B, and C below, of the most significant parts of such statements.

(A) Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to modify its fee schedule applicable to the Exchange’s options platform to modify the criteria necessary to meet the Customer⁶ Step-Up Volume Tier under footnote 1. The Exchange currently offers a total of eight Customer Penny Pilot Add Volume Tiers under footnote 1 that provide enhanced rebates for Customer orders in Penny Pilot Securities that add liquidity under fee code PY.⁷ Under the Customer Step-Up Volume Tier, the Member would receive a rebate of \$0.53 per contract where they have an Options Step-Up Add TCV⁸ in Customer orders from September 2015 baseline equal to or greater than 0.40%. The Exchange proposes to ease the criteria necessary to qualify for the Customer Step-Up Volume Tier by requiring an Options Step-Up Add TCV in Customer orders from September 2015 baseline equal to or greater than 0.35%. The Exchange proposes to implement this amendment to its fee schedule on January 4, 2016.

2. Statutory Basis

The Exchange believes that the proposed rule change is consistent with the requirements of the Act and the rules and regulations thereunder that are applicable to a national securities exchange, and, in particular, with the requirements of Section 6 of the Act. Specifically, the Exchange believes that the proposed rule change is consistent with Section 6(b)(4) of the Act, in that it provides for the equitable allocation of reasonable dues, fees and other charges among members and other persons using any facility or system which the Exchange operates or controls. The Exchange notes that it operates in a highly competitive market in which market participants can readily direct order flow to competing venues if they deem fee levels to be excessive.

Volume-based rebates such as those currently maintained on the Exchange

⁶ As defined in the Exchange’s fee schedule available at http://www.batsoptions.com/support/fee_schedule/bzx/.

⁷ Fee code PY is appended to Customer orders that add liquidity in Penny Pilot Securities. *Id.* Penny Pilot Securities is defined in the Exchange’s fee schedule. *Id.* Orders yielding fee code PY receive a rebate of \$0.25 per share, absent achieving a tier and receiving an increased rebate under footnote 1.

⁸ As defined in the Exchange’s fee schedule available at http://www.batsoptions.com/support/fee_schedule/bzx/.

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

³ 15 U.S.C. 78s(b)(3)(A)(ii).

⁴ 17 CFR 240.19b-4(f)(2).

⁵ The term “Member” is defined as “any registered broker or dealer that has been admitted to membership in the Exchange.” See Exchange Rule 1.5(n).

have been widely adopted by equities and options exchanges and are equitable because they are open to all Members on an equal basis and provide additional benefits or discounts that are reasonably related to the value to an exchange's market quality associated with higher levels of market activity, such as higher levels of liquidity provision and/or growth patterns, and introduction of higher volumes of orders into the price and volume discovery processes. Easing the criteria for the Customer Step-Up Volume Tier is intended to incentivize Members to send additional orders to the Exchange in an effort to qualify for the enhanced rebate available by the respective tier.

The Exchange believes that this change is reasonable, fair and equitable and non-discriminatory, for the reasons set forth with respect to volume-based pricing generally and because such change will either incentivize participants to further contribute to market quality on the Exchange or will allow the Exchange to earn additional revenue that can be used to offset the addition of new pricing incentives. The Exchange also believes that the proposed rebate remains consistent with pricing previously offered by the Exchange as well as competitors of the Exchange and does not represent a significant departure from the Exchange's general pricing structure.

(B) Self-Regulatory Organization's Statement on Burden on Competition

The Exchange believes the proposed amendment to its fee schedule would not impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. The Exchange does not believe that the proposed change represents a significant departure from previous pricing offered by the Exchange or pricing offered by the Exchange's competitors. Additionally, Members may opt to disfavor the Exchange's pricing if they believe that alternatives offer them better value. Accordingly, the Exchange does not believe that the proposed change will impair the ability of Members or competing venues to maintain their competitive standing in the financial markets. The Exchange does not believe that the proposed change to the Exchange's tiered pricing structure burdens competition, but instead, enhances competition as it is intended to increase the competitiveness of the Exchange by easing the criteria necessary to qualify for the Customer Step-Up Volume tier. Also, the Exchange believes that the decrease to the tier's threshold contributes to, rather than burdens

competition, as such change is intended to incentivize participants to increase their participation on the Exchange.

(C) Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants or Others

The Exchange has not solicited, and does not intend to solicit, comments on this proposed rule change. The Exchange has not received any written comments from members or other interested parties.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

The foregoing rule change has become effective pursuant to Section 19(b)(3)(A) of the Act⁹ and paragraph (f) of Rule 19b-4 thereunder.¹⁰ At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (<http://www.sec.gov/rules/sro.shtml>); or
- Send an email to rule-comments@sec.gov. Please include File No. SR-BATS-2015-120 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549-1090.
- All submissions should refer to File No. SR-BATS-2015-120. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (<http://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule

change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of such filing will also be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File No. SR-BATS-2015-120 and should be submitted on or before February 5, 2016.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.¹¹

Robert W. Errett,

Deputy Secretary.

[FR Doc. 2016-00640 Filed 1-14-16; 8:45 am]

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SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-76869; File No. SR-NYSEArca-2015-86]

Self-Regulatory Organizations; NYSE Arca, Inc.; Order Granting Approval of Proposed Rule Change, and Notice of Filing and Order Granting Accelerated Approval of Amendment Nos. 1 and 3 Thereto, Relating to Auctions for Pillar, the Exchange's New Trading Technology Platform

January 11, 2016.

I. Introduction

On September 22, 2015, NYSE Arca, Inc. ("Exchange" or "Arca") filed with the Securities and Exchange Commission ("Commission"), pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 ("Act")¹ and Rule 19b-4 thereunder,² a proposed rule change to adopt new equity trading rules relating to auctions for Pillar, the Exchange's new trading technology platform. The proposed rule change was published for comment in the **Federal**

¹¹ 17 CFR 200.30-3(a)(12).

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

⁹ 15 U.S.C. 78s(b)(3)(A).

¹⁰ 17 CFR 240.19b-4(f).

Register on October 13, 2015.³ The Commission received no comments on the proposed rule change. On November 20, 2015, the Commission designated a longer period within which to approve the proposed rule change, disapprove the proposed rule change, or institute proceedings to determine whether to approve or disapprove the proposed rule change.⁴ On December 22, 2015, the Exchange filed Amendment No. 1 to the proposed rule change.⁵ On January 7, 2016, the Exchange filed Amendment No. 3 to the proposed rule change.⁶ The Commission is publishing this notice to solicit comment on Amendment Nos. 1 and 3 from interested persons, and is approving the proposed rule change, as modified by Amendment Nos. 1 and 3, on an accelerated basis.

II. Description of the Proposed Rule Change

The Exchange proposes to adopt Rule 7.35P, which relates to auctions for Pillar, the Exchange's new trading technology platform. The Exchange also proposes to amend existing definitions in Rule 1.1.⁷

³ See Securities Exchange Act Release No. 76085 (October 6, 2015), 80 FR 61513 ("Notice").

⁴ See Securities Exchange Act Release No. 76493, 80 FR 74169 (November 27, 2015).

⁵ In Amendment No. 1, the Exchange: (i) Amends proposed Rule 7.35P(h) to provide that the rule would address how orders would be handled not only in the transition to continuous trading following an auction, but also when transitioning from one trading session to the next trading session; (ii) amends proposed Rule 7.35P(h)(3)(B) to provide that, before continuous trading following a prior trading session or an auction begins, the display price and working price of orders would be adjusted as provided for in Rule 7.31P, and that when transitioning to continuous trading, the display price and working price of Day ISOs would be adjusted in the same manner as Arca Only Orders until the Day ISO is either traded in full or displayed at its limit price; and (iii) provides additional discussions related to certain proposed rules.

⁶ Amendment No. 3 superseded Amendment No. 2 in its entirety. In Amendment No. 3, the Exchange: (i) Specifies the percentages for the Auction Collar thresholds; (ii) removes the reference to the Trading Halt Auction in the definition of Auction Collar; (iii) states that the Exchange would provide prior notice to ETP Holders if additional UTP Securities are to be designated as Auction-Eligible Securities; (iv) includes cross-references to Rule 7.16P in Commentary .01 to proposed Rule 7.35P to clarify where certain terms are defined; and (v) provides additional discussions related to certain proposed rules.

⁷ The Exchange proposes to amend Rules 1.1(r) and (s) to specify that the definition of "Imbalance" and "Indicative Match Price" in those rules would be applicable only for auctions conducted on the current trading platform. The Exchange states that these changes would remove impediments to and perfect the mechanism of a fair and orderly market because they would not make any substantive changes, but rather are designed to reduce confusion by specifying that Rules 1.1(r) and (s) would be applicable to auctions on the current trading platform only. See Notice at 61525.

A. Background

The Exchange represents that Pillar is an integrated trading technology platform designed to use a single specification for connecting to the equities and options markets operated by Arca and its affiliates, New York Stock Exchange LLC ("NYSE") and NYSE MKT LLC ("NYSE MKT").⁸ On April 30, 2015, the Exchange filed the first rule filing relating to the implementation of Pillar, which adopted rules relating to Trading Sessions, Order Ranking and Display, and Order Execution.⁹ On July 7, 2015, the Exchange filed the second rule filing relating to the implementation of Pillar, which adopted rules relating to Orders and Modifiers and the Retail Liquidity Program.¹⁰ On July 1, 2015, the Exchange filed the third rule filing relating to the implementation of Pillar, which adopted rules relating to Trading Halts, Short Sales, Limit Up-Limit Down, and Odd Lots and Mixed Lots.¹¹

This filing is the fourth set of proposed rule changes to support Pillar implementation. As proposed, the new rule governing trading on Pillar would have the same numbering as the current rule, but with the modifier "P" appended to the rule number. Specifically, Rule 7.35, which governs auctions, would remain unchanged and continue to apply to any trading in symbols on the current trading platform. Proposed Rule 7.35P would govern auctions for trading in symbols migrated to the Pillar platform.

B. Proposed Modifications

As stated in the Notice, the Exchange proposes new Rule 7.35P to describe auctions on Pillar, which would be based on Rule 7.35 and Rules 1.1(r) and (s).¹² The Exchange states that auctions on Pillar would function similarly to auctions on the current trading

⁸ See Notice at 61513.

⁹ See Securities Exchange Act Release No. 74951 (May 13, 2015), 80 FR 28721 (May 19, 2015) (SR-NYSEArca-2015-38) ("Pillar I Filing"). The Commission approved the Pillar I Filing on July 20, 2015. See Securities Exchange Act Release No. 75494 (July 20, 2015), 80 FR 44170 (July 24, 2015).

¹⁰ See Securities Exchange Act Release No. 75497 (July 21, 2015), 80 FR 45022 (July 28, 2015) (SR-NYSEArca-2015-56) ("Pillar II Filing"). The Commission approved the Pillar II Filing on October 26, 2015. See Securities Exchange Act Release No. 76267 (October 26, 2015), 80 FR 66951 (October 30, 2015).

¹¹ See Securities Exchange Act Release No. 75467 (July 16, 2015), 80 FR 43515 (July 22, 2015) (SR-NYSEArca-2015-58) ("Pillar III Filing"). The Commission approved the Pillar III Filing on October 20, 2015. See Securities Exchange Act Release No. 76198 (October 20, 2015), 80 FR 65274 (October 26, 2015). See also Securities Exchange Act Release No. 76198A (October 28, 2015), 80 FR 67822 (November 3, 2015).

¹² See Notice at 61513.

platform.¹³ According to the Exchange, proposed Rule 7.35P would use Pillar terminology and include both substantive and non-substantive differences and clarifications from the current rule text.¹⁴ The proposed changes that are more substantive in nature are noted in Section III below and are discussed in the Notice.

III. Discussion and Commission Findings

The Commission finds that the proposed rule change is consistent with the requirements of the Act and the rules and regulations thereunder applicable to a national securities exchange.¹⁵ In particular, the Commission finds that the proposed rule change is consistent with Section 6(b)(5) of the Act,¹⁶ which requires, among other things, that the rules of a national securities exchange be designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system and, in general, to protect investors and the public interest and that the rules are not designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

The Commission notes that, in the proposal, the Exchange states its belief that proposed Rule 7.35P, together with rules from the three previous Pillar filings, would remove impediments to and perfect the mechanism of a free and open market because they would promote transparency by using consistent terminology for rules governing equities trading, thereby ensuring that members, regulators, and the public can more easily navigate the Exchange's rulebook and better understand how equity trading would be conducted on Pillar.¹⁷ The Exchange also states that the proposed use of Pillar terminology would promote consistency in the Exchange's rulebook regarding how the Exchange would process orders during an auction.¹⁸ Moreover, the Exchange states that adding new rules with the modifier "P" to denote the rules that would be

¹³ See Notice at 61513-14.

¹⁴ See Notice at 61514.

¹⁵ In approving this proposed rule change, the Commission has considered the proposed rule's impact on efficiency, competition, and capital formation. See 15 U.S.C. 78c(f).

¹⁶ 15 U.S.C. 78f(b)(5).

¹⁷ See Notice at 61525.

¹⁸ See *id.*

operative for Pillar would remove impediments to and perfect the mechanism of a free and open market by providing transparency regarding which rules govern trading once a symbol has been migrated to Pillar.¹⁹

The Commission also notes that, with respect to the substantive differences between proposed Rule 7.35P and the current rules, the Exchange states that they would remove impediments to and perfect the mechanism of a fair and orderly market.²⁰ In particular, the Exchange proposes to make several changes that are more substantive in nature, which include:

Definitions

Auction-Eligible Security: The Exchange proposes a new definition for the term “Auction-Eligible Security.”²¹ According to the Exchange, as with the current rule, all securities for which the Exchange is the primary listing market would be Auction-Eligible Securities.²² However, for Pillar, the Exchange would designate UTP Securities²³ that would be Auction-Eligible Securities for the Early Open Auction, the Core Open Auction, and the Closing Auction.²⁴ According to the Exchange, this approach would support the initiatives of the Exchange, NYSE, and the NASDAQ Stock Market LLC (“Nasdaq”) to increase resiliency by having auctions on Arca serve as a backup to either NYSE or Nasdaq if one of those markets is unable to conduct an auction.²⁵

Auction Imbalance Information: The Exchange proposes to define “Auction Imbalance Information” to mean the information that is disseminated by the Corporation²⁶ for an auction.²⁷ As proposed, Auction Imbalance Information would be updated at least every second (unless there is no change to the information), rather than on a real-time basis.²⁸ According to the Exchange, by updating Auction Imbalance Information on a one-second basis, ETP Holders that are interested in entering offsetting interest during an

Auction Imbalance Freeze would have greater certainty of the Imbalance in effect at the time of order entry.²⁹

Auction NBBO: The Exchange proposes to define “Auction NBBO” to mean an NBBO that is used for purposes of pricing an auction. As proposed, an NBBO is an Auction NBBO when (i) there is an NBB above zero and NBO for the security and (ii) the NBBO is not crossed.³⁰ In addition, for the Core Open Auction, an NBBO is an Auction NBBO when the midpoint of the NBBO, when multiplied by a designated percentage, is greater than or equal to the spread of that NBBO.³¹ According to the Exchange, this approach would promote transparency regarding how the Exchange determines pricing for its auctions.³² Moreover, according to the Exchange, the proposed method for determining the Auction NBBO for the Core Open Auction is designed to validate whether an NBBO bears a relation to the value of the security.³³

Auction Ranking: The Exchange proposes to define “Auction Ranking” to mean how orders on the side of an Imbalance would be ranked for allocation in an Auction. Specifically, orders on the side of the Imbalance would be ranked in price-time priority under Rule 7.36P(c)–(g) consistent with the priority ranking associated with each order, provided that: (i) MOO and MOC Orders would be ranked Priority 1—Market Orders; (ii) LOO and LOC Orders would be ranked Priority 2—Display Orders; and (iii) the limit price of Limit, LOO, and LOC orders would be used for ranking purposes.³⁴ According to the Exchange, the only order ranked Priority 3—Non-Display Orders that would be eligible to participate in an auction would be the non-displayed quantity of a Reserve Order.³⁵ The Exchange states that the proposed approach would promote transparency in Exchange rules by consolidating into a single location how orders would be ranked for auctions.³⁶ The Exchange also states that using the same methodology to rank and allocate orders on the side of the Imbalance for all auctions based on the priority ranking described in Rule 7.36P would promote consistency in how the Exchange would rank orders on Pillar, whether for continuous trading or for

auctions.³⁷ In addition, during a Short Sale Period (as defined in Rule 7.16P(f)(4)), for purposes of pricing an auction and ranking orders for allocation in an auction, sell short Market Orders that are adjusted to a Permitted Price (as defined in Rule 7.16P(f)(5)(A)) would be processed as Limit Orders ranked Priority 2—Display Orders, and would not be included in the Market Imbalance.³⁸ The Exchange states that, once adjusted to a Permitted Price, a sell short Market Order has a price and such price could be used for purposes of determining the price of the auction.³⁹ As such, the Exchange believes that it is appropriate to treat these re-priced Market Orders as Limit Orders for purposes of determining allocation in an auction, and that this approach would promote transparency by processing all orders that have a price similarly in an auction.⁴⁰

Market Orders: The Exchange proposes that, for purposes of Rule 7.35P, unless otherwise specified, the term “Market Orders” would include MOO Orders (for the Core Open Auction and Trading Halt Auction) and MOC Orders (for the Closing Auction).⁴¹ According to the Exchange, consistent with Rule 7.31P(c)(2), the term “Market Orders” in proposed Rule 7.35P would include MOO Orders for the Trading Halt Auction.⁴² Also, the Exchange states that because unexecuted Market Orders that are held at a Trading Collar or NBBO would be eligible to participate in the Closing Auction and would be included in Closing Auction Imbalance Information, proposed Rule 7.35P would refer to Market Orders generally for the Closing Auction, which would include MOC Orders.⁴³

Market Imbalance: As proposed, the term “Market Imbalance” would mean the imbalance of any remaining buy (sell) Market Orders that are not matched for trading in an auction against any interest, and not just Market Orders not matched for trading against

¹⁹ See *id.*

²⁰ See *id.*

²¹ See proposed Rule 7.35P(a)(1).

²² See Notice at 61515.

²³ The term “UTP Security” means a security that is listed on a national securities exchange other than the Exchange and that trades on the NYSE Arca Marketplace pursuant to unlisted trading privileges. See Rule 1.1(ii).

²⁴ See Notice at 61515. According to the Exchange, consistent with Rule 7.18P(b), for the Trading Halt Auction, Auction-Eligible Securities means securities for which Arca is the primary listing market. See *id.*

²⁵ See *id.*

²⁶ The term “Corporation” means NYSE Arca Equities, Inc. See Rule 1.1(k).

²⁷ See proposed Rule 7.35P(a)(4).

²⁸ See proposed Rule 7.35P(a)(4)(A).

²⁹ See Amendment No. 1.

³⁰ See proposed Rule 7.35P(a)(5).

³¹ See *id.* The designated percentage would be determined by the Corporation from time to time upon prior notice to ETP Holders. See *id.*

³² See Notice at 61516 and 61526.

³³ See Notice at 61516.

³⁴ See proposed Rule 7.35P(a)(6).

³⁵ See Notice at note 29.

³⁶ See Notice at 61526.

³⁷ See *id.*

³⁸ See proposed Rule 7.35P, Commentary .01(a). As proposed, sell short orders that are included in the Auction Imbalance Information, but are not eligible for continuous trading before the applicable auction, would be adjusted to a Permitted Price as the NBB moves both up and down. See proposed Rule 7.35P, Commentary .01(b). The Exchange states that continuously re-pricing sell short orders consistent with Rule 7.16P(f)(5), even though they are not yet eligible to trade, would provide greater transparency regarding the price at which such orders would be included in the Auction Imbalance Information. See Notice at 61525 and Amendment No. 1.

³⁹ See Notice at 61525 and Amendment No. 1.

⁴⁰ See Notice at 61526.

⁴¹ See proposed Rule 7.35P(a).

⁴² See Notice at 61514–15.

⁴³ See Notice at 61515.

other Market Orders.⁴⁴ The Exchange states its belief that the proposed approach would provide transparency regarding the volume of Market Orders not paired up against any interest.⁴⁵

Indicative Match Price: As proposed, the term “Indicative Match Price” would mean the best price at which the maximum volume of shares, including the non-displayed quantity of Reserve Orders, is tradable in the applicable auction, subject to the Auction Collars.⁴⁶ If there are two or more prices at which the maximum volume of shares is tradable, the Indicative Match Price would be the price closest to the “Auction Reference Price” (provided that the Indicative Match Price would not be lower (higher) than the price of an order to buy (sell) ranked Priority 2 that was eligible to participate in the auction).⁴⁷ If the Matched Volume for an auction consists of Market Orders only, the Indicative Match Price would be: (i) for the Core open Auction, the Auction Reference Price; (ii) for the Closing Auction, the midpoint of the Auction NBBO as of the time the auction is conducted, provided that if the Auction NBBO is locked, the locked price, and if there is no Auction NBBO, the Auction Reference Price; and (iii) for the Trading Halt Auction, the Auction Reference Price.⁴⁸ In addition, if there is a BBO but no Matched Volume, the Indicative Match Price and Total Imbalance for the Auction Imbalance Information would be the side of the

BBO that has the higher volume, and if the volume of BB equals the volume of BO, the BB.⁴⁹ As proposed, if there is no Matched Volume and Market Orders on only one side of the market, the Indicative Match Price would be zero.⁵⁰

Auction Reference Price: The Auction Reference Price for the Core Open Auction would be the midpoint of an Auction NBBO or, if the Auction NBBO is locked, the locked price. If there is no Auction NBBO, the Exchange would use the prior trading day’s Official Closing Price.⁵¹ The Exchange states its belief that using the midpoint of the Auction NBBO for the Core Open Auction would better reflect the most recent value of the security, as compared to a closing price from the prior trading day.⁵² The Auction Reference Price for the Trading Halt Auction and the Closing Auction would be the last consolidated round-lot price of that trading day and, if none, the prior trading day’s Official Closing Price.⁵³ The Exchange states that the Auction Reference Price for the Trading Halt Auction and the Closing Auction is based on Rule 1.1(s), with additional specificity that it would be a last consolidated round-lot price of that trading day, and to specify the reference price if there were no last consolidated round-lot trades that day.⁵⁴ The Exchange states its belief that the last consolidated round-lot price prior to a Trading Halt Auction would reflect the most recent value for a security, and that the last consolidated round-lot

price would be representative of the value of the security going into the Closing Auction.⁵⁵ With respect to the IPO Auction, the Exchange proposes that the Auction Reference Price would be zero, unless the Corporation is provided with a price for the security.⁵⁶ The Exchange states that it proposes to use zero (unless the Corporation is provided with a price for the security) because there would not be any prior trading in that security.⁵⁷

Auction Collar: The Exchange proposes to define “Auction Collar” to mean the price collar thresholds for the Indicative Match Price for the Core Open Auction and Closing Auction.⁵⁸ As proposed, the Auction Collar would be based on a price that is a specified percentage away from the Auction Reference Price.⁵⁹ An Indicative Match Price that is equal to or outside the Auction Collar would be adjusted to be one minimum price variation (“MPV”) inside the Auction Collar, and orders eligible to participate in the applicable auction would trade at the collared Indicative Match Price.⁶⁰ According to the Exchange, if the Auction Collars are based on the clearly erroneous execution thresholds (which is currently the case for the Core Open Auction), pricing an auction one MPV inside the Auction Collar would potentially prevent an auction from being a clearly erroneous execution.⁶¹ Under the proposal, the specified percentages for the Auction Collar would be:⁶²

Auction reference price	Core open auction (%)	Closing auction (%)
\$25.00 or less	10	5
Greater than \$25.00 but less than or equal to \$50.00	5	2
Greater than \$50.00	3	1

Early Open Auction

Similar to the Core Open Auction, the non-displayed quantity of Reserve Orders eligible to participate in the Early Open Auction would not be included in the Matched Volume or

Total Imbalance until the Early Open Auction Imbalance Freeze begins.⁶³

There would not be any order entry or cancellation restrictions during the one-minute Auction Imbalance Freeze before the Early Open Auction. According to

the Exchange, there is not any trading occurring before the Early Open Auction, and therefore the risk to manipulate market prices before the Early Open Auction is minimal.⁶⁴ The Exchange also notes that, because an

⁴⁴ See proposed Rule 7.35P(a)(7)(B).

⁴⁵ See Notice at 61517.

⁴⁶ See proposed Rule 7.35P(a)(8). As proposed, the Indicative Match Price would be determined for all securities in the same manner, regardless of whether the Exchange is the primary listing market for a security or the security is a UTP Security. See Notice at 61514. The Exchange states that this would promote clarity and transparency in Exchange rules and streamline how auctions would be processed. See Notice at 61526.

⁴⁷ See proposed Rule 7.35P(a)(8)(A). If there are two prices at which the maximum volume of shares is tradable and both prices are equidistant to the Auction Reference Price, the Indicative Match Price

would be the Auction Reference Price. See proposed Rule 7.35P(a)(8)(B).

⁴⁸ See proposed Rule 7.35P(a)(8)(C).

⁴⁹ See proposed Rule 7.35P(a)(8)(D). According to the Exchange, while there would be no Matched Volume, the Indicative Match Price would be a benchmark price that could attract more interest for participation in the auction, thereby promoting price discovery. See Notice at 61526.

⁵⁰ See proposed Rule 7.35P(a)(8)(E).

⁵¹ See proposed Rule 7.35P(a)(8).

⁵² See Amendment No. 1.

⁵³ See proposed Rule 7.35P(a)(8).

⁵⁴ See Notice at 61518.

⁵⁵ See Amendment No. 1.

⁵⁶ See proposed Rule 7.35P(a)(8).

⁵⁷ See Notice at 61518. As with the current rule, the Auction Reference Price for the Early Open Auction would be the prior day’s Official Closing Price. See proposed Rule 7.35P(a)(8).

⁵⁸ See proposed Rule 7.35P(a)(10) and Amendment No. 3.

⁵⁹ See proposed Rule 7.35P(a)(10)(A).

⁶⁰ See proposed Rule 7.35P(a)(10)(B).

⁶¹ See Notice at 61526.

⁶² See proposed Rule 7.35P(a)(10) and Amendment No. 3. These thresholds are the same as the current price collar thresholds for the Market Order Auction and the Closing Auction.

⁶³ See proposed Rule 7.35P(b)(1) and discussion below regarding the Core Open Auction.

⁶⁴ See Notice at 61526.

Early Open Auction would occur at 4:00 a.m. Eastern Time, which is well before regular market hours, the Exchange generally does not receive sufficient buying and selling interest to warrant conducting such an auction in the vast majority of Exchange-listed securities.⁶⁵ The Exchange notes that, because it generally conducts an Early Open Auction in fewer than 20 securities on a given trading day, the need for order entry or cancellation restrictions in advance of such auctions is abated.⁶⁶

Core Open Auction

As proposed, the non-displayed quantity of Reserve Orders eligible to participate in the Core Open Auction would not be included in the Matched Volume, Total Imbalance, or Market Imbalance until the Core Open Auction Imbalance Freeze begins.⁶⁷ The Exchange states its belief that it is appropriate to exclude the volume of the non-displayed portion of Reserve Orders until the Core Open Auction Imbalance Freeze begins because it reduces the potential for market participants to identify the volume of interest that is intended to be non-displayed.⁶⁸ The Exchange also states its belief that it is appropriate to include this information once the Core Open Auction Imbalance Freeze begins so that market participants can have greater certainty of the full size of the Imbalance in order to assess whether to enter offsetting interest and to promote transparency regarding the pricing of an auction.⁶⁹

As proposed, the Core Open Auction Imbalance Freeze would be five seconds, instead of one minute.⁷⁰ According to the Exchange, this shorter Freeze period would provide additional time for market participants to enter orders for the Core Open Auction without restriction, thereby promoting

price discovery for the auction.⁷¹ The Exchange also states its belief that, with today's faster technology, five seconds provides sufficient time for industry participants to respond to a published Imbalance and enter offsetting interest, if applicable.⁷²

Under the proposal, because of the shorter Freeze period, MOO and LOO Orders entered during the Freeze would be rejected regardless of side.⁷³ The Exchange states its belief that rejecting all MOO and LOO Orders would remove the potential for such orders to impact the Imbalance.⁷⁴ As proposed, during the Freeze, the Exchange would accept Market Orders (other than MOO Orders) and Limit Orders designated for the Core Trading Session on both sides of the market, but such orders would be eligible to participate in the auction only to offset the Imbalance that remains after all orders entered before the Freeze are allocated in the Core Open Auction.⁷⁵ The Exchange states that this approach would eliminate the possibility for these orders to create or increase an Imbalance.⁷⁶ The Exchange also states that it proposes to process Market Orders (other than MOO Orders) and Limit Orders differently from MOO and LOO Orders because Market Orders (other than MOO Orders) and Limit Orders would not expire at the end of the auction.⁷⁷ Therefore, rather than rejecting these orders upon entry, they would be accepted and would be eligible to be offsetting interest for the auction.⁷⁸ If these orders do not participate in the Core Open Auction, they would become eligible to participate in the Core Trading Session.⁷⁹ As proposed, during the Freeze, requests to cancel and requests to cancel and replace Market Orders (other than MOO Orders) and Limit Orders designated for the Core Trading Session only would be accepted but would not be processed until after the Core Open Auction concludes.⁸⁰ All other order instructions would be accepted during the Freeze.⁸¹

Closing Auction

As with the Core Open Auction, the non-displayed quantity of Reserve Orders eligible to participate in the Closing Auction would not be included

in the Matched Volume, Total Imbalance, or Market Imbalance until the Closing Auction Imbalance Freeze begins.⁸²

As proposed, the Exchange would conduct a Closing Auction in Pillar even if there are only Market Orders eligible to participate in the Closing Auction.⁸³ According to the Exchange, this proposal would increase the potential for market participants that have entered MOC Orders to receive an execution in an auction that is priced based on the prevailing value of the security.⁸⁴

Trading Halt Auction

As proposed, a Trading Halt Auction would be conducted to re-open trading in an Auction-Eligible Security following a halt or pause of trading in that security in the Early Trading Session, Core Trading Session, or Late Trading Session, as applicable.⁸⁵ As proposed, during a trading halt or pause in an Auction-Eligible Security, entry and cancellation of orders eligible to participate in the Trading Halt Auction would be processed as provided for in Rule 7.18P(c).⁸⁶

Under current Rule 7.35(f)(3)(C), the Corporation, if it deems such action necessary, will disseminate the time, prior to the time that orders are matched pursuant to the Trading Halt Auction, at which orders may no longer be cancelled. The Exchange states that, on the current trading platform, it has not invoked this authority, and it proposes to not include it in the Pillar rules.⁸⁷

IPO Auction

As proposed, an IPO Auction would be conducted during the Core Trading Session on the first day of trading for any security, including a Derivative Securities Product,⁸⁸ for which Arca is

⁶⁵ See Amendment No. 1.

⁶⁶ See *id.*

⁶⁷ See proposed Rule 7.35P(c)(1).

⁶⁸ See Amendment No. 1. According to the Exchange, the Indicative Match Price would include the volume of the non-displayed portion of Reserve Orders at all times because that data point only provides pricing information, and not volume of shares eligible to trade. See *id.*

⁶⁹ See Amendment No. 3. Also, according to the Exchange, because the proposed rule would specify that reserve interest would be included in specified Auction Imbalance Information, ETP Holders that enter these orders would be on notice that certain information about the reserve quantity of their orders would be included in the information provided in advance of an auction. See *id.*

⁷⁰ See proposed Rule 7.35P(c)(3). However, similar to the current rule, the Exchange would reject requests to cancel and requests to cancel and replace MOO and LOO Orders beginning one minute before the scheduled time for the Core Open Auction. See proposed Rule 7.35P(c)(2).

⁷¹ See Notice at 61521 and 61526.

⁷² See Amendment No. 1.

⁷³ See proposed Rule 7.35P(c)(3)(A).

⁷⁴ See Notice at 61526.

⁷⁵ See proposed Rule 7.35P(c)(3)(B).

⁷⁶ See Notice at 61526.

⁷⁷ See Notice at 61521.

⁷⁸ See *id.*

⁷⁹ See *id.*

⁸⁰ See proposed Rule 7.35P(c)(3)(C).

⁸¹ See proposed Rule 7.35P(c)(3)(D).

⁸² See proposed Rule 7.35P(d)(1).

⁸³ See discussion above regarding the determination of Indicative Match Price where the Matched Volume for an auction consists of Market Orders only.

⁸⁴ See Notice at 61526. The Exchange states that the midpoint of the Auction NBBO in effect as of the scheduled time of the Closing Auction as bound by Auction Collars that would be based on the last consolidated round-lot price of that trading day would reflect the most recent quoting activity and price in a stock. See Amendment No. 3. In addition, the Exchange states that pricing an auction with only Market Orders on both sides of the market based on the midpoint of an uncrossed NBBO is not novel. See *id.*

⁸⁵ See proposed Rule 7.35P(e).

⁸⁶ See proposed Rule 7.35P(e)(3).

⁸⁷ See Amendment No. 1.

⁸⁸ The Exchange notes that although the first day of trading of a Derivative Securities Product may not technically be an initial public offering, it proposes to use the term IPO as signifying that this would be the auction on the first day of trading of a new listing on the Exchange. See Notice at 61523.

the primary listing market, excluding transfers.⁸⁹ As proposed, an IPO Auction would follow the processing rules of a Core Open Auction, provided that NYSE Arca Marketplace would specify the time that an IPO Auction would be conducted.⁹⁰ Also, there would be no Auction Imbalance Freeze, Auction Collars, or restrictions on the entry or cancellation of orders for an IPO Auction.⁹¹ According to the Exchange, because an IPO Auction would not be set at a specific time, nor would there be any trading in the security before the IPO Auction, the Exchange does not believe that an Auction Imbalance Freeze or Auction Collars would assist in the price discovery process or would be necessary to prevent fraudulent and manipulative acts and practices.⁹² Moreover, according to the Exchange, because the time of an IPO Auction may change, the Exchange does not believe that there needs to be any restrictions on the entry or cancellation of orders before an IPO Auction.⁹³ The Exchange states that if there is an Imbalance going into an IPO Auction, the Exchange could extend the time for the IPO Auction in order to attract additional offsetting interest or allow ETP Holders to cancel orders that are on the side of the Imbalance.⁹⁴ Finally, an IPO Auction would not be conducted if there are only Market Orders on both sides of the market.⁹⁵ According to the Exchange, if there are only Market Orders on both sides of the market, the Exchange has the flexibility to change the time in order to attract more interest for the auction.⁹⁶

Auction Processing Period

As proposed, new orders, requests to cancel, and requests to cancel and replace an order that are received during the Auction Processing Period⁹⁷ would be accepted but would not be processed until after the auction concludes.⁹⁸ The Exchange states its belief that it is appropriate to wait to process such new order instructions until after the auction processing concludes in order to provide certainty regarding the timing and pricing of an auction.⁹⁹ Moreover,

as proposed, a request to cancel and replace an order that was entered during the Auction Processing Period for an order that was also entered during the Auction Processing Period would be rejected.¹⁰⁰

Transition to Continuous Trading

As proposed, after auction processing concludes, including if there is no Matched Volume and an auction is not conducted, or when transitioning from one trading session to another, orders that are no longer eligible to trade would expire.¹⁰¹ Orders that are designated for a trading session and that were received during a prior trading session or during the Auction Processing Period and that did not participate in the auction would become eligible to trade.¹⁰² Also, before continuous trading following a prior trading session or an auction begins, any order instructions received during either the Auction Imbalance Freeze or Auction Processing Period that were not processed would be processed.¹⁰³ The display price and working price of orders would be adjusted based on the PBBO or NBBO as provided in Rule 7.31P.¹⁰⁴ Moreover, when transitioning to continuous trading, the display price and working price of Day ISOs would be adjusted in the same manner as Arca Only Orders until the Day ISO is either traded in full or displayed at its limit price.¹⁰⁵

As proposed, if orders eligible to trade in the next trading session are marketable, such orders would trade and/or route based on price-time priority of individual orders, as provided in Rule 7.37P.¹⁰⁶ According to the Exchange, if such orders are marketable, they would trade or route, as applicable, rather than publishing a locked or crossed quote from the NYSE Arca Book.¹⁰⁷ After marketable orders have traded or routed, the NYSE Arca Marketplace would publish a quote for the next trading session.¹⁰⁸

Based on the Exchange's representations, the Commission

believes that the proposed rule change does not raise any novel regulatory considerations and should provide greater specificity with respect to the functionality available on the Exchange as symbols are migrated to the Pillar platform. For these reasons, the Commission believes that the proposal should help prevent fraudulent and manipulative acts and practices, promote just and equitable principles of trade, remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, protect investors and the public interest.

IV. Accelerated Approval of Amendment Nos. 1 and 3

As noted above, in Amendment No. 1, the Exchange: (i) Amends proposed Rule 7.35P(h) to provide that the rule would address how orders would be handled not only in the transition to continuous trading following an auction, but also when transitioning from one trading session to the next trading session; (ii) amends proposed Rule 7.35P(h)(3)(B) to provide that, before continuous trading following a prior trading session or an auction begins, the display price and working price of orders would be adjusted as provided for in Rule 7.31P, and that when transitioning to continuous trading, the display price and working price of Day ISOs would be adjusted in the same manner as Arca Only Orders until the Day ISO is either traded in full or displayed at its limit price; and (iii) provides additional discussions related to certain proposed rules. In addition, in Amendment No. 3, the Exchange: (i) Specifies the percentages for the Auction Collar thresholds; (ii) removes the reference to the Trading Halt Auction in the definition of Auction Collar; (iii) states that the Exchange would provide prior notice to ETP Holders if additional UTP Securities are to be designated as Auction-Eligible Securities; (iv) includes cross-references to Rule 7.16P in Commentary .01 to proposed Rule 7.35P to clarify where certain terms are defined; and (v) provides additional discussions related to certain proposed rules. The Commission believes that the changes proposed in Amendment Nos. 1 and 3 do not raise novel regulatory issues and provide further discussions regarding the proposed rules governing Pillar. Accordingly, the Commission finds good cause, pursuant to Section 19(b)(2) of the Act,¹⁰⁹ to approve the proposed

⁸⁹ See proposed Rule 7.35P(f).

⁹⁰ See proposed Rule 7.35P(f)(1).

⁹¹ See proposed Rule 7.35P(f)(2).

⁹² See Notice at 61523.

⁹³ See *id.*

⁹⁴ See Amendment No. 1.

⁹⁵ See proposed Rule 7.35P(f)(3).

⁹⁶ See Notice at 61523–24.

⁹⁷ The Exchange proposes to define "Auction Processing Period" to mean the period during which the applicable auction is being processed. See proposed Rule 7.35P(a)(2).

⁹⁸ See proposed Rule 7.35P(g).

⁹⁹ See Amendment No. 1.

¹⁰⁰ See proposed Rule 7.35P(g).

¹⁰¹ See proposed Rule 7.35P(h)(1) and Amendment No. 1.

¹⁰² See proposed Rule 7.35P(h)(2) and Amendment No. 1.

¹⁰³ See proposed Rule 7.35P(h)(3)(A) and Amendment No. 1.

¹⁰⁴ See proposed Rule 7.35P(h)(3)(B) and Amendment No. 1.

¹⁰⁵ See proposed Rule 7.35P(h)(3)(B) and Amendment No. 1. The Exchange states its belief that this proposed treatment of Day ISO orders would be consistent with the original terms of the order. See Amendment No. 1.

¹⁰⁶ See proposed Rule 7.35P(h)(3)(C) and Amendment No. 1.

¹⁰⁷ See Amendment No. 1.

¹⁰⁸ See proposed Rule 7.35P(h)(3)(D).

¹⁰⁹ 15 U.S.C. 78s(b)(2).

rule change, as modified by Amendment Nos. 1 and 3, on an accelerated basis.

V. Solicitation of Comments on Amendment Nos. 1 and 3

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether Amendment Nos. 1 and 3 are consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (<http://www.sec.gov/rules/sro.shtml>); or
- Send an email to rule-comments@sec.gov. Please include File Number SR-NYSEArca-2015-86 on the subject line.

Paper Comments

- Send paper comments in triplicate to Brent J. Fields, Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549-1090. All submissions should refer to File Number SR-NYSEArca-2015-86. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (<http://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR-NYSEArca-2015-86 and should be submitted on or before February 5, 2016.

VI. Conclusion

IT IS THEREFORE ORDERED, pursuant to Section 19(b)(2) of the

Act,¹¹⁰ that the proposed rule change (SR-NYSEArca-2015-86), as modified by Amendment Nos. 1 and 3, be, and hereby is, approved on an accelerated basis.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.¹¹¹

Robert W. Errett,
Deputy Secretary.

[FR Doc. 2016-00645 Filed 1-14-16; 8:45 am]

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SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-76862; File No. SR-BATS-2015-94]

Self-Regulatory Organizations; BATS Exchange, Inc., Notice of Filing of Proposed Rule Change To List and Trade Shares of the SPDR DoubleLine Emerging Markets Fixed Income ETF of the SSgA Active Trust

January 11, 2016.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (the "Act"),¹ and Rule 19b-4 thereunder,² notice is hereby given that on December 28, 2015, BATS Exchange, Inc. (the "Exchange" or "BATS") filed with the Securities and Exchange Commission ("Commission") the proposed rule change as described in Items I and II, below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange is proposing a rule change to list and trade shares of the SPDR® DoubleLine® Emerging Markets Fixed Income ETF (the "Fund") of the SSgA Active Trust (the "Trust") under BATS Rule 14.11(i) ("Managed Fund Shares"). The shares of the Fund are collectively referred to herein as the "Shares."

The text of the proposed rule change is available at the Exchange's Web site at www.batstrading.com, at the principal office of the Exchange, and at the Commission's Public Reference Room.

¹¹⁰ 15 U.S.C. 78s(b)(2).

¹¹¹ 17 CFR 200.30-3(a)(12).

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in Sections A, B, and C below, of the most significant parts of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to list and trade the Shares under BATS Rule 14.11(i), which governs the listing and trading of Managed Fund Shares on the Exchange.³ The Fund will be an actively managed fund. The Shares will be offered by the Trust, which was established as a Massachusetts business trust on March 30, 2011. The Trust is registered with the Commission as an open-end investment company and has filed a registration statement on behalf of the Fund on Form N-1A ("Registration Statement") with the Commission.⁴

Description of the Shares and the Fund

SSGA Funds Management, Inc. will be the investment adviser ("SSGA FM" or "Adviser") to the Fund. The Adviser will serve as the administrator for the Fund (the "Administrator"). DoubleLine Capital LP will be the Fund's sub-adviser ("Sub-Adviser"). State Street Global Markets, LLC (the "Distributor") will be the principal underwriter and distributor of the Fund's Shares. State Street Bank and Trust Company (the "Sub-Administrator", "Custodian", "Transfer Agent" or "Lending Agent") will serve as sub-administrator, custodian, transfer agent, and, where applicable, lending agent for the Fund.

³ The Commission approved BATS Rule 14.11(i) in Securities Exchange Act Release No. 65225 (August 30, 2011), 76 FR 55148 (September 6, 2011) (SR-BATS-2011-018).

⁴ See Registration Statement on Form N-1A for the Trust, dated October 8, 2015 (File Nos. 333-173276 and 811-22542). The descriptions of the Fund and the Shares contained herein are based, in part, on information in the Registration Statement. The Commission has issued an order granting certain exemptive relief to the Trust under the Investment Company Act of 1940 (15 U.S.C. 80a-1) ("1940 Act") (the "Exemptive Order"). See Investment Company Act Release No. 29524 (December 13, 2010) (File No. 812-13487).

BATS Rule 14.11(i)(7) provides that, if the investment adviser to the investment company issuing Managed Fund Shares is affiliated with a broker-dealer, such investment adviser shall erect a “fire wall” between the investment adviser and the broker-dealer with respect to access to information concerning the composition and/or changes to such investment company portfolio.⁵ In addition, Rule 14.11(i)(7) further requires that personnel who make decisions on the investment company’s portfolio composition must be subject to procedures designed to prevent the use and dissemination of material nonpublic information regarding the applicable investment company portfolio. Rule 14.11(i)(7) is similar to BATS Rule 14.11(b)(5)(A)(i), however, Rule 14.11(i)(7) in connection with the establishment of a “fire wall” between the investment adviser and the broker-dealer reflects the applicable open-end fund’s portfolio, not an underlying benchmark index, as is the case with index-based funds. The Adviser and Sub-Adviser are not registered as a broker-dealer but the Adviser is affiliated with a broker-dealer and has implemented a “fire wall” with respect to such broker-dealer regarding access to information concerning the composition and/or changes to the Fund’s portfolio. The Sub-Adviser is not affiliated with a broker-dealer. In the event (a) the Adviser or Sub-Adviser becomes registered as a broker-dealer or newly affiliated with a broker-dealer, or (b) any new adviser or sub-adviser is a registered broker-dealer or becomes affiliated with a broker-dealer, it will

⁵ An investment adviser to an open-end fund is required to be registered under the Investment Advisers Act of 1940 (the “Advisers Act”). As a result, the Adviser and its related personnel as well as the Sub-Adviser and its related personnel are subject to the provisions of Rule 204A–1 under the Advisers Act relating to codes of ethics. This Rule requires investment advisers to adopt a code of ethics that reflects the fiduciary nature of the relationship to clients as well as compliance with other applicable securities laws. Accordingly, procedures designed to prevent the communication and misuse of non-public information by an investment adviser must be consistent with Rule 204A–1 under the Advisers Act. In addition, Rule 206(4)–7 under the Advisers Act makes it unlawful for an investment adviser to provide investment advice to clients unless such investment adviser has (i) adopted and implemented written policies and procedures reasonably designed to prevent violation, by the investment adviser and its supervised persons, of the Advisers Act and the Commission rules adopted thereunder; (ii) implemented, at a minimum, an annual review regarding the adequacy of the policies and procedures established pursuant to subparagraph (i) above and the effectiveness of their implementation; and (iii) designated an individual (who is a supervised person) responsible for administering the policies and procedures adopted under subparagraph (i) above.

implement a fire wall with respect to its relevant personnel or broker-dealer affiliate regarding access to information concerning the composition and/or changes to the portfolio, and will be subject to procedures designed to prevent the use and dissemination of material non-public information regarding such portfolio.

SPDR® DoubleLine Emerging Markets Fixed Income ETF

According to the Registration Statement, the Fund will seek to provide high total return from current income and capital appreciation. To achieve its objective, the Fund will invest, under normal circumstances, at least 80% of its net assets (plus the amount of borrowings for investment purposes) in emerging market fixed income securities, as described further in the Principal Holding, Other Portfolio Holdings, and Investment Restrictions sections below.⁶ The Fund is an actively-managed fund that does not seek to replicate the performance of a specified index.

Under normal market conditions, the Sub-Adviser intends to seek to construct an investment portfolio with a weighted average effective duration of no less than two years and no more than eight years. The effective duration of the portfolio may vary materially from its target, from time to time, and there is no assurance that the effective duration of the Fund’s investment portfolio will not exceed its target.

The Fund may invest without limit in investments denominated in any currency, but currently expects to invest a substantial amount of its assets in investments denominated in the U.S. dollar. Securities held by the Fund may be sold at any time. By way of example, sales may occur when the Sub-Adviser perceives deterioration in the credit fundamentals of the issuer, when the

⁶ Generally, as used in this proposed rule change, the terms debt security, debt obligation, bond, fixed income instrument and fixed income security are used interchangeably. These terms should be considered to include any evidence of indebtedness, including, by way of example, a security or instrument having one or more of the following characteristics: A security or instrument issued at a discount to its face value, a security or instrument that pays interest at a fixed, floating, or variable rate, or a security or instrument with a stated principal amount that requires repayment of some or all of that principal amount to the holder of the security. These terms are interpreted broadly to include any instrument or security evidencing what is commonly referred to as an IOU rather than evidencing the corporate ownership of equity unless that equity represents an indirect or derivative interest in one or more debt securities. For this purpose, the terms also include instruments that are intended to provide one or more of the characteristics of a direct investment in one or more debt securities.

Sub-Adviser believes there are negative macro geo-political considerations that may affect the issuer, when the Sub-Adviser determines to take advantage of a better investment opportunity, or the individual security has reached the Sub-Adviser’s sell target.

In allocating investments among various emerging market countries, the Sub-Adviser attempts to analyze internal political, market and economic factors. These factors may include public finances, monetary policy, external accounts, financial markets, foreign investment regulations, stability of exchange rate policy, and labor conditions. In certain situations or market conditions, the Fund may temporarily depart from its normal investment policies and strategies provided that the alternative is in the best interest of the Fund. For example, the Fund may hold a higher than normal proportion of its assets in cash in times of extreme market stress.

Principal Holdings

The Fund intends to achieve its investment objective by investing, under normal circumstances,⁷ at least 80% of its net assets (plus the amount of borrowings for investment purposes) in fixed income instruments (“Fixed Income Securities”), subject to certain limits described below. For purposes of this filing, Fixed Income Securities will be, where applicable and unless otherwise noted, U.S. dollar-denominated and are defined as the following instruments: Fixed income securities issued or guaranteed by foreign corporations or foreign governments, including securities issued or guaranteed by companies (including hybrid securities),⁸ financial institutions, or government entities in emerging market countries; corporate or government bonds; sovereign debt; structured securities;⁹ foreign currency

⁷ The term “under normal circumstances” includes, but is not limited to, the absence of extreme volatility or trading halts in the fixed income markets or the financial markets generally; operational issues causing dissemination of inaccurate market information; or force majeure type events such as systems failure, natural or man-made disaster, act of God, armed conflict, act of terrorism, riot or labor disruption or any similar intervening circumstance.

⁸ A third party or the Sub-Adviser may create a hybrid security by combining an income-producing debt security and the right to receive payment based on the change in the price of an equity security. The Fund may invest in hybrid securities related to emerging market countries.

⁹ Structured securities generally includes [sic] privately-issued and publicly-issued structured securities, including certain publicly-issued structured securities that are not agency securities. Examples include, but are not limited to: Asset-backed securities backed by assets such as

transactions; certain derivatives; exchange-traded foreign equity securities and preferred securities; zero coupon bonds; credit linked notes; pass through notes; bank loans;¹⁰ perpetual maturity bonds; and convertible securities. Fixed Income Securities may have fixed or variable interest rates¹¹ and any maturity.

The Fund will generally invest in Fixed Income Securities from at least five emerging market countries,¹² with no more than 20% allocated to a single country. The Fund may invest in Fixed Income Securities of any credit quality, but seeks to invest no more than 20%, at the time of investment, in Fixed Income Securities that are unrated, rated BB+ or lower by Standard & Poor's Rating Service or Ba1 or lower by Moody's Investor Service, Inc. or the equivalent by any other nationally recognized statistical rating organization. Corporate bonds and certain other Fixed Income Securities rated below investment grade, or such instruments that are unrated and are determined by the Sub-Adviser to be of comparable quality, are high yield, high risk bonds, commonly known as junk bonds.

The Fund may invest in corporate bonds.¹³ The investment return of corporate bonds reflects interest on the bond and changes in the market value

of the bond. The market value of a corporate bond may be affected by the credit rating of the corporation, the corporation's performance and perceptions of the corporation in the market place. Such corporate bonds may be investment grade or may be below investment grade.

The Fund may purchase exchange-traded common stocks and exchange-traded preferred securities of foreign corporations. The Fund's investments in common stock of foreign corporations may also be in the form of American Depositary Receipts ("ADRs"), Global Depositary Receipts ("GDRs") and European Depositary Receipts ("EDRs") (collectively "Depository Receipts").¹⁴

The Fund may invest in sovereign debt. Sovereign debt obligations are issued or guaranteed by foreign governments or their agencies. Sovereign debt may be in the form of conventional securities or other types of debt instruments such as loans or loan participations. Sovereign debt obligations may be either investment grade or below investment grade.

The Fund may conduct foreign currency transactions on a spot (*i.e.*, cash) or forward basis (*i.e.*, by entering into forward contracts to purchase or sell foreign currencies). The Fund may also invest in the following derivatives: Foreign currency futures; credit default swaps; and options, swaps, futures, and forward contracts on Fixed Income Securities. These practices may be used to hedge the Fund's portfolio as well as for investment purposes; however, such practices sometimes may reduce returns or increase volatility. All such derivatives will be exchange traded or centrally cleared.

In the case of a credit default swap ("CDS"), the contract gives one party (the buyer) the right to recoup the

economic value of a decline in the value of debt securities of the reference issuer if the credit event (a downgrade or default) occurs. This value is obtained by delivering a debt security of the reference issuer to the party in return for a previously agreed payment from the other party (frequently, the par value of the debt security).¹⁵

CDSs may require initial premium (discount) payments as well as periodic payments (receipts) related to the interest leg of the swap or to the default of a reference obligation. The Fund will segregate assets necessary to meet any accrued payment obligations when it is the buyer of CDSs. In cases where the Fund is a seller of a CDS, if the CDS is physically settled or cash settled, the Fund will be required to segregate the full notional amount of the CDS. Such segregation will not limit the Fund's exposure to loss.

Other Portfolio Holdings

While the Adviser and Sub-Adviser, under normal circumstances, will invest at least 80% of the Fund's net assets in the instruments described above, the Adviser and Sub-Adviser may invest up to 20% of the Fund's net assets in other securities and financial instruments, as described below.

The Fund may invest in U.S. Government obligations. U.S. Government obligations are a type of bond. U.S. Government obligations include securities issued or guaranteed as to principal and interest by the U.S. Government, its agencies or instrumentalities.

The Fund may invest in U.S. equity securities. Equity securities are securities that represent an ownership interest (or the right to acquire such an interest) in a company and include common and preferred stock. The Fund's investments in such U.S. equity securities may include securities traded over-the-counter as well as those traded on a securities exchange.

The Fund may invest in repurchase agreements with commercial banks, brokers or dealers to generate income from its excess cash balances and to invest securities lending cash collateral. A repurchase agreement is an agreement under which a fund acquires a financial instrument (*e.g.*, a security issued by the U.S. Government or an agency thereof, a banker's acceptance or a certificate of deposit) from a seller, subject to resale to the seller at an agreed upon price and date (normally, the next business day).

consumer receivables, credit cards, student loans, and equipment leases; asset-backed commercial paper; credit linked notes; and secured funding notes.

¹⁰ The Fund may invest up to 20% of its portfolio in junior bank loans.

¹¹ A variable rate security provides for the automatic establishment of a new interest rate on set dates. Variable rate obligations whose interest is readjusted no less frequently than annually will be deemed to have a maturity equal to the period remaining until the next readjustment of the interest rate. The Fund may also purchase floating rate securities. A floating rate security provides for the automatic adjustment of its interest rate whenever a specified interest rate changes. Interest rates on these securities are ordinarily tied to, and are a percentage of, a widely recognized interest rate, such as the yield on 90-day U.S. Treasury bills or the prime rate of a specified bank. These rates may change as often as twice daily.

¹² An "emerging market country" is a country that, at the time the Fund invests in the related fixed income instruments, is classified as an emerging or developing economy by any supranational organization such as the World Bank or the United Nations, or related entities, or is considered an emerging market country for purposes of constructing a major emerging market securities index.

¹³ While the Fund is permitted to invest without restriction in corporate bonds, the Sub-Adviser expects that, under normal circumstances, the Fund will generally seek to invest in corporate bond issuances that have at least \$100,000,000 par amount outstanding. Further, component corporate bonds that in the aggregate account for at least 75% of the weight of corporate bonds will have a minimum original principal outstanding of \$100 million or more.

¹⁴ Depository Receipts are receipts, typically issued by a bank or trust company, which evidence ownership of underlying securities issued by a foreign corporation. For ADRs, the depository is typically a U.S. financial institution and the underlying securities are issued by a foreign issuer. For other Depository Receipts, the depository may be a foreign or a U.S. entity, and the underlying securities may have a foreign or a U.S. issuer. Depository Receipts will not necessarily be denominated in the same currency as their underlying securities. Generally, ADRs, in registered form, are designed for use in the U.S. securities market, and EDRs, in bearer form, are designated for use in European securities markets. GDRs are tradable both in the United States and in Europe and are designed for use throughout the world. The Fund may invest in sponsored or unsponsored ADRs; however, not more than 10% of the net assets of the Fund will be invested in unsponsored ADRs. All exchange-traded equity securities in which the Fund may invest will trade on markets that are members of the Intermarket Surveillance Group ("ISG") or that have entered into a comprehensive surveillance agreement with the Exchange.

¹⁵ The Fund will enter into CDS agreements only with counterparties that meet certain standards of creditworthiness.

The Fund may also enter into reverse repurchase agreements, which involve the sale of securities with an agreement to repurchase the securities at an agreed-upon price, date and interest payment and have the characteristics of borrowing. The Fund's exposure to reverse repurchase agreements will be covered by securities having a value equal to or greater than such commitments. Under the 1940 Act, reverse repurchase agreements are considered borrowings. Although there is no limit on the percentage of Fund assets that can be used in connection with reverse repurchase agreements, the Fund does not expect to engage, under normal circumstances, in reverse repurchase agreements with respect to more than 10% of its net assets.

The Fund may lend its portfolio securities in an amount not to exceed 33¹/₃% of the value of its total assets via a securities lending program through the Lending Agent, to brokers, dealers and other financial institutions desiring to borrow securities to complete transactions and for other purposes. A securities lending program allows the Fund to receive a portion of the income generated by lending its securities and investing the respective collateral. The Fund will receive collateral for each loaned security which is at least equal to 102% of the market value of that security, marked to market each trading day.

The Fund may invest in convertible securities traded on an exchange or OTC. Convertible securities are bonds, debentures, notes, or other securities that may be converted or exchanged (by the holder or by the issuer) into shares of the underlying common stock (or cash or securities of equivalent value) at a stated exchange ratio.

In addition to repurchase agreements, the Fund may invest in short-term instruments, including money market instruments, (including money market funds advised by the Adviser), cash and cash equivalents, on an ongoing basis to provide liquidity or for other reasons. Money market instruments are generally short-term investments that may include but are not limited to: (i) Shares of money market funds (including those advised by the Adviser); (ii) obligations issued or guaranteed by the U.S. government, its agencies or instrumentalities (including government-sponsored enterprises); (iii) negotiable certificates of deposit ("CDs"), bankers' acceptances, fixed time deposits and other obligations of U.S. and foreign banks (including foreign branches) and similar institutions; (iv) commercial paper rated at the date of purchase "Prime-1" by

Moody's or "A-1" by S&P, or if unrated, of comparable quality as determined by the Adviser; (v) non-convertible corporate debt securities (e.g., bonds and debentures) with remaining maturities at the date of purchase of not more than 397 days and that satisfy the rating requirements set forth in Rule 2a-7 under the 1940 Act; and (vi) short-term U.S. dollar-denominated obligations of foreign banks (including U.S. branches) that, in the opinion of the Adviser, are of comparable quality to obligations of U.S. banks which may be purchased by the Fund. Any of these instruments may be purchased on a current or a forward-settled basis. Time deposits are non-negotiable deposits maintained in banking institutions for specified periods of time at stated interest rates. Bankers' acceptances are time drafts drawn on commercial banks by borrowers, usually in connection with international transactions.

The Fund may invest in Restricted Securities. Restricted Securities are securities that are not registered under the Securities Act, but which can be offered and sold to "qualified institutional buyers" under Rule 144A under the Securities Act or securities purchased after the lapse of the appropriate distribution compliance period under Regulation S under the Securities Act.

The Fund may invest in the securities of other investment companies, including affiliated funds and money market funds, subject to applicable limitations under Section 12(d)(1) of the 1940 Act.

Investment Restrictions

The Fund may hold up to an aggregate amount of 15% of its net assets in illiquid assets (calculated at the time of investment), including Restricted Securities deemed illiquid by the Adviser or Sub-Adviser¹⁶ under the 1940 Act.¹⁷ The Fund will monitor its

¹⁶ In reaching liquidity decisions, the Adviser and Sub-Adviser may consider factors including: The frequency of trades and quotes for the security; the number of dealers wishing to purchase or sell the security and the number of other potential purchasers; dealer undertakings to make a market in the security; the nature of the security and the nature of the marketplace in which it trades (e.g., the time needed to dispose of the security, the method of soliciting offers, and the mechanics of transfer).

¹⁷ The Commission has stated that long-standing Commission guidelines have required open-end funds to hold no more than 15% of their net assets in illiquid securities and other illiquid assets. See Investment Company Act Release No. 28193 (March 11, 2008), 73 FR 14618 (March 18, 2008), footnote 34. See also, Investment Company Act Release No. 5847 (October 21, 1969), 35 FR 19989 (December 31, 1970) (Statement Regarding "Restricted Securities"); Investment Company Act Release No. 18612 (March 12, 1992), 57 FR 9828 (March 20,

portfolio liquidity on an ongoing basis to determine whether, in light of current circumstances, an adequate level of liquidity is being maintained, and will consider taking appropriate steps in order to maintain adequate liquidity if, through a change in values, net assets, or other circumstances, more than 15% of the Fund's net assets are held in illiquid assets. Illiquid assets include securities subject to contractual or other restrictions on resale and other instruments that lack readily available markets as determined in accordance with Commission staff guidance.

The Fund intends to qualify each year as a regulated investment company (a "RIC") under Subchapter M of the Internal Revenue Code of 1986, as amended.¹⁸ The Fund will invest its assets, and otherwise conduct its operations, in a manner that is intended to satisfy the qualifying income, diversification, and distribution requirements necessary to establish and maintain RIC qualification under Subchapter M.

The Fund's investments will be consistent with its investment objective and will not be used to seek to achieve leveraged or inverse leveraged returns (i.e. two times or three times the Fund's benchmark).

Net Asset Value

According to the Registration Statement, the net asset value ("NAV") of the Fund's Shares generally will be calculated once daily Monday through Friday as of the close of regular trading on the Exchange, generally 4:00 p.m. Eastern Time (the "NAV Calculation Time") on each day that the Exchange is open for trading, based on prices at the NAV Calculation Time. NAV per Share is calculated by dividing the Fund's net assets by the number of Fund Shares outstanding. The Fund's net assets are valued primarily on the basis of market quotations. Expenses and fees, including the management fees, will be accrued daily and taken into account for purposes of determining NAV.

Restricted Securities, repurchase agreements, and reverse repurchase agreements will generally be valued at bid prices received from independent pricing services as of the announced

1992) (Revisions of Guidelines to Form N-1A). A fund's portfolio security is illiquid if it cannot be disposed of in the ordinary course of business within seven days at approximately the value ascribed to it by the fund. See Investment Company Act Release No. 14983 (March 12, 1986), 51 FR 9773 (March 21, 1986) (adopting amendments to Rule 2a-7 under the 1940 Act); Investment Company Act Release No. 17452 (April 23, 1990), 55 FR 17933 (April 30, 1990) (adopting Rule 144A under the Securities Act of 1933).

¹⁸ 26 U.S.C. 851.

closing time for trading in such instruments. Spot currency transactions will generally be valued at mid prices received from an independent pricing service converted into U.S. dollars at current market rates on the date of valuation. Foreign currency forwards normally will be valued on the basis of quotes obtained from broker-dealers or third party pricing services.

According to the Adviser, U.S. Government obligations; U.S.-registered, dollar-denominated bonds of foreign corporations, governments, agencies and supra-national entities; sovereign debt; corporate bonds; and short-term instruments will generally be valued at bid prices received from independent pricing services as of the announced closing time for trading in such instruments in the respective market. In determining the value of such instruments, pricing services determine valuations for normal institutional-size trading units of such securities using valuation models or matrix pricing, which incorporates yield and/or price with respect to bonds that are considered comparable in characteristics such as rating, interest rate and maturity date and quotations from securities dealers to determine current value. Investments having a maturity of 60 days or less are generally valued at amortized cost.

Listed futures will generally be valued at the settlement price determined by the applicable exchange. Listed options will generally be valued at the last sale price on the applicable exchange. Non-exchange traded derivatives, including OTC-traded options, swaps, forwards, and structured investments, will normally be valued on the basis of quotations or equivalent indication of value supplied by a third-party pricing service or broker-dealer who makes markets in such instruments. The Fund's OTC-traded derivative instruments will generally be valued at bid prices.

Common stocks and other exchange-traded equity securities (including shares of preferred securities, convertible securities, and exchange traded investment companies ("ETPs")) generally will be valued at the last reported sale price or the official closing price on that exchange where the security is primarily traded on the day that the valuation is made. Foreign equities and exchange-listed Depositary Receipts will be valued at the last sale or official closing price on the relevant exchange on the valuation date. If, however, neither the last sale price nor the official closing price is available, each of these securities will be valued at either the last reported sale price or

official closing price as of the close of regular trading of the principal market on which the security is listed. Unsponsored ADRs, which are traded in the OTC market, will be valued at the last reported sale price from the OTC Bulletin Board or OTC Link LLC on the valuation date. OTC-traded preferred securities and OTC-traded convertible securities will be valued based on price quotations obtained from a broker-dealer who makes markets in such securities or other equivalent indications of value provided by a third-party pricing service. Securities of non-exchange traded investment companies will be valued at NAV.

According to the Registration Statement, in the event that current market valuations are not readily available or are deemed unreliable, the Trust's procedures require the Oversight Committee ("Committee") to determine a security's fair value, in accordance with the 1940 Act.¹⁹ In determining such value, the Committee may consider, among other things, (i) price comparisons among multiple sources, (ii) a review of corporate actions and news events, and (iii) a review of relevant financial indicators (e.g., movement in interest rates and market indices). In these cases, the Fund's NAV may reflect certain portfolio securities' fair values rather than their market prices.

Creation and Redemption of Shares

The NAV of Shares of the Fund will be determined once each business day, normally 4:00 p.m. Eastern time. The Fund currently anticipates that a Creation Unit will consist of 50,000 Shares, though this number may change from time to time, including prior to the listing of the Fund. The exact number of Shares that will comprise a Creation Unit will be disclosed in the Registration Statement of the Fund. The

¹⁹ If a security's market price is not readily available or is deemed unreliable, the security will be valued by another method that the Board believes will better reflect fair value in accordance with the Trust's valuation policies and procedures and in accordance with the 1940 Act. The Board has delegated the process of valuing securities for which market quotations are not readily available or are deemed unreliable to the Committee. The Committee, subject to oversight by the Board, may use fair value pricing in a variety of circumstances, including but not limited to, situations when trading in a security has been suspended or halted. Accordingly, the Fund's NAV may reflect certain securities' fair values rather than their market prices. Fair value pricing involves subjective judgments and it is possible that the fair value determination for a security is materially different than the value that could be received on the sale of the security. The Committee has implemented procedures designed to prevent the use and dissemination of material, non-public information regarding the Fund.

Trust will issue and sell Shares of the Fund only in Creation Units on a continuous basis, without a sales load (but subject to transaction fees), at their NAV per Share next determined after receipt of an order, on any business day, in proper form. Creation and redemption will typically occur in cash, however, the Trust retains discretion to conduct such transactions on an in-kind basis or a combination of cash and in-kind, as further described below.

The consideration for purchase of a Creation Unit of the Fund generally will consist of either (i) the in-kind deposit of a designated portfolio of securities (the "Deposit Securities") per each Creation Unit and the Cash Component (defined below), computed as described below, or (ii) the cash value of the Deposit Securities ("Deposit Cash") and the "Cash Component," computed as described below. When accepting purchases of Creation Units for cash, the Fund may incur additional costs associated with the acquisition of Deposit Securities that would otherwise be provided by an in-kind purchaser. Together, the Deposit Securities or Deposit Cash, as applicable, and the Cash Component constitute the "Fund Deposit," which represents the minimum initial and subsequent investment amount for a Creation Unit of the Fund. The "Cash Component" is an amount equal to the difference between the NAV of the Shares (per Creation Unit) and the market value of the Deposit Securities or Deposit Cash, as applicable. If the Cash Component is a positive number (*i.e.*, the NAV per Creation Unit exceeds the market value of the Deposit Securities or Deposit Cash, as applicable), the Cash Component shall be such positive amount. If the Cash Component is a negative number (*i.e.*, the NAV per Creation Unit is less than the market value of the Deposit Securities or Deposit Cash, as applicable), the Cash Component will be such negative amount and the creator will be entitled to receive cash in an amount equal to the Cash Component. The Cash Component serves the function of compensating for any differences between the NAV per Creation Unit and the market value of the Deposit Securities or Deposit Cash, as applicable.

The Custodian, through the National Securities Clearing Corporation ("NSCC"), will make available on each business day, prior to the opening of business on the Exchange, the list of the names and the required amount of each Deposit Security or the required amount of Deposit Cash, as applicable, to be included in the current Fund Deposit

(based on information at the end of the previous business day) for the Fund. Such Fund Deposit is subject to any applicable adjustments as described in the Registration Statement, in order to effect purchases of Creation Units of the Fund until such time as the next-announced composition of the Deposit Securities or the required amount of Deposit Cash, as applicable, is made available.

Shares may be redeemed only in Creation Units at their NAV next determined after receipt of a redemption request in proper form by the Fund through the Transfer Agent and only on a business day.

With respect to the Fund, the Custodian, through the NSCC, will make available immediately prior to the opening of business on the Exchange (9:30 a.m. Eastern time) on each business day, the list of the names and share quantities of the Fund's portfolio securities that will be applicable (subject to possible amendment or correction) to redemption requests received in proper form on that day ("Fund Securities"). Fund Securities received on redemption may not be identical to Deposit Securities.

Redemption proceeds for a Creation Unit will be paid either in-kind or in cash or a combination thereof, as determined by the Trust. With respect to in-kind redemptions of the Fund, redemption proceeds for a Creation Unit will consist of Fund Securities as announced by the Custodian on the business day of the request for redemption received in proper form plus cash in an amount equal to the difference between the NAV of the Shares being redeemed, as next determined after a receipt of a request in proper form, and the value of the Fund Securities (the "Cash Redemption Amount"), less a fixed redemption transaction fee and any applicable additional variable charge as set forth in the Registration Statement. In the event that the Fund Securities have a value greater than the NAV of the Shares, a compensating cash payment equal to the differential will be required to be made by or through an authorized participant by the redeeming shareholder. Notwithstanding the foregoing, at the Trust's discretion, an authorized participant may receive the corresponding cash value of the securities in lieu of the in-kind securities value representing one or more Fund Securities.²⁰

²⁰ The Adviser represents that, to the extent that the Trust permits or requires a "cash in lieu" amount, such transactions will be effected in the same or equitable manner for all Authorized Participants.

The creation/redemption order cut-off time for the Fund is expected to be 4:00 p.m. Eastern time. Creation/redemption order cut-off times may be earlier on any day that the Securities Industry and Financial Markets Association ("SIFMA") (or applicable exchange or market on which the Fund's investments are traded) announces an early closing time. On days when the Exchange closes earlier than normal, the Fund may require orders for Creation Units to be placed earlier in the day.

Availability of Information

The Fund's Web site, which will be publicly available prior to the public offering of Shares, will include a form of the prospectus for the Fund that may be downloaded. The Web site will include additional quantitative information updated on a daily basis, including, for the Fund: (1) The prior business day's reported NAV, mid-point of the bid/ask spread at the time of calculation of such NAV (the "Bid/Ask Price"),²¹ daily trading volume, and a calculation of the premium and discount of the Bid/Ask Price against the NAV; and (2) data in chart format displaying the frequency distribution of discounts and premiums of the daily Bid/Ask Price against the NAV, within appropriate ranges, for each of the four previous calendar quarters. Daily trading volume information for the Fund will also be available in the financial section of newspapers, through subscription services such as Bloomberg, Thomson Reuters, and International Data Corporation, which can be accessed by authorized participants and other investors, as well as through other electronic services, including major public Web sites. On each business day, before commencement of trading in Shares during Regular Trading Hours²² on the Exchange, the Fund will disclose on its Web site the identities and quantities of the portfolio of securities and other assets (the "Disclosed Portfolio") held by the Fund that will form the basis for the Fund's calculation of NAV at the end of the business day.²³ The Disclosed

²¹ The Bid/Ask Price of the Fund will be determined using the midpoint of the highest bid and the lowest offer on the Exchange as of the time of calculation of the Fund's NAV. The records relating to Bid/Ask Prices will be retained by the Fund and its service providers.

²² Regular Trading Hours are 9:30 a.m. to 4:00 p.m. Eastern Time.

²³ Under accounting procedures to be followed by the Fund, trades made on the prior business day ("T") will be booked and reflected in NAV on the current business day ("T+1"). Accordingly, the Fund will be able to disclose at the beginning of the business day the portfolio that will form the basis for the NAV calculation at the end of the business day.

Portfolio will include, as applicable: The ticker symbol; CUSIP number or other identifier, if any; a description of the holding (including the type of holding, such as the type of swap); the identity of the security, commodity, index or other asset or instrument underlying the holding, if any; for options, the option strike price; quantity held (as measured by, for example, par value, notional value or number of shares, contracts, or units); maturity date, if any; coupon rate, if any; effective date, if any; market value of the holding; and the percentage weighting of the holding in the Fund's portfolio. The Web site and information will be publicly available at no charge.

In addition, for the Fund, an estimated value, defined in BATS Rule 14.11(i)(3)(C) as the "Intraday Indicative Value," that reflects an estimated intraday value of the Fund's portfolio, will be disseminated. Moreover, the Intraday Indicative Value will be based upon the current value for the components of the Disclosed Portfolio and will be updated and widely disseminated by one or more major market data vendors at least every 15 seconds during the Exchange's Regular Trading Hours.²⁴ In addition, the quotations of certain of the Fund's holdings may not be updated during U.S. trading hours if such holdings do not trade in the United States or if updated prices cannot be ascertained.

The dissemination of the Intraday Indicative Value, together with the Disclosed Portfolio, will allow investors to determine the value of the underlying portfolio of the Fund on a daily basis and provide a close estimate of that value throughout the trading day.

Intraday, closing, and settlement prices of common stocks and other exchange-listed instruments (including Depositary Receipts, preferred securities, convertible securities, common stock, and ETPs) will be readily available from the national securities exchanges trading such securities as well as automated quotation systems, published or other public sources, or online information services such as Bloomberg or Reuters. Intraday and closing price information for exchange-traded options and futures will be available from the applicable exchange and from major market data vendors. In addition, price information for U.S. exchange-traded options will be available from the Options Price Reporting Authority. Quotation

²⁴ Currently, it is the Exchange's understanding that several major market data vendors display and/or make widely available Intraday Indicative Values published via the Consolidated Tape Association ("CTA") or other data feeds.

information from brokers and dealers or pricing services will be available for Fixed Income Securities. Price information regarding spot currency transactions and OTC-traded derivative instruments, including options, swaps, and forward currency transactions, as well as non-exchange listed equity securities traded in the OTC market, including Restricted Securities, repurchase and reverse repurchase agreements, OTC equity securities, OTC-traded preferred securities, and OTC-traded convertible securities, is available from major market data vendors.

Information regarding market price and volume of the Shares will be continually available on a real-time basis throughout the day on brokers' computer screens and other electronic services. The previous day's closing price and trading volume information for the Shares will be published daily in the financial section of newspapers. Quotation and last sale information for the Shares will be available on the facilities of the CTA.

Initial and Continued Listing

The Shares will be subject to BATS Rule 14.11(i), which sets forth the initial and continued listing criteria applicable to Managed Fund Shares. The Exchange represents that, for initial and/or continued listing, the Fund must be in compliance with Rule 10A-3 under the Act.²⁵ A minimum of 100,000 Shares will be outstanding at the commencement of trading on the Exchange. The Exchange will obtain a representation from the issuer of the Shares that the NAV per Share will be calculated daily and that the NAV and the Disclosed Portfolio will be made available to all market participants at the same time.

Trading Halts

With respect to trading halts, the Exchange may consider all relevant factors in exercising its discretion to halt or suspend trading in the Shares of the Fund. The Exchange will halt trading in the Shares under the conditions specified in BATS Rule 11.18. Trading may be halted because of market conditions or for reasons that, in the view of the Exchange, make trading in the Shares inadvisable. These may include: (1) The extent to which trading is not occurring in the securities and/or the financial instruments composing the Disclosed Portfolio of the Fund; or (2) whether other unusual conditions or circumstances detrimental to the maintenance of a fair and orderly

market are present. Trading in the Shares also will be subject to Rule 14.11(i)(4)(B)(iv), which sets forth circumstances under which Shares of the Fund may be halted.

Trading Rules

The Exchange deems the Shares to be equity securities, thus rendering trading in the Shares subject to the Exchange's existing rules governing the trading of equity securities. BATS will allow trading in the Shares from 8:00 a.m. until 5:00 p.m. Eastern Time. The Exchange has appropriate rules to facilitate transactions in the Shares during all trading sessions. As provided in BATS Rule 14.11(i)(2)(C), the minimum price variation for quoting and entry of orders in Managed Fund Shares traded on the Exchange is \$0.01.

Surveillance

The Exchange believes that its surveillance procedures are adequate to properly monitor the trading of the Shares on the Exchange during all trading sessions and to deter and detect violations of Exchange rules and the applicable federal securities laws. Trading of the Shares through the Exchange will be subject to the Exchange's surveillance procedures for derivative products, including Managed Fund Shares. The Exchange may obtain information regarding trading in the Shares and the underlying shares in exchange traded investment companies, U.S. equity securities, foreign securities, futures, and options via the ISG, from other exchanges who are members or affiliates of the ISG, or with which the Exchange has entered into a comprehensive surveillance sharing agreement.²⁶ In addition, the Exchange is able to access, as needed, trade information for certain fixed income instruments reported to FINRA's Trade Reporting and Compliance Engine ("TRACE"). The Exchange prohibits the distribution of material non-public information by its employees.

Information Circular

Prior to the commencement of trading, the Exchange will inform its members in an Information Circular of the special characteristics and risks

²⁶ For a list of the current members and affiliate members of ISG, see www.isgportal.com. The Exchange notes that not all components of the Disclosed Portfolio for the Fund may trade on markets that are members of ISG or with which the Exchange has in place a comprehensive surveillance sharing agreement. The Exchange also notes that all exchange-traded instruments, including investment company securities, futures, and options will trade on markets that are a member of ISG or with which the Exchange has in place a comprehensive surveillance sharing agreement.

associated with trading the Shares. Specifically, the Information Circular will discuss the following: (1) The procedures for purchases and redemptions of Shares in Creation Units (and that Shares are not individually redeemable); (2) BATS Rule 3.7, which imposes suitability obligations on Exchange members with respect to recommending transactions in the Shares to customers; (3) how information regarding the Intraday Indicative Value and the Disclosed Portfolio is disseminated; (4) the risks involved in trading the Shares during the Pre-Opening²⁷ and After Hours Trading Sessions²⁸ when an updated Intraday Indicative Value will not be calculated or publicly disseminated; (5) the requirement that members deliver a prospectus to investors purchasing newly issued Shares prior to or concurrently with the confirmation of a transaction; and (6) trading information.

In addition, the Information Circular will advise members, prior to the commencement of trading, of the prospectus delivery requirements applicable to the Fund. Members purchasing Shares from the Fund for resale to investors will deliver a prospectus to such investors. The Information Circular will also discuss any exemptive, no-action, and interpretive relief granted by the Commission from any rules under the Act.

In addition, the Information Circular will reference that the Fund is subject to various fees and expenses described in the Registration Statement. The Information Circular will also disclose the trading hours of the Shares of the Fund and the applicable NAV Calculation Time for the Shares. The Information Circular will disclose that information about the Shares of the Fund will be publicly available on the Fund's Web site. In addition, the Information Circular will reference that the Trust is subject to various fees and expenses described in the Fund's Registration Statement.

2. Statutory Basis

The Exchange believes that the proposal is consistent with Section 6(b) of the Act²⁹ in general and Section 6(b)(5) of the Act³⁰ in particular in that it is designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and

²⁷ The Pre-Opening Session is from 8:00 a.m. to 9:30 a.m. Eastern Time.

²⁸ The After Hours Trading Session is from 4:00 p.m. to 5:00 p.m. Eastern Time.

²⁹ 15 U.S.C. 78f.

³⁰ 15 U.S.C. 78f(b)(5).

²⁵ See 17 CFR 240.10A-3.

coordination with persons engaged in facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system and, in general, to protect investors and the public interest.

The Exchange believes that the proposed rule change is designed to prevent fraudulent and manipulative acts and practices in that the Shares will be listed and traded on the Exchange pursuant to the initial and continued listing criteria in BATS Rule 14.11(i). The Exchange believes that its surveillance procedures are adequate to properly monitor the trading of the Shares on the Exchange during all trading sessions and to deter and detect violations of Exchange rules and the applicable federal securities laws. If the investment adviser to the investment company issuing Managed Fund Shares is affiliated with a broker-dealer, such investment adviser to the investment company shall erect a "fire wall" between the investment adviser and the broker-dealer with respect to access to information concerning the composition and/or changes to such investment company portfolio. The Adviser is not a registered broker-dealer, but is affiliated with a broker-dealer and has implemented a "fire wall" with respect to such broker-dealer regarding access to information concerning the composition and/or changes to the Fund's portfolio. In the event (a) the Adviser or Sub-Adviser becomes registered as a broker-dealer or newly affiliated with a broker-dealer, or (b) any new adviser or sub-adviser is a registered broker-dealer or becomes affiliated with a broker-dealer, it will implement a fire wall with respect to its relevant personnel or broker-dealer affiliate regarding access to information concerning the composition and/or changes to the portfolio, and will be subject to procedures designed to prevent the use and dissemination of material non-public information regarding such portfolio. The Exchange may obtain information regarding trading in the Shares and the underlying shares in Depositary Receipts that are not OTC ADRs and exchange traded investment companies, U.S. equity securities, futures, and options via the ISG, from other exchanges who are members or affiliates of the ISG, or with which the Exchange has entered into a comprehensive surveillance sharing agreement.³¹ In addition, the Exchange

is able to access, as needed, trade information for certain fixed income instruments reported to FINRA's TRACE.

According to the Registration Statement, the Fund intends to achieve its investment objective by investing, under normal circumstances, at least 80% of its net assets in Fixed Income Securities from at least five emerging market countries, with no more than 20% allocated to a single country. The Fund's investments will be consistent with the Fund's investment objective and will not be used to achieve leveraged or inverse leveraged returns, as stated above. While the Fund is permitted to invest without restriction in corporate bonds, the Sub-Adviser expects that, under normal circumstances, the Fund will generally seek to invest in corporate bond issuances that have at least \$100,000,000 par amount outstanding. Further, component corporate bonds that in the aggregate account for at least 75% of the weight of corporate bonds will have a minimum original principal outstanding of \$100 million or more.

In addition to the holdings in Fixed Income Securities described above as part of the Fund's principal investment strategy, the Fund may also, to a limited extent (under normal circumstances, less than 20% of the Fund's net assets) and as further described above, engage in transactions in the following:

U.S. Government obligations, U.S. equity securities, repurchase agreements, reverse repurchase agreements, portfolio lending, convertible securities, short-term instruments, Restricted Securities, and securities of other investment companies.

The Fund may hold up to an aggregate amount of 15% of its net assets in illiquid assets (calculated at the time of investment), including Restricted Securities deemed illiquid by the Adviser or Sub-Adviser³² under the

markets that are members of ISG or with which the Exchange has in place a comprehensive surveillance sharing agreement. The Exchange also notes that all of the exchange-listed investment company securities, futures, and options will trade on markets that are a member of ISG or with which the Exchange has in place a comprehensive surveillance sharing agreement.

³² In reaching liquidity decisions, the Adviser and Sub-Adviser may consider factors including: The frequency of trades and quotes for the security; the number of dealers wishing to purchase or sell the security and the number of other potential purchasers; dealer undertakings to make a market in the security; the nature of the security and the nature of the marketplace in which it trades (e.g., the time needed to dispose of the security, the method of soliciting offers, and the mechanics of transfer).

1940 Act.³³ The Fund will monitor its portfolio liquidity on an ongoing basis to determine whether, in light of current circumstances, an adequate level of liquidity is being maintained, and will consider taking appropriate steps in order to maintain adequate liquidity if, through a change in values, net assets, or other circumstances, more than 15% of the Fund's net assets are held in illiquid assets. Illiquid assets include securities subject to contractual or other restrictions on resale and other instruments that lack readily available markets as determined in accordance with Commission staff guidance.

The proposed rule change is designed to promote just and equitable principles of trade and to protect investors and the public interest in that the Exchange will obtain a representation from the issuer of the Shares that the NAV per Share will be calculated daily and that the NAV and the Disclosed Portfolio will be made available to all market participants at the same time. In addition, a large amount of information is publicly available regarding the Fund and the Shares, thereby promoting market transparency. Moreover, the Intraday Indicative Value will be disseminated by one or more major market data vendors at least every 15 seconds during Regular Trading Hours. On each business day, before commencement of trading in Shares during Regular Trading Hours, the Fund will disclose on its Web site the Disclosed Portfolio that will form the basis for the Fund's calculation of NAV at the end of the business day. Pricing information will be available on the Fund's Web site including: (1) The prior business day's reported NAV, the Bid/Ask Price of the Fund, and a calculation of the premium and discount of the Bid/Ask Price against the NAV; and (2) data in chart format displaying the frequency distribution of discounts and premiums of the daily Bid/Ask Price against the

³³ The Commission has stated that long-standing Commission guidelines have required open-end funds to hold no more than 15% of their net assets in illiquid securities and other illiquid assets. See Investment Company Act Release No. 28193 (March 11, 2008), 73 FR 14618 (March 18, 2008), footnote 34. See also, Investment Company Act Release No. 5847 (October 21, 1969), 35 FR 19989 (December 31, 1970) (Statement Regarding "Restricted Securities"); Investment Company Act Release No. 18612 (March 12, 1992), 57 FR 9828 (March 20, 1992) (Revisions of Guidelines to Form N-1A). A fund's portfolio security is illiquid if it cannot be disposed of in the ordinary course of business within seven days at approximately the value ascribed to it by the fund. See Investment Company Act Release No. 14983 (March 12, 1986), 51 FR 9773 (March 21, 1986) (adopting amendments to Rule 2a-7 under the 1940 Act); Investment Company Act Release No. 17452 (April 23, 1990), 55 FR 17933 (April 30, 1990) (adopting Rule 144A under the Securities Act of 1933).

³¹ For a list of the current members and affiliate members of ISG, see www.isgportal.com. The Exchange notes that not all components of the Disclosed Portfolio for the Fund may trade on

NAV, within appropriate ranges, for each of the four previous calendar quarters. Additionally, information regarding market price and trading of the Shares will be continually available on a real-time basis throughout the day on brokers' computer screens and other electronic services, and quotation and last sale information for the Shares will be available on the facilities of the CTA. The Web site for the Fund will include a form of the prospectus for the Fund and additional data relating to NAV and other applicable quantitative information. Trading in Shares of the Fund will be halted under the conditions specified in BATS Rule 11.18. Trading may also be halted because of market conditions or for reasons that, in the view of the Exchange, make trading in the Shares inadvisable. Finally, trading in the Shares will be subject to BATS Rule 14.11(i)(4)(B)(iv), which sets forth circumstances under which Shares of the Fund may be halted. In addition, the Exchange is able to access, as needed, trade information for certain fixed income instruments reported to FINRA's TRACE. As noted above, investors will also have ready access to information regarding the Fund's holdings, the Intraday Indicative Value, the Disclosed Portfolio, and quotation and last sale information for the Shares.

Intraday, closing, and settlement prices of common stocks and other exchange-listed instruments (including Depositary Receipts, preferred securities, convertible securities, common stock, and ETPs) will be readily available from the national securities exchanges trading such securities as well as automated quotation systems, published or other public sources, or online information services such as Bloomberg or Reuters. Intraday and closing price information for exchange-traded options and futures will be available from the applicable exchange and from major market data vendors. In addition, price information for U.S. exchange-traded options will be available from the Options Price Reporting Authority. Quotation information from brokers and dealers or pricing services will be available for Fixed Income Securities. Price information regarding spot currency transactions and OTC-traded derivative instruments, including options, swaps, and forward currency transactions, as well as non-exchange listed equity securities traded in the OTC market, including Restricted Securities, repurchase and reverse repurchase agreements, OTC equity securities, OTC-traded preferred securities, and OTC-

traded convertible securities, is available from major market data vendors.

The proposed rule change is designed to perfect the mechanism of a free and open market and, in general, to protect investors and the public interest in that it will facilitate the listing and trading of an additional type of actively-managed exchange-traded product that will enhance competition among market participants, to the benefit of investors and the marketplace. As noted above, the Exchange has in place surveillance procedures relating to trading in the Shares and may obtain information via ISG from other exchanges that are members of ISG or with which the Exchange has entered into a comprehensive surveillance sharing agreement. In addition, as noted above, investors will have ready access to information regarding the Fund's holdings, the Intraday Indicative Value, the Disclosed Portfolio, and quotation and last sale information for the Shares.

For the above reasons, the Exchange believes that the proposed rule change is consistent with the requirements of Section 6(b)(5) of the Act.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purpose of the Act. The Exchange notes that the proposed rule change will facilitate the listing and trading of an additional actively-managed exchange-traded product that will enhance competition among market participants, to the benefit of investors and the marketplace.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants or Others

The Exchange has neither solicited nor received written comments on the proposed rule change.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Within 45 days of the date of publication of this notice in the **Federal Register** or within such longer period up to 90 days (i) as the Commission may designate if it finds such longer period to be appropriate and publishes its reasons for so finding or (ii) as to which the self-regulatory organization consents, the Commission will:

(A) By order approve or disapprove the proposed rule change, or

(B) institute proceedings to determine whether the proposed rule change should be disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (<http://www.sec.gov/rules/sro.shtml>); or
- Send an email to rule-comments@sec.gov. Please include File Number SR-BATS-2015-94 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549-1090.

All submissions should refer to File Number SR-BATS-2015-94. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (<http://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of such filing will also be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR-BATS-2015-94 and should be submitted on or before February 5, 2016.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.³⁴

Robert W. Errett,
Deputy Secretary.

[FR Doc. 2016-00639 Filed 1-14-16; 8:45 am]

BILLING CODE 8011-01-P

SURFACE TRANSPORTATION BOARD

[Docket No. FD 35988]

East Penn Railroad, LLC—Lease Exemption Containing Interchange Commitment—Norfolk Southern Railway Company

East Penn Railroad, LLC (ESPN), a Class III rail carrier, has filed a verified notice of exemption under 49 CFR 1150.41 to lease from Norfolk Southern Railway Company (NSR) 1.8 miles of rail line located between milepost VE 0.00 and milepost VE 1.80 near Philadelphia, Pa. (the Line). ESPN will be the operator on the Line.

ESPN states that it will shortly enter into an agreement with NSR for the lease of the Line. As required by 49 CFR 1150.43(h), ESPN has disclosed in this notice that the lease agreement contains a provision that will enable ESPN to reduce its lease payments by receiving a credit for each car interchanged with NSR.¹ ESPN states that it requested the lease credit option in order to provide it with an opportunity to earn lower rental payment so that ESPN will be able to invest in improvements on the Line to increase traffic levels. The affected interchange point is West Falls Yard, Philadelphia, Pa.

ESPN has certified that its projected annual revenues as a result of the proposed transaction will not result in ESPN becoming a Class II or Class I rail carrier. ESPN has further certified that its projected annual rail freight revenues from operation of the Line, when combined with ESPN's projected revenues from current rail freight operations, would not exceed \$5 million.

ESPN states that it intends to consummate the transaction on or after January 29, 2016, the effective date of the exemption (30 days after the exemption was filed).

If the verified notice contains false or misleading information, the exemption is void ab initio. Petitions to revoke the exemption under 49 U.S.C. 10502(d) may be filed at any time. The filing of a petition to revoke will not automatically stay the effectiveness of

the exemption. Petitions for stay must be filed no later than January 22, 2016 (at least 7 days before the exemption becomes effective).

An original and 10 copies of all pleadings, referring to Docket No. FD 35988, must be filed with the Surface Transportation Board, 395 E Street SW., Washington, DC 20423-0001. In addition, a copy of each pleading must be served on Karl Morell, Karl Morell & Associates, Suite 225, 655 15th Street NW., Washington, DC 20005.

According to ESPN, this action is categorically excluded from environmental review under 49 CFR 1105.6(c).

Board decisions and notices are available on our Web site at www.stb.dot.gov.

Decided: January 12, 2016.

By the Board, Rachel D. Campbell,
Director, Office of Proceedings.

Jeffrey Herzig,
Clearance Clerk.

[FR Doc. 2016-00733 Filed 1-14-16; 8:45 am]

BILLING CODE 4915-01-P

SURFACE TRANSPORTATION BOARD

[Docket No. AB 55 (Sub-No. 749X)]

CSX Transportation, Inc.—Discontinuance of Service Exemption—in Harnett County, NC

CSX Transportation, Inc. (CSXT) filed a verified notice of exemption under 49 CFR part 1152 subpart F—*Exempt Abandonments and Discontinuances of Service* to discontinue service over an approximately 0.34-mile rail line between mileposts SDS 56.66 and SDS 57.00 (the Line) on its Southern Region, Florence Division, South End Subdivision, in Harnett County, NC. The Line traverses United States Postal Service Zip Code 28334.

CSXT has certified that: (1) No local traffic has moved over the Line for at least two years; (2) there is no overhead traffic on the Line that would have to be rerouted over other lines; (3) no formal complaint filed by a user of rail service on the Line (or by a state or local government entity acting on behalf of such user) regarding cessation of service over the Line is pending either with the Surface Transportation Board or any U.S. District Court or has been decided in favor of a complainant within the two-year period; and (4) the requirements at 49 CFR 1105.12 (newspaper publication), and 49 CFR 1152.50(d)(1) (notice to governmental agencies) have been met.

As a condition to this exemption, any employee adversely affected by the

discontinuance shall be protected under *Oregon Short Line Railroad—Abandonment Portion Goshen Branch Between Firth & Ammon, in Bingham & Bonneville Counties, Idaho*, 360 I.C.C. 91 (1979). To address whether this condition adequately protects affected employees, a petition for partial revocation under 49 U.S.C. 10502(d) must be filed.

Provided no formal expression of intent to file an offer of financial assistance (OFA) to subsidize continued rail service has been received, this exemption will become effective on February 17, 2016, unless stayed pending reconsideration. Petitions to stay that do not involve environmental issues and formal expressions of intent to file an OFA to subsidize continued rail service under 49 CFR 1152.27(c)(2)¹ must be filed by January 25, 2016.² Petitions to reopen must be filed by February 4, 2016, with the Surface Transportation Board, 395 E Street SW., Washington, DC 20423-0001.

A copy of any petition filed with the Board should be sent to CSXT's representative: Louis E. Gitomer, Law Offices of Louis E. Gitomer, LLC, 600 Baltimore Ave., Suite 301, Towson, MD 21204.

If the verified notice contains false or misleading information, the exemption is void ab initio.

Board decisions and notices are available on our Web site at www.stb.dot.gov.

Decided: January 11, 2016.

By the Board, Rachel D. Campbell,
Director, Office of Proceedings.

Raina S. Contee,
Clearance Clerk.

[FR Doc. 2016-00737 Filed 1-14-16; 8:45 am]

BILLING CODE 4915-01-P

DEPARTMENT OF TRANSPORTATION

Federal Motor Carrier Safety Administration

[Docket No. FMCSA-2015-0372]

Notice of Availability of a Draft Environmental Assessment for the City of El Paso, Texas, Commercial Zone Expansion

AGENCY: Federal Motor Carrier Safety Administration (FMCSA), DOT.

¹ Each OFA must be accompanied by the filing fee, which is currently set at \$1,600. See 49 CFR 1002.2(f)(25).

² Because this is a discontinuance proceeding and not an abandonment, interim trail use/rail banking and public use conditions are not appropriate. Because there will be an environmental review during abandonment, this discontinuance does not require an environmental review.

³⁴ 17 CFR 200.30-3(a)(12).

¹ ESPN has filed the lease agreement under seal pursuant to 49 CFR 1150.43(h)(1)(ii).

ACTION: Notice of availability; request for comments.

SUMMARY: FMCSA announces the availability of a draft Environmental Assessment (EA) prepared for the expansion of the City of El Paso, Texas, commercial zone. The EA was prepared in compliance with the National Environmental Policy Act of 1969 (NEPA); the Council on Environmental Quality Regulations; and FMCSA NEPA Order 5610.1 (NEPA Implementing Procedures and Policy for Considering Environmental Impacts). Interested persons are invited to comment on the draft EA.

DATES: Comments on the draft environmental assessment must be received on or before January 28, 2016.

ADDRESSES: You may submit comments bearing the Federal Docket Management System Docket ID [FMCSA–2015–0372] using any of the following methods:

Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the online instructions for submitting comments.

Mail: Docket Management Facility; U.S. Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12–140, Washington, DC 0590–0001.

Hand Delivery or Courier: West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m., ET, Monday through Friday, except Federal holidays.

Fax: 1–202–493–2251.

Each submission must include the Agency name and the docket number for this notice. Note that DOT posts all comments received without change to www.regulations.gov, including any personal information included in a comment. Please see the Privacy Act heading below.

Docket: For access to the docket to read background documents or comments, go to www.regulations.gov at any time or visit Room W12–140 on the ground level of the West Building, 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The online Federal document management system is available 24 hours each day, 365 days each year. If you want acknowledgment that we received your comments, please include a self-addressed, stamped envelope or postcard or print the acknowledgement page that appears after submitting comments online.

Privacy Act: In accordance with 5 U.S.C. 553(c), DOT solicits comments from the public to better inform its rulemaking process. DOT posts these

comments, without edit, including any personal information the commenter provides, to www.regulations.gov, as described in the system of records notice (DOT/ALL–14 FDMS), which can be reviewed at www.dot.gov/privacy.

FOR FURTHER INFORMATION CONTACT: Ms. Andrea Pahlevanpour, Environmental Program Analyst, Regulatory Evaluation Division, U.S. Department of Transportation, Federal Motor Carrier Safety Administration, 1200 New Jersey Ave SE., Washington, DC 20590–0001, Telephone number: 202–366–5370, andrea.pahlevanpour@dot.gov. If you have questions on viewing or submitting material to the docket, contact Docket Services, telephone (202) 366–9826.

SUPPLEMENTARY INFORMATION:

Background

The County of El Paso submitted a Presidential Permit application on April 14, 2003, to the U.S. Department of State for replacement of the Fabens-Caseta International Bridge (Fabens, Texas connecting Caseta, Chihuahua, Mexico) and port of entry. The Department of State, under its authority under Executive Order 11423, “Delegation of Functions to Secretary of State Respecting Certain Facilities Constructed and Maintained on United States Borders,” 33 FR 11741 (Aug. 16, 1968), for the construction, maintenance, and operation of U.S.-Mexico cross-border facilities, issued the Presidential Permit on March 16, 2005.

Presidential Permit 05–01 is titled “Authorizing the County of El Paso, Texas, to Construct, Operate, and Maintain an International Bridge, Its Approaches and Facilities, at the International Boundary Between the United States and Mexico.” This permit granted permission, subject to the conditions of the permit, to the County of El Paso, Texas, to construct, operate and maintain an international bridge. The permit noted that the name of the bridge was proposed as the “Tornillo-Guadalupe New International Bridge.” The bridge was to be constructed, “approximately 1,950 feet upstream” from the existing Fabens-Caseta International Bridge. The permit specified that, “[T]he proposed Tornillo International Bridge will facilitate passenger vehicles, commercial trucks, and pedestrian traffic.” In June 2011, the General Services Administration (GSA) announced the kick-off of construction of the new port facility, including a six-lane replacement bridge.

Construction is complete on the United States’ side of the crossing, and non-commercial passenger-vehicle

crossings are ongoing at this location. Northbound traffic is using the existing bridge, built in 1938 that is to be destroyed and replaced along with the port-of-entry facilities, with the traffic detoured to the new Tornillo inspection facilities. The construction of facilities, interchanges, and roads on the Mexican side of the border has been delayed but is expected to be completed in the near future.

The commercial zone of the City of El Paso, Texas (which had a population of 649,121 as of the 2010 census) is currently defined by the general provisions of 49 CFR Sections 372.239, 372.241 and 372.243. It includes the municipality of the City of El Paso, all municipalities contiguous to the City of El Paso, and all other municipalities and all unincorporated areas that are adjacent to the City of El Paso. It also includes “when the base municipality has a population of 500,000 but less than 1 million, all unincorporated areas within 15 miles of its corporate limits and all of any other municipality any part of which is within 15 miles of the corporate limits of the base municipality.” 49 CFR 372.241(c)(6). The unincorporated community of Tornillo, Texas, as well as the area near the location of the new Port of Entry, are more than 15 miles from the closest municipal boundary of the City of El Paso. Therefore, these areas are not included as part of the current City of El Paso, Texas commercial zone.

FMCSA will expand the City of El Paso, TX, commercial zone to include all unincorporated areas within 15 miles of the corporate boundaries of the City of San Elizario, TX. The City of San Elizario (located southeast of the City of El Paso) was incorporated on November 18, 2013 under the general laws of Texas and is thus included within the present commercial zone of the City of El Paso because it is within 15 miles of the boundary of the City of El Paso. By expanding the commercial zone to include those unincorporated areas within 15 miles of the boundaries of San Elizario, the new Tornillo-Guadalupe POE and the roads and highways providing access to the POE will be within the commercial zone of the City of El Paso, TX. Most motor carriers operating entirely in a border commercial zone such as at El Paso are not required to obtain operating authority to perform such transportation. But under 49 U.S.C. 13902(c) and 49 CFR part 368, Mexico-domiciled motor carriers of property must obtain a certificate of registration to operate in border commercial zones. Allowing all of these carriers to continue their operations at El Paso

necessitates ensuring that the new bridge and port of entry are in a commercial zone.

Environment

NEPA (42 U.S.C. 4371 *et seq.*) requires Federal agencies to integrate environmental values into their decision-making processes by requiring Federal agencies to consider the potential environmental impacts of their proposed actions. In accordance with NEPA, the Council on Environmental Quality's regulations implementing NEPA (40 CFR parts 1500–1508), FMCSA's NEPA Order 5610.1, NEPA Implementing Procedures and Policy for Considering Environmental Impacts, and other applicable requirements (March 1, 2004 (69 FR 9680)), FMCSA has prepared a draft EA to review the potential impacts of the expansion of the El Paso commercial zone. FMCSA concludes that the action of expanding the existing commercial zone will not impact endangered species, cultural resources protected under the National Historic Preservation Act, wetlands, and resources protected under Section 4(f) of the DOT Act of 1966 49 U.S.C. 303, as amended by Public Law 109–59 (Aug. 10, 2005). The impact areas that may be affected and were evaluated in the Draft EA include air quality, noise, socioeconomic, environmental justice, land use public health and safety, and hazardous materials. FMCSA anticipates that expanding the El Paso commercial zone will have certain minor impacts related principally to air emissions and land use from economic growth; however, neither of these impacts individually or collectively will cause significant impacts. In addition, the economic impact will have potentially beneficial impacts on the quality of life in terms of job creation. The Draft EA is available for inspection or copying in the Regulations.gov Web site at <http://www.regulations.gov>.

The draft EA also provides an analysis under the Clean Air Act, as amended (CAA), section 176(c) (42 U.S.C. 42 U.S.C. 7506(c)), and implementing regulations promulgated by the Environmental Protection Agency. None of the alternatives considered in the Draft EA are located in a nonattainment or maintenance area for any of the criteria pollutants; therefore, FMCSA has determined that it is not required to perform the CAA general conformity analysis.

Subject to public notice and comment, FMCSA anticipates issuing a Finding of No Significant Impact (FONSI) related to this action.

Issued pursuant to authority delegated in 49 CFR 1.87 on:

Issued on: January 7, 2016.
T.F. Scott Darling, III,
Acting Administrator.
 [FR Doc. 2016–00532 Filed 1–14–16; 8:45 am]
BILLING CODE 4910–EX–P

DEPARTMENT OF TRANSPORTATION

Federal Transit Administration

[FTA Docket No. FTA–2015–0034]

Agency Information Collection Activity Under OMB Review

AGENCY: Federal Transit Administration, DOT.

ACTION: Notice of request for comments.

SUMMARY: The Federal Transit Administration invites public comment about its intention to request the Office of Management and Budget's (OMB) approval to renew the following information collection:

Bus Testing Program

The information to be collected for the Bus Testing Program is necessary to ensure that buses have been tested at the Bus Testing Center for maintainability, reliability, safety, performance (including breaking performance), structural integrity, fuel economy, emissions, and noise. Specifically, this notice invites comment on FTA's proposal to adopt new streamlined online procedures for accepting and reviewing applications for entry into the New Bus Model Testing Program. The **Federal Register** notice with a 60-day comment period soliciting comments for the Bus Testing Program was published on November 4, 2015 (Citation 80 FR 213). No comments were received from that notice.

DATES: Comments must be submitted before February 16, 2016. A comment to OMB is most effective, if OMB receives it within 30 days of publication.

FOR FURTHER INFORMATION CONTACT: Tia Swain, Office of Administration, Office of Management Planning, (202) 366–0354.

SUPPLEMENTARY INFORMATION:

Title: Bus Testing Program.

OMB Number: 2132–0550.

Abstract: The Bus Testing Program is a series of tests performed on new transit vehicles or existing vehicles that have been previously tested, but have undergone significant/major changes to their design. Bus Testing is required by law, for any model bus that will be purchased using federal funds. Before federal funds can be expended, the grantee certifies to FTA that the bus models being procured are compliant

with 49 CFR 665 *Bus Testing*. In turn, FTA grantees delegate the burden of demonstrating compliance to the bus manufacturers. The Bus Testing Program provides assistance to transit bus manufacturers with achieving compliance with the testing requirement. A variety of information is collected from bus manufacturers during the bus testing process.

Estimated Total Burden: 205 hours.

ADDRESSES: All written comments must refer to the docket number that appears at the top of this document and be submitted to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street NW., Washington, DC 20503, Attention: FTA Desk Officer.

Comments are Invited On: Whether the proposed collection of information is necessary for the proper performance of the functions of the Department, including whether the information will have practical utility; the accuracy of the Department's estimate of the burden of the proposed information collection; ways to enhance the quality, utility, and clarity of the information to be collected; and ways to minimize the burden of the collection of information on respondents, including the use of automated collection techniques or other forms of information technology.

William Hyre,

Deputy Associate Administrator for Administration.

[FR Doc. 2016–00715 Filed 1–14–16; 8:45 am]

BILLING CODE P

DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

[Docket No. PHMSA–2015–0179]

Pipeline Safety: Information Collection Activities

AGENCY: Pipeline and Hazardous Materials Safety Administration (PHMSA), DOT.

ACTION: Notice and request for comments.

SUMMARY: On October 5, 2015, in accordance with the Paperwork Reduction Act of 1995, PHMSA published a notice in the **Federal Register** (80 FR 60242) inviting comments on information collections titled “Pipeline Integrity Management in High Consequence Areas Gas Transmission Pipeline Operators; Control Room Management/Human Factors; Integrity Management Program for Gas Distribution Pipelines, and

Response Plans for Onshore Oil Pipelines,” identified by Office of Management and Budget (OMB) control numbers 2137–0610, 2137–0624, 2137–0625, and 2137–0589. These information collections will expire on March 31, 2016. PHMSA will request an extension with no change for the information collections 2137–0610, 0624, and 0625. PHMSA will request a renewal with revisions to the information collection 2137–0589 to revise the number of respondents PHMSA expected to comply with this information collection.

During the 60-day comment period, PHMSA received no comments in response to these collections. PHMSA is publishing this notice to provide the public with an additional 30 days to comment on the renewal of these information collections and announce that these information collections will be submitted to OMB for approval.

DATES: Interested persons are invited to submit comments on or before February 16, 2016.

ADDRESSES: You may submit comments identified by the docket number PHMSA–2015–0009 by any of the following methods:

- *Fax:* 1–202–395–5806.

- *Mail:* Office of Information and Regulatory Affairs, Records Management Center, Room 10102 NEOB, 725 17th Street NW., Washington, DC 20503, ATTN: Desk Officer for the U.S. Department of Transportation/PHMSA.

- *Email:* Office of Information and Regulatory Affairs, Office of Management and Budget, at the following email address: *OIRA_Submission@omb.eop.gov*.

Requests for a copy of the Information Collection should be directed to Jenny Donohue by telephone at 202–366–4046 or by email at *jenny.donohue@dot.gov*.

FOR FURTHER INFORMATION CONTACT: Angela Dow by telephone at 202–366–1246 or by email at *angela.dow@dot.gov*.

SUPPLEMENTARY INFORMATION: Section 1320.8(d), Title 5, Code of Federal Regulations, requires PHMSA to provide interested members of the public and affected agencies an opportunity to comment on information collection and recordkeeping requests. This notice identifies several information collection requests that PHMSA will submit to OMB for renewal. The following information is provided for each information collection: (1) Title of the information collection; (2) OMB control number; (3) Current expiration date; (4) Type of request; (5) Abstract of the information collection activity; (6) Description of affected public; (7)

Estimate of total annual reporting and recordkeeping burden; and (8) Frequency of collection. PHMSA will request a three-year term of approval for each information collection activity. PHMSA requests comments on the following information collections:

1. *Title:* Pipeline Integrity Management in High Consequence Areas Gas Transmission Pipeline Operators.

OMB Control Number: 2137–0610.

Current Expiration Date: 3/31/2016.

Type of Request: Extension without change of a currently approved collection.

Abstract: The Federal Pipeline Safety Regulations in 49 CFR part 192, subpart O require operators of gas pipelines to develop and implement integrity management programs. The purpose of these programs is to enhance safety by identifying and reducing pipeline integrity risks. The regulations also require that operators maintain records demonstrating compliance with these requirements.

Affected Public: Gas transmission operators.

Annual Reporting and Recordkeeping Burden:

Estimated number of responses: 733.

Estimated annual burden hours: 1,018,807.

Frequency of collection: On occasion.

2. *Title:* Control Room Management/ Human Factors.

OMB Control Number: 2137–0624.

Current Expiration Date: 3/31/2016.

Type of Request: Extension without change of a currently approved collection.

Abstract: The Federal Pipeline Safety Regulations in 49 CFR parts 192 and 195 require operators of hazardous liquid pipelines and gas pipelines to develop and implement a human factors management plan designed to reduce risk associated with human factors in each pipeline control room and to maintain records demonstrating compliance with these requirements.

Affected Public: Private sector; Operators of both natural gas and hazardous liquid pipeline systems.

Annual Reporting and Recordkeeping Burden:

Estimated number of responses: 2,702.

Estimated annual burden hours: 127,328.

Frequency of Collection: On occasion.

3. *Title:* Pipeline Safety: Integrity Management Program for Gas Distribution Pipelines.

OMB Control Number: 2137–0625.

Current Expiration Date: 3/31/2016.

Type of Request: Extension without change of a currently approved collection.

Abstract: The Federal Pipeline Safety Regulations require operators of gas distribution pipelines to develop and implement integrity management programs. The purpose of these programs is to enhance safety by identifying and reducing pipeline integrity risks. The regulations require that operators maintain records demonstrating compliance with these requirements.

Affected Public: Operators of gas distribution pipeline systems.

Annual Reporting and Recordkeeping Burden:

Estimated number of responses: 9,343.

Estimated annual burden hours: 865,178.

Frequency of collection: On occasion.

4. *Title:* Response Plans for Onshore Oil Pipelines.

OMB Control Number: 2137–0589.

Current Expiration Date: 3/31/2016.

Type of Request: Revision of a currently approved information collection.

Abstract: The Oil Pipeline Response Plan regulations in 49 CFR part 194 require an operator of an onshore oil pipeline facility to prepare and submit an oil spill response plan to PHMSA for review and approval. This revision only updates the number of respondents to accurately reflect the current usage of this collection.

Affected Public: Operators of onshore oil pipeline facilities.

Estimated number of responses: 434.

Estimated annual burden hours: 59,458.

Frequency of collection: On occasion.

Comments are invited on:

(a) The need for the renewal and revision of these collections of information for the proper performance of the functions of the agency, including whether the information will have practical utility;

(b) The accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;

(c) Ways to enhance the quality, utility, and clarity of the information to be collected; and

(d) Ways to minimize the burden of the collection of information on those who are to respond, including the use of appropriate automated, electronic, mechanical, or other technological collection techniques.

Authority: The Paperwork Reduction Act of 1995; 44 U.S.C. Chapter 35, as amended; and 49 CFR 1.48.

Issued in Washington, DC, on January 11, 2016, under authority delegated in 49 CFR 1.97.

John A. Gale,

Director, Office of Standards and Rulemaking.

[FR Doc. 2016-00626 Filed 1-14-16; 8:45 am]

BILLING CODE 4910-60-P

DEPARTMENT OF THE TREASURY

Departmental Offices; Debt Management Advisory Committee Meeting

Notice is hereby given, pursuant to 5 U.S.C. App. 2, 10(a)(2), that a meeting will be held at the Hay-Adams Hotel, 16th Street and Pennsylvania Avenue NW., Washington, DC, on February 2, 2016 at 11:30 a.m. of the following debt management advisory committee:

Treasury Borrowing Advisory Committee of The Securities Industry and Financial Markets Association.

The agenda for the meeting provides for a charge by the Secretary of the Treasury or his designate that the Committee discuss particular issues and conduct a working session. Following the working session, the Committee will present a written report of its recommendations. The meeting will be closed to the public, pursuant to 5 U.S.C. App. 2, 10(d) and Public Law 103-202, 202(c)(1)(B) (31 U.S.C. 3121 note).

This notice shall constitute my determination, pursuant to the authority placed in heads of agencies by 5 U.S.C. App. 2, 10(d) and vested in me by Treasury Department Order No. 101-05, that the meeting will consist of discussions and debates of the issues presented to the Committee by the Secretary of the Treasury and the making of recommendations of the Committee to the Secretary, pursuant to Public Law 103-202, 202(c)(1)(B). Thus, this information is exempt from disclosure under that provision and 5 U.S.C. 552b(c)(3)(B). In addition, the meeting is concerned with information that is exempt from disclosure under 5 U.S.C. 552b(c)(9)(A). The public interest requires that such meetings be closed to the public because the Treasury Department requires frank and full advice from representatives of the financial community prior to making its final decisions on major financing operations. Historically, this advice has been offered by debt management advisory committees established by the several major segments of the financial community. When so utilized, such a committee is recognized to be an

advisory committee under 5 U.S.C. App. 2, 3.

Although the Treasury's final announcement of financing plans may not reflect the recommendations provided in reports of the Committee, premature disclosure of the Committee's deliberations and reports would be likely to lead to significant financial speculation in the securities market. Thus, this meeting falls within the exemption covered by 5 U.S.C. 552b(c)(9)(A).

Treasury staff will provide a technical briefing to the press on the day before the Committee meeting, following the release of a statement of economic conditions and financing estimates. This briefing will give the press an opportunity to ask questions about financing projections. The day after the Committee meeting, Treasury will release the minutes of the meeting, any charts that were discussed at the meeting, and the Committee's report to the Secretary.

The Office of Debt Management is responsible for maintaining records of debt management advisory committee meetings and for providing annual reports setting forth a summary of Committee activities and such other matters as may be informative to the public consistent with the policy of 5 U.S.C. 552(b). The Designated Federal Officer or other responsible agency official who may be contacted for additional information is Fred Pietrangeli, Director for Office of Debt Management (202) 622-1876.

Dated: January 8, 2016.

James Clark,

Deputy Assistant Secretary for Federal Finance.

[FR Doc. 2016-00527 Filed 1-14-16; 8:45 am]

BILLING CODE 4810-25-M

UNITED STATES SENTENCING COMMISSION

Sentencing Guidelines for United States Courts

AGENCY: United States Sentencing Commission.

ACTION: Notice of proposed amendments to sentencing guidelines, policy statements, and commentary. Request for public comment, including public comment regarding retroactive application of any of the proposed amendments; public hearing.

SUMMARY: Pursuant to section 994(a), (o), and (p) of title 28, United States Code, the United States Sentencing Commission is considering promulgating certain amendments to the

sentencing guidelines, policy statements, and commentary. This notice sets forth the proposed amendments and, for each proposed amendment, a synopsis of the issues addressed by that amendment. This notice also sets forth a number of issues for comment, some of which are set forth together with the proposed amendments, and one of which (regarding retroactive application of proposed amendments) is set forth in the **SUPPLEMENTARY INFORMATION** portion of this notice.

The proposed amendments and issues for comment in this notice are as follows:

(1) A multi-part proposed amendment to the *Guidelines Manual* to respond to recently enacted legislation and miscellaneous guideline issues, including (A) revisions to Appendix A (Statutory Index) to respond to new offenses established by the Uniting and Strengthening America by Fulfilling Rights and Ensuring Effective Discipline Over Monitoring Act (USA FREEDOM Act) of 2015, Public Law 114-23 (June 2, 2015), and related issues for comment; (B) revisions to Appendix A (Statutory Index) to respond to changes made by the Bipartisan Budget Act of 2015, Public Law 114-74 (Nov. 2, 2015), to existing criminal statutes, and related issues for comment; (C) a revision to Appendix A (Statutory Index) to reference offenses under 18 U.S.C. 1715 (Firearms as nonmailable items) to § 2K2.1 (Unlawful Receipt, Possession, or Transportation of Firearms or Ammunition; Prohibited Transactions Involving Firearms or Ammunition) and a revision to § 2K2.1 to establish a base offense level for such offenses, and a related issue for comment; and (D) a technical amendment to the Background Commentary to § 2T1.6 (Failing to Collect or Truthfully Account for and Pay Over Tax);

(2) a two-part proposed amendment to the policy statement pertaining to "compassionate release," § 1B1.13 (Reduction in Term of Imprisonment as a Result of Motion by Director of Bureau of Prisons), including (A) a detailed request for comment on whether any changes should be made to the policy statement and (B) a proposed amendment illustrating one possible set of changes to the policy statement, *i.e.*, to reflect the criteria set forth in the program statement used by the Bureau of Prisons;

(3) a proposed amendment to §§ 5B1.3 (Conditions of Probation) and 5D1.3 (Conditions of Supervised Release) to revise, clarify, and rearrange the provisions in the *Guidelines Manual* on

conditions of probation and supervised release, and related issues for comment;

(4) a proposed amendment to § 2E3.1 (Gambling; Animal Fighting Offenses) to provide higher penalties for animal fighting offenses and to respond to two new offenses relating to attending an animal fighting venture that were established by section 12308 of the Agricultural Act of 2014, Public Law 113–79 (Feb. 7, 2014), and related issues for comment;

(5) a proposed amendment to the child pornography guidelines, §§ 2G2.1 (Sexually Exploiting a Minor by Production of Sexually Explicit Visual or Printed Material; Custodian Permitting Minor to Engage in Sexually Explicit Conduct; Advertisement for Minors to Engage in Production), 2G2.2 (Trafficking in Material Involving the Sexual Exploitation of a Minor; Receiving, Transporting, Shipping, Soliciting, or Advertising Material Involving the Sexual Exploitation of a Minor; Possessing Material Involving the Sexual Exploitation of a Minor with Intent to Traffic; Possessing Material Involving the Sexual Exploitation of a Minor), and 2G2.6 (Child Exploitation Enterprises), to address circuit conflicts and application issues that have arisen when applying these guidelines, including issues in (A) application of the vulnerable victim adjustment when the offense involves minors who are unusually young and vulnerable (such as infants or toddlers) and (B) application of the tiered distribution enhancement and, in particular, determining the appropriate tier of enhancement to apply when the offense involves a peer-to-peer file-sharing program or network, and related issues for comment; and

(6) a multi-part proposed amendment to the guidelines for immigration offenses, including (A) revisions to § 2L1.1 (Smuggling, Transporting, or Harboring an Unlawful Alien) to provide options for raising the base offense level for alien smuggling offenses and address offenses involving unaccompanied minors in alien smuggling offenses, and a related issue for comment, and (B) revisions to § 2L1.2 (Unlawfully Entering or Remaining in the United States) to (i) generally reduce the use of the “categorical approach” in applying the guidelines by measuring the seriousness of a defendant’s prior conviction by the length of the sentence imposed on the prior conviction rather than by the type of offense (e.g., “crime of violence”); (ii) provide higher alternative base offense levels for defendants who have one or more prior convictions for illegal reentry offenses; (iii) provide a new

tiered enhancement for defendants who engage in criminal conduct after reentering the United States; (iv) correspondingly reduce the existing tiered enhancement at subsection (b)(1) for defendants who had one or more prior convictions before being deported; and (v) related issues for comment.

DATES: (1) Written Public Comment.—Written public comment regarding the proposed amendments and issues for comment set forth in this notice, including public comment regarding retroactive application of any of the proposed amendments, should be received by the Commission not later than March 21, 2016.

(2) Public Hearings.—The Commission plans to hold public hearings regarding the proposed amendments and issues for comment set forth in this notice on February 17, 2016, and March 16, 2016. Further information regarding the public hearings, including requirements for testifying and providing written testimony, as well as the location, time, and scope of the hearings, will be provided by the Commission on its Web site at www.ussc.gov.

ADDRESSES: Public comment should be sent to the Commission by electronic mail or regular mail. The email address for public comment is PublicComment@ussc.gov. The regular mail address for public comment is United States Sentencing Commission, One Columbus Circle NE., Suite 2–500, Washington, DC 20002–8002, Attention: Public Affairs.

FOR FURTHER INFORMATION CONTACT: Matt Osterrieder, Legislative Specialist, (202) 502–4500, pubaffairs@ussc.gov.

SUPPLEMENTARY INFORMATION: The United States Sentencing Commission is an independent agency in the judicial branch of the United States Government. The Commission promulgates sentencing guidelines and policy statements for federal courts pursuant to 28 U.S.C. 994(a). The Commission also periodically reviews and revises previously promulgated guidelines pursuant to 28 U.S.C. 994(o) and submits guideline amendments to the Congress not later than the first day of May each year pursuant to 28 U.S.C. 994(p).

The proposed amendments in this notice are presented in one of two formats. First, some of the amendments are proposed as specific revisions to a guideline or commentary. Bracketed text within a proposed amendment indicates a heightened interest on the Commission’s part in comment and suggestions regarding alternative policy choices; for example, a proposed

enhancement of [2][4][6] levels indicates that the Commission is considering, and invites comment on, alternative policy choices regarding the appropriate level of enhancement. Similarly, bracketed text within a specific offense characteristic or application note means that the Commission specifically invites comment on whether the proposed provision is appropriate. Second, the Commission has highlighted certain issues for comment and invites suggestions on how the Commission should respond to those issues.

The Commission requests public comment regarding whether, pursuant to 18 U.S.C. 3582(c)(2) and 28 U.S.C. 994(u), any proposed amendment published in this notice should be included in subsection (d) of § 1B1.10 (Reduction in Term of Imprisonment as a Result of Amended Guideline Range (Policy Statement)) as an amendment that may be applied retroactively to previously sentenced defendants. The Commission lists in § 1B1.10(d) the specific guideline amendments that the court may apply retroactively under 18 U.S.C. 3582(c)(2). The background commentary to § 1B1.10 lists the purpose of the amendment, the magnitude of the change in the guideline range made by the amendment, and the difficulty of applying the amendment retroactively to determine an amended guideline range under § 1B1.10(b) as among the factors the Commission considers in selecting the amendments included in § 1B1.10(d). To the extent practicable, public comment should address each of these factors.

Publication of a proposed amendment requires the affirmative vote of at least three voting members and is deemed to be a request for public comment on the proposed amendment. See Rules 2.2 and 4.4 of the Commission’s Rules of Practice and Procedure. In contrast, the affirmative vote of at least four voting members is required to promulgate an amendment and submit it to Congress. See Rule 2.2; 28 U.S.C. 994(p).

Additional information pertaining to the proposed amendments described in this notice may be accessed through the Commission’s Web site at www.ussc.gov

Authority: 28 U.S.C. 994(a), (o), (p), (x); USSC Rules of Practice and Procedure, Rule 4.4.

Patti B. Saris,
Chair.

1. Miscellaneous

Synopsis of Proposed Amendment: This proposed amendment responds to recently enacted legislation and miscellaneous guideline issues.

A. USA FREEDOM Act of 2015

Part A of the proposed amendment responds to the Uniting and Strengthening America by Fulfilling Rights and Ensuring Effective Discipline Over Monitoring Act (USA FREEDOM Act) of 2015, Pub. L. 114–23 (June 2, 2015), which, among other things, set forth changes to statutes related to maritime navigation and provided new and expanded criminal offenses to implement certain provisions in international conventions relating to maritime and nuclear terrorism. The Act also added these new offenses to the list of offenses specifically enumerated at 18 U.S.C. 2332b(g)(5) as federal crimes of terrorism.

The USA FREEDOM Act created a new criminal offense at 18 U.S.C. 2280a (Violence against maritime navigation and maritime transport involving weapons of mass destruction) to prohibit certain terrorism acts and threats against maritime navigation committed in a manner that causes or is likely to cause death, serious injury, or damage, when the purpose of the conduct is to intimidate a population or to compel a government or international organization to do or abstain from doing any act. The prohibited acts include (i) the use against or on a ship, or discharge from a ship, of any explosive or radioactive material, biological, chemical, or nuclear weapon or other nuclear explosive device; (ii) the discharge from a ship of oil, liquefied natural gas, or other hazardous or noxious substance; (iii) any use of a ship that causes death or serious injury or damage; and (iv) the transportation aboard a ship of any explosive or radioactive material. Section 2280a also prohibits the transportation on board a ship of any biological, chemical or nuclear weapon or other nuclear explosive device, and any components, delivery means, or materials for a nuclear weapon or other nuclear explosive device, under specified circumstances, but this conduct does not contain a mens rea requirement. Further, section 2280a prohibits the transportation onboard a ship of a person who committed an offense under section 2280 or 2280a, with the intent of assisting that person evade criminal prosecution. The penalties for violations of section 2280a are a fine, imprisonment for no more than 20 years, or both, or, if the death of a person results, imprisonment for any term of years or life. Section 2280a also prohibits threats to commit the offenses not related to transportation on board a ship and provides a penalty of imprisonment of up to five years.

Part A of the proposed amendment addresses these new offenses at section 2280a by referencing them in Appendix A (Statutory Index) to the following Chapter Two guidelines: §§ 2A1.1 (First Degree Murder); 2A1.2 (Second Degree Murder); 2A1.3 (Voluntary Manslaughter); 2A1.4 (Involuntary Manslaughter); 2A2.1 (Assault with Intent to Commit Murder; Attempted Murder); 2A2.2 (Aggravated Assault); 2A2.3 (Assault); 2A6.1 (Threatening or Harassing Communications); 2B1.1 (Fraud); 2B3.2 (Extortion); 2K1.3 (Unlawful Receipt, Possession, or Transportation of Explosive Materials; Prohibited Transactions Involving Explosive Materials); 2K1.4 (Arson); 2M5.2 (Exportation of Arms, Munitions, or Military Equipment or Services Without Required Validated Export License); 2M5.3 (Providing Material Support or Resources to Designated Foreign Terrorist Organizations or Specially Designated Global Terrorists, or For a Terrorist Purpose); 2M6.1 (Nuclear, Biological, and Chemical Weapons, and Other Weapons of Mass Destruction); 2Q1.1 (Knowing Endangerment Resulting From Mishandling Hazardous or Toxic Substances, Pesticides or Other Pollutants); 2Q1.2 (Mishandling of Hazardous or Toxic Substances or Pesticides); 2X1.1 (Conspiracy); 2X2.1 (Aiding and Abetting); and 2X3.1 (Accessory After the Fact).

The USA FREEDOM Act also created a new criminal offense at 18 U.S.C. § 2281a (Additional offenses against maritime fixed platforms) to prohibit certain maritime terrorism acts that occur either on a fixed platform or to a fixed platform committed in a manner that may cause death, serious injury, or damage, when the purpose of the conduct is to intimidate a population or to compel a government or international organization to do or abstain from doing any act. Section 2281a prohibits specific conduct, including (i) the use against or discharge from a fixed platform, of any explosive or radioactive material, or biological, chemical, or nuclear weapon and (ii) the discharge from a fixed platform of oil, liquefied natural gas, or another hazardous or noxious substance. The penalties for violations of section 2281a are a fine, imprisonment for no more than 20 years, or both, or, if the death of a person results, imprisonment for any term of years or life. Section 2281a also prohibits threats to commit the offenses related to acts on or against fixed platforms and provides a penalty of imprisonment of up to five years.

Part A of the proposed amendment amends Appendix A (Statutory Index)

so the new offenses at 18 U.S.C. 2281a are referenced to §§ 2A1.1, 2A1.2, 2A1.3, 2A1.4, 2A2.1, 2A2.2, 2A2.3, 2A6.1, 2B1.1, 2B3.2, 2K1.4, 2M6.1, 2Q1.1, 2Q1.2, and 2X1.1.

In addition, the USA FREEDOM Act created a new criminal offense at 18 U.S.C. 2332i that prohibits (i) the possession or production of radioactive material or a device with the intent to cause death or serious bodily injury or to cause substantial damage to property or the environment; and (ii) the use of a radioactive material or a device, or the use, damage, or interference with the operation of a nuclear facility that causes the release of radioactive material, radioactive contamination, or exposure to radiation with the intent (or knowledge that such act is likely) to cause death or serious bodily injury or substantial damage to property or the environment, or with the intent to compel a person, international organization or country to do or refrain from doing an act. Section 2332i also prohibits threats to commit any such acts. The penalties for violations of section 2332i are a fine for not more than \$2,000,000 and imprisonment for any term of years or life.

Part A of the proposed amendment amends Appendix A (Statutory Index) to reference the new offenses at 18 U.S.C. 2332i to §§ 2A6.1, 2K1.4, 2M2.1 (Destruction of, or Production of Defective, War Material, Premises, or Utilities), 2M2.3 (Destruction of, or Production of Defective, National Defense Material, Premises, or Utilities), and 2M6.1.

Finally, Part A makes clerical changes to Application Note 1 to § 2M6.1 (Nuclear, Biological, and Chemical Weapons, and Other Weapons of Mass Destruction) to reflect the redesignation of a section in the United States Code by the USA FREEDOM Act.

Part A of the proposed amendment also sets forth two issues for comment.

B. Bipartisan Budget Act of 2015

Part B of the proposed amendment responds to the Bipartisan Budget Act of 2015, Pub. L. 114–74 (Nov. 2, 2015), which, among other things, amended three existing criminal statutes concerned with fraudulent claims under certain Social Security programs.

The three criminal statutes amended by the Bipartisan Budget Act of 2015 are sections 208 (Penalties [for fraud involving the Federal Old-Age and Survivors Insurance Trust Fund]), 811 (Penalties for fraud [involving special benefits for certain World War II veterans]), and 1632 (Penalties for fraud [involving supplemental security income for the aged, blind, and

disabled]) of the Social Security Act (42 U.S.C. 408, 1011, and 1383a, respectively). The three amended statutes are currently referenced in Appendix A (Statutory Index) of the *Guidelines Manual* to § 2B1.1 (Theft, Property Destruction, and Fraud). The Act added new subdivisions criminalizing conspiracy to commit fraud for selected offense conduct already in the three statutes. For each of the three statutes, the new subdivision provides that whoever “conspires to commit any offense described in any of [the] paragraphs” enumerated shall be imprisoned for not more than five years, the same statutory maximum penalty applicable to the substantive offense.

Part B amends Appendix A (Statutory Index) so that sections 408, 1011, and 1383a of Title 42 are referenced not only to § 2B1.1 but also to § 2X1.1 (Attempt, Solicitation, or Conspiracy (Not Covered by a Specific Office Guideline)).

Part B of the proposed amendment also includes issues for comment.

C. 18 U.S.C. 1715 (Firearms as Nonmailable Items)

Section 1715 of title 18, United States Code (Firearms as nonmailable items), makes it unlawful to deposit for mailing or delivery by the mails pistols, revolvers, and other firearms capable of being concealed on the person and declared nonmailable (as prescribed by Postal Service regulations). For any violation of section 1715, the statutory maximum term of imprisonment is two years. The current *Guidelines Manual* does not provide a guideline reference in Appendix A for offenses under section 1715.

The Department of Justice in its annual letter to the Commission has proposed that section 1715 offenses should be assigned a guideline reference, base offense level, and appropriate specific offense characteristics. The Department indicates that in recent years the United States Attorney’s Office for the Virgin Islands has brought several cases charging section 1715, where firearms were illegally brought onto the islands by simply mailing them from mainland United States.

Part C of the proposed amendment amends Appendix A (Statutory Index) to reference offenses under section 1715 to § 2K2.1 (Unlawful Receipt, Possession, or Transportation of Firearms or Ammunition; Prohibited Transactions Involving Firearms or Ammunition). It also adds 18 U.S.C. 1715 to subsection (a)(8) of § 2K2.1, establishing a base offense level of 6 for such offenses.

Part C of the proposed amendment also includes an issue for comment regarding section 1715 offenses and whether other changes to the guidelines are appropriate to address these offenses.

D. Technical Amendment to § 2T1.6

The Internal Revenue Code (Title 26, United States Code) requires employers to withhold from their employees’ paychecks money representing the employees’ personal income and Social Security taxes. The Code directs the employer to collect taxes as wages are paid, but only requires a periodic payment of such taxes to the IRS. If an employer willfully fails to collect, truthfully account for, or pay over such taxes, 26 U.S.C. 7202 provides both civil and criminal remedies. Section 7202 provides as criminal penalty a term of imprisonment with a statutory maximum of five years.

Section 7202 is referenced in Appendix A (Statutory Index) to § 2T1.6 (Failing to Collect or Truthfully Account for and Pay Over Tax). The Background commentary to § 2T1.6 states that “[t]he offense is a felony that is infrequently prosecuted.” The Department of Justice in its annual letter to the Commission has proposed that the “infrequently prosecuted” statement should be deleted. The Department points out that while that statement may have been accurate when the relevant commentary was originally written (in 1987), the number of prosecutions under section 7202 have since increased substantially. The use of § 2T1.6 increased from three cases in 2002 to 46 cases in 2014. See United States Sentencing Commission, Use of Guidelines and Specific Offense Characteristics: Guideline Calculation Based (Fiscal Year 2002), at <http://www.ussc.gov/research-and-publications/federal-sentencing-statistics/guideline-application-frequencies/guideline-application-frequencies-2002>; United States Sentencing Commission, Use of Guidelines and Specific Offense Characteristics: Guideline Calculation Based (Fiscal Year 2014), at http://www.ussc.gov/sites/default/files/pdf/research-and-publications/federal-sentencing-statistics/guideline-application-frequencies/2014/Use_of_SOC_Guideline_Based.pdf.

Part D of the proposed amendment amends the Background Commentary to § 2T6.1 to delete the sentence that states “The offense is a felony that is infrequently prosecuted.”

Proposed Amendment:

(A) USA FREEDOM Act of 2015

The Commentary to § 2M6.1 captioned “Application Notes” is amended in Note 1 by striking “831(f)(2)” and inserting “831(g)(2)”, and by striking “831(f)(1)” and inserting “831(g)(1)”.

Appendix A (Statutory Index) is amended by inserting after the line referenced to 18 U.S.C. § 2280 the following:

“18 U.S.C. § 2280a 2A1.1, 2A1.2, 2A1.3, 2A1.4, 2A2.1, 2A2.2, 2A2.3, 2A6.1, 2B1.1, 2B3.2, 2K1.3, 2K1.4, 2M5.2, 2M5.3, 2M6.1, 2Q1.1, 2Q1.2, 2X1.1, 2X2.1, 2X3.1”;

by inserting after the line referenced to 18 U.S.C. § 2281 the following:

“18 U.S.C. 2281a 2A1.1, 2A1.2, 2A1.3, 2A1.4, 2A2.1, 2A2.2, 2A2.3, 2A6.1, 2B1.1, 2B3.2, 2K1.4, 2M6.1, 2Q1.1, 2Q1.2, 2X1.1”;

and by inserting after the line referenced to 18 U.S.C. 2332h the following:

“18 U.S.C. 2332i 2A6.1, 2K1.4, 2M2.1, 2M2.3, 2M6.1”.

Issues for Comment:

1. The USA FREEDOM Act was enacted as a reauthorization of the USA PATRIOT Act, Pub. L. 107–56 (October 26, 2001), relating to the collection of telephone metadata by various national security agencies. Title VII of the Act also amended four existing criminal statutes and created three new criminal statutes to implement certain provisions in international conventions relating to maritime and nuclear terrorism. One of the existing criminal statutes amended by the USA FREEDOM Act was 18 U.S.C. 2280. Although the Act did not amend the substantive offense conduct in section 2280, it added 19 new definitions and terms to the statute and made them applicable to other criminal statutes, including the new offenses created by the Act.

The Commission seeks comment on whether the guidelines should be amended to address the changes made by the USA FREEDOM Act. Are the existing provisions in the guidelines adequate to address the changes to existing criminal statutes and the new offenses created by the Act? If not, how should the Commission amend the guidelines to address them?

2. The proposed amendment would reference the offenses under 18 U.S.C. 2280a, 18 U.S.C. 2281a, and 18 U.S.C. 2332i to various guidelines. The Commission invites comment on offenses under these new statutes, including in particular the conduct involved in such offenses and the nature

and seriousness of the harms posed by such offenses. Do the guidelines covered by the proposed amendment adequately account for these offenses? If not, what revisions to the guidelines would be appropriate to account for these offenses? In particular, should the Commission provide one or more new alternative base offense levels, specific offense characteristics, or departure provisions in one or more of these guidelines to better account for these offenses? If so, what should the Commission provide?

In addition, the Commission seeks comment on whether the Commission should reference these new offenses to other guidelines instead of, or in addition to, the guidelines covered by the proposed amendment. Alternatively, should the Commission defer action in response to these new offenses this amendment cycle, undertake a broader review of the guidelines pertaining to offenses involving terrorism and weapons of mass destruction, and include responding to the new offenses as part of that broader review?

(B) Bipartisan Budget Act of 2015

Appendix A (Statutory Index) is amended in each of the lines referenced to 42 U.S.C. 408, 1011, and 1383a(a) by inserting “, 2X1.1” at the end.

Issues for Comment:

1. Part B of the proposed amendment would reference the new conspiracy offenses under 42 U.S.C. 408, 1011, and 1383a to § 2X1.1 (Attempt, Solicitation, or Conspiracy (Not Covered by a Specific Office Guideline)). The Commission invites comment on whether the guidelines covered by the proposed amendment adequately account for these offenses. If not, what revisions to the guidelines would be appropriate to account for these offenses?

2. In addition to the amendments to the criminal statutes described above, the Bipartisan Budget Act of 2015 also amended sections 408, 1011, and 1383a of Title 42 to add increased penalties for certain persons who commit fraud offenses under the relevant social security programs. The Act included a provision in all three statutes identifying such persons as:

a person who receives a fee or other income for services performed in connection with any determination with respect to benefits under this title (including a claimant representative, translator, or current or former employee of the Social Security Administration), or who is a physician or other health care provider who submits, or causes the submission of,

medical or other evidence in connection with any such determination

In light of this new provision, a person who meets this criteria and is convicted of a fraud offense under one of the three amended statutes may be imprisoned for not more than ten years, double the otherwise applicable five-year penalty for other offenders. The new increased penalties apply to all of the fraudulent conduct in subsection (a) of the three statutes.

The Commission seeks comment on whether the guidelines should be amended to address cases involving defendants convicted of a fraud offense under one of the three amended statutes and who meet this new criteria set forth by the Bipartisan Budget Act of 2015. Are the existing provisions in the guidelines, such as the provisions at § 2B1.1 and the Chapter Three adjustment at § 3B1.3 (Abuse of Position of Trust or Use of Special Skill), adequate to address these cases? If not, how should the Commission amend the guidelines to address them?

(C) 18 U.S.C. 1715 (Firearms as Non-mailable Items)

Section 2K2.1 is amended in subsection (a)(8) by inserting “, or § 1715” before the period at the end.

The Commentary to § 2K2.1 captioned “Statutory Provisions” is amended by inserting after “(k)–(o),” the following: “1715,”.

Appendix A (Statutory Index) is amended by inserting after the line referenced to 18 U.S.C. 1712 the following:

“18 U.S.C. 1715 2K2.1”.

Issue for Comment:

1. Part C of the proposed amendment would reference offenses under 18 U.S.C. 1715 to § 2K2.1. The Commission invites comment on offenses under section 1715, including in particular the conduct involved in such offenses and the nature and seriousness of the harms posed by such offenses. What guideline or guidelines are appropriate for these offenses? Does § 2K2.1 adequately account for these offenses? To the extent the Commission does provide a reference to one or more guidelines, what revisions, if any, to those guidelines would be appropriate to account for offenses under section 1715?

(D) Technical Amendment to § 2T1.6

The Commentary to § 2T1.6 captioned “Background” is amended by striking “The offense is a felony that is infrequently prosecuted.”.

2. Compassionate Release

Synopsis of Proposed Amendment: In August 2015, the Commission indicated that one of its policy priorities would be “possible consideration of amending the policy statement pertaining to ‘compassionate release,’ § 1B1.13 (Reduction in Term of Imprisonment as a Result of Motion by Director of Bureau of Prisons).” See United States Sentencing Commission, “Notice of Final Priorities,” 80 FR 48957 (Aug. 14, 2015). The Commission is publishing this proposed amendment to inform the Commission’s consideration of the issues related to this policy priority.

The proposed amendment contains two parts. Part A sets forth a detailed request for comment on whether any changes should be made to the Commission’s policy statement at § 1B1.13 (Reduction in Term of Imprisonment as a Result of Motion by Director of Bureau of Prisons). Part B illustrates one possible set of changes to the policy statement at § 1B1.13.

(A) Request for Public Comment on Whether Any Changes Should Be Made to the Commission’s Policy Statement at § 1B1.13 (Reduction in Term of Imprisonment as a Result of Motion by Director of Bureau of Prisons)

Issue for Comment:

1. *Statutory Provisions Related to Compassionate Release.* Section 3582(c)(1)(A) of title 18, United States Code, authorizes a federal court, upon motion of the Director of the Bureau of Prisons, to reduce the term of imprisonment of a defendant in certain circumstances, *i.e.*, if “extraordinary and compelling reasons” warrant such a reduction or the defendant is at least 70 years of age and meets certain other criteria. Such a reduction must be consistent with applicable policy statements issued by the Sentencing Commission. See 18 U.S.C. 3582(c)(1); *see also* 28 U.S.C. 994(t) (stating that the Commission, in promulgating any such policy statements, “shall describe what should be considered extraordinary and compelling reasons for sentence reduction, including the criteria to be applied and a list of specific examples”).

Policy Statement at § 1B1.13. The Commission’s policy statement, § 1B1.13 (Reduction in Term of Imprisonment as a Result of Motion by Director of Bureau of Prisons), provides that “extraordinary and compelling reasons” exist if (1) the defendant is suffering from a terminal illness; (2) the defendant is suffering from certain permanent physical or medical conditions, or experiencing

deteriorating physical or mental health because of the aging process; or (3) the defendant has a minor child and the defendant's only family member capable of caring for the child has died or is incapacitated. See § 1B1.13, comment. (n.1(A)(i)–(iii)). In addition, the policy statement provides that extraordinary and compelling reasons exist if, as determined by the Director of the Bureau of Prisons, there exists in the defendant's case an extraordinary and compelling reason other than, or in combination with, the reasons described above. See § 1B1.13, comment. (n.1(A)(iv)). The policy statement was last amended in 2007 to provide the current criteria to be applied and a list of the specific circumstances which constitute “extraordinary and compelling reasons” for compassionate release consideration.

Bureau of Prisons Program Statement on Compassionate Release. On August 12, 2013, the Bureau of Prisons issued a new program statement, 5050.49, that changes how the Bureau implements section 3582(c)(1)(A). Among other things, the new program statement expands and details the range of circumstances that the Bureau may consider “extraordinary and compelling reasons” warranting such a reduction. Under the program statement, a sentence reduction may be based on the defendant's medical circumstances (e.g., a terminal or debilitating medical condition; see 5050.49(3)(a)–(b)) or on certain non-medical circumstances (e.g., an elderly defendant, the death or incapacitation of the family member caregiver, or the incapacitation of the defendant's spouse or registered partner; see 5050.49(4), (5), (6)).

Report of the Department of Justice's Office of the Inspector General. In May 2015, the Department of Justice's Office of the Inspector General (OIG) released a report on the Bureau of Prisons' implementation of the compassionate release program provisions related to elderly inmates. See U.S. Department of Justice, Office of the Inspector General, *The Impact of the Aging Inmate Population on the Federal Bureau of Prisons*, E–15–05 (May 2015), available at <https://oig.justice.gov/reports/2015/e1505.pdf>. The report found that while aging inmates (age 50 years or older) make up a disproportionate share of the inmate population, are more costly to incarcerate (primarily due to medical needs), engage in less misconduct while in prison, and have a lower rate of re-arrest once released than their younger counterparts, “BOP policies limit the number of aging inmates who can be considered for early release and, as a result, few are actually released early.”

In addition, the report found that the eligibility requirements for both medical and non-medical provisions as applied to inmates 65 years or older are “unclear” and “confusing.”

In light of its review, the OIG recommended that the Bureau of Prisons should consider revising its compassionate release program to facilitate the release of appropriate elderly inmates. The report provided the following specific recommendations, among others: (1) Revising the inmate age provisions to define an aging inmate as age 50 or above; and (2) revising the time-served provision for those inmates 65 and older without medical conditions to remove the requirement that they serve 10 years, and require only that they serve 75 percent of their sentence. In April 2015, the Bureau of Prisons responded to a draft of the OIG report and concurred with each of the recommendations made by the OIG.

Issue for Comment. The Commission seeks comment whether any changes should be made to the Commission's policy statement at § 1B1.13 (Reduction in Term of Imprisonment as a Result of Motion by Director of Bureau of Prisons). Should the Commission amend the current policy statement describing what constitutes “extraordinary and compelling reasons” and, if so, how?

Should the list of extraordinary and compelling reasons in the *Guidelines Manual* closely track the criteria set forth by the Bureau of Prisons in its program statement? Should the Commission develop further criteria and examples of what circumstances constitute “extraordinary and compelling reasons”? If so, what specific criteria and examples should the Commission provide? Should the Commission further define and expand the medical and non-medical criteria provided in the Bureau's program statement?

In addition, the Commission seeks comment on how, if at all, the policy statement at § 1B1.13 should be revised to address the recommendations in the OIG report. Should the Commission adopt the recommendations in the OIG report as part of its revision of the policy statement at § 1B1.13? Should the Commission expand upon these recommendations to revise the Bureau's requirements that limit the availability of compassionate release for aging inmates? Alternatively, should the Commission defer action on this issue during this amendment cycle to consider any possible changes that the Bureau of Prisons might promulgate to its compassionate release program statement in response to the OIG report?

Finally, the Commission adopted the policy statement at § 1B1.13 to implement the directive in 28 U.S.C. 994(t). As noted above, the directive requires the Commission to “describe what should be considered extraordinary and compelling reasons for sentence reduction, including the criteria to be applied and a list of specific examples.” The Commission also has authority to promulgate general policy statements regarding application of the guidelines or other aspects of sentencing that in the view of the Commission would further the purposes of sentencing (18 U.S.C. 3553(a)(2)), including, among other things, the appropriate use of the sentence modification provisions set forth in 18 U.S.C. 3582(c). See 28 U.S.C. 994(a)(2)(C). Under this general authority, should the Commission further develop the policy statement at § 1B1.13 to provide additional guidance or limitations regarding the circumstance in which sentences may be reduced as a result of a motion by the Director of the Bureau of Prisons? If so, what should the specific guidance or limitations be? For example, should the Commission provide that the Director of the Bureau of Prisons should not withhold a motion under 18 U.S.C. 3582(c)(1)(A) if the defendant meets any of the circumstances listed as “extraordinary and compelling reasons” in § 1B1.13?

(B) Proposed Amendment

Synopsis of Proposed Amendment: This part of the proposed amendment illustrates one possible set of changes to the Commission's policy statement at § 1B1.13. The proposed amendment would revise the list of “extraordinary and compelling reasons” for compassionate release consideration in the Commentary to § 1B1.13 to reflect the criteria set forth in the Bureau of Prisons' program statement. The language used in this part parallels the language in the Bureau's program statement.

Proposed Amendment:

The Commentary to § 1B1.13 captioned “Application Notes” is amended in Note 1(A) by striking “following circumstances” and inserting “circumstances set forth below”; by redesignating clause (iv) as clause (viii); by striking clauses (i) through (iii) and inserting the following:

- “(i) The defendant (I) has been diagnosed with a terminal, incurable disease; and (II) has a life expectancy of 18 months or less.
- (ii) The defendant has an incurable, progressive illness.

(iii) The defendant has suffered a debilitating injury from which he or she will not recover.

(iv) The defendant meets the following criteria—

(I) the defendant is at least 65 years old;

(II) the defendant has served at least 50 percent of his or her sentence;

(III) the defendant suffers from a chronic or serious medical condition related to the aging process;

(IV) the defendant is experiencing deteriorating mental or physical health that substantially diminishes his or her ability to function in a correctional facility; and

(V) conventional treatment promises no substantial improvement to the defendant's mental health or physical condition.

(v) The defendant (I) is at least 65 years old; and (II) has served at least 10 years or 75 percent of his or her sentence, whichever is greater.

(vi) The death or incapacitation of the family member caregiver of the defendant's child.

["Incapacitation" means the family member caregiver suffered a severe injury or suffers from a severe illness that renders the caregiver incapable of caring for the child. "Child" means an individual who had not attained the age of 18 years.]

(vii) The incapacitation of the defendant's spouse or registered partner when the defendant would be the only available caregiver for the spouse or registered partner.

["Incapacitation" means the spouse or registered partner (I) has suffered a serious injury or suffers from a debilitating physical illness and the result of the injury or illness is that the spouse or registered partner is completely disabled, meaning that the spouse or registered partner cannot carry on any self-care and is totally confined to a bed or chair; or (II) has a severe cognitive deficit, caused by an illness or injury, that has severely affected the spouse's or registered partner's mental capacity or function but may not be confined to a bed or chair. "Spouse" means an individual in a relationship with the defendant, where that relationship has been legally recognized as a marriage, including a legally-recognized common-law marriage. "Registered partner" means an individual in relationship with the defendant, where the relationship has been legally recognized as a civil union or registered domestic partnership.];

and in clause (viii), as so redesignated, by striking "(i), (ii), and (iii)" and inserting "(i) through (vii)".

3. Conditions of Probation and Supervised Release

Synopsis of Proposed Amendment:

This proposed amendment revises, clarifies, and rearranges the conditions of probation and supervised release. It is a result of the Commission's multi-year review of federal sentencing practices relating to conditions of probation and supervised release. *See* United States Sentencing Commission, "Notice of Final Priorities," 80 FR 48957 (Aug. 14, 2015). It is also informed by a series of opinions issued by the Seventh Circuit in recent years.

Specifically, the Seventh Circuit has found several of the standard conditions to be unduly vague, overbroad, or inappropriately applied. *See, e.g., United States v. Adkins*, 743 F.3d 176 (7th Cir. 2014); *United States v. Goodwin*, 717 F.3d 511 (7th Cir. 2013); *United States v. Quinn*, 698 F.3d 651 (7th Cir. 2012); *United States v. Siegel*, 753 F.3d 705 (7th Cir. 2014). The Seventh Circuit has also suggested that the language of the conditions be revised to be more comprehensible to defendants and probation officers, and to contain a stated mens rea requirement where one was lacking. *United States v. Kappes*, 782 F.3d 828, 848 (7th Cir. 2015) ("We have suggested that sentencing judges define the crucial terms in a condition in a way that provides clear notice to the defendant (preferably through objective rather than subjective terms), and/or includes a mens rea requirement (such as intentional conduct). We have further suggested that the judge make sure that each condition imposed is simply worded, bearing in mind that, with rare exceptions, neither the defendant nor the probation officer is a lawyer and that when released from prison the defendant will not have a lawyer to consult." (quotation and alteration marks omitted)).

The Statutory and Guidelines Framework

When imposing a sentence of probation, the court is required to impose certain conditions of probation listed by statute. *See* 18 U.S.C. 3563(a). In addition, the court has discretion to impose additional conditions of probation "to the extent that such conditions are reasonably related to the factors set forth in sections 3553(a)(1) and (a)(2) and to the extent that such conditions involve only such deprivations of liberty or property as are reasonably necessary for the purposes indicated in section 3553(a)(2)." *See* 18 U.S.C. 3563(b). Similarly, when imposing a sentence of supervised

release, the court is required to impose certain conditions of supervised release listed by statute, and the court has discretion to impose additional conditions of supervised release, to the extent that the additional condition "is reasonably related to the factors set forth in section 3553(a)(1), (a)(2)(B), (a)(2)(C), and (a)(2)(D)" and "involves no greater deprivation of liberty than is reasonably necessary for the purposes set forth in section 3553(a)(2)(B), (a)(2)(C), and (a)(2)(D)." *See* 18 U.S.C. 3583(d). The additional condition of supervised release must also be consistent with any pertinent policy statements issued by the Sentencing Commission. *See* 18 U.S.C. 3583(d)(3).

In addition, the court is required to direct that the probation officer provide the defendant with a written statement that sets forth all the conditions to which he or she is subject, which must be "sufficiently clear and specific to serve as a guide for the defendant's conduct and for such supervision as is required." *See* 18 U.S.C. 3563(d), 3583(f). The Judgment in a Criminal Case Form, AO 245B, sets forth a series of mandatory and "standard" conditions in standardized form and provides space for the court to impose additional "standard" and "special" conditions devised by the court.

The Commission is directed by its organic statute to promulgate policy statements on the appropriate use of the conditions of probation and supervised release. *See* 28 U.S.C. 994(a)(2)(B). Sections 5B1.3 (Conditions of Probation) and 5D1.3 (Conditions of Supervised Release) implement this directive. Subsections (a) and (b) of § 5B1.3 set forth the conditions of probation that are required by statute. Subsections (c), (d), and (e) of § 5B1.3 provide guidance on discretionary conditions of probation, which are categorized as "standard" conditions, "special" conditions, and "additional" special conditions, respectively. Subsections (a) through (e) of § 5D1.3 follow the same structure in setting forth the mandatory conditions of supervised release and providing guidance on discretionary conditions of supervised release.

The Proposed Changes to §§ 5B1.3 and 5D1.3

The changes made by the proposed amendment would revise, clarify, and rearrange the provisions in the *Guidelines Manual* on conditions of probation and supervised release. These changes would not necessarily affect the conditions of probation and supervised release as set forth in the Judgment in a Criminal Case Form, AO 245B. However, in light of the responsibilities

of the Judicial Conference of the United States and the Administrative Office of the United States Courts in this area, the Commission works with the Criminal Law Committee and the Probation and Pretrial Services Office on these issues and anticipates that the Commission's work on this proposed amendment may inform their consideration of possible changes to the judgment form.

In general, the changes are intended to make the conditions more focused and precise as well as easier for defendants to understand and probation officers to enforce. For some conditions that do not have a mens rea standard, a "knowing" standard is inserted.

First, the proposed amendment amends the "mandatory" conditions set forth in subsection (a) of §§ 5B1.3 and 5D1.3. It inserts new language directing that, if there is a court-established payment schedule for making restitution or paying a special assessment, the defendant shall adhere to the schedule. See 18 U.S.C. 3572(d). This new language is similar to paragraph (14) of the "standard" conditions; accordingly, paragraph (14) of the "standard" conditions is deleted, as described below.

Second, the proposed amendment amends the "standard" conditions set forth in subsection (c) of §§ 5B1.3 and 5D1.3. Paragraphs (1)–(3), (5)–(6), and (9)–(13) are revised, clarified, and rearranged into a new set of paragraphs (1) through (12). A new paragraph (13) is added, which provides that the defendant "must follow the instructions of the probation officer related to the conditions of supervision."

Several provisions are moved from the "standard" conditions list to the "special" conditions list, or vice versa. Specifically, paragraph (1) of the "special" conditions list (relating to possession of a firearm or dangerous weapon) is moved to the "standard" conditions list. Paragraphs (4) and (7) of the "standard" conditions list (relating to support of dependents and child support, and alcohol use, respectively) are moved to the "special" conditions list. In addition, as mentioned above, paragraph (14) on the "standard" conditions list (relating to payment of special assessment) is incorporated into the "mandatory" conditions list. Finally, paragraph (8) of the "standard" conditions list (relating to frequenting places where controlled substances are trafficked) is deleted.

Third, the proposed amendment adds two new provisions to the "special" conditions set forth in subsection (d) of §§ 5B1.3 and 5D1.3. The first new provision, based on paragraph (7) of the "standard" conditions, would specify

that the defendant must not use or possess alcohol. The second new provision, based on paragraph (4) of the "standard" conditions, would specify that, if the defendant has one or more dependents, the defendant must support his or her dependents; and if the defendant is ordered by the government to make child support payments or to make payments to support a person caring for a child, the defendant must make the payments and comply with the other terms of the order.

Issues for comment are also included.

Proposed Amendment:

Section 5B1.3 is amended in subsection (a)(6) by inserting before the semicolon at the end the following: ". If there is a court-established payment schedule for making restitution or paying the assessment (see 18 U.S.C. 3572(d)), the defendant shall adhere to the schedule";

in subsection (b) by striking "The" and inserting the following:

"Discretionary Conditions

The";

in subsection (c) by striking "(Policy Statement) The" and inserting the following:

"'Standard' Conditions (Policy Statement)

The";

and by striking paragraphs (1) through (14) and inserting the following:

"(1) The defendant must report to the probation office in the federal judicial district where he or she is authorized to reside within 72 hours of the time the defendant was sentenced, unless the probation officer tells the defendant to report to a different probation office or within a different time frame.

(2) After initially reporting to the probation office, the defendant will receive instructions from the court or the probation officer about how and when to report to the probation officer, and the defendant must report to the probation officer as instructed.

(3) The defendant must not knowingly leave the federal judicial district where he or she is authorized to reside without first getting permission from the court or the probation officer.

(4) The defendant must [answer truthfully][be truthful when responding to] the questions asked by the probation officer.

(5) The defendant must live at a place approved by the probation officer. If the defendant plans to change where he or she lives or anything about his or her living arrangements (such as the people the defendant lives with), the defendant must notify the probation officer at least

10 calendar days before the change. If notifying the probation officer in advance is not possible due to unanticipated circumstances, the defendant must notify the probation officer within 72 hours of becoming aware of a change or expected change.

(6) The defendant must allow the probation officer to visit the defendant at his or her home or elsewhere, and the defendant must permit the probation officer to take any items prohibited by the conditions of the defendant's supervision that he or she observes in plain view.

(7) The defendant must work full time (at least 30 hours per week) at a lawful type of employment, unless the probation officer excuses the defendant from doing so. If the defendant does not have full-time employment he or she must try to find full-time employment, unless the probation officer excuses the defendant from doing so. If the defendant plans to change where the defendant works or anything about his or her work (such as the position or the job responsibilities), the defendant must notify the probation officer at least 10 calendar days before the change. If notifying the probation officer in advance is not possible due to unanticipated circumstances, the defendant must notify the probation officer within 72 hours of becoming aware of a change or expected change.

(8) The defendant must not communicate or interact with someone the defendant knows is engaged in criminal activity. If the defendant knows someone has been convicted of a felony, the defendant must not knowingly communicate or interact with that person without first getting the permission of the probation officer.

(9) If the defendant is arrested or has any official contact with a law enforcement officer, the defendant must notify the probation officer within 72 hours.

(10) The defendant must not own, possess, or have access to a firearm, ammunition, destructive device, or dangerous weapon (i.e., anything that was designed, or was modified for, the specific purpose of causing bodily injury or death to another person, such as nunchakus or tasers).

(11) The defendant must not act or make any agreement with a law enforcement agency to act as a confidential human source or informant without first getting the permission of the court.

(12) If the probation officer determines that the defendant poses a risk to another person (including an organization), the probation officer may require the defendant to tell the person

about the risk and the defendant must comply with that instruction. The probation officer may contact the person and confirm that the defendant has told the person about the risk.

(13) The defendant must follow the instructions of the probation officer related to the conditions of supervision.”;

and in subsection (d) by striking “(Policy Statement) The” and inserting the following:

“‘*Special*’ Conditions (Policy Statement)

The”;

by striking paragraph (1) and inserting the following:

“(1) *Support of Dependents*

If the defendant—

(A) has one or more dependents—a condition specifying that the defendant must support his or her dependents; and

(B) is ordered by the government to make child support payments or to make payments to support a person caring for a child—a condition specifying that the defendant must make the payments and comply with the other terms of the order.”;

and in paragraph (4) by striking “*Program Participation*” in the heading; by inserting “(A)” before “a condition requiring”; and by inserting “; and (B) a condition specifying that the defendant must not use or possess alcohol” before the period at the end.

Section 5D1.3 is amended in subsection (a)(6) by inserting before the semicolon at the end the following: “. If there is a court-established payment schedule for making restitution or paying the assessment (see 18 U.S.C. 3572(d)), the defendant shall adhere to the schedule”;

in subsection (b) by striking “The” and inserting the following:

“*Discretionary Conditions*

The”;

in subsection (c) by striking “(Policy Statement) The” and inserting the following:

“‘*Standard*’ Conditions (Policy Statement)

The”;

and by striking paragraphs (1) through (15) and inserting the following:

“(1) The defendant must report to the probation office in the federal judicial district where he or she is authorized to reside within 72 hours of release from imprisonment, unless the probation officer tells the defendant to report to a different probation office or within a different time frame.

(2) After initially reporting to the probation office, the defendant will receive instructions from the court or

the probation officer about how and when to report to the probation officer, and the defendant must report to the probation officer as instructed.

(3) The defendant must not knowingly leave the federal judicial district where he or she is authorized to reside without first getting permission from the court or the probation officer.

(4) The defendant must [answer truthfully][be truthful when responding to] the questions asked by the probation officer.

(5) The defendant must live at a place approved by the probation officer. If the defendant plans to change where he or she lives or anything about his or her living arrangements (such as the people the defendant lives with), the defendant must notify the probation officer at least 10 calendar days before the change. If notifying the probation officer in advance is not possible due to unanticipated circumstances, the defendant must notify the probation officer within 72 hours of becoming aware of a change or expected change.

(6) The defendant must allow the probation officer to visit the defendant at his or her home or elsewhere, and the defendant must permit the probation officer to take any items prohibited by the conditions of the defendant’s supervision that he or she observes in plain view.

(7) The defendant must work full time (at least 30 hours per week) at a lawful type of employment, unless the probation officer excuses the defendant from doing so. If the defendant does not have full-time employment he or she must try to find full-time employment, unless the probation officer excuses the defendant from doing so. If the defendant plans to change where the defendant works or anything about his or her work (such as the position or the job responsibilities), the defendant must notify the probation officer at least 10 calendar days before the change. If notifying the probation officer in advance is not possible due to unanticipated circumstances, the defendant must notify the probation officer within 72 hours of becoming aware of a change or expected change.

(8) The defendant must not communicate or interact with someone the defendant knows is engaged in criminal activity. If the defendant knows someone has been convicted of a felony, the defendant must not knowingly communicate or interact with that person without first getting the permission of the probation officer.

(9) If the defendant is arrested or has any official contact with a law enforcement officer, the defendant must

notify the probation officer within 72 hours.

(10) The defendant must not own, possess, or have access to a firearm, ammunition, destructive device, or dangerous weapon (*i.e.*, anything that was designed, or was modified for, the specific purpose of causing bodily injury or death to another person, such as nunchakus or tasers).

(11) The defendant must not act or make any agreement with a law enforcement agency to act as a confidential human source or informant without first getting the permission of the court.

(12) If the probation officer determines that the defendant poses a risk to another person (including an organization), the probation officer may require the defendant to tell the person about the risk and the defendant must comply with that instruction. The probation officer may contact the person and confirm that the defendant has told the person about the risk.

(13) The defendant must follow the instructions of the probation officer related to the conditions of supervision.

(14) The defendant shall notify the probation officer of any material change in the defendant’s economic circumstances that might affect the defendant’s ability to pay any unpaid amount of restitution, fines, or special assessments.”;

and in subsection (d) by striking “(Policy Statement) The” and inserting the following:

“‘*Special*’ Conditions (Policy Statement)

The”;

by striking paragraph (1) and inserting the following:

“(1) *Support of Dependents*

If the defendant—

(A) has one or more dependents—a condition specifying that the defendant must support his or her dependents; and

(B) is ordered by the government to make child support payments or to make payments to support a person caring for a child—a condition specifying that the defendant must make the payments and comply with the other terms of the order.”;

and in paragraph (4) by striking “*Program Participation*” in the heading; by inserting “(A)” before “a condition requiring”; and by inserting “; and (B) a condition specifying that the defendant must not use or possess alcohol” before the period at the end.

Issues for Comment:

1. The Commission seeks comment on the bracketed options in paragraph (3) of the “special” conditions, which would

become (4) under the proposed amendment. Specifically, the proposed amendment brackets whether the defendant should “answer truthfully” the questions of the probation officer or, instead, should “be truthful when responding to” the questions of the probation officer. The Commission seeks comment on the policy implications and the Fifth Amendment implications of each of these bracketed options. Which option, if any, is appropriate? Should the Commission clarify that an offender’s legitimate invocation of the Fifth Amendment privilege against self-incrimination in response to a probation officer’s question shall not be considered a violation of this special condition?

2. The Commission seeks comment on the standard condition of supervised release in § 5D1.3(c)(15), which states that the defendant “shall notify the probation officer of any material change in the defendant’s economic circumstances that might affect the defendant’s ability to pay any unpaid amount of restitution, fines, or special assessments.” Under the proposed amendment, this would remain a standard condition and would be redesignated as subsection (c)(14). The Commission seeks comment on whether this condition should be made a special condition rather than a standard condition.

4. Animal Fighting

Synopsis of Proposed Amendment:

This proposed amendment revises § 2E3.1 (Gambling; Animal Fighting Offenses) to provide higher penalties for animal fighting offenses and to respond to two new offenses, relating to attending an animal fighting venture, established by section 12308 of the Agricultural Act of 2014, Public Law 113–79 (Feb. 7, 2014).

Animal fighting ventures are prohibited by the Animal Welfare Act, 7 U.S.C. 2156. Under that statute, an “animal fighting venture” is an event that involves a fight between at least two animals for purposes of sport, wagering, or entertainment. *See* 7 U.S.C. 2156(g)(1). Section 2156 prohibits a range of conduct relating to animal fighting ventures, including making it unlawful to knowingly—

- sponsor or exhibit an animal in an animal fighting venture, *see* § 2156(a)(1);
- sell, buy, possess, train, transport, deliver, or receive an animal for purposes of having the animal participate in an animal fighting venture, *see* § 2156(b);
- advertise an animal (or a sharp instrument designed to be attached to the leg of a bird) for use in an animal

fighting venture or promoting or in any other manner furthering an animal fighting venture, *see* § 2156(c); and

- sell, buy, transport, or deliver a sharp instrument designed to be attached to the leg of a bird for use in an animal fighting venture, *see* § 2156(e).

The criminal penalties for violations of section 2156 are provided in 18 U.S.C. 49. For any violation of section 2156 listed above, the statutory maximum term of imprisonment is 5 years. *See* 18 U.S.C. 49(a).

However, two new types of animal fighting offenses were added by the Agricultural Act of 2014. They make it unlawful to knowingly—

- attend an animal fighting venture, *see* § 2156(a)(2)(A); or
- cause an individual under 16 to attend an animal fighting venture, *see* § 2156(a)(2)(B).

The statutory maximum is 3 years if the offense of conviction is causing an individual under 16 to attend an animal fighting venture, *see* 18 U.S.C. 49(c), and 1 year if the offense of conviction is attending an animal fighting venture, *see* 18 U.S.C. 49(b).

All offenses under section 2156 are referenced in Appendix A (Statutory Index) to § 2E3.1 (Gambling Offenses; Animal Fighting Offenses). Under the penalty structure of that guideline, a defendant convicted of an animal fighting offense receives a base offense level of 12 if the offense involved gambling—specifically, if the offense was engaging in a gambling business, transmitting wagering information, or part of a commercial gambling operation—and a base offense level of 10 otherwise. The guideline contains no specific offense characteristics. There is an upward departure provision if an animal fighting offense involves exceptional cruelty.

Higher Penalties for Animal Fighting Offenses

First, the proposed amendment revises § 2E3.1 to provide a base offense level of [14][16] if the offense involved an animal fighting venture.

In addition, it revises the existing upward departure provision to cover not only offenses involving exceptional cruelty but also offenses involving animal fighting on an exceptional scale.

New Offenses Relating to Attending an Animal Fighting Venture

Next, the proposed amendment responds to the two new offenses relating to attendance at an animal fighting venture. It establishes new base offense levels for such offenses. Specifically, a base offense level of

[8][10] in § 2E3.1 would apply if the defendant was convicted under section 2156(a)(2)(B) (causing an individual under 16 to attend an animal fighting venture). The class A misdemeanor at section 2156(a)(2)(A) (attending an animal fighting venture) would not be referenced in Appendix A (Statutory Index) to § 2E3.1; it would receive a base offense level of 6 in § 2X5.2 (Class A Misdemeanors (Not Covered by Another Specific Offense Guideline)).

Issues for comment are also included.

Proposed Amendment:

Section 2E3.1 is amended in subsection (a) by striking subsection (a)(2); by redesignating subsections (a)(1) and (a)(3) as subsections (a)(2) and (a)(4), respectively; by striking “or” in subsection (a)(2), as so redesignated; by inserting before subsection (a)(2) (as so redesignated) the following new subsection (a)(1):

“(1) [14][16], if the offense involved an animal fighting venture, except as provided in subdivision (3) below;”

and by inserting before subsection (a)(4), as so redesignated, the following new subsection (b)(3):

“(3) [8][10], if the defendant was convicted under 7 U.S.C. 2156(a)(2)(B); or”.

The Commentary to § 2E3.1 captioned “Statutory Provisions” is amended by inserting after “7 U.S.C. 2156” the following: “(felony provisions only)”.

The Commentary to § 2E3.1 captioned “Application Notes” is amended in Note 2 by striking “If the offense involved extraordinary cruelty to an animal that resulted in, for example, maiming or death to an animal, an upward departure may be warranted.”, and inserting “There may be cases in which the offense level determined under this guideline substantially understates the seriousness of the offense. In such cases, an upward departure may be warranted. For example, an upward departure may be warranted if (A) the offense involved extraordinary cruelty to an animal; or (B) the offense involved animal fighting on an exceptional scale (such as an offense involving an unusually large number of animals).”.

Appendix A (Statutory Index) is amended in the line referenced to 7 U.S.C. 2156 by inserting after “§ 2156” the following: “(felony provisions only)”.

Issues for Comment:

1. The Commission seeks comment on offenses involving animal fighting. How prevalent are these offenses, and do the guidelines adequately address these offenses? If not, how should the

Commission revise the guidelines to provide appropriate penalties in such cases?

What, if any, aggravating and mitigating factors are involved in these offenses that the guidelines should take into account? Should the Commission provide new departure provisions, enhancements, adjustments, or minimum offense levels to account for such aggravating or mitigating factors? If so, what should the Commission provide, and with what penalty levels?

For example, should the Commission provide an enhancement if the defendant possessed a dangerous weapon (including a firearm)? Should the Commission provide an enhancement if the defendant was in the business of breeding, selling, buying, possessing, training, transporting, delivering, or receiving animals for use in animal fighting ventures, or brokering such activities?

2. The proposed amendment includes an upward departure provision if the offense involved animal fighting “on an exceptional scale (such as an offense involving an unusually large number of animals).” What additional guidance, if any, should the Commission provide on what constitutes animal fighting on an exceptional scale?

Under the proposed amendment, the factors of exceptional cruelty and exceptional scale are departure provisions. Should the Commission provide enhancements, rather than departure provisions, for these factors? If so, what penalty levels should be provided?

3. The Commission seeks comment on how the multiple count rules should operate when the defendant is convicted of multiple counts of animal fighting offenses. How, if at all, should the guideline calculation be affected by the presence of multiple counts of conviction? For example, should the Commission specify that multiple counts involving animal fighting ventures are to be grouped together under subsection (d) of § 3D1.2 (Groups of Closely Related Counts)? Should the Commission specify that multiple counts involving animal fighting ventures are not to be grouped together?

5. Child Pornography Circuit Conflicts

Synopsis of Proposed Amendment: This proposed amendment addresses circuit conflicts and application issues that have arisen when applying the guidelines to child pornography offenses. One of the issues typically arises under both the child pornography production guideline and the child pornography distribution guideline when the offense involves victims who

are unusually young and vulnerable. The other two issues typically arise when the offense involves a peer-to-peer file-sharing program or network. These issues were noted by the Commission in its 2012 report to Congress on child pornography offenses. *See* United States Sentencing Commission, “Report to the Congress: Federal Child Pornography Offenses” at 33–35 (2012), available at <http://www.ussc.gov/news/congressional-testimony-and-reports/sex-offense-topics/report-congress-federal-child-pornography-offenses>.

Offenses Involving Unusually Young and Vulnerable Minors

First, the proposed amendment responds to differences among the circuits in cases in which the offense involves minors who are unusually young and vulnerable (such as infants or toddlers). The production guideline provides a 4-level enhancement if the offense involved a minor who had not attained the age of 12 years and a 2-level enhancement if the minor had not attained the age of 16 years. *See* § 2G2.1(b)(1). A similar tiered enhancement is contained in § 2G2.6 (Child Exploitation Enterprises). *See* § 2G2.6(b)(1). The non-production guideline provides a 2-level enhancement if the material involved a prepubescent minor or a minor who had not attained the age of 12 years. *See* § 2G2.2(b)(2).

These three guidelines do not provide a further enhancement for cases in which the victim was unusually young and vulnerable. However, the adjustment at § 3A1.1(b)(1) provides a 2-level increase if the defendant knew or should have known that the victim was a “vulnerable victim,” *i.e.*, a victim “who is unusually vulnerable due to age, physical or mental condition, or who is otherwise particularly susceptible to the criminal conduct.” *See* § 3A1.1, comment. (n.2). The Commentary further provides:

Do not apply subsection (b) if the factor that makes the person a vulnerable victim is incorporated in the offense guideline. For example, if the offense guideline provides an enhancement for the age of the victim, this subsection would not be applied unless the victim was unusually vulnerable for reasons unrelated to age. *See* § 3A1.1, comment. (n.2).

There are differences among the circuits over whether the vulnerable victim adjustment applies when the victim is extremely young, such as an infant or toddler. The Ninth Circuit has indicated that the under-12 enhancement “does not take especially vulnerable stages of childhood into

account” and that, “[t]hrough the characteristics of being an infant or toddler tend to correlate with age, they can exist independently of age, and are not the same thing as merely not having ‘attained the age of twelve years.’” *United States v. Wright*, 373 F.3d 935, 943 (9th Cir. 2004). Accordingly, it held, a vulnerable victim adjustment may be applied based on extreme youth and small physical size, such as when the victim is in the infant or toddler stage. *Id.* Similarly, the Fifth Circuit has stated, “we do not see any logical reason why a ‘victim under the age of twelve’ enhancement should bar application of the ‘vulnerable victim’ enhancement when the victim is especially vulnerable, even as compared to most children under twelve.” *United States v. Jenkins*, 712 F.3d 209, 214 (5th Cir. 2013).

The Fourth Circuit, in contrast, has indicated that the vulnerable victim adjustment may not be applied based solely on extreme youth or on factors that are for conditions that “necessarily are related to . . . age.” *United States v. Dowell*, 771 F.3d 162, 175 (4th Cir. 2014). The line drawn by the under-12 enhancement “implicitly preclude[s] courts from drawing additional lines below that point,” and “once the offense involves a child under twelve, any additional considerations based solely on age simply are not appropriate to the Guidelines calculation.” *Id.*

The proposed amendment generally adopts the approach of the Fifth and Ninth Circuits. It amends the Commentary in the child pornography guidelines to provide that application of the age enhancement does not preclude application of the vulnerable victim adjustment. Specifically, if the minor’s extreme youth and small physical size made the minor especially vulnerable compared to most minors under the age of 12 years, § 3A1.1(b) applies, assuming the mens rea requirement of § 3A1.1(b) is also met (*i.e.*, the defendant knew or should have known of this vulnerability).

Two Issues Relating to the Tiered Enhancement for Distribution in § 2G2.2

Second, the proposed amendment responds to differences among the circuits in applying the tiered enhancement for distribution in § 2G2.2(b)(3), which provides an enhancement ranging from 2 levels to 7 levels depending on specific factors.

There are two related issues that typically arise in child pornography cases when the offense involves a peer-to-peer file-sharing program or network. The first issue is when a participant’s use of a peer-to-peer file sharing

program or network warrants at minimum a 2-level enhancement under subsection (b)(3)(F). The second issue is when, if at all, the use of a peer-to-peer file sharing program or network warrants a 5-level enhancement under (b)(3)(B) instead.

(1) *The 2-Level Distribution Enhancement at Subsection (b)(3)(F)*

The Fifth, Tenth, and Eleventh Circuits have each held that the 2-level distribution enhancement applies if the defendant used a file sharing program, regardless of whether he did so purposefully, knowingly, or negligently. *See, e.g., United States v. Baker*, 742 F.3d 618, 621 (5th Cir. 2014) (the enhancement applies “regardless of the defendant’s mental state”); *United States v. Ray*, 704 F.3d 1307, 1312 (10th Cir. 2013) (the enhancement “does not require that a defendant know about the distribution capability of the program he is using”; the enhancement “requires no particular state of mind”); *United States v. Creel*, 783 F.3d 1357, 1360 (11th Cir. 2015) (“No element of *mens rea* is expressed or implied . . . The definition requires only that the ‘act . . . relates to the transfer of child pornography.’”).

The Second, Fourth, and Fifth Circuits, in contrast, have held that the 2-level distribution enhancement requires a showing that the defendant knew, or at least acted in reckless disregard of, the file sharing properties of the program. *See, e.g., United States v. Baldwin*, 743 F.3d 357, 361 (2nd Cir. 2015) (requiring knowledge); *United States v. Robinson*, 714 F.3d 466, 468 (7th Cir. 2013) (knowledge); *United States v. Layton*, 564 F.3d 330, 335 (4th Cir. 2009) (knowledge or reckless disregard).

Other circuits appear to follow somewhat different approaches. The Eighth Circuit has stated that knowledge is required, but knowledge may be inferred from the fact that a file sharing program was used, absent “concrete evidence” of ignorance. *United States v. Dodd*, 598 F.3d 449, 452 (8th Cir. 2010). The Sixth Circuit has stated in an unpublished opinion that there is a “presumption” that “users of file-sharing software understand others can access their files.” *United States v. Conner*, 521 Fed. App’x 493, 499 (6th Cir. 2013).

The proposed amendment generally adopts the approach of the Second, Fourth, and Fifth Circuits. It amends subsection (b)(3)(F) to provide that the 2-level enhancement requires “knowing” distribution by the defendant.

As a conforming change, the proposed amendment also revises the 2-level distribution enhancement at § 2G2.1(b)(3) to provide that the enhancement requires that the defendant knowingly distributed.

(2) *The 5-Level Distribution Enhancement at Subsection (b)(3)(B)*

The 5-level distribution enhancement at subsection (b)(3)(B) applies if the offense involved distribution “for the receipt, or expectation of receipt, of a thing of value, but not for pecuniary gain.” The Commentary provides, as one example, that in a case involving the bartering of child pornographic material, the “thing of value” is the material received in exchange.

The circuits have taken different approaches to this issue. The Fifth Circuit has indicated that when the defendant knowingly uses file sharing software, the requirements for the 5-level enhancement are generally satisfied. *See United States v. Groce*, 784 F.3d 291, 294 (5th Cir. 2015) (“Generally, when a defendant knowingly uses peer-to-peer file sharing software . . . he engages in the kind of distribution contemplated by” the 5-level enhancement).

The Fourth Circuit appears to have a higher standard. It has required the government to show that the defendant (1) “knowingly made child pornography in his possession available to others by some means”; and (2) did so “for the specific purpose of obtaining something of valuable consideration, such as more pornography.” *United States v. McManus*, 734 F.3d 315, 319 (4th Cir. 2013).

The proposed amendment revises subsection (b)(3)(B) to clarify that the enhancement applies if the defendant distributed in exchange for any valuable consideration. Specifically, this means that the defendant agreed to an exchange with another person under which the defendant knowingly distributed to that other person for the specific purpose of obtaining something of valuable consideration from that other person, such as other child pornographic material, preferential access to child pornographic material, or access to a child.

Proposed Amendment:

Section 2G2.1 is amended in subsection (b)(3) by striking “offense involved distribution” and inserting “defendant knowingly distributed”.

The Commentary to § 2G2.1 captioned “Application Notes” is amended by redesignating Notes 2 through 6 as Notes 3 through 7, respectively, and by

inserting after Note 1 the following new Note 2:

“2. *Interaction of Age Enhancement (Subsection (b)(1)) and Vulnerable Victim (§ 3A1.1(b)).*—If subsection (b)(1) applies, § 3A1.1(b) ordinarily would not apply unless the minor was unusually vulnerable for reasons unrelated to age. *See* § 3A1.1, comment. (n.2). However, if the minor’s extreme youth and small physical size made the minor especially vulnerable compared to most minors under the age of 12 years, and the defendant knew or should have known this, apply § 3A1.1(b).”

Section 2G2.2 is amended in subsection (b)(3) by striking “If the offense involved”;

in subparagraphs (A), (C), (D), and (E) by striking “Distribution” and inserting “If the offense involved distribution”;

in subparagraph (B) by striking “Distribution for the receipt, or expectation of receipt, of a thing of value,” and inserting “If the defendant distributed in exchange for any valuable consideration,”;

and in subparagraph (F) by striking “Distribution” and inserting “If the defendant knowingly distributed,”.

The Commentary to § 2G2.2 captioned “Application Notes” is amended in Note 1 by striking the paragraph that begins “‘Distribution for the receipt, or expectation of receipt, of a thing of value, but not for pecuniary gain’ means” and inserting “‘The defendant distributed in exchange for any valuable consideration’ means the defendant agreed to an exchange with another person under which the defendant knowingly distributed to that other person for the specific purpose of obtaining something of valuable consideration from that other person, such as other child pornographic material, preferential access to child pornographic material, or access to a child.”;

and by redesignating Notes 2 through 7 as Notes 3 through 8, respectively, and by inserting after Note 1 the following new Note 2:

“2. *Interaction of Age Enhancement (Subsection (b)(2)) and Vulnerable Victim (§ 3A1.1(b)).*—If subsection (b)(2) applies, § 3A1.1(b) ordinarily would not apply unless the minor was unusually vulnerable for reasons unrelated to age. *See* § 3A1.1, comment. (n.2). However, if the minor’s extreme youth and small physical size made the minor especially vulnerable compared to most minors under the age of 12 years, and the defendant knew or should have known this, apply § 3A1.1(b).”

The Commentary to § 2G2.6 captioned “Application Notes” is amended by redesignating Notes 2 and 3 as Notes 3

and 4, respectively, and by inserting after Note 1 the following new Note 2:

“2. *Interaction of Age Enhancement (Subsection (b)(1)) and Vulnerable Victim (§ 3A1.1(b)).*—If subsection (b)(1) applies, § 3A1.1(b) ordinarily would not apply unless the minor was unusually vulnerable for reasons unrelated to age. See § 3A1.1, comment. (n.2). However, if the minor’s extreme youth and small physical size made the minor especially vulnerable compared to most minors under the age of 12 years, and the defendant knew or should have known this, apply § 3A1.1(b).”

Issues for Comment

1. With respect to the interaction of the age enhancements and the vulnerable victim adjustment, the proposed amendment would respond to the circuit conflict by clarifying the circumstances under which the vulnerable victim adjustment would also apply. Should the Commission use a different approach to resolving the circuit conflict? If so, what approach should the Commission use to clarify how the age enhancements interact with the vulnerable victim adjustment? For example, should the Commission revise the tiered age enhancements to provide an additional tier, 2 levels higher than the existing tiers, for cases involving unusually young and vulnerable victims, such as infants or toddlers? In the alternative, should the Commission provide an upward departure provision to address this factor?

Application Note 2 to § 3A1.1 provides that, “if the offense guideline provides an enhancement for the age of the victim, this subsection would not be applied unless the victim was unusually vulnerable for reasons unrelated to age.” Should the Commission revise this provision to change or clarify how age enhancements in the guidelines (whether for child pornography offenses or otherwise) interact with the vulnerable victim adjustment? For example, should the Commission change “unless the victim was unusually vulnerable for reasons unrelated to age” to “unless the victim was unusually vulnerable for reasons not based on age *per se*”?

2. With respect to the 2-level distribution enhancement, the proposed amendment generally adopts the approach of the circuits that require “knowing” distribution. The Commission seeks comment on whether a different approach should be used, particularly in cases involving a file sharing program or network. For example, should the Commission provide a bright-line rule that use of a file sharing program qualifies for the 2-

level enhancement, even in cases where the defendant was in fact ignorant that use of the program would result in files being shared to others?

3. With respect to the 5-level distribution enhancement, the proposed amendment would generally require an agreement with another person in which the defendant trades child pornography for other child pornography or another thing of value, such as access to a child. The Commission seeks comment on whether a different approach should be used, particularly in cases involving a file sharing program or network. For example, should the Commission provide a bright-line rule that use of a file sharing program qualifies for the 5-level enhancement?

4. The proposed amendment amends § 2G2.2 to provide that the 2-level enhancement at subsection (b)(3) requires “knowing” distribution by the defendant. Should the Commission change any other enhancements in subsection (b) from an “offense involved” approach to a “defendant-based” approach? If so, should the Commission include a culpable state of mind requirement, such as, for example, requiring “knowing” distribution by the defendant?

5. The guideline for obscenity offenses, § 2G3.1 (Importing, Mailing, or Transporting Obscene Matter; Transferring Obscene Matter to a Minor; Misleading Domain Names), contains a tiered distribution enhancement similar to the tiered distribution enhancement in § 2G2.2. If the Commission were to make revisions to the tiered distribution enhancement in § 2G2.2, should the Commission make similar revisions to § 2G3.1?

6. Immigration

Synopsis of Proposed Amendment:

This proposed amendment is a result of the Commission’s multi-year study of the guidelines applicable to immigration offenses and related criminal history rules. See United States Sentencing Commission, “Notice of Final Priorities,” 80 FR 48957 (Aug. 14, 2015). The Commission is publishing this proposed amendment to inform the Commission’s consideration of these issues.

The proposed amendment contains two parts. The Commission is considering whether to promulgate any one or both of these parts, as they are not necessarily mutually exclusive. They are as follows—

Part A revises the alien smuggling guideline at § 2L1.1 (Smuggling, Transporting, or Harboring an Unlawful Alien). An issue for comment is also provided.

Part B revises the illegal reentry guideline at § 2L1.2 (Unlawfully Entering or Remaining in the United States). Issues for comment are also included.

(A) Alien Smuggling

Synopsis of Proposed Amendment:

This part of the proposed amendment revises the alien smuggling guideline at § 2L1.1 (Smuggling, Transporting, or Harboring an Unlawful Alien). The Commission has received comment expressing concern that the guideline provides for inadequate sentences for alien smugglers, particularly those who smuggle unaccompanied minors. See, e.g., Annual Letter from the Department of Justice to the Commission (July 24, 2015), at <http://www.ussc.gov/sites/default/files/pdf/amendment-process/public-comment/20150727/DOJ.pdf>.

First, the proposed amendment revises the alternative base offense levels at § 2L1.1(a). Two options are provided. Option 1 would raise the base offense level at subsection (a)(3) from 12 to [16]. Option 2 adds an alternative base offense level of [16] if the defendant smuggled, transported, or harbored an unlawful alien as part of an ongoing commercial organization.

Second, the proposed amendment addresses offenses involving unaccompanied minors in alien smuggling offenses. The Department of Justice in its annual letter to the Commission has suggested that the enhancement for smuggling, transporting, or harboring unaccompanied minors under § 2L1.1(b)(4) is inadequate in light of the serious nature of such offenses. The Department states that “[t]hese smugglers often treat children as human cargo and subject them to a multitude of abuses throughout a long and dangerous journey, including sexual assault, extortion, and other crimes.” The proposed amendment would amend § 2L1.1 to address the issue of unaccompanied minors. The proposed amendment first amends § 2L1.1(b)(4) to make the enhancement offense-based (with a mens rea requirement) as opposed to exclusively defendant-based. The proposed amendment would also amend the commentary to § 2L1.1 to clarify that the term “serious bodily injury” included in subsection (b)(7)(B) has the meaning given to that term in the Commentary to § 1B1.1 (Application Instructions), which states that “serious bodily injury” is deemed to have occurred if the offense involved conduct constituting criminal sexual abuse under 18 U.S.C. 2241 or § 2242 or any similar offense under state law.

Finally, the proposed amendment would revise the definition of “minor” for purposes of the “unaccompanied minor” enhancement at § 2L1.1(b)(4) and change it from minors under the age of 16 to minors under the age of [18]. The proposed amendment also brackets the possibility of including a new departure provision in the commentary to § 2L1.1 for cases in which the offense involved the smuggling, transporting, or harboring of six or more unaccompanied minors.

An issue for comment is also provided.

Proposed Amendment

Section 2L1.1 is amended—

[Option 1:
in subsection (a)(3) by striking “12, otherwise” and inserting “[16], otherwise”];

[Option 2:
in subsection (a) by redesignating paragraph (3) as paragraph (4), and by inserting after paragraph (2) the following new paragraph (3):

“(3) [16], if the defendant smuggled, transported, or harbored an unlawful alien as part of an ongoing commercial organization; or”];

and in subsection (b)(4) by striking “If the defendant smuggled, transported, or harbored a minor who was unaccompanied by the minor’s parent or grandparent” and inserting “If the offense involved the smuggling, transporting, or harboring of a minor who the defendant knew [or had reason to believe] was unaccompanied by the minor’s parent or grandparent”.

The Commentary to § 2L1.1 captioned “Application Notes” is amended—

in Note 1—

[Option 2 (continued):

by inserting before the paragraph that begins “‘The offense was committed other than for profit’ means” the following new paragraph:

“‘As part of an ongoing commercial organization’ means that the defendant participated (A) in a continuing organization or enterprise of five or more persons that had as one of its primary purposes the smuggling, transporting, or harboring of unlawful aliens for profit, and (B) with knowledge [or reason to believe] that the members of the continuing organization or enterprise smuggled, transported, or harbored different groups of unlawful aliens on more than one occasion.”];

in the paragraph that begins “‘Minor’ means” by striking “16 years” and inserting “[18] years”;

and by inserting after the paragraph that begins “‘Parent’ means” the following new paragraph:

“‘Bodily injury,’ ‘serious bodily injury,’ and ‘permanent or life-

threatening bodily injury’ have the meaning given those terms in the Commentary to § 1B1.1 (Application Instructions).”];

by redesignating Notes 2 through 6 as Notes 3 through 7, respectively, and by inserting after Note 1 the following new Note 2:

“2. *Application of Subsection (b)(7) to Conduct Constituting Criminal Sexual Abuse.*—Consistent with Application Note 1(L) of § 1B1.1 (Application Instructions), ‘serious bodily injury’ is deemed to have occurred if the offense involved conduct constituting criminal sexual abuse under 18 U.S.C. 2241 or § 2242 or any similar offense under state law.”;

and in Note 4, as so redesignated, by inserting at the end the following new subdivision:

“[(D) The offense involved the smuggling, transporting, or harboring of six or more minors who were unaccompanied by their parents or grandparents.]”.

Issue for Comment

1. The Department of Justice has stated that alien smuggling offenses often involved sexual abuse of the aliens smuggled, transported, or harbored, particularly of unaccompanied minors. The proposed amendment would amend the commentary to § 2L1.1 to clearly state that the term “serious bodily injury” included in subsection (b)(7)(B) has the meaning given to that term in the Commentary to § 1B1.1 (Application Instructions), which is deemed to have occurred if the offense involved conduct constituting criminal sexual abuse under 18 U.S.C. 2241 or § 2242 or any similar offense under state law. The Commission invites comment on whether the 4-level enhancement at § 2L1.1(b)(7)(B) adequately accounts for cases in which the offense covered by this guideline involved sexual abuse of an alien who was smuggled, transported, or harbored. If not, what revisions to § 2L1.1 would be appropriate to account for this conduct? For example, should the Commission provide one or more specific offense characteristics or departure provisions to better account for this conduct? If so, what should the Commission provide?

(B) Illegal Reentry

Synopsis of the Proposed

Amendment: This part of the proposed amendment is also informed by the Commission’s recent report on offenders sentenced under § 2L1.2 (Unlawfully Entering or Remaining in the United States). See United States Sentencing Commission, *Illegal Reentry Offenses* (2015), available at [http://www.ussc.gov/](http://www.ussc.gov/sites/default/files/pdf/research-and-publications/research-projects-and-surveys/immigration/2015_Illegal-Reentry-Report.pdf)

[sites/default/files/pdf/research-and-publications/research-projects-and-surveys/immigration/2015_Illegal-Reentry-Report.pdf](http://www.ussc.gov/sites/default/files/pdf/research-and-publications/research-projects-and-surveys/immigration/2015_Illegal-Reentry-Report.pdf).

The key findings from the report include—

- the average sentence for illegal reentry offenders was 18 months;
- all but two of the 18,498 illegal reentry offenders—including the 40 percent with the most serious criminal histories triggering a statutory maximum penalty of 20 years under 8 U.S.C. 1326(b)(2)—were sentenced at or below the ten-year statutory maximum under 8 U.S.C. 1326(b)(1) for offenders with less serious criminal histories (*i.e.*, those without “aggravated felony” convictions);

- the rate of within-guideline range sentences was significantly lower among offenders who received 16-level enhancements pursuant to § 2L1.2(b)(1)(A) for predicate convictions (31.3%), as compared to the within-range rate for those who received no enhancements under § 2L1.2(b) (92.7%);

- significant differences in the rates of application of the various enhancements in § 2L1.2(b) appeared among the districts where most illegal reentry offenders were prosecuted;

- the average illegal reentry offender was deported 3.2 times before his instant illegal reentry prosecution, and over one-third (38.1%) were previously deported after a prior illegal entry or illegal reentry conviction;

- 61.9 percent of offenders were convicted of at least one criminal offense after illegally reentering the United States;

- 4.7 percent of illegal reentry offenders had no prior convictions and not more than one prior deportation before their instant illegal reentry prosecutions; and

- most illegal reentry offenders were apprehended by immigration officials at or near the border.

The statutory penalty structure for illegal reentry offenses is based on whether the defendant had a criminal conviction *before* he or she was deported. The offense of illegal reentry, set forth in 8 U.S.C. 1326, applies to defendants who previously were deported from, or unlawfully remained in, the United States. Specifically, the statutory maximum term of imprisonment is—

- **two years**, in general (*see* 8 U.S.C. 1326(a)); but

- **10 years**, if the defendant was deported after sustaining (A) three misdemeanor convictions involving drugs or crimes against the person, or

both, or (B) one felony conviction (*see* 8 U.S.C. § 1326(b)(1)); or

- **20 years**, if the defendant was deported after sustaining an “aggravated felony”—a term that covers a range of offense types, listed in 8 U.S.C. § 1101(a)(43), that includes such different offense types as murder and tax evasion (*see* 8 U.S.C. § 1326(b)(2)).

The penalty structure of the guideline is similar to the statutory penalty structure. The guideline provides a base offense level of 8 and a tiered enhancement based on whether the defendant had a criminal conviction before he or she was deported. Specifically, the enhancement is—

- **4 levels**, for (A) three misdemeanor convictions for crimes of violence or drug trafficking offenses, or (B) any felony (*see* § 2L1.2(b)(1)(D),(E));
- **8 levels**, for an “aggravated felony” (*see* § 2L1.2(b)(1)(C));
- **12 levels**, for a felony drug trafficking offense for which the sentence imposed was 13 months or less (*see* § 2L1.2(b)(1)(B)); and
- **16 levels**, for specific types of felonies: a drug trafficking offense for which the sentence imposed was more than 13 months, a crime of violence, a firearms offense, a child pornography offense, a national security or terrorism offense, a human trafficking offense, or an alien smuggling offense (*see* § 2L1.2(b)(1)(A)).

The penalties in the illegal reentry statute apply based on the criminal convictions the defendant had before he or she was deported, regardless of the age of the prior conviction. Likewise, until 2011, the enhancements in § 2L1.2 applied regardless of the age of the prior conviction. In 2011, the Commission revised the guideline to provide that the 16- and 12-level enhancements would be reduced to 12 and 8 levels, respectively, if the conviction was too remote in time (too “stale”) to receive criminal history points under the timing limits set forth in Chapter Four (Criminal History and Criminal Livelihood). *See* USSG App. C, Amend. 754 (effective Nov. 1, 2011). The other enhancements continue to apply regardless of the age of the prior conviction (*i.e.*, without regard to whether the conviction receives criminal history points). *See* § 2L1.2, comment. (n.1(C)).

Part B of the proposed amendment amends § 2L1.2 to lessen the emphasis on pre-deportation convictions by providing new enhancements for more recent, post-reentry convictions and a corresponding reduction in the enhancements for past, pre-deportation convictions. The enhancements for these convictions would be based on the

sentence imposed rather than on the type of offense (*e.g.*, “crime of violence”)—in other words, the proposed amendment would eliminate the use of the “categorical approach” for predicate felony convictions in § 2L1.2. Also, the proposed amendment accounts for prior convictions for illegal reentry separately from other types of convictions.

First, the proposed amendment amends subsection (a) of § 2L1.2 to provide alternative base offense levels of [14] and [12] if the defendant had one or more prior convictions for illegal reentry offenses under 8 U.S.C. 1253, § 1325(a), or § 1326. For defendants without such prior convictions, the proposed amendment increases the otherwise applicable base offense level from 8 to [10]. The alternative base offense levels at subsection (a) apply without regard to whether the prior conviction receives criminal history points.

Second, the proposed amendment changes how subsection (b)(1) accounts for pre-deportation convictions—basing them not on the type of offense (*e.g.*, “crime of violence”) but on the length of the sentence imposed for a felony conviction. The proposed amendment incorporates these new enhancements in subdivision (A) through (C) at subsection (b)(1). Specifically, if the defendant had a felony conviction and the sentence imposed was [24] months or more, an enhancement of [8] levels would apply. If the defendant had a felony conviction and the sentence imposed was at least [12] months but less than [24] months, an enhancement of [6] levels would apply. If the defendant had a felony conviction and the sentence imposed was less than [12] months, an enhancement of [4] levels would apply. Finally, an enhancement of [2] levels would apply if the defendant had three or more convictions for misdemeanors involving drugs or crimes against the person. If more than one of these enhancements apply, the court is instructed to apply the greatest.

Third, the proposed amendment would permit prior convictions to be considered under subsection (b)(1) only if they receive criminal history points under Chapter Four.

To account for post-reentry criminal activity, the proposed amendment inserts a new subsection (b)(2) to provide a tiered enhancement for a defendant who engaged in criminal conduct resulting in a conviction for one or more felony offenses after the defendant’s first deportation or first order of removal. The structure of the new subsection (b)(2) parallels the proposed changes to subsection (b)(1),

both in the sentence length required and the level of enhancement to be applied. As with subsection (b)(1), prior convictions would be considered under subsection (b)(2) only if they receive criminal history points under Chapter Four.

Finally, the proposed amendment provides a new departure provision for cases in which the defendant was previously deported on multiple occasions not reflected in prior convictions under 8 U.S.C. 1253, § 1325(a), or § 1326. It also revises the departure provision based on seriousness of a prior conviction to bring it more into parallel with § 4A1.3 (Adequacy of Criminal History Category) and provide examples related to: (1) cases in which serious offenses do not qualify for an adjustment under subsection (b)(1) and the new subsection (b)(2) because they did not receive criminal history points; and (2) for cases in which a defendant committed one or more felony offenses but no conviction resulted from the commission of such offense or offenses. The proposed amendment also brackets the possibility of deleting the departure based on time served in state custody.

In addition, the proposed amendment would make conforming changes to the application notes, including the consolidation of all guideline definitions in one place.

Issues for comment are also included.

Proposed Amendment

Section 2L1.2 is amended—
in subsection (a) by striking “Base Offense Level: 8” and inserting the following:

“Base Offense Level (Apply the Greatest):

(1) [14], if the defendant committed the instant offense of conviction after sustaining two or more convictions for illegal reentry offenses;

(2) [12], if the defendant committed the instant offense of conviction after sustaining a conviction for an illegal reentry offense;

(3) [10], otherwise.”;

in subsection (b) by striking “Characteristic” in the heading and inserting “Characteristics”; by striking subsection (b)(1) and inserting the following new subsection (b)(1):

“(1) Apply the Greatest:

If, before the defendant’s first deportation or first order of removal, the defendant sustained—

(A) a conviction for a felony offense (other than an illegal reentry offense) for which the sentence imposed was [24] months or more, increase by [8] levels;

(B) a conviction for a felony offense (other than an illegal reentry offense) for

which the sentence imposed was at least [12] months but less than [24] months, increase by [6] levels;

(C) a conviction for a felony offense (other than an illegal reentry offense) for which the sentence imposed was less than [12] months, increase by [4] levels; or

(D) three or more convictions for misdemeanors involving drugs, crimes against the person, or both, increase by [2] levels.”;

and by inserting at the end the following new subsection (b)(2):

“(2) Apply the Greatest:

If, at any time after the defendant’s first deportation or first order of removal, the defendant engaged in criminal conduct resulting in—

(A) a conviction for a felony offense (other than an illegal reentry offense) for which the sentence imposed was [24] months or more, increase by [8] levels;

(B) a conviction for a felony offense (other than an illegal reentry offense) for which the sentence imposed was at least [12] months but less than [24] months, increase by [6] levels;

(C) a conviction for a felony offense (other than an illegal reentry offense) for which the sentence imposed was less than [12] months, increase by [4] levels; or

(D) three or more convictions for misdemeanors involving drugs, crimes against the person, or both, increase by [2] levels.”.

The Commentary to § 2L1.2 captioned “Statutory Provisions” is amended by inserting after “8 U.S.C.” the following: “§ 1253.”.

The Commentary to § 2L1.2 captioned “Application Notes” is amended—

in Note 1, in the heading, by striking “Subsection (b)(1)” and inserting “Subsections (b)(1) and (b)(2)”;

in Note 1(A) by striking “For purposes of subsection (b)(1)” and inserting “For purposes of this guideline”;

by striking Notes 1(B) and 1(C), and inserting the following new Note 1(B):

“(B) *Interaction of Subsections (b)(1) and (b)(2).*—Subsections (b)(1) and (b)(2) are intended to divide the defendant’s criminal history into two time periods. Subsection (b)(1) reflects the convictions, if any, that the defendant sustained before his first deportation or order of removal (whichever event occurs first). Subsection (b)(2) reflects the convictions, if any, that the defendant sustained after that event (when the criminal conduct that resulted in the conviction took place after that event).”;

by striking Notes 2 through 7 and inserting the following new Notes 2, 3, 4, and 5:

“2. *Definitions.*—For purposes of this guideline:

‘Felony’ means any federal, state, or local offense punishable by imprisonment for a term exceeding one year.

‘Illegal reentry offense’ means (A) an offense under 8 U.S.C. 1253 or § 1326, or (B) a second or subsequent offense under 8 U.S.C. 1325(a) (regardless of whether the conviction was designated a felony or misdemeanor).

‘Misdemeanor’ means any federal, state, or local offense punishable by a term of imprisonment of one year or less.

‘Sentence imposed’ has the meaning given the term ‘sentence of imprisonment’ in Application Note 2 and subsection (b) of § 4A1.2 (Definitions and Instructions for Computing Criminal History), without regard to the date of the conviction. The length of the sentence imposed includes any term of imprisonment given upon revocation of probation, parole, or supervised release, but only if the revocation occurred before the defendant was deported or unlawfully remained in the United States.

‘Three or more convictions’ means at least three convictions for offenses that are not treated as a single sentence pursuant to subsection (a)(2) of § 4A1.2 (Definitions and Instructions for Computing Criminal History).

3. *Criminal History Points.*—The alternative base offense levels at subsection (a) apply without regard to whether a conviction for an illegal reentry offense receives criminal history points. However, for purposes of applying subsections (b)(1) and (b)(2), use only those convictions that receive criminal history points under § 4A1.1(a), (b), or (c), and that are counted separately under § 4A1.2(a)(2).

A conviction taken into account under subsection (a) or (b) is not excluded from consideration of whether that conviction receives criminal history points pursuant to Chapter Four, Part A (Criminal History).

4. *Departure Based on Multiple Prior Deportations not Reflected in Prior Convictions.*—There may be cases in which the alternative base offense levels at subsections (a)(1) and (a)(2) do not apply and the defendant was previously deported (voluntarily or involuntarily) on multiple occasions not reflected in prior convictions under 8 U.S.C. 1253, § 1325(a), or § 1326. In such a case, an upward departure may be warranted to reflect both the increased culpability of a defendant with multiple prior deportations, as well as the increased risk of future illegal reentry (as reflected in the defendant’s record of multiple prior deportations). For example, an upward departure may be warranted for

a defendant who is convicted under 8 U.S.C. 1326 for the first time but was deported five times prior to the instant offense of illegal reentry.

5. *Departure Based on Seriousness of Criminal History.*—There may be cases in which the applicable offense level substantially overstates or understates the seriousness of a defendant’s criminal history. In such a case, a departure may be warranted. See § 4A1.3 (Departures Based on Inadequacy of Criminal History Category (Policy Statement)). *Examples:* (A) In a case in which an adjustment under subsection (b)(1) or (b)(2) does not apply because a prior serious conviction (*e.g.*, murder) is not within the time limits set forth in § 4A1.2(e) and did not receive criminal history points, an upward departure may be warranted to reflect the serious nature of the defendant’s prior conviction. (B) In a case in which a defendant committed one or more felony offenses but subsections (b)(1) and (b)(2) do not apply because no conviction resulted from the commission of such offense or offenses, an upward departure may be warranted.”;

[by striking Note 8 as follows:

8. *Departure Based on Time Served in State Custody.*—In a case in which the defendant is located by immigration authorities while the defendant is serving time in state custody, whether pre- or post-conviction, for a state offense, the time served is not covered by an adjustment under § 5G1.3(b) and, accordingly, is not covered by a departure under § 5K2.23 (Discharged Terms of Imprisonment). See § 5G1.3(a). In such a case, the court may consider whether a departure is appropriate to reflect all or part of the time served in state custody, from the time immigration authorities locate the defendant until the service of the federal sentence commences, that the court determines will not be credited to the federal sentence by the Bureau of Prisons. Any such departure should be fashioned to achieve a reasonable punishment for the instant offense.

Such a departure should be considered only in cases where the departure is not likely to increase the risk to the public from further crimes of the defendant. In determining whether such a departure is appropriate, the court should consider, among other things, (A) whether the defendant engaged in additional criminal activity after illegally reentering the United States; (B) the seriousness of any such additional criminal activity, including (1) whether the defendant used violence or credible threats of violence or possessed a firearm or other dangerous

weapon (or induced another person to do so) in connection with the criminal activity, (2) whether the criminal activity resulted in death or serious bodily injury to any person, and (3) whether the defendant was an organizer, leader, manager, or supervisor of others in the criminal activity; and (C) the seriousness of the defendant's other criminal history.”];

and by redesignating Note 9 as Note 6.

Issues for Comment

1. Some commentators have expressed concern about the operation of the illegal reentry guideline and the severity of the enhancements available in subsection (b) for some offenders. The Commission's recent report found that the rate of within-range sentences differed substantially depending on the level of enhancement under § 2L1.2(b)(1). The rate of within-guideline range sentences was significantly lower among defendants who received the 16-level enhancement (31.3%) as compared to the within-range rate for those who received no enhancements (92.7%). The report showed that the greater enhancements result in the lowest within-range sentences (52.5% within range for 4-level enhancement, 46.7% within range for 8-level enhancement, 32.8% within range for 12-level enhancement).

The Commission seeks comment on whether illegal reentry offenses are adequately addressed by the guidelines. Should the Commission consider amending § 2L1.2 and, if so, how?

2. Currently, § 2L1.2 requires the court to classify the defendant's prior convictions by type (e.g., is it a “crime of violence” or is it an “aggravated felony”?), a task that involves the Supreme Court's “categorical approach.” In recent years, the Commission has received commentary from stakeholders in the federal criminal justice system—including district and circuit judges, federal probation officers, the Department of Justice, and some defense counsel—that the use of a “categorical approach” to determine if a predicate conviction qualifies for an enhancement under § 2L1.2(b) requires a cumbersome, overly detailed, and resource-intensive legal analysis that often is under- or over-inclusive regarding the actual seriousness of offenders' predicate convictions. See, e.g., Comment Received by the Commission in Response to Request for Public Comment on Proposed Priorities from 2010 to 2015 (available on the Commission's Web site at www.ussc.gov/amendment-process/

public-comment). Cf. *Almanza-Arenda v. Lynch*, ___ F.3d ___, 2015 WL 9462976 at *8–*9 (9th Cir. Dec. 28, 2015) (Owens, J., concurring, joined by Tallman, Bybee & Callahan) (“The bedeviling . . . [‘]categorical approach’ will continue to spit out intra- and inter-circuit splits and confusion, which are inevitable when we have hundreds of federal judges reviewing thousands of criminal state laws and certain documents to determine if an offense is ‘categorically[.]’ [a predicate offense]. . . . A better mousetrap is long overdue. Rather than compete with Rube Goldberg, we instead should look to a more objective standard, such as the length of the underlying sentence [to determine what is a predicate offense].”).

The proposed amendment would eliminate the use of the “categorical approach” for predicate felony convictions and provide for enhancements based on the sentence imposed rather than on the type of offense. What are the advantages and disadvantages of basing the enhancement on the type of the prior conviction? What are the advantages and disadvantages of basing the enhancement on the length of the sentence imposed on the prior conviction? If the Commission were to adopt the sentence-imposed model, are the 24- and 12-month gradations included in the proposed amendment appropriate? Should the Commission adopt different gradations, such as the ones currently used in Chapter Four of the *Guidelines Manual* (i.e., “exceeding one year and one month” and “at least sixty days”), or more or fewer gradations? If the Commission were to provide a different approach to apply the enhancements at § 2L1.2, what should that different approach be?

3. As noted in the Commission's recent report, both the illegal reentry statute and § 2L1.2 provide enhanced penalties only if the defendant sustained a conviction before being deported. A defendant receives at most a single enhancement under § 2L1.2—based on the most serious conviction. Additional convictions that occurred before the defendant's most recent deportation, and convictions that occurred after the defendant's most recent illegal reentry, are not taken into account in the calculation of the offense level (although they may be taken into account in the criminal history score).

Should the Commission amend how the enhancements at § 2L1.2 work and, if so, how? Should the Commission amend § 2L1.2 to account not only for pre-deportation convictions but also for other aggravating factors relevant to a

defendant's culpability and need for incapacitation and deterrence?

For example, the proposed amendment would amend subsection (a) of § 2L1.2 to provide alternative base offense levels if the defendant had one or more prior convictions for illegal reentry offenses under 8 U.S.C. § 1253, § 1325(a), or § 1326. What are the advantages and disadvantages of basing alternative base offense levels on illegal reentry convictions? Should the Commission use a different approach for such alternative base offense levels?

Should the Commission use deportations and orders of removal instead to apply the base offense levels?

If the Commission provided additional enhancements to account for aggravating factors relevant to a defendant's culpability other than pre-deportation convictions, how should these enhancements interact? How much weight should be given to pre-deportation convictions in relation to prior illegal reentry convictions or post-reentry convictions in driving the guideline range? Should the guideline provide greater emphasis on one or more of these factors? For example, should the guideline give more weight to post-reentry convictions and less weight to pre-deportation convictions (e.g., a 10-level enhancement for a post-reentry conviction for which the sentence imposed was 24 months or more with a corresponding 6-level enhancement for a pre-deportation conviction for which the sentence imposed was 24 months or more)?

What other aggravating factors, if any, should the Commission incorporate into § 2L1.2, and how should the Commission incorporate them? Should the factor be an enhancement, an alternative base offense level, a minimum offense level, an upward departure provision, or some combination of these? If so, what level of enhancement should apply?

What mitigating factors, if any, should the Commission incorporate into § 2L1.2, and how should the Commission incorporate them? For example, should the Commission provide a new departure provision for cases in which the defendant's predicate felony conviction is based on an offense that was classified by the laws of the state as a misdemeanor?

4. Currently, § 2L1.2 provides enhanced penalties based on convictions sustained prior to the defendant's most recent deportation from the United States. The proposed amendment would modify how the enhancements work in the illegal reentry guideline. Specifically, it would divide the defendant's criminal history

into two time periods. Subsection (b)(1) would reflect the convictions that the defendant sustained before his or her first deportation or order of removal (whichever event occurs first). Subsection (b)(2) would then reflect the convictions that the defendant sustained after that event (when the criminal conduct that resulted in the conviction took place after that event).

What are the advantages and disadvantages of using a particular deportation or order of removal as the determining event for whether a prior conviction qualifies for an enhancement under subsection (b)(1) or subsection (b)(2)? Should the Commission use a different approach to distinguish pre-deportation convictions from post-reentry convictions? For example, should the Commission provide instead that a prior conviction sustained before any deportation would qualify for an enhancement for pre-deportation convictions? If so, how should such enhancement interact with an enhancement based on post-reentry convictions as provided in the proposed amendment?

5. In 2014, the Commission amended the Commentary to § 2L1.1 to add a departure provision for cases in which the defendant is located by immigration authorities while the defendant is in state custody for a state offense unrelated to the federal illegal reentry offense. In such a case, the time served is not covered by adjustment under § 5G1.3 (Imposition of a Sentence on a Defendant Subject to an Undischarged Term of Imprisonment or Anticipated State Term of Imprisonment) and, accordingly, is not covered by a departure under § 5K2.23 (Discharged Terms of Imprisonment). Under the current guideline, the departure allows courts to depart to reflect all or part of the time served in state custody for the unrelated offense, from the time federal immigration authorities locate the defendant until the service of the federal sentence commences, that the court determines will not be credited to the federal sentence by the Bureau of Prisons. The proposed amendment brackets the possibility of deleting the departure provision at Application Note 8 to § 2L1.2.

If the Commission were to promulgate the proposed amendment revising how the enhancements at the illegal reentry guideline work, should the Commission delete the departure based on time served in state custody? If not, how should the new enhancements at § 2L1.2 interact with the departure provision? For example, should the Commission limit the applicability of the departure provision?

6. The Commission recently promulgated an amendment that amends the definition of “crime of violence” in subsection (a) of § 4B1.2 (Definitions of Terms Used in Section 4B1.1), effective August 1, 2016 (to be published in a forthcoming edition of the **Federal Register**). The changes made by that amendment include revising the list of enumerated offenses and adding definitions for the enumerated offenses of extortion and a forcible sex offense. Finally, the amendment includes a downward departure provision in § 4B1.1 for cases in which the defendant’s prior “crime of violence” or “controlled substance offense” is based on an offense that was classified by the laws of the state as a misdemeanor.

The proposed amendment would eliminate the use of the term “crime of violence” in § 2L1.2. In the event that the Commission does not promulgate the proposed amendment, and retains the term “crime of violence” in § 2L1.2, should the Commission incorporate all or part of the definition of “crime of violence” provided in the recently amended § 4B1.2 into § 2L1.2? If the Commission were to conform § 2L1.2 to the new definition in § 4B1.2(a), are there any particular offenses that would no longer qualify as a “crime of violence” but that nonetheless should receive an enhancement under subsection (b)(1) (e.g., statutory rape or burglary of a dwelling)?

[FR Doc. 2016–00766 Filed 1–14–16; 8:45 am]

BILLING CODE 2210–40–P

DEPARTMENT OF VETERANS AFFAIRS

Funding Availability Under Supportive Services for Veteran Families Program

AGENCY: Veterans Health Administration, VA.

ACTION: Notice of fund availability.

SUMMARY:

Funding Opportunity Title: Supportive Services for Veteran Families Program.

Announcement Type: Initial.

Funding Opportunity Number: VA–SSVF–011516.

Catalog of Federal Domestic Assistance Number: 64.033, VA Supportive Services for Veteran Families Program.

The Department of Veterans Affairs (VA) is announcing the availability of funds for supportive services grants under the Supportive Services for Veteran Families (SSVF) Program. This Notice of Fund Availability (NOFA)

contains information concerning the SSVF Program, initial supportive services grant application processes, and the amount of funding available. Awards made for supportive services grants will fund operations beginning October 1, 2016.

DATES: Applications for supportive services grants under the SSVF Program must be received by the SSVF Program Office by 4:00 p.m. Eastern Time on February 5, 2016. In the interest of fairness to all competing applicants, this deadline is firm as to date and hour, and VA will treat as ineligible for consideration any application that is received after the deadline. Applicants should take this practice into account and make early submission of their materials to avoid any risk of loss of eligibility brought about by unanticipated delays, computer service outages, or other delivery-related problems.

ADDRESSES: For a Copy of the Application Package: Copies of the application can be downloaded directly from the SSVF Program Web site at: www.va.gov/homeless/ssvf.asp. Questions should be referred to the SSVF Program Office via email at SSVF@va.gov. For detailed SSVF Program information and requirements, see part 62 of Title 38, Code of Federal Regulations (38 CFR part 62).

Submission of Application Package: Applicants are strongly encouraged to submit applications electronically following instructions found at www.va.gov/homeless/ssvf.asp. Alternatively, applicants can mail in applications. If mailed, applicants must submit two completed, collated, hard copies of the application and two compact discs (CDs) containing electronic versions of the entire application are required. Each application copy must (i) be fastened with a binder clip, and (ii) contain tabs listing the major sections of and exhibits to the application. Each CD must be labeled with the applicant’s name and must contain an electronic copy of the entire application. A budget template must be attached in Excel format on the CD, but all other application materials may be attached in a PDF or other format. The application copies and CDs must be submitted to the following address: Supportive Services for Veteran Families Program Office National Center on Homelessness Among Veterans, 4100 Chester Avenue, Suite 201, Philadelphia, PA 19104. Applicants must submit two hard copies and two CDs. Applications may not be sent by facsimile (FAX). Applications must be received in the SSVF Program Office by

4:00 p.m. Eastern Time on the application deadline date. Applications must arrive as a complete package. Materials arriving separately will not be included in the application package for consideration and may result in the application being rejected. See Section II.C. of this NOFA for maximum allowable grant amounts.

Technical Assistance: Information regarding how to obtain technical assistance with the preparation of an initial supportive services grant application is available on the SSVF Program Web site at: <http://www.va.gov/HOMELESS/SSVF.asp>.

FOR FURTHER INFORMATION CONTACT: Mr. John Kuhn, Supportive Services for Veteran Families Program Office, National Center on Homelessness Among Veterans, 4100 Chester Avenue, Suite 201, Philadelphia, PA 19104; SSVF@va.gov.

SUPPLEMENTARY INFORMATION:

I. Funding Opportunity Description

A. Purpose: The SSVF Program's purpose is to provide supportive services grants to private non-profit organizations and consumer cooperatives, who will coordinate or provide supportive services to very low-income Veteran families who: (i) Are residing in permanent housing; (ii) are homeless and scheduled to become residents of permanent housing within a specified time period; or (iii) after exiting permanent housing within a specified time period, are seeking other housing that is responsive to such very low-income Veteran family's needs and preferences.

B. Funding Priorities: VA will provide up to \$300 million for existing grantees seeking to renew their grants.

C. Definitions: Part 62 of title 38, Code of Federal Regulations (38 CFR part 62), contains definitions of terms used in the SSVF Program.

D. Approach: Respondents to this NOFA should base their proposals and applications on the current requirements of part 62. Grantees will be expected to leverage supportive services grant funds to enhance the housing stability of very low-income Veteran families who are occupying permanent housing. In doing so, grantees are required to establish relationships with local community resources. Therefore, agencies must work through coordinated partnerships built either through formal agreements or the informal working relationships commonly found amongst strong social service providers. The scoring criteria for grantees applying for renewal supportive services grants are at 38 CFR

62.24, which provides for points to be awarded based on the success of the grantee's program. As part of the application, all applicants are strongly encouraged to provide letters of support from their respective VA Network Homeless Coordinator (or their designee). In addition, applicants are strongly encouraged to provide letters of support from the Continuum of Care (CoC) where they plan to deliver services that reflect the applicant's engagement in the CoC's efforts to coordinate services. The CoC may elect to provide VA with a rank order of their support in lieu of providing individual letters of support. A CoC is a community plan to organize and deliver housing and services to meet the needs of people who are homeless as they move to stable housing and maximize self-sufficiency. It includes action steps to end homelessness and prevent a return to homelessness (CoC locations and contact information can be found at the Department of Housing and Urban Development's (HUD) Web site, <http://www.hudhre.info/index.cfm?do=viewCocMaps>). The CoC's letter of support should describe the applicant's participation in the CoC's coordinated assessment efforts (coordinated assessment refers to a common process for accessing homeless assistance services including: Prevention, diversion, emergency shelter, transitional housing, rapid re-housing, supportive services and even permanent supportive housing). In addition, any applicant proposing to serve an Indian Tribal area is strongly encouraged to provide a letter of support from the relevant Indian Tribal Government. The aim of the provision of supportive services is to assist very low-income Veteran families residing in permanent housing to remain stably housed and to rapidly transition those not currently in permanent housing to stable housing. SSVF emphasizes the placement of homeless Veteran families who are described in regulation as (i) very low-income Veteran families who are homeless and scheduled to become residents of permanent housing within 90 days, and (ii) very low-income Veteran families who have exited permanent housing within the previous 90 days to seek other housing that is responsive to their needs and preferences. As a crisis intervention program, the SSVF Program is not intended to provide long-term support for participants, nor will it be able to address all of the financial and supportive services needs of participants that affect housing stability. Rather, when participants require long-

term support, grantees should focus on connecting such participants to income supports, such as employment and mainstream Federal and community resources (e.g., HUD-VA Supportive Housing program, HUD Housing Choice Voucher programs, McKinney-Vento funded supportive housing programs, Temporary Assistance for Needy Families (TANF), and Social Security Income/Social Security Disability Insurance (SSI/SSDI) etc.) that can provide ongoing support as required.

Assistance in obtaining or retaining permanent housing is a fundamental goal of the SSVF Program. Grantees must provide case management services in accordance with 38 CFR 62.31. Such case management should include tenant counseling, mediation with landlords and outreach to landlords.

E. Authority: Funding applied for under this NOFA is authorized by 38 U.S.C. 2044. VA implements the SSVF Program by regulation in 38 CFR part 62. Funds made available under this NOFA are subject to the requirements of the aforementioned regulations and other applicable laws and regulations.

F. Requirements for the Use of Supportive Services Grant Funds: The grantee's request for funding must be consistent with the limitations and uses of supportive services grant funds set forth in 38 CFR part 62 and this NOFA. In accordance with the regulations and this NOFA, the following requirements apply to supportive services grants awarded under this NOFA:

1. Grantees may use a maximum of 10 percent of supportive services grant funds for administrative costs identified in 38 CFR 62.70.

2. Grantees must use a minimum of 60 percent of the temporary financial assistance portion of their supportive services grant funds to serve very low-income Veteran families who qualify under 38 CFR 62.11(b). (NOTE: Grantees may request a waiver to decrease this minimum, as discussed in section V.B.3.a.)

3. Grantees may use a maximum of 50 percent of supportive services grant funds to provide the supportive service of temporary financial assistance paid directly to a third party on behalf of a participant for child care, emergency housing assistance, transportation, rental assistance, utility-fee payment assistance, security deposits, utility deposits, moving costs, and general housing stability assistance (which includes emergency supplies) in accordance with 38 CFR 62.33 and 38 CFR 62.34.

G. Guidance for the Use of Supportive Services Grant Funds: It is VA policy to support a "Housing First" model in

addressing and ending homelessness. Housing First establishes housing stability as the primary intervention in working with homeless persons. The Housing First approach is based on research that shows that a homeless individual or household's first and primary need is to obtain stable housing, and that other issues that may affect the household can and should be addressed as housing is obtained. Research supports this approach as an effective means to end homelessness. Housing is not contingent on compliance with mandated therapies or services; instead, participants must comply with a standard lease agreement and are provided with the services and supports that are necessary to help them do so successfully.

Grantees must develop plans that will ensure that Veteran participants have the level of income and economic stability needed to remain in permanent housing after the conclusion of the SSVF intervention. Both employment and benefits assistance from VA and non-VA sources represent a significant underutilized source of income stability for homeless Veterans. The complexity of program rules and the stigma some associate with entitlement programs contributes to their lack of use. To this effect, grantees are encouraged to consider strategies that can lead to prompt and successful access to employment and benefits that are essential to retaining housing.

1. Consistent with the Housing First model supported by VA, grantees are expected to offer the following supportive services: Housing counseling; assisting participants in understanding leases; securing utilities; making moving arrangements; providing representative payee services concerning rent and utilities when needed; and mediation and outreach to property owners related to locating or retaining housing. Grantees may also assist participants by providing rental assistance, security or utility deposits, moving costs or emergency supplies; or using other Federal resources, such as the HUD's ESG, or supportive services grant funds subject to the limitations described in this NOFA and 38 CFR 62.34.

2. As SSVF is a short-term crisis intervention, grantees must develop plans that will produce sufficient income to sustain Veteran participants in permanent housing after the conclusion of the SSVF intervention. Grantees must ensure the availability of employment and vocational services either through the direct provision of these services or their availability through formal or informal service

agreements. Agreements with Homeless Veteran Reintegration Programs funded by the U.S. Department of Labor are strongly encouraged. For participants unable to work due to disability, income must be established through available benefits programs.

3. Per 38 CFR 62.33, grantees must assist participants in obtaining public benefits. Grantees must screen all participants for eligibility for a broad range of entitlements such as TANF, Social Security, the Supplemental Nutrition Assistance Program (SNAP), the Low Income Home Energy Assistance Program (LIHEAP), the Earned Income Tax Credit (EITC), and local General Assistance programs. Grantees are expected to access the Substance Abuse and Mental Health Services Administration's SSI/SSDI Outreach, Access, and Recovery (SOAR) program either through community linkages or by training staff to deliver SOAR services. In addition, where available grantees should access information technology tools to support case managers in their efforts to link participants to benefits.

4. Grantees are encouraged to provide, or assist participants in obtaining, legal services relevant to issues that interfere with the participants' ability to obtain or retain permanent housing. (**Note:** Information regarding legal services provided may be protected from being released to the grantee or VA under attorney-client privilege, although grantee must provide sufficient information to demonstrate the frequency and type of service delivered.) Support for legal services can include paying for court filing fees to assist a participant with issues that interfere with the participant's ability to obtain or retain permanent housing or supportive services, including issues that affect the participant's employability and financial security. Grantees (in addition to employees and members of grantees) may represent participants before VA with respect to a claim for VA benefits, but only if they are recognized for that purpose pursuant to 38 U.S.C. Chapter 59. Further, the individual providing such representation must be accredited pursuant to 38 U.S.C. Chapter 59.

5. Access to mental health and addiction services are required by SSVF; however, grantees cannot fund these services directly through the SSVF grant. Therefore, applicants must demonstrate, through either formal or informal agreements, their ability to promote rapid access and engagement to mental health and addiction services for the Veteran and family members.

6. VA recognizes that extremely low-income Veterans, with incomes below 30 percent of the area median income, face greater barriers to permanent housing placement. Grantees should consider how they can support these participants.

7. When serving participants who are residing in permanent housing, the defining question to ask is: "Would this individual or family be homeless but for this assistance?" The grantee must use a VA-approved screening tool with criteria that targets those most at-risk of homelessness. To qualify for SSVF services, a participant who is served under 38 CFR 62.11(a) (homeless prevention) must not have sufficient resources or support networks (*e.g.*, family, friends, faith-based or other social networks) immediately available to prevent them from becoming homeless. To further qualify for services under 38 CFR 62.11(a), the grantee must document that the participant meets at least one of the following conditions:

(a) Has moved because of economic reasons two or more times during the 60 days immediately preceding the application for homelessness prevention assistance;

(b) Is living in the home of another because of economic hardship;

(c) Has been notified in writing that their right to occupy their current housing or living situation will be terminated within 21 days after the date of application for assistance;

(d) Lives in a hotel or motel and the cost of the hotel or motel stay is not paid by charitable organizations or by Federal, State, or local government programs for low-income individuals;

(e) Is exiting a publicly funded institution or system of care (such as a health care facility, a mental health facility, or correctional institution) without a stable housing plan; or

(f) Otherwise lives in housing that has characteristics associated with instability and an increased risk of homelessness, as identified in the recipient's approved screening tool.

8. SSVF grantees are required to participate in local planning efforts designed to end Veteran homelessness. Grantees may use grant funds to support SSVF involvement in such community planning by sub-contracting with CoCs, when such funding is essential to create or sustain the development of these data driven plans.

9. When other funds from community resources are not readily available to assist program participants, grantees may choose to utilize supportive services grants, to the extent described in this NOFA and in 38 CFR 62.33 and 62.34, to provide temporary financial

assistance. Such assistance may, subject to the limitations in this NOFA and 38 CFR part 62, be paid directly to a third party on behalf of a participant for child care, transportation, family emergency housing assistance, rental assistance, utility-fee payment assistance, security or utility deposits, moving costs and general housing stability assistance as necessary.

II. Award Information

A. Overview: This NOFA announces the availability of funds for supportive services grants under the SSVF Program and pertains to proposals for renewal of existing supportive services grant programs. New applications for SSVF grant awards will not be funded through this NOFA. Up to \$300 million will be available through this NOFA.

B. Funding: To be eligible for renewal of a supportive services grant, the grantee's program concept must be substantially the same with the program concept of the grantee's current grant award. Renewal applications can request funding that is equal to or less than their current award. If sufficient funding is available, VA may provide an increase of up to 2 percent from the previous year's award. Any percentage increase, if provided, will be awarded uniformly to all grant recipients regardless of their grant award. As provided in section V.5., VA may in its discretion offer to award a non-renewed grant to the highest-ranked applicant that is awarded a renewal grant in the same community as, or a proximate community to, the non-renewed grant, so long as that applicant has the capacity to promptly begin providing services in connection with all awards. In such instance, the amount of the award will be equal to or less than the prior award which was not renewed.

C. Allocation of Funds: Funding will be awarded under this NOFA to existing grantees for a 1- to 3-year period beginning October 1, 2016. The following requirements apply to supportive services grants awarded under this NOFA:

1. In response to this NOFA, only existing grantees can apply.
2. Each grant request cannot exceed the current award.
3. Applicants may request an amount less than their current award (this will not be considered a substantial change to the program concept).
4. If a grantee failed to use all of awarded funds in the previous fiscal year (2016), VA may elect to limit renewal award to the amount of funds used in the previous fiscal year.

5. Applicants should fill out separate applications for each supportive services renewal funding request.

D. Supportive Services Grant Award Period: Grant awards are generally made for a 1-year period, although selected grants may be eligible for a 3-year award (see VI.C.6). All grants are eligible to be renewed subject to the availability of funding.

III. Eligibility Information

A. Eligible Applicants: Only eligible entities that are existing grantees can apply in response to this NOFA. In order to be eligible, an applicant must qualify as a private non-profit organization (section 501(c)(3) or 501(c)(19) tax exempt status is required) or a consumer cooperative as defined in 38 U.S.C. 2044(f). In addition, tribally designated housing entities (as defined in section 4 of the Native American Housing Assistance and Self-Determination Act of 1996 (25 U.S.C. 4103)) are eligible.

B. Cost Sharing or Matching: None.

IV. Application and Submission Information

A. Address to Request Application Package: Download directly from the SSVF Program Web site at www.va.gov/homeless/ssvf.asp or send a written request for an application to SSVF Program Office, National Center on Homelessness Among Veterans, 4100 Chester Avenue, Suite 201, Philadelphia, PA 19104. Any questions regarding this process should be referred to the SSVF Program Office via phone at (877) 737-0111 (toll-free number) or via email at ssvf@va.gov. For detailed SSVF Program information and requirements, see 38 CFR 62.

B. Content and Form of Application: Applicants are strongly encouraged to submit applications electronically following instructions found at www.va.gov/homeless/ssvf.asp. Alternatively, applicants can mail in applications. If mailed, applicants must submit two completed collated, hard copies of the application and two CDs containing electronic versions of the entire application are required. Each application copy must (i) be fastened with a binder clip, and (ii) contain tabs listing the major sections of and exhibits to the application. Each CD must be labeled with the applicant's name and must contain an electronic copy of the entire application. A budget template must be attached in Excel format on the CD, but all other application materials may be attached in a PDF or other format.

C. Submission Dates and Times: Applications for supportive services

grants under the SSVF Program must be received by the SSVF Program Office by 4:00 p.m. Eastern Time on February 5, 2016. Awards made for supportive services grants will fund operations beginning October 1, 2016. Applications must arrive as a complete package. Materials arriving separately will not be included in the application package for consideration and may result in the application being rejected. Additionally, in the interest of fairness to all competing applicants, this deadline is firm as to date and hour, and VA will treat as ineligible for consideration any application that is received after the deadline. Applicants should take this practice into account and make early submission of their materials to avoid any risk of loss of eligibility brought about by unanticipated delays, computer service outages, or other delivery-related problems.

D. Intergovernmental Review: This section is not applicable to the SSVF Program.

E. Funding Restrictions: Up to \$300 million may be awarded depending on funding availability and subject to available appropriations for supportive services grants to be funded under this NOFA. Applicants should fill out separate applications for each supportive services funding request. Funding will be awarded under this NOFA to existing grantees for a 1- to 3-year period beginning October 1, 2016.

F. Other Submission Requirements:

1. Applicants may apply only as renewal applicants using the application designed for renewal grants.
2. At the discretion of VA, multiple grant proposals submitted by the same lead agency may be combined into a single grant award if the proposals provide services to contiguous areas. Any funds awarded pursuant to section V.5. will be combined into a single award.
3. Additional supportive services grant application requirements are specified in the application package. Submission of an incorrect or incomplete application package will result in the application being rejected during threshold review. The application packages must contain all required forms and certifications. Selections will be made based on criteria described in 38 CFR part 62 and this NOFA. Applicants and grantees will be notified of any additional information needed to confirm or clarify information provided in the application and the deadline by which to submit such information. Applicants are strongly encouraged to submit applications electronically. If mailed, applications and CDs must be submitted

to the following address: SSVF Program Office, National Center on Homelessness Among Veterans, 4100 Chester Avenue, Suite 201, Philadelphia, PA 19104. Applicants must submit two hard copies and two CDs. Applications may not be sent by facsimile (FAX).

V. Application Review Information

A. Criteria:

1. VA will only score applicants that meet the following threshold requirements:

(a) The application is filed within the time period established in the NOFA, and any additional information or documentation requested by VA under 38 CFR 62.20(c) is provided within the time frame established by VA;

(b) The application is completed in all parts;

(c) The applicant is an eligible entity;

(d) The activities for which the supportive services grant is requested are eligible for funding under 38 CFR part 62;

(e) The applicant's proposed participants are eligible to receive supportive services under this part;

(f) The applicant agrees to comply with the requirements of 38 CFR part 62;

(g) The applicant does not have an outstanding obligation to the Federal Government that is in arrears and does not have an overdue or unsatisfactory response to an audit; and

(h) The applicant is not in default by failing to meet the requirements for any previous Federal assistance.

2. VA will use the following criteria to score grantees applying for renewal of a supportive services grant:

(a) VA will award up to 55 points based on the success of the grantee's program.

(b) VA will award up to 30 points based on the cost-effectiveness of the grantee's program.

(c) VA will award up to 15 points based on the extent to which the grantee's program complies with SSVF Program goals and requirements.

3. VA will use the following process to select applicants to receive supportive services grants: VA will score all applicants that meet the threshold requirements set forth in 38 CFR 62.21 using the scoring criteria set forth in 38 CFR 62.24.

B. Review and Selection Process: VA will review all supportive services renewal grant applications in response to this NOFA according to the following steps:

1. Score all applications that meet the threshold requirements described in 38 CFR 62.21.

2. Rank those applications who score at least 75 cumulative points and receive at least one point under each of the categories identified for renewal applicants in 38 CFR 62.24. The applications will be ranked in order from highest to lowest scores in accordance with 38 CFR 62.25.

3. Utilize the ranked scores of applications as the primary basis for selection. However, VA will also utilize the following considerations in 38 CFR 62.23(d) to select applicants for funding:

(a) Give preference to applications that provide or coordinate the provision of supportive services for very low-income Veteran families transitioning from homelessness to permanent housing. Consistent with this preference, where other funds from community resources are not readily available for temporary financial assistance, applicants are required to spend no less than 60 percent of all budgeted temporary financial assistance on participants occupying permanent housing as defined in 38 CFR 62.11(b)). Waivers to this 60 percent requirement may be requested when grantees can demonstrate significant local progress towards eliminating homelessness in the target service area. Waiver requests must include data from authoritative sources such as HUD's Annual Homeless Assessment Report, annual Point-In-Time Counts and evidence of decreased demand for emergency shelter and transitional housing. Waivers for the 60 percent requirement may also be requested for services provided to rural Indian tribal areas and other rural areas where shelter capacity is insufficient to meet local need. Waiver requests must include an endorsement by the impacted CoC explicitly stating that a shift in resources from rapid re-housing to prevention will not result in an increase in homelessness.

(b) To the extent practicable, ensure that supportive services grants are equitably distributed across geographic regions, including rural communities and tribal lands. This equitable distribution criteria will be used to ensure that SSVF resources are provided to those communities with the highest need as identified by authoritative sources such as HUD's Annual Homeless Assessment Report, annual Point-In-Time Counts and VA Homeless Registry data.

4. Subject to the considerations noted in paragraph B.3 above, VA will fund the highest-ranked applicants for which funding is available.

5. VA may in its discretion offer to award a non-renewed grant to the highest-ranked applicant that is

awarded a renewal grant in the same community as, or a proximate community to, the non-renewed grant, so long as that applicant has the capacity to promptly begin providing services in connection with all awards. If that applicant declines the award, VA will offer the award to the next highest-ranked applicant and continue in that manner until a qualifying grantee accepts the award.

VI. Award Administration Information

A. Award Notices: Although subject to change, the SSVF Program Office expects to announce grant recipients for all applicants in the fourth quarter of fiscal year 2016 with grants beginning October 1, 2016. Prior to executing a funding agreement, VA will contact the applicants and make known the amount of proposed funding and verify that the applicant would still like the funding. Once VA verifies that the applicant is still seeking funding, VA will execute an agreement and make payments to the grant recipient in accordance with 38 CFR part 62 and this NOFA.

B. Administrative and National Policy Requirements: It is VA policy to support a "Housing First" model in addressing and ending homelessness. Housing First establishes housing stability as the primary intervention in working with homeless persons. The Housing First approach is based on research that shows that a homeless individual or household's first and primary need is to obtain stable housing, and that other issues that may affect the household can and should be addressed as housing is obtained. Housing is not contingent on compliance with services; instead, participants must comply with a standard lease agreement and are provided with the services and supports that are necessary to help them do so successfully. Research supports this approach as an effective means to end homelessness.

Consistent with the Housing First model supported by VA, grantees are expected to offer the following supportive services: Housing counseling; assisting participants in understanding leases; securing utilities; making moving arrangements; providing representative payee services concerning rent and utilities when needed; and mediation and outreach to property owners related to locating or retaining housing. Grantees may also assist participants by providing rental assistance, security or utility deposits, moving costs or emergency supplies, using other Federal resources, such as the ESG, or supportive services grant funds to the extent described in this NOFA and 38 CFR 62.34.

As SSVF grants cannot be used to fund treatment for mental health or substance use disorders, applicants must provide evidence that they can provide access to such services to all program participants through formal and informal agreements with community providers.

C. Reporting: VA places great emphasis on the responsibility and accountability of grantees. As described in 38 CFR 62.63 and 62.71, VA has procedures in place to monitor supportive services provided to participants and outcomes associated with the supportive services provided under the SSVF Program. Applicants should be aware of the following:

1. Upon execution of a supportive services grant agreement with VA, grantees will have a VA regional coordinator assigned by the SSVF Program Office who will provide oversight and monitor supportive services provided to participants.

2. Grantees will be required to enter data into a Homeless Management Information System (HMIS) Web-based software application. This data will consist of information on the participants served and types of supportive services provided by grantees. Grantees must treat the data for activities funded by the SSVF Program separate from that of activities funded by other programs. Grantees will be required to work with their HMIS Administrators to export client-level data for activities funded by the SSVF Program to VA on at least a monthly basis.

3. VA shall complete annual monitoring evaluations of each grantee. Monitoring will also include the submittal of quarterly and annual financial and performance reports by the grantee. The grantee will be expected to demonstrate adherence to the grantee's proposed program concept, as described in the grantee's application. All grantees are subject to audits conducted by the VA Financial Services Center.

4. Grantees will be required to provide each participant with a satisfaction survey which can be submitted by the participant directly to VA within 30 days of such participant's pending exit from the grantee's program.

5. Grantees will be assessed based on their ability to meet critical performance measures. In addition to meeting program requirements defined by the regulations and applicable NOFA(s), grantees will be assessed on their ability to place participants into housing and the housing retention rates of participants served. Higher placement for homeless participants and higher

housing retention rates for at-risk participants are expected for very-low income Veteran families when compared to extremely low-income Veteran families with incomes below 30 percent of the area median income.

6. Organizations receiving renewal awards and that have had ongoing SSVF program operation for at least 1 year (as measured from the start of initial SSVF services until January 16, 2016) may be eligible for a 3-year award. Grantees meeting outcome goals defined by VA and in substantial compliance with their grant agreements (defined by meeting targets and having no outstanding corrective action plans) and who, in addition, receive 3-year accreditation from the Commission on Accreditation of Rehabilitation Facilities (CARF) in Employment and Community Services: Rapid Rehousing and Homeless Prevention standards or a 4-year accreditation from the Council on Accreditation's (COA) accreditation in Supported Community Living Services standards are eligible for a 3-year grant renewal subject to funding availability (NOTE: Multi-year awards are contingent on funding availability). If awarded a multiple year renewal, grantees may be eligible for funding increases as defined in NOFAs that correspond to years 2 and 3 of their renewal funding.

VII. Agency Contact

FOR FURTHER INFORMATION CONTACT: John Kuhn, Supportive SSVF Program Office, National Center on Homelessness Among Veterans, 4100 Chester Avenue, Suite 201, Philadelphia, PA 19104; (877) 737-0111 (this is a toll-free number); SSVF@va.gov.

VIII. Other Information

A. VA Goals and Objectives for Funds Awarded Under this NOFA: In accordance with 38 CFR 62.24(c), VA will evaluate an applicant's compliance with VA goals and requirements for the SSVF Program. VA goals and requirements include the provision of supportive services designed to enhance the housing stability and independent living skills of very low-income Veteran families occupying permanent housing across geographic regions and program administration in accordance with all applicable laws, regulations, and guidelines. For purposes of this NOFA, VA goals and requirements also include the provision of supportive services designed to rapidly re-house or prevent homelessness among people in the following target populations who also meet all requirements for being part of a very low-income Veteran family occupying permanent housing:

1. Veteran families earning less than 30 percent of area median income as most recently published by HUD for programs under section 8 of the United States Housing Act of 1937 (42 U.S.C. 1437f) (<http://www.huduser.org>).

2. Veterans with at least one dependent family member.

3. Veterans returning from Operation Enduring Freedom, Operation Iraqi Freedom, or Operation New Dawn.

4. Veteran families located in a community, as defined by HUD's CoC, or a county not currently served by a SSVF grantee.

5. Veteran families located in a community, as defined by HUD's CoC, where current level of SSVF services is not sufficient to meet demand of Category 2 and 3 (currently homeless) Veteran families.

6. Veteran families located in a rural area.

7. Veteran families located on Indian Tribal Property.

B. Payments of Supportive Services Grant Funds: Grantees will receive payments electronically through the U.S. Department of Health and Human Services Payment Management System. Grantees will have the ability to request payments as frequently as they choose subject to the following limitations:

1. During the first quarter of the grantee's supportive services annualized grant award period, the grantee's cumulative requests for supportive services grant funds may not exceed 35 percent of the total supportive services grant award without written approval by VA.

2. By the end of the second quarter of the grantee's supportive services annualized grant award period, the grantee's cumulative requests for supportive services grant funds may not exceed 60 percent of the total supportive services grant award without written approval by VA.

3. By the end of the third quarter of the grantee's supportive services annualized grant award period, the grantee's cumulative requests for supportive services grant funds may not exceed 80 percent of the total supportive services grant award without written approval by VA.

4. By the end of the fourth quarter of the grantee's supportive services annualized grant award period, the grantee's cumulative requests for supportive services grant funds may not exceed 100 percent of the total supportive services grant award.

Signing Authority

The Secretary of Veterans Affairs, or designee, approved this document and authorized the undersigned to sign and

submit the document to the Office of the Federal Register for publication electronically as an official document of the Department of Veterans Affairs. Robert L. Nabors II, Chief of Staff,

Department of Veterans Affairs, approved this document on January 7, 2016, for publication.

Dated: January 12, 2016.

Michael P. Shores,

Chief Impact Analyst, Office of Regulation Policy & Management, Office of the General Counsel, Department of Veterans Affairs.

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Part II

Department of Energy

10 CFR Part 430

Energy Conservation Program: Energy Conservation Standards for
Residential Boilers; Final Rule

DEPARTMENT OF ENERGY**10 CFR Part 430**

[Docket Number EERE-2012-BT-STD-0047]

RIN 1904-AC88

Energy Conservation Program: Energy Conservation Standards for Residential Boilers

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Final rule.

SUMMARY: The Energy Policy and Conservation Act of 1975 (EPCA), as amended, prescribes energy conservation standards for various consumer products and certain commercial and industrial equipment, including residential boilers. EPCA also requires the U.S. Department of Energy (DOE) to periodically determine whether more-stringent, amended standards would be technologically feasible and economically justified, and would save a significant amount of energy. In this final rule, DOE is adopting more-stringent energy conservation standards for residential boilers. It has determined that the amended energy conservation standards for these products would result in significant conservation of energy, and are technologically feasible and economically justified.

DATES: The effective date of this rule is March 15, 2016. Compliance with the amended standards established for residential boilers in this final rule is required on and after January 15, 2021.

ADDRESSES: The docket for this rulemaking, which includes **Federal Register** notices, public meeting attendee lists and transcripts, comments, and other supporting documents/materials, is available for review at www.regulations.gov. All documents in the docket are listed in the www.regulations.gov index. However, not all documents listed in the index may be publicly available, such as information that is exempt from public disclosure.

A link to the docket Web page can be found at: <http://www.regulations.gov/#/docketDetail;D=EERE-2012-BT-STD-0047>. The www.regulations.gov Web page contains simple instructions on how to access all documents, including public comments, in the docket.

For further information on how to review the docket, contact Ms. Brenda Edwards at (202) 586-2945 or by email: Brenda.Edwards@ee.doe.gov.

FOR FURTHER INFORMATION CONTACT: Mr. John Cymbalsky, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, EE-5B, 1000 Independence Avenue SW., Washington, DC 20585-0121. Telephone: (202) 287-1692. Email: residential_furnaces_and_boilers@ee.doe.gov.

Mr. Eric Stas, U.S. Department of Energy, Office of the General Counsel, GC-33, 1000 Independence Avenue SW., Washington, DC 20585-0121. Telephone: (202) 586-9507. Email: Eric.Stas@hq.doe.gov.

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I. Synopsis of the Final Rule

Title III, Part B¹ of the Energy Policy and Conservation Act of 1975 (EPCA or the Act), Public Law 94–163 (42 U.S.C. 6291–6309, as codified), established the Energy Conservation Program for Consumer Products Other Than Automobiles.² These products include residential boilers, the subject of this document.

Pursuant to EPCA, any new or amended energy conservation standard must be designed to achieve the maximum improvement in energy efficiency that DOE determines is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A)) Furthermore, the new or amended standard must result in a significant conservation of energy. (42 U.S.C. 6295(o)(3)(B)) EPCA specifically provides that DOE must conduct a second round of energy conservation standards rulemaking for residential boilers. (42 U.S.C. 6295(f)(4)(C)) The statute also provides that not later than 6 years after issuance of any final rule establishing or amending a standard, DOE must publish either a notice of determination that standards for the product do not need to be amended, or a notice of proposed rulemaking including new proposed energy conservation standards (proceeding to a

final rule, as appropriate). (42 U.S.C. 6295(m)) DOE initiated this rulemaking as required by 42 U.S.C. 6295(f)(4)(C), but once complete, this rulemaking will also satisfy the 6-year review provision under 42 U.S.C. 6295(m).

Furthermore, EISA 2007 amended EPCA to require that any new or amended energy conservation standard adopted after July 1, 2010, shall address standby mode and off mode energy consumption pursuant to 42 U.S.C. 6295(o). (42 U.S.C. 6295(gg)(3)) If feasible, the statute directs DOE to incorporate standby mode and off mode energy consumption into a single standard with the product's active mode energy use. If a single standard is not feasible, DOE may consider establishing a separate standard to regulate standby mode and off mode energy consumption.

In accordance with these and other statutory provisions discussed in this document, DOE is adopting amended annual fuel utilization efficiency (AFUE) energy conservation standards and adopting new standby mode off mode electrical energy conservation standards for residential boilers. The AFUE standards for residential boilers are expressed as minimum AFUE, as determined by the DOE test method (described in section III.B), and are shown in Table I.1, as are the design requirements. Table I.2 shows the standards for standby mode and off mode. These standards apply to all residential boilers listed in Table I.1 and Table I.2 and manufactured in, or imported into, the United States starting on the date five years after January 15, 2021.

TABLE I.1—AFUE ENERGY CONSERVATION STANDARDS FOR RESIDENTIAL BOILERS

[Compliance starting January 15, 2021]

Product class *	AFUE ** (%)	Design requirement
Gas-fired hot water boiler	84	Constant-burning pilot not permitted. Automatic means for adjusting water temperature required (except for boilers equipped with tankless domestic water heating coils).
Gas-fired steam boiler	82	Constant-burning pilot not permitted.
Oil-fired hot water boiler	86	Automatic means for adjusting temperature required (except for boilers equipped with tankless domestic water heating coils).
Oil-fired steam boiler	85	None.
Electric hot water boiler	None	Automatic means for adjusting temperature required (except for boilers equipped with tankless domestic water heating coils).
Electric steam boiler	None	None.

* Product classes are separated by fuel source—gas, oil, or electricity—and heating medium—steam or hot water. See section IV.A.2 for a discussion of product classes.

** AFUE is an annualized fuel efficiency metric that fully accounts for fossil-fuel energy consumption in active, standby, and off modes. See section III.B for a discussion of the AFUE test method.

¹ For editorial reasons, upon codification in the U.S. Code, Part B was redesignated Part A.

² All references to EPCA in this document refer to the statute as amended through the Energy

Efficiency Improvement Act of 2015 (EEIA 2015), Public Law 114–11 (April 30, 2015).

TABLE I.2—ENERGY CONSERVATION STANDARDS FOR RESIDENTIAL BOILERS STANDBY MODE AND OFF MODE ELECTRICAL ENERGY CONSUMPTION

Product class	Standard: $P_{W,SB}$ (watts)	Standard: $P_{W,OFF}$ (watts)
Gas-fired hot water boiler	9	9
Gas-fired steam boiler	8	8
Oil-fired hot water boiler	11	11
Oil-fired steam boiler	11	11
Electric hot water boiler	8	8
Electric steam boiler	8	8

A. Benefits and Costs to Consumers

Table I.3 presents DOE's evaluation of the economic impacts of the adopted AFUE and standby mode and off mode standards on consumers of residential boilers, as measured by the average life-cycle cost (LCC) savings and the simple

payback period (PBP).³ Table I.4 presents the same results for standby mode and off mode. The average LCC savings are positive for all product classes, and the PBP is less than the average boiler lifetime, which is estimated to be 26.6 years for gas-fired hot water boilers and electric hot water

boilers, 23.6 years for gas-fired steam boilers and electric steam boilers, 24.7 for oil-fired hot water boilers, and 19.3 years for oil-fired steam boilers.⁴ DOE has not conducted an analysis of an AFUE standard level for electric boilers as the efficiency of these products already approaches 100 percent AFUE.

TABLE I.3—IMPACTS OF AMENDED AFUE ENERGY CONSERVATION STANDARDS ON CONSUMERS OF RESIDENTIAL BOILERS

Product class	Average LCC savings (2014\$)	Simple payback period (years)
Gas-fired Hot Water Boiler	364	1.2
Gas-fired Steam Boiler	333	2.7
Oil-fired Hot Water Boiler	626	5.8
Oil-fired Steam Boiler	434	6.7
Electric Hot Water Boiler	(*)	(*)
Electric Steam Boiler	(*)	(*)

* N/A (No Standard).

TABLE I.4—IMPACTS OF STANDBY MODE AND OFF MODE ELECTRICAL ENERGY CONSERVATION STANDARDS ON CONSUMERS OF RESIDENTIAL BOILERS

Product class	Average LCC savings (2014\$)	Simple payback period (years)
Gas-fired Hot Water Boiler	15	6.7
Gas-fired Steam Boiler	18	6.4
Oil-fired Hot Water Boiler	20	6.2
Oil-fired Steam Boiler	13	6.1
Electric Hot Water Boiler	8	8.9
Electric Steam Boiler	6	8.8

Estimates of the combined impact of the adopted AFUE and standby mode and off mode standards on consumers are shown in Table I.5.

TABLE I.5—COMBINED IMPACTS OF ADOPTED AFUE AND STANDBY MODE AND OFF MODE ENERGY CONSERVATION STANDARDS ON CONSUMERS OF RESIDENTIAL BOILERS

Product class	Average LCC savings (2014\$)	Simple payback period (years)
Gas-Fired Hot Water Boiler	379	2.3
Gas-Fired Steam Boiler	351	4.2
Oil-Fired Hot Water Boiler	646	6.6
Oil-Fired Steam Boiler	447	7.4
Electric Hot Water Boiler	8	8.9
Electric Steam Boiler	6	8.8

³ The average LCC savings are measured relative to the efficiency distribution in the no-new-standards case, which depicts the market in the compliance year in the absence of standards (see

section IV.F.8). The simple PBP, which is designed to compare specific efficiency levels, is measured relative to the baseline model (see section IV.C.1.a and chapter 5 of the final rule TSD).

⁴ DOE used a distribution of boiler lifetimes that ranges from 1 to 60 years. See appendix 8F of the final rule TSD for details of the derivation of the average boiler lifetime.

DOE's analysis of the impacts of the adopted standards on consumers is described in section IV.F of this document.

B. Impact on Manufacturers

The industry net present value (INPV) is the sum of the discounted cash flows to the industry from the base year through the end of the analysis period (2014 to 2050). Using a real discount rate of 8.0 percent, DOE estimates that the (INPV) for manufacturers of residential boilers in the base case without amended standards is \$367.83 million in 2014\$.

DOE analyzed the impacts of AFUE energy conservation standards and standby/off mode electrical energy consumption energy conservation standards on manufacturers separately. Under the adopted AFUE standards, DOE expects that the change in INPV will range from -0.71 to 0.44 percent, which is approximately equivalent to a reduction of -\$2.63 million to an increase of \$1.62 million. DOE estimates industry conversion costs from the amended AFUE standards to total \$2.27 million.

Under the adopted standby mode and off mode standards, DOE expects the change in INPV will range from -0.46 to 0.12 percent, which is approximately equivalent to a decrease of \$1.71 million to an increase of \$0.45 million. DOE estimates industry conversion costs from the standby mode and off mode standards to total \$0.21 million.

DOE's analysis of the impacts of the adopted standards on manufacturers is described in section IV.J of this final rule.

C. National Benefits⁵

DOE's analyses indicate that the adopted AFUE energy conservation standards for residential boilers are expected to save a significant amount of energy. Relative to the case without amended standards, the lifetime energy savings for residential boilers purchased in the 30-year period that begins in the

first full year of compliance with the amended standards (2021–2050) amount to 0.16 quadrillion Btu (quads).⁶ This represents a savings of 0.6 percent relative to the energy use of these products in the case without amended standards (referred to as the “no-new-standards case”).

The cumulative net present value (NPV) of total consumer costs and savings for the amended residential boilers AFUE standards ranges from \$0.35 billion to \$1.20 billion at 7-percent and 3-percent discount rates, respectively. This NPV expresses the estimated total value of future operating-cost savings minus the estimated increased product costs for residential boilers purchased in 2021–2050.

In addition, the amended AFUE standards for residential boilers are expected to have significant environmental benefits. DOE estimates that the AFUE standards would result in cumulative emission reductions (over the same period as for energy savings) of 9.33 million metric tons (Mt)⁷ of carbon dioxide (CO₂), 2.075 thousand tons of sulfur dioxide (SO₂), 122.3 tons of nitrogen oxides (NO_x), 71.9 thousand tons of methane (CH₄), 0.09 thousand tons of nitrous oxide (N₂O), and 0.45 pounds of mercury (Hg).⁸ The cumulative reduction in CO₂ emissions through 2030 amounts to 0.77 Mt, which is equivalent to the emissions resulting from the annual electricity use of more than 70,000 homes.

⁶ A quad is equal to 10¹⁵ British thermal units (Btu). The quantity refers to full-fuel-cycle (FFC) energy savings. FFC energy savings includes the energy consumed in extracting, processing, and transporting primary fuels (*i.e.*, coal, natural gas, petroleum fuels), and, thus, presents a more complete picture of the impacts of energy efficiency standards. For more information on the FFC metric, see section IV.H.2.

⁷ A metric ton is equivalent to 1.1 short tons. Results for gases other than CO₂ are presented in short tons.

⁸ DOE calculated emissions reductions relative to the no-new-standards-case, which reflects key assumptions in the *Annual Energy Outlook 2015* (AEO 2015) Reference case, which generally represents current legislation and environmental regulations for which implementing regulations were available as of October 31, 2014. DOE notes that the amended AFUE standards are estimated to cause a very slight increase in mercury emissions due to associated increase in boiler electricity use.

The value of the CO₂ reductions is calculated using a range of values per metric ton of CO₂ (otherwise known as the “Social Cost of Carbon”, or SCC) developed by a Federal interagency working group (IWG).⁹ The derivation of the SCC values is discussed in section IV.L. Using discount rates appropriate for each set of SCC values, DOE estimates that the net present monetary value of the CO₂ emissions reduction (not including CO₂-equivalent emissions of other gases with global warming potential) from residential boiler AFUE standards is between \$0.053 billion and \$0.802 billion, with a value of \$0.263 billion using the central SCC case represented by \$40.0/t in 2015. DOE also estimates that the net present monetary value of the NO_x emissions reduction to be \$0.109 billion at a 7-percent discount rate, and \$0.328 billion at a 3-percent discount rate.¹⁰

Table I.6 summarizes the national economic benefits and costs expected to result from the adopted AFUE standards for residential boilers.

⁹ *Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866*, Interagency Working Group on Social Cost of Carbon, United States Government (May 2013; revised July 2015) (Available at: <https://www.whitehouse.gov/sites/default/files/omb/inforeg/scc-ts-d-final-july-2015.pdf>).

¹⁰ DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the Regulatory Impact Analysis titled, “Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants,” published in June 2014 by EPA's Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposalRIAfinal0602.pdf>.) See section IV.L.2 for further discussion. Note that the agency is presenting a national benefit-per-ton estimate for particulate matter emitted from the Electricity Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). If the benefit-per-ton estimates were based on the Six Cities study (Lepule et al., 2011), the values would be nearly two-and-a-half times larger. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emissions, DOE intends to investigate refinements to the agency's current approach of one national estimate by assessing the regional approach taken by EPA's Regulatory Impact Analysis for the Clean Power Plan Final Rule. Note that DOE is currently investigating valuation of avoided and SO₂ and Hg emissions.

⁵ All monetary values in this document are expressed in 2014 dollars and, where appropriate, are discounted to 2015 unless explicitly stated otherwise. Energy savings in this section refer to full-fuel-cycle savings (see section IV.H for discussion).

TABLE I.6—SUMMARY OF NATIONAL ECONOMIC BENEFITS AND COSTS OF AMENDED AFUE ENERGY CONSERVATION STANDARDS FOR RESIDENTIAL BOILERS (TSL 3) *

Category	Present value billion 2014\$	Discount rate %
Benefits		
Consumer Operating Cost Savings	0.500	7
	1.468	3
CO ₂ Reduction Value (\$12.2/t case) **	0.053	5
CO ₂ Reduction Value (\$40.0/t case) **	0.263	3
CO ₂ Reduction Value (\$62.3/t case) **	0.425	2.5
CO ₂ Reduction Value (\$117/t case) **	0.802	3
NO _x Reduction Value †	0.109	7
	0.328	3
Total Benefits ††	0.872	7
	2.058	3
Costs		
Consumer Incremental Installed Costs	0.150	7
	0.270	3
Total Net Benefits		
Including Emissions Reduction Value ††	0.722	7
	1.789	3

* This table presents the costs and benefits associated with residential boilers shipped in 2021–2050. These results include benefits to consumers which accrue after 2050 from the products purchased in 2021–2050.

** The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

† The \$/ton values used for NO_x are described in section IV.L.2. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the Regulatory Impact Analysis titled, “Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants,” published in June 2014 by EPA’s Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposalRIAFinal0602.pdf>.) See section IV.L.2 for further discussion. Note that the agency is presenting a national benefit-per-ton estimate for particulate matter emitted from the Electricity Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). If the benefit-per-ton estimates were based on the Six Cities study (Lepuele et al., 2011), the values would be nearly two-and-a-half times larger. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emissions, DOE intends to investigate refinements to the agency’s current approach of one national estimate by assessing the regional approach taken by EPA’s Regulatory Impact Analysis for the Clean Power Plan Final Rule.

†† Total Benefits for both the 3% and 7% cases are derived using the series corresponding to average SCC with 3-percent discount rate (\$40.0/t case).

For the adopted standby mode and off mode standards, the lifetime energy savings for residential boilers purchased in the 30-year period that begins in the first full year of compliance with amended standards (2021–2050) amount to 0.0026 quads. This is a savings of 1.2 percent relative to the standby energy use of these products in the no-new-standards case.

The cumulative NPV of total consumer costs and savings for the adopted standby mode and off mode standards for residential boilers ranges from \$0.003 billion to \$0.014 billion at 7-percent and 3-percent discount rates, respectively. This NPV expresses the estimated total value of future operating-cost savings minus the estimated increased product costs for residential boilers purchased in 2021–2050.

In addition, the standby mode and off mode standards are expected to have significant environmental benefits. The energy savings are expected to result in cumulative emission reductions (over the same period as for energy savings) of 0.154 Mt of CO₂, 0.087 thousand tons of SO₂, 0.278 thousand tons of NO_x, 0.669 thousand tons of CH₄, 0.0018 thousand tons of N₂O, and 0.642 pounds of Hg. The cumulative reduction in CO₂ emissions through 2030 amounts to 0.013 Mt, which is equivalent to the emissions resulting from the annual electricity use of approximately 1,200 homes.

As noted above, the value of the CO₂ reductions is calculated using a range of values per metric ton of CO₂ (otherwise known as the SCC) developed by a Federal interagency IWG. The derivation of the SCC values is

discussed in section IV.L. Using discount rates appropriate for each set of SCC values, DOE estimates that the net present monetary value of the CO₂ emissions reduction from standby mode and off mode standards for residential boilers is between \$0.001 billion and \$0.013 billion, with a value of \$0.004 billion using the central SCC case represented by \$40.0/t in 2015. DOE also estimates that the net present monetary value of the NO_x emissions reduction to be \$0.0002 billion at a 7-percent discount rate, and \$0.0007 billion at a 3-percent discount rate.

Table I.7 summarizes the national economic benefits and costs expected to result from the adopted standby mode and off mode standards for residential boilers.

TABLE I.7—SUMMARY OF NATIONAL ECONOMIC BENEFITS AND COSTS OF ADOPTED STANDBY MODE AND OFF MODE ENERGY CONSERVATION STANDARDS FOR RESIDENTIAL BOILERS (TSL 3) *

Category	Present value (billion 2014\$)	Discount rate (%)
Benefits		
Consumer Operating Cost Savings	0.007	7
	0.022	3
CO ₂ Reduction Value (\$12.2/t case) **	0.001	5
CO ₂ Reduction Value (\$40.0/t case) **	0.004	3
CO ₂ Reduction Value (\$62.3/t case) **	0.007	2.5
CO ₂ Reduction Value (\$117/t case) **	0.013	3
NO _x Reduction Value †	0.0002	7
	0.0007	3
Total Benefits ††	0.012	7
	0.027	3
Costs		
Consumer Incremental Installed Costs	0.004	7
	0.008	3
Total Net Benefits		
Including Emissions Reduction Value ††	0.008	7
	0.019	3

* This table presents the costs and benefits associated with residential boilers shipped in 2021–2050. These results include benefits to consumers which accrue after 2050 from the products purchased in 2021–2050.

** The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

† The \$/ton values used for NO_x are described in section IV.L.2. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the Regulatory Impact Analysis titled, “Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants,” published in June 2014 by EPA’s Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposalRIAFinal0602.pdf>.) See section IV.L.2 for further discussion. Note that the agency is presenting a national benefit-per-ton estimate for particulate matter emitted from the Electricity Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski *et al.*, 2009). If the benefit-per-ton estimates were based on the Six Cities study (Lepuele *et al.*, 2011), the values would be nearly two-and-a-half times larger. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emissions, DOE intends to investigate refinements to the agency’s current approach of one national estimate by assessing the regional approach taken by EPA’s Regulatory Impact Analysis for the Clean Power Plan Final Rule.

†† Total Benefits for both the 3% and 7% cases are derived using the series corresponding to average SCC with 3-percent discount rate (\$40.0/t case).

The benefits and costs of the adopted energy conservation standards, for residential boiler products sold in 2021–2050, can also be expressed in terms of annualized values. Benefits and costs for the AFUE standards are considered separately from benefits and costs for the standby mode and off mode electrical consumption standards, because for the reasons explained in section I.D below, it was not technically feasible to develop a single, integrated standard. The monetary values for the total annualized net benefits are the sum of: (1) The national economic value of the benefits in reduced consumer operating cost, minus (2) the increases in product purchase price and installation costs, plus (3) the value of the benefits of CO₂ and NO_x emission reductions, all annualized.¹¹

¹¹ To convert the time-series of costs and benefits into annualized values, DOE calculated a present value in 2015, the year used for discounting the NPV of total consumer costs and savings. For the benefits, DOE calculated a present value associated with each year’s shipments in the year in which the shipments occur (*e.g.*, 2021 or 2030), and then

Although the value of operating cost savings and CO₂ emission reductions are both important, two issues are relevant. First, the national operating cost savings are domestic U.S. consumer monetary savings that occur as a result of market transactions, whereas the value of CO₂ reductions is based on a global value. Second, the assessments of operating cost savings and CO₂ savings are performed with different methods that use different time frames for analysis. The national operating cost savings is measured for the lifetime of residential boilers shipped in 2021–2050. Because CO₂ emissions have a very long residence time in the atmosphere,¹² the SCC values in future

discounted the present value from each year to 2015. The calculation uses discount rates of 3 and 7 percent for all costs and benefits except for the value of CO₂ reductions, for which DOE used case-specific discount rates, as shown in Table I.7. Using the present value, DOE then calculated the fixed annual payment over a 30-year period, starting in the compliance year, that yields the same present value.

¹² The atmospheric lifetime of CO₂ is estimated of the order of 30–95 years. Jacobson, MZ (2005),

years reflect future CO₂-emissions impacts that continue beyond 2100.

Estimates of annualized benefits and costs of the adopted AFUE standards for residential boilers are shown in Table I.8.

The results under the primary estimate are as follows. Using a 7-percent discount rate for benefits and costs other than CO₂ reduction (for which DOE used a 3-percent discount rate along with the SCC series that has a value of \$40.0/t in 2015),¹³ the estimated cost of the AFUE standards in this rule is \$17.0 million per year in increased equipment costs, while the estimated annual benefits are \$56.5 million in reduced equipment operating costs, \$15.5 million in CO₂ reductions, and \$12.3 million in reduced NO_x

“Correction to ‘Control of fossil-fuel particulate black carbon and organic matter, possibly the most effective method of slowing global warming,’” *J. Geophys. Res.* 110. pp. D14105.

¹³ DOE used a 3-percent discount rate because the SCC values for the series used in the calculation were derived using a 3-percent discount rate (see section IV.L).

emissions. In this case, the net benefit amounts to \$67.4 million per year. Using a 3-percent discount rate for all benefits and costs and the SCC series that has a value of \$40.0/t in 2015, the

estimated cost of the AFUE standards is \$15.9 million per year in increased equipment costs, while the estimated annual benefits are \$86.8 million in reduced operating costs, \$15.5 million

in CO₂ reductions, and \$19.4 million in reduced NO_x emissions. In this case, the net benefit amounts to \$105.8 million per year.

TABLE I.8—ANNUALIZED BENEFITS AND COSTS OF AMENDED AFUE ENERGY CONSERVATION STANDARDS FOR RESIDENTIAL BOILERS (TSL 3) *

	Discount rate %	(Million 2014\$/year)		
		Primary estimate *	Low net benefits estimate *	High net benefits estimate *
Benefits				
Consumer Operating Cost Savings	7	56.5	53.5	60.1
	3	86.8	81.6	92.8
CO ₂ Reduction Value (\$12.2/t case) **	5	4.4	4.3	4.5
CO ₂ Reduction Value (\$40.0/t case) **	3	15.5	15.3	15.8
CO ₂ Reduction Value (\$62.3/t case) **	2.5	23.0	22.7	23.4
CO ₂ Reduction Value (\$117/t case) **	3	47.5	46.8	48.3
NO _x Reduction Value †	7	12.3	12.2	28.0
	3	19.4	19.2	43.2
Total Benefits ††	7 plus CO ₂ range ...	73 to 116	70 to 112	93 to 136
	7	84.4	81.0	104.0
	3 plus CO ₂ range ...	111 to 154	105 to 148	141 to 184
	3	121.7	116.1	151.9
Costs				
Consumer Incremental Installed Costs	7	17.0	19.9	14.7
	3	15.9	19.2	13.4
Net Benefits				
Total ††	7 plus CO ₂ range ...	56 to 99	50 to 93	78 to 122
	7	67.4	61.1	89.3
	3 plus CO ₂ range ...	95 to 138	86 to 128	127 to 171
	3	105.8	96.9	138.5

This table presents the annualized costs and benefits associated with residential boilers shipped in 2021–2050. These results include benefits to consumers which accrue after 2050 from the products purchased in 2021–2050. The Primary, Low Benefits, and High Benefits Estimates utilize projections of energy prices from the AEO 2015 Reference case, Low Economic Growth case, and High Economic Growth case, respectively. In addition, incremental product costs reflect a medium decline rate in the Primary Estimate, a low decline rate in the Low Benefits Estimate, and a high decline rate in the High Benefits Estimate. The methods used to derive projected price trends are explained in section IV.F.1.

** The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

† The \$/ton values used for NO_x are described in section IV.L. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the Regulatory Impact Analysis titled, “Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants,” published in June 2014 by EPA’s Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposal/RIAFinal0602.pdf>.) For DOE’s Primary Estimate and Low Net Benefits Estimate, the agency is presenting a national benefit-per-ton estimate for particulate matter emitted from the Electric Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). For DOE’s High Net Benefits Estimate, the benefit-per-ton estimates were based on the Six Cities study (Lepuele et al., 2011), which are nearly two-and-a-half times larger than those from the ACS study. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emission, DOE intends to investigate refinements to the agency’s current approach of one national estimate by assessing the regional approach taken by EPA’s Regulatory Impact Analysis for the Clean Power Plan Final Rule.

†† Total benefits for both the 3% and 7% cases are derived using the series corresponding to the average SCC with the 3-percent discount rate (\$40.0/t) case. In the rows labeled “7% plus CO₂ range” and “3% plus CO₂ range,” the operating cost and NO_x benefits are calculated using the labeled discount rate, and those values are added to the full range of CO₂ values.

Estimates of annualized benefits and costs of the adopted standby mode and off mode standards are shown in Table I.9. The results under the primary estimate are as follows. Using a 7-percent discount rate for benefits and costs other than CO₂ reduction (for which DOE used a 3-percent discount rate along with the SCC series that has a value of \$40.0/t in 2015), the estimated cost of the residential boiler

standby mode and off mode standards in this rule is \$0.46 million per year in increased equipment costs, while the estimated annual benefits are \$0.84 million in reduced equipment operating costs, \$0.25 million in CO₂ reductions, and \$0.03 million in reduced NO_x emissions. In this case, the net benefit amounts to \$0.66 million per year. Using a 3-percent discount rate for all benefits and costs and the SCC series

that has a value of \$40.0/t in 2015, the estimated cost of the AFUE standards is \$0.46 million per year in increased equipment costs, while the estimated annual benefits are \$1.28 million in reduced operating costs, \$0.25 million in CO₂ reductions, and \$0.04 million in reduced NO_x emissions. In this case, the net benefit amounts to \$1.11 million per year.

TABLE I.9—ANNUALIZED BENEFITS AND COSTS OF ADOPTED STANDBY MODE AND OFF MODE ENERGY CONSERVATION STANDARDS FOR RESIDENTIAL BOILERS (TSL 3)*

	Discount rate (%)	(Million 2014\$/year)		
		Primary estimate *	Low net benefits estimate *	High net benefits estimate *
Benefits				
Consumer Operating Cost Savings	7	0.84	0.81	0.89
	3	1.28	1.25	1.38
CO ₂ Reduction Value (\$12.2/t case) **	5	0.07	0.07	0.07
CO ₂ Reduction Value (\$40.0/t case) **	3	0.25	0.25	0.26
CO ₂ Reduction Value (\$62.3/t case) **	2.5	0.37	0.36	0.38
CO ₂ Reduction Value (\$117/t case) **	3	0.77	0.75	0.79
NO _X Reduction Value †	7	0.03	0.03	0.06
	3	0.04	0.04	0.10
Total Benefits ††	7 plus CO ₂ range	0.94 to 1.63	0.91 to 1.59	1.02 to 1.74
	7	1.12	1.09	1.21
	3 plus CO ₂ range	1.40 to 2.09	1.36 to 2.04	1.54 to 2.26
	3	1.58	1.54	1.73
Costs				
Consumer Incremental Installed Costs	7	0.46	0.45	0.47
	3	0.46	0.45	0.47
Net Benefits				
Total ††	7 plus CO ₂ range	0.48 to 1.17	0.46 to 1.14	0.55 to 1.26
	7	0.66	0.63	0.73
	3 plus CO ₂ range	0.93 to 1.63	0.91 to 1.59	1.07 to 1.78
	3	1.11	1.09	1.25

* This table presents the annualized costs and benefits associated with residential boilers shipped in 2021–2050. These results include benefits to consumers which accrue after 2050 from the products purchased in 2021–2050. The Primary, Low Benefits, and High Benefits Estimates utilize projections of energy prices from the AEO 2015 Reference case, Low Economic Growth case, and High Economic Growth case, respectively.

** The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

† The \$/ton values used for NO_x are described in section IV.L. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the Regulatory Impact Analysis titled, “Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants,” published in June 2014 by EPA’s Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposal/RIAFinal0602.pdf>.) For DOE’s Primary Estimate and Low Net Benefits Estimate, the agency is presenting a national benefit-per-ton estimate for particulate matter emitted from the Electric Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). For DOE’s High Net Benefits Estimate, the benefit-per-ton estimates were based on the Six Cities study (Lepuele et al., 2011), which are nearly two-and-a-half times larger than those from the ACS study. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emission, DOE intends to investigate refinements to the agency’s current approach of one national estimate by assessing the regional approach taken by EPA’s Regulatory Impact Analysis for the Clean Power Plan Final Rule.

†† Total benefits for both the 3% and 7% cases are derived using the series corresponding to the average SCC with the 3-percent discount rate (\$40.0/t) case. In the rows labeled “7% plus CO₂ range” and “3% plus CO₂ range,” the operating cost and NO_x benefits are calculated using the labeled discount rate, and those values are added to the full range of CO₂ values.

DOE’s analysis of the national impacts of the adopted standards is described in sections IV.H, IV.K, and IV.L of this notice.

Based on the analyses culminating in this final rule, DOE found the benefits to the Nation of the standards (energy savings, positive NPV of consumer benefits, consumer LCC savings, and emission reductions) for both AFUE as well as standby mode and off would outweigh the burdens (loss of INPV for manufacturers and LCC increases for some consumers). DOE has concluded that the standards in this final rule represent the maximum improvement in energy efficiency that is technologically feasible and economically justified, and

would result in significant conservation of energy.

DOE also added the annualized benefits and costs from the individual annualized tables to provide a combined benefit and cost estimate of the adopted AFUE and standby mode and off mode standards, as shown in Table I.10.¹⁴ The results under the primary estimate are as follows. Using a 7-percent discount rate for benefits and costs other than CO₂ reduction (for which DOE used a 3-percent discount rate along with the SCC series that has a value of \$40.0/t in 2015), the estimated cost of the residential boiler AFUE and standby

¹⁴ To obtain the combined results, DOE added the results for the AFUE standards in Table I.8 with the results for the standby standards in Table I.9.

mode and off mode standards in this rule is \$17.4 million per year in increased equipment costs, while the estimated annual benefits are \$57.4 million in reduced equipment operating costs, \$15.8 million in CO₂ reductions, and \$12.4 million in reduced NO_x emissions. In this case, the net benefit amounts to \$68.1 million per year. Using a 3-percent discount rate for all benefits and costs and the SCC series that has a value of \$40.0/t in 2015, the estimated cost of the residential boiler AFUE and standby mode and off mode standards in this rule is \$16.4 million per year in increased equipment costs, while the estimated annual benefits are \$88.1 million in reduced equipment operating costs, \$15.8 million in CO₂

reductions, and \$19.4 million in net benefit amounts to \$106.9 million reduced NO_x emissions. In this case, the per year.

TABLE I.10—ANNUALIZED BENEFITS AND COSTS OF ADOPTED AFUE AND STANDBY MODE AND OFF MODE ENERGY CONSERVATION STANDARDS FOR RESIDENTIAL BOILERS (TSL 3) *

	Discount rate	(Million 2014\$/year)		
		Primary estimate *	Low net benefits estimate *	High net benefits estimate *
Benefits				
Consumer Operating Cost Savings	7%	57.4	54.3	61.0.
	3%	88.1	82.8	94.2.
CO ₂ Reduction Value (\$12.2/t case) **	5%	4.5	4.4	4.6.
CO ₂ Reduction Value (\$40.0/t case) **	3%	15.8	15.6	16.1.
CO ₂ Reduction Value (\$62.3/t case) **	2.5%	23.4	23.0	23.8.
CO ₂ Reduction Value (\$117/t case) **	3%	48.2	47.5	49.1.
NO _x Reduction Value †	7%	12.4	12.2	28.0.
	3%	19.4	19.2	43.3.
Total Benefits ††	7% plus CO ₂ range.	74.2 to 117.9	70.9 to 114	93.6 to 138.
	7%	85.5	82.1	105.
	3% plus CO ₂ range.	112 to 156	106 to 150	142 to 187.
	3%	123.3	117.6	153.6.
Costs				
Consumer Incremental Product Costs	7%	17.4	20.3	15.1.
	3%	16.4	19.6	13.9.
Net Benefits				
Total ††	7% plus CO ₂ range.	56.8 to 100	50.6 to 93.7	78.5 to 123.
	7%	68.1	61.8	90.0.
	3% plus CO ₂ range.	95.6 to 139	86.8 to 130	128 to 173.
	3%	106.9	98.0	139.7.

* This table presents the annualized costs and benefits associated with residential boilers shipped in 2021–2050. These results include benefits to consumers which accrue after 2050 from the products purchased in 2021–2050. The Primary, Low Benefits, and High Benefits Estimates utilize projections of energy prices from the AEO 2015 Reference case, Low Economic Growth case, and High Economic Growth case, respectively. In addition, incremental product costs reflect a medium decline rate in the Primary Estimate, a low decline rate in the Low Benefits Estimate, and a high decline rate in the High Benefits Estimate. The methods used to derive projected price trends are explained in section IV.F.1.

** The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

† The \$/ton values used for NO_x are described in section IV.L. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the Regulatory Impact Analysis titled, “Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants,” published in June 2014 by EPA’s Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposal/RIAFinal0602.pdf>.) For DOE’s Primary Estimate and Low Net Benefits Estimate, the agency is presenting a national benefit-per-ton estimate for particulate matter emitted from the Electric Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). For DOE’s High Net Benefits Estimate, the benefit-per-ton estimates were based on the Six Cities study (Lepuele et al., 2011), which are nearly two-and-a-half times larger than those from the ACS study. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emission, DOE intends to investigate refinements to the agency’s current approach of one national estimate by assessing the regional approach taken by EPA’s Regulatory Impact Analysis for the Clean Power Plan Final Rule.

†† Total benefits for both the 3% and 7% cases are derived using the series corresponding to the average SCC with the 3-percent discount rate (\$40.0/t) case. In the rows labeled “7% plus CO₂ range” and “3% plus CO₂ range,” the operating cost and NO_x benefits are calculated using the labeled discount rate, and those values are added to the full range of CO₂ values.

D. Standby Mode and Off Mode

As discussed in section II.A of this final rule, any final rule for amended or new energy conservation standards that is published on or after July 1, 2010 must address standby mode and off mode energy use. (42 U.S.C. 6295(gg)(3)) As a result, DOE has analyzed and is adopting new energy conservation standards for the standby mode and off mode electrical energy consumption of residential boilers.

AFUE, the statutory metric for residential boilers, does not incorporate standby mode or off mode use of electricity, although it already fully addresses use in these modes of fossil fuels by gas-fired and oil-fired boilers. In the October 2010 test procedure final rule for residential furnaces and boilers, DOE determined that incorporating standby mode and off mode electricity consumption into a single standard for residential furnaces and boilers is not

technically feasible. 75 FR 64621, 64626–27 (Oct. 20, 2010). DOE concluded that a metric that integrates standby mode and off mode electricity consumption into AFUE is not technically feasible, because the standby mode and off mode energy usage, when measured, is essentially lost in practical terms due to rounding conventions for certifying furnace and boiler compliance with Federal energy conservation standards. *Id.* Therefore, in this final

rule, DOE is adopting amended boiler standards that are AFUE levels, which exclude standby mode and off mode electricity use; furthermore, DOE is adopting separate standards that are maximum wattage (W) levels to address the standby mode ($P_{W,SB}$) and off mode ($P_{W,OFF}$) electrical energy use of boilers. DOE also presents corresponding trial standard levels (TSLs) for energy consumption in standby mode and off mode. DOE has decided to use a maximum wattage requirement to regulate standby mode and off mode for boilers. DOE believes using an annualized metric could add unnecessary complexities, such as trying to estimate an assumed number of hours that a boiler typically spends in standby mode. Instead, DOE believes that a maximum wattage standard is the most straightforward metric for regulating standby mode and off mode energy consumption of boilers and will result in the least amount of industry and consumer confusion.

DOE is using the metrics just described—AFUE, $P_{W,SB}$, and $P_{W,OFF}$ —in the amended energy conservation standards in this rulemaking for residential boilers. This approach satisfies the mandate of 42 U.S.C. 6295(gg)(3) that amended standards address standby mode and off mode energy use. The various analyses performed by DOE to evaluate minimum standards for standby mode and off mode electrical energy consumption for boilers are discussed further in section IV.E of this final rule.

II. Introduction

The following section briefly discusses the statutory authority underlying this final rule, as well as some of the relevant historical background related to the establishment of standards for residential boilers.

A. Authority

Title III, Part B of the Energy Policy and Conservation Act of 1975 (EPCA or the Act), Pub. L. 94–163 (codified as 42 U.S.C. 6291–6309) established the Energy Conservation Program for Consumer Products Other Than Automobiles, a program covering most major household appliances (collectively referred to as “covered products”). These products include the residential boilers that are the subject of this rulemaking. (42 U.S.C. 6292(a)(5)) EPCA, as amended, prescribed energy conservation standards for these products (42 U.S.C. 6295(f)(1) and (3)), and directed DOE to conduct future rulemakings to determine whether to amend these standards (42 U.S.C. 6295(f)(4)). Under 42 U.S.C. 6295(m),

the agency must periodically review its already-established energy conservation standards for a covered product no later than 6 years from the issuance of a final rule establishing or amending a standard for a covered product. This rulemaking satisfies both statutory provisions (42 U.S.C. 6295(f)(4) and (m)).

Pursuant to EPCA, DOE’s energy conservation program for covered products consists essentially of four parts: (1) Testing; (2) labeling; (3) establishment of Federal energy conservation standards; and (4) certification and enforcement procedures. The Federal Trade Commission (FTC) is primarily responsible for labeling, and DOE implements the remainder of the program. Subject to certain criteria and conditions, DOE is required to develop test procedures to measure the energy efficiency, energy use, or estimated annual operating cost of each covered product. (42 U.S.C. 6295(o)(3)(A) and (r)) Manufacturers of covered products must use the prescribed DOE test procedure as the basis for certifying to DOE that their products comply with the applicable energy conservation standards adopted under EPCA and when making representations to the public regarding the energy use or efficiency of those products. (42 U.S.C. 6293(c) and 6295(s)) Similarly, DOE must use these test procedures to determine whether the products comply with standards adopted pursuant to EPCA. (42 U.S.C. 6295(s)) The DOE test procedure for residential boilers appears at title 10 of the Code of Federal Regulations (CFR) part 430, subpart B, appendix N. In 2012, DOE initiated a rulemaking to review the residential furnaces and boilers test procedure. In March 2015, DOE published a notice of proposed rulemaking (NPR) outlining the proposed changes to the test procedure. 80 FR 12876 (March 11, 2015). In January 2016, DOE published a final rule outlining the final changes made to the test procedure. (See EERE–2012–BT–TP–0024). Details regarding this rulemaking are discussed in section III.B.

DOE must follow specific statutory criteria for prescribing new or amended standards for covered products, including residential boilers. Any new or amended standard for a covered product must be designed to achieve the maximum improvement in energy efficiency that is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A) and (3)(B)) Furthermore, DOE may not adopt any standard that would not result in the significant conservation of energy. (42

U.S.C. 6295(o)(3)) Moreover, DOE may not prescribe a standard: (1) For certain products, including residential boilers, if no test procedure has been established for the product, or (2) if DOE determines by rule that the standard is not technologically feasible or economically justified. (42 U.S.C. 6295(o)(3)(A)–(B)) In deciding whether a proposed standard is economically justified, after receiving comments on the proposed standard, DOE must determine whether the benefits of the standard exceed its burdens. (42 U.S.C. 6295(o)(2)(B)(i)) DOE must make this determination by, to the greatest extent practicable, considering the following seven statutory factors:

(1) The economic impact of the standard on manufacturers and consumers of the products subject to the standard;

(2) The savings in operating costs throughout the estimated average life of the covered products in the type (or class) compared to any increase in the price, initial charges, or maintenance expenses for the covered products that are likely to result from the standard;

(3) The total projected amount of energy (or as applicable, water) savings likely to result directly from the standard;

(4) Any lessening of the utility or the performance of the covered products likely to result from the standard;

(5) The impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the standard;

(6) The need for national energy and water conservation; and

(7) Other factors the Secretary of Energy (Secretary) considers relevant. (42 U.S.C. 6295(o)(2)(B)(i)(I)–(VII))

Further, EPCA, as codified, establishes a rebuttable presumption that a standard is economically justified if the Secretary finds that the additional cost to the consumer of purchasing a product complying with an energy conservation standard level will be less than three times the value of the energy savings during the first year that the consumer will receive as a result of the standard, as calculated under the applicable test procedure. (42 U.S.C. 6295(o)(2)(B)(iii))

EPCA, as codified, also contains what is known as an “anti-backsliding” provision, which prevents the Secretary from prescribing any amended standard that either increases the maximum allowable energy use or decreases the minimum required energy efficiency of a covered product. (42 U.S.C. 6295(o)(1)) Also, the Secretary may not prescribe an amended or new standard if interested persons have established by

a preponderance of the evidence that the standard is likely to result in the unavailability in the United States in any covered product type (or class) of performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as those generally available in the United States. (42 U.S.C. 6295(o)(4))

Additionally, EPCA specifies requirements when promulgating an energy conservation standard for a covered product that has two or more subcategories. DOE must specify a different standard level for a type or class of product that has the same function or intended use, if DOE determines that products within such group: (A) Consume a different kind of energy from that consumed by other covered products within such type (or class); or (B) have a capacity or other performance-related feature that other products within such type (or class) do not have and such feature justifies a higher or lower standard. (42 U.S.C. 6295(q)(1)) In determining whether a performance-related feature justifies a

different standard for a group of products, DOE must consider such factors as the utility to the consumer of such a feature and other factors DOE deems appropriate. *Id.* Any rule prescribing such a standard must include an explanation of the basis on which such higher or lower level was established. (42 U.S.C. 6295(q)(2))

Federal energy conservation requirements generally supersede State laws or regulations concerning energy conservation testing, labeling, and standards. (42 U.S.C. 6297(a)–(c)) DOE may, however, grant waivers of Federal preemption for particular State laws or regulations, in accordance with the procedures and other provisions set forth under 42 U.S.C. 6297(d).

Finally, pursuant to the amendments contained in the Energy Independence and Security Act of 2007 (EISA 2007), Pub. L. 110–140, any final rule for new or amended energy conservation standards promulgated after July 1, 2010, is required to address standby mode and off mode energy use. (42 U.S.C. 6295(gg)(3)) Specifically, when

DOE adopts a standard for a covered product after that date, it must, if justified by the criteria for adoption of standards under EPCA (42 U.S.C. 6295(o)), incorporate standby mode and off mode energy use into a single standard, or, if that is not feasible, adopt a separate standard for such energy use for that product. (42 U.S.C. 6295(gg)(3)(A)–(B)). DOE's current test procedures for residential boilers address standby mode and off mode energy use. In this rulemaking, DOE adopts separate energy conservation standards to address standby mode and off mode energy use.

B. Background

1. Current Standards

In a final rule published on July 28, 2008 (2008 final rule), DOE prescribed energy conservation standards for residential boilers manufactured on or after September 1, 2012. 73 FR 43611. These standards are set forth in DOE's regulations at 10 CFR 430.32(e)(2)(ii) and are repeated in Table II.1 below.

TABLE II.1—FEDERAL ENERGY EFFICIENCY STANDARDS FOR RESIDENTIAL BOILERS

Product class	Minimum annual fuel utilization efficiency (%)	Design requirements
Gas-fired Hot Water Boiler	82	No Constant-Burning Pilot, Automatic Means for Adjusting Water Temperature.*
Gas-fired Steam Boiler	80	No Constant-Burning Pilot.
Oil-fired Hot Water Boiler	84	Automatic Means for Adjusting Temperature.*
Oil-fired Steam Boiler	82	None.
Electric Hot Water Boiler	None	Automatic Means for Adjusting Temperature.*
Electric Steam Boiler**	None	None.

* Excluding boilers equipped with a tankless domestic water heating coil.

** Although the “Electric steam boiler” product class is not included in the table at 10 CFR 430.32(e)(2)(ii), according to 42 U.S.C. 6295(f), there are no minimum AFUE or design requirements for these products. In order to clarify their status, DOE is including these products in both the AFUE and standby/off standards tables as part of this final rule.

2. History of Standards Rulemaking for Residential Boilers

Given the somewhat complicated interplay of recent DOE rulemakings and statutory provisions related to residential boilers, DOE provides the following regulatory history as background leading to the present rulemaking. On November 19, 2007, DOE published a final rule in the **Federal Register** (November 2007 final rule) revising the energy conservation standards for furnaces and boilers, which addressed the first required review of standards for boilers under 42 U.S.C. 6295(f)(4)(B). 72 FR 65136. Compliance with the standards in the November 2007 final rule would have been required by November 19, 2015. However, on December 19, 2007, EISA 2007, Pub. L. 110–140, was signed into

law, which further revised the energy conservation standards for residential boilers. More specifically, EISA 2007 amended EPCA to revise the AFUE requirements for residential boilers and set design requirements for most product classes. (42 U.S.C. 6295(f)(3)) EISA 2007 required compliance with the amended energy conservation standards for residential boilers beginning on September 1, 2012.

Only July 15, 2008, DOE issued a final rule technical amendment to the 2007 final rule, which was published in the **Federal Register** on July 28, 2008, to codify the energy conservation standard levels, the design requirements, and compliance dates for residential boilers outlined in EISA 2007. 73 FR 43611. For gas-fired hot water boilers, oil-fired hot water boilers, and electric hot water

boilers, EISA 2007 requires that residential boilers manufactured after September 1, 2012 have an automatic means for adjusting water temperature. (42 U.S.C. 6295(f)(3)(A)–(C); 10 CFR 430.32(e)(2)(ii)–(iv)) The automatic means for adjusting water temperature must ensure that an incremental change in the inferred heat load produces a corresponding incremental change in the temperature of the water supplied by the boiler. EISA 2007 also disallows the use of constant-burning pilot lights in gas-fired hot water boilers and gas-fired steam boilers.

DOE initiated this rulemaking pursuant to 42 U.S.C. 6295(f)(4)(C), which requires DOE to conduct a second round of amended standards rulemaking for residential boilers. EPCA, as amended by EISA 2007, also

requires that not later than 6 years after issuance of any final rule establishing or amending a standard, DOE must publish either a notice of the determination that standards for the product do not need to be amended, or a notice of proposed rulemaking including proposed energy conservation standards (proceeding to a final rule, as appropriate). (42 U.S.C. 6295(m)) This rulemaking will satisfy both statutory provisions.

Furthermore, EISA 2007 amended EPCA to require that any new or amended energy conservation standard adopted after July 1, 2010, shall address standby mode and off mode energy consumption pursuant to 42 U.S.C. 6295(o). (42 U.S.C. 6295(gg)(3)) If feasible, the statute directs DOE to incorporate standby mode and off mode energy consumption into a single standard with the product's active mode energy use. If a single standard is not feasible, DOE may consider establishing a separate standard to regulate standby mode and off mode energy consumption. Consequently, DOE considered standby mode and off mode energy use as part of this rulemaking for residential boilers.

DOE initiated this current rulemaking by issuing an analytical Framework Document, "Rulemaking Framework for Residential Boilers" (February 11, 2013). DOE published the notice of public meeting and availability of the Framework Document for residential boilers in the **Federal Register** on February 11, 2013. 78 FR 9631. The residential boiler energy conservation standards rulemaking docket is EERE-2012-BT-STD-0047. See: http://www1.eere.energy.gov/buildings/appliance_standards/rulemaking.aspx?ruleid=112.

The Framework Document explained the issues, analyses, and process that DOE anticipated using to develop energy conservation standards for residential boilers. DOE held a public meeting on March 13, 2013, to solicit comments from interested parties regarding DOE's analytical approach. The comment period for the Framework Document closed on March 28, 2013.

To further develop the energy conservation standards for residential boilers, DOE gathered additional information and performed an initial technical analysis. This process culminated in publication in the **Federal Register** on February 11, 2014, of the notice of data availability (NODA), which announced the availability of analytical results and modeling tools. 79 FR 8122. In that document, DOE presented its initial analysis of potential amended energy conservation standards for residential

boilers, and requested comment on the following matters discussed in the analysis: (1) The product classes and scope of coverage; (2) the analytical framework, models, and tools that DOE is using to evaluate potential standards; and (3) the results of the preliminary analyses performed by DOE. *Id.* DOE also invited written comments on these subjects, as well as any other relevant issues, and announced the availability of supporting documentation on its Web site at: <http://www.regulations.gov/#!documentDetail;D=EERE-2012-BT-STD-0047-0015>.

A PDF copy of the supporting documentation is available at <http://www.regulations.gov/#!documentDetail;D=EERE-2012-BT-STD-0047-0011>. The comment period closed on March 13, 2014.

On March 31, 2015, DOE published a notice of proposed rulemaking in the **Federal Register** (March 2015 NOPR). 80 FR 17222. In the March 2015 NOPR, DOE addressed in detail the comments received in earlier stages of the rulemaking, and proposed amended energy conservation standards for residential boilers. In conjunction with the March 2015 NOPR, DOE also published on its Web site the complete technical support document (TSD) for the proposed rule, which incorporated the analysis DOE conducted and technical documentation for each analysis. Also published on DOE's Web site were the LCC analysis spreadsheet and the national impact analysis standard spreadsheet. These materials are available at: https://www1.eere.energy.gov/buildings/appliance_standards/product.aspx?productid=89.

In the March 2015 NOPR, DOE identified twenty four issues on which it was particularly interested in receiving comments and views of interested parties. 80 FR 17222, 17303–17304 (March 31, 2015). The comment period was initially set to end June 1, 2015, but it was subsequently extended to July 1, 2015 in a **Federal Register** notice published on May 20, 2015. 80 FR 28852. After the publication of the March 2015 NOPR, DOE received written comments on these and other issues. DOE also held a public meeting in Washington, DC, on April 30, 2015 to discuss and receive comments regarding the tools and methods DOE used in the NOPR analysis, as well as the results of that analysis. DOE also invited written comments and announced the availability of a NOPR analysis technical support document (NOPR TSD). The NOPR TSD is available at: <http://www.regulations.gov/>

[#!documentDetail;D=EERE-2012-BT-STD-0047-0036](#).

The NOPR TSD described in detail DOE's analysis of potential standard levels for residential boilers. The document also described the analytical framework used in considering standard levels, including a description of the methodology, the analytical tools, and the relationships between the various analyses. In addition, the NOPR TSD presented each analysis that DOE performed to evaluate residential boilers, including descriptions of inputs, sources, methodologies, and results. DOE included the same analyses that were conducted at the preliminary analysis stage, with revisions based on comments received and additional research.

Statements received after publication of the Framework Document, at the Framework public meeting, and comments received after the publication of the NODA and NOPR have helped identify issues involved in this rulemaking and have provided information that has contributed to DOE's resolution of these issues. The Department considered these statements and comments in developing revised engineering and other analyses for this final rule.

III. General Discussion

DOE developed this final rule after considering verbal and written comments, data, and information from interested parties that represent a variety of interests. The following discussion addresses issues raised by these commenters.

DOE received 21 comments in response to the March 2015 NOPR. These commenters include: A joint comment from the American Council for an Energy-Efficient Economy (ACEEE), the Appliance Standards Awareness Project (ASAP), the Alliance to Save Energy (ASE), the Consumer Federation of America (CFA), the National Consumer Law Center (NCLC), the Natural Resources Defense Council (NRDC), and the Northeast Energy Efficiency Partnerships (NEEP); four comments from the Air-Conditioning, Heating, and Refrigeration Institute (AHRI); a comment from the Air Conditioning Contractors of America (ACCA); a comment from the Plumbing-Heating-Cooling Contractors National Association (PHCC); a comment from U.S. Chamber of Commerce; a comment from the Cato Institute; a comment from Oilheat Manufacturers Association; a comment from Exquisite Heat; and an anonymous comment. Manufacturers submitting written comments include: Energy Kinetics, Weil-McLain, Burnham

Holdings (Burnham), and Lochinvar. Gas utilities and associations who submitted written comments include: A joint comment from the American Gas Association (AGA) and the American Public Gas Association (APGA); Philadelphia Gas Works (PGW); National Propane Gas Association (NPGA); the Laclede Group; and the Laclede Gas Company. This final rule summarizes and responds to the issues raised in these comments. A parenthetical reference¹⁵ at the end of a comment quotation or paraphrase provides the location of the item in the public record.

A. Product Classes and Scope of Coverage

When evaluating and establishing energy conservation standards, DOE divides covered products into product classes by the type of energy used or by capacity or other performance-related features that justify differing standards. In making a determination whether a performance-related feature justifies a different standard, DOE must consider such factors as the utility of the feature to the consumer and other factors DOE determines are appropriate. (42 U.S.C. 6295(q))

Existing energy conservation standards divide residential boilers into six product classes based on the fuel type (*i.e.*, gas, oil, or electricity) and heating medium of the product (*i.e.*, hot water or steam). For this rulemaking, DOE maintains the scope of coverage defined by its current regulations for the analysis of standards, so as to include six product classes of boilers: (1) Gas-fired hot water boilers; (2) gas-fired steam boilers; (3) oil-fired hot water boilers; (4) oil-fired steam boilers; (5) electric hot water boilers; and (6) electric steam boilers. DOE has not conducted an analysis of an AFUE standard level for electric boilers, as the AFUE of these products already approaches 100 percent. DOE also did not conduct an analysis of a standard level for combination appliances, as the DOE test procedure does not include a method with which to test these products. These reasons are explained in greater detail in section IV.A.1 of this final rule. However, DOE did include electric boilers within the scope of its

analysis of standby mode and off mode energy conservation standards.

The scope and product classes analyzed for this final rule are the same as those initially set forth in the Framework Document and examined in DOE's initial analysis, as well as what was proposed in the NOPR. Comments received relating to the scope of coverage are described in section IV.A of this final rule.

B. Test Procedure

DOE's current energy conservation standards for residential boilers are expressed in terms of AFUE (*see* 10 CFR 430.32(e)(2)(ii)). AFUE is an annualized fuel efficiency metric that fully accounts for fossil-fuel energy consumption in active, standby, and off modes. The existing DOE test procedure for determining the AFUE of residential boilers is located at 10 CFR part 430, subpart B, appendix N. The current DOE test procedure for residential boilers was originally established by a May 12, 1997 final rule, which incorporates by reference the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)/American National Standards Institute (ANSI) Standard 103–1993, *Method of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers* (1993). 62 FR 26140, 26157.

On October 20, 2010, DOE updated its test procedures for residential boilers in a final rule published in the **Federal Register** (October 2010 test procedure final rule). 75 FR 64621. This rule amended DOE's test procedure for residential furnaces and boilers to establish a separate metric for measuring the electrical energy use in standby mode and off mode for gas-fired, oil-fired, and electric boilers pursuant to requirements established by EISA 2007. In the final rule, DOE determined that due to the magnitude of the electrical standby/off mode versus active mode, a single efficiency metric is technically infeasible. The test procedure amendments were primarily based on and incorporate by reference provisions of the International Electrotechnical Commission (IEC) Standard 62301 (First Edition), "Household electrical appliances—Measurement of standby power." On December 31, 2012, DOE published a final rule in the **Federal Register** that updated the incorporation by reference of the standby mode and off mode test procedure provisions to refer to the latest edition of IEC Standard 62301 (Second Edition). 77 FR 76831.

On July 10, 2013, DOE published a final rule in the **Federal Register** (July

2013 final rule) that modified the existing testing procedures for residential furnaces and boilers. 78 FR 41265. The modification addressed the omission of equations needed to calculate AFUE for two-stage and modulating condensing furnaces and boilers that are tested using an optional procedure provided by section 9.10 of ASHRAE 103–1993 (incorporated by reference into DOE's test procedure), which allows the test engineer to omit the heat-up and cool-down tests if certain conditions are met. Specifically, the DOE test procedure allows condensing boilers and furnaces to omit the heat-up and cool-down tests, provided that the units have no measurable airflow through the combustion chamber and heat exchanger (HX) during the burner off period and have post-purge period(s) of less than 5 seconds. For two-stage and modulating condensing furnaces and boilers, ASHRAE 103–1993 (and by extension the DOE test procedure) does not contain the necessary equations to calculate the heating seasonal efficiency (which contributes to the ultimate calculation of AFUE) when the option in section 9.10 is selected. The July 2013 final rule adopted two new equations needed to account for the use of section 9.10 for two-stage and modulating condensing furnaces and boilers. *Id.*

EPCA, as amended by EISA 2007, requires that DOE must review test procedures for all covered products at least once every 7 years. (42 U.S.C. 6293(b)(1)(A)) Accordingly, on March 11, 2015, DOE published a NOPR for the test procedure in the **Federal Register** (March 2015 test procedure NOPR), a necessary step toward fulfillment of the requirement under 42 U.S.C. 6293(b)(1)(A) for residential furnaces and boilers. 80 FR 12876. After a stakeholder comment and review period, DOE published a final rule for the test procedure in January 2016 (January 2016 test procedure final rule). (See EERE–2012–BT–TP–0024). DOE must base the analysis of amended energy conservation standards on the most recent version of its test procedures, and accordingly, DOE used the amended test procedure when considering product efficiencies, energy use, and efficiency improvements in its analyses. Major changes adopted in the January 2016 test procedure final rule included:

- Clarifying the definition of the electrical power term PE;
- Adopting a smoke stick test for determining the use of minimum default draft factors;

¹⁵ The parenthetical reference provides a reference for information located in the docket of DOE's rulemaking to develop energy conservation standards for residential boilers. (Docket No. EERE–2012–BT–0047, which is maintained at <http://www.regulations.gov/#/docketDetail;D=EERE-2012-BT-STD-0047>). The references are arranged as follows: (commenter name, comment docket ID number, page of that document).

- Allowing for the measurement of condensate under steady-state conditions;
- Referencing the manufacturer's installation and operations (I&O) manual and providing clarification if the I&O manual does not specify test set up;
- Specifying ductwork for units installed without a return duct;
- Specifying testing requirements for units with multiposition configurations; and
- Revising the required reporting precision for AFUE.
- Adopting a verification method for determining whether a boiler incorporates an automatic means for adjusting water temperature and whether this design requirement functions as required.

DOE received several comments from stakeholders relating to the residential furnace and boiler test procedure. These comments were considered and addressed in that rulemaking proceeding.

C. Technological Feasibility

1. General

In each energy conservation standards rulemaking, DOE conducts a screening analysis based on information gathered on all current technology options and prototype designs that could improve the efficiency of the products or equipment that are the subject of the rulemaking. As the first step in such an analysis, DOE develops a list of technology options for consideration in consultation with manufacturers, design engineers, and other interested parties. DOE then determines which of those means for improving efficiency are technologically feasible. DOE considers technologies incorporated in commercially-available products or in working prototypes to be technologically feasible. 10 CFR part 430, subpart C, appendix A, section 4(a)(4)(i).

After DOE has determined that particular technology options are technologically feasible, it further evaluates each technology option in light of the following additional screening criteria: (1) Practicability to manufacture, install, and service; (2) adverse impacts on product utility or availability; and (3) adverse impacts on health or safety. 10 CFR part 430, subpart C, appendix A, section 4(a)(4)(ii)–(iv). Additionally, it is DOE policy not to include in its analysis any proprietary technology that is a unique pathway to achieving a certain efficiency level. Section IV.B of this notice discusses the results of the

screening analysis for residential boilers, particularly the designs DOE considered, those it screened out, and those that are the basis for the standards in this rulemaking. For further details on the screening analysis for this rulemaking, see chapter 4 of the final rule technical support document (TSD).

2. Maximum Technologically Feasible Levels

When DOE proposes to adopt an amended standard for a type or class of covered product, it must determine the maximum improvement in energy efficiency or maximum reduction in energy use that is technologically feasible for such product. (42 U.S.C. 6295(p)(1)) Accordingly, in the engineering analysis, DOE determined the maximum technologically feasible (“max-tech”) improvements in energy efficiency for residential boilers, using the design parameters for the most efficient products available on the market or in working prototypes. The max-tech levels that DOE determined for this rulemaking are described in section IV.C of this final rule and in chapter 5 of the final rule TSD.

D. Energy Savings

1. Determination of Savings

For each trial standard level (TSL), DOE projected energy savings from application of the TSL to residential boilers purchased in the 30-year period that begins in the year of compliance with any amended standards (2021–2050).^{16 17} The savings are measured over the entire lifetime of products purchased in the 30-year analysis period.¹⁸ DOE quantified the energy savings attributable to each TSL as the difference in energy consumption between each standards case and the no-new-standards case. The no-new-standards case represents a projection of energy consumption that reflects how the market for a product would likely evolve in the absence of amended energy conservation standards, and it considers market forces and policies

¹⁶ The expected compliance year at the time of the NOPR was 2020. For the final rule, the expected compliance year is 2021.

¹⁷ DOE also presents a sensitivity analysis that considers impacts for products shipped in a 9-year period.

¹⁸ In the past, DOE presented energy savings for only the 30-year period that begins in the year of compliance. In the calculation of economic impacts, however, DOE considered operating cost savings measured over the entire lifetime of equipment shipped in the 30-year period. DOE has chosen to modify its presentation of national energy savings to be consistent with the approach used for its national economic analysis.

that affect demand for more-efficient products.

DOE used its national impact analysis (NIA) spreadsheet model to estimate national energy savings (NES) from potential amended standards for residential boilers. The NIA spreadsheet model (described in section IV.H of this final rule) calculates energy savings in terms of site energy, which is the energy directly consumed by products at the locations where they are used. For electricity, DOE calculates NES on an annual basis in terms of primary energy¹⁹ savings, which is the savings in the energy that is used to generate and transmit the site electricity. To calculate primary energy savings from site electricity savings, DOE derived annual conversion factors from the model used to prepare the Energy Information Administration (EIA)'s *AEO 2015*. For natural gas and oil, the primary energy savings are considered equal to the site energy savings because they are supplied to the user without transformation from another form of energy.

In addition to primary energy savings, DOE also calculates full-fuel-cycle (FFC) energy savings. As discussed in DOE's statement of policy and notice of policy amendment, the FFC metric includes the energy consumed in extracting, processing, and transporting primary fuels (e.g., coal, natural gas, petroleum fuels), and, thus, presents a more complete picture of the impacts of energy conservation standards. 76 FR 51281 (August 18, 2011), as amended at 77 FR 49701 (August 17, 2012). For FFC energy savings, DOE's approach is based on the calculation of an FFC multiplier for each of the energy types used by covered equipment. For more information on FFC energy savings, see section IV.H.2 of this notice. For natural gas, the primary energy savings are considered to be equal to the site energy savings.²⁰

2. Significance of Savings

To adopt standards for a covered product, DOE must determine that such action would result in “significant” energy savings. (42 U.S.C. 6295(o)(3)(B)) Although the term “significant” is not defined in the Act, the U.S. Court of Appeals for the District of Columbia Circuit, in *Natural Resources Defense*

¹⁹ Primary energy consumption refers to the direct use at source, or supply to users without transformation, of crude energy; that is, energy that has not been subjected to any conversion or transformation process.

²⁰ U.S. Energy Information Administration/Annual Energy Review 2011, Glossary, p.365 (Available at: <http://www.eia.gov/totalenergy/data/annual/pdf/sec18.pdf>).

Council v. Herrington, 768 F.2d 1355, 1373 (D.C. Cir. 1985), opined that Congress intended “significant” energy savings in the context of EPCA to be savings that are not “genuinely trivial.” The energy savings for all the TSLs considered in this rulemaking, including the adopted standards, are nontrivial, and, therefore, DOE considers them “significant” within the meaning of section 325 of EPCA.

E. Economic Justification

1. Specific Criteria

As noted above, EPCA provides seven factors to be evaluated in determining whether a potential energy conservation standard is economically justified. (42 U.S.C. 6295(o)(2)(B)(i)(I)–(VII)) The following sections discuss how DOE has addressed each of those seven factors in this rulemaking.

a. Economic Impact on Manufacturers and Consumers

In determining the impacts of a potential amended standard on manufacturers, DOE conducts a manufacturer impact analysis (MIA), as discussed in section IV.J. DOE first uses an annual cash-flow approach to determine the quantitative impacts. This step includes both a short-term assessment—based on the cost and capital requirements during the period between when a regulation is issued and when entities must comply with the regulation—and a long-term assessment over a 30-year period. The industry-wide impacts analyzed include: (1) Industry net present value (INPV), which values the industry on the basis of expected future cash flows; (2) cash flows by year; (3) changes in revenue and income; and (4) other measures of impact, as appropriate. Second, DOE analyzes and reports the impacts on different types of manufacturers, including impacts on small manufacturers. Third, DOE considers the impact of standards on domestic manufacturer employment and manufacturing capacity, as well as the potential for standards to result in plant closures and loss of capital investment. Finally, DOE takes into account cumulative impacts of various DOE regulations and other regulatory requirements on manufacturers.

For individual consumers, measures of economic impact include the changes in LCC and PBP associated with new or amended standards. These measures are discussed further in the following section. For consumers in the aggregate, DOE also calculates the national net present value of the economic impacts applicable to a particular rulemaking.

DOE also evaluates the LCC impacts of potential standards on identifiable subgroups of consumers that may be affected disproportionately by a national standard.

b. Savings in Operating Costs Compared to Increase in Price (LCC and PBP)

EPCA requires DOE to consider the savings in operating costs throughout the estimated average life of the covered product in the type (or class) compared to any increase in the price of, or in the initial charges for, or maintenance expenses of, the covered product that are likely to result from a standard. (42 U.S.C. 6295(o)(2)(B)(i)(II)) DOE conducts this comparison in its LCC and PBP analysis.

The LCC is the sum of the purchase price of a product (including its installation) and the operating cost (including energy, maintenance, and repair expenditures) discounted over the lifetime of the product. The LCC analysis requires a variety of inputs, such as product prices, product energy consumption, energy prices, maintenance and repair costs, product lifetime, and discount rates appropriate for consumers. To account for uncertainty and variability in specific inputs, such as product lifetime and discount rate, DOE uses a distribution of values, with probabilities attached to each value.

The PBP is the estimated amount of time (in years) it takes consumers to recover the increased purchase cost (including installation) of a more-efficient product through lower operating costs. DOE calculates the PBP by dividing the change in purchase cost due to a more-stringent standard by the change in annual operating cost for the year that standards are assumed to take effect.

For its LCC and PBP analysis, DOE assumes that consumers will purchase the covered products in the first year of compliance with amended standards. The LCC savings for the considered efficiency levels are calculated relative to the case that reflects projected market trends in the absence of amended standards. DOE’s LCC and PBP analysis is discussed in further detail in section IV.F.

c. Energy Savings

Although significant conservation of energy is a separate statutory requirement for adopting an energy conservation standard, EPCA requires DOE, in determining the economic justification of a standard, to consider the total projected energy savings that are expected to result directly from the standard. (42 U.S.C. 6295(o)(2)(B)(i)(III))

As discussed in section IV.H, DOE uses the NIA spreadsheet model to project national energy savings.

d. Lessening of Utility or Performance of Products

In establishing product classes and in evaluating design options and the impact of potential standard levels, DOE evaluates potential standards that would not lessen the utility or performance of the considered products. (42 U.S.C. 6295(o)(2)(B)(i)(IV)) Based on data available to DOE, the standards adopted in this final rule will not reduce the utility or performance of the products under consideration in this rulemaking.

e. Impact of Any Lessening of Competition

EPCA directs DOE to consider the impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from a standard. (42 U.S.C. 6295(o)(2)(B)(i)(V)) It also directs the Attorney General to determine the impact, if any, of any lessening of competition likely to result from a standard and to transmit such determination to the Secretary within 60 days of the publication of a proposed rule, together with an analysis of the nature and extent of the impact. (42 U.S.C. 6295(o)(2)(B)(ii)) To assist the Department of Justice (DOJ) in making such a determination, DOE transmitted copies of both its proposed rule and NOPR TSD to the Attorney General for review, with a request that DOJ provide its determination on this issue. In its assessment letter responding to DOE, DOJ concluded that the proposed energy conservation standards for residential boilers are unlikely to have a significant adverse impact on competition. DOE is publishing the Attorney General’s assessment at the end of this final rule.

f. Need for National Energy Conservation

DOE also considers the need for national energy conservation in determining whether a new or amended standard is economically justified. (42 U.S.C. 6295(o)(2)(B)(i)(VI)) The energy savings from the adopted standards are likely to provide improvements to the security and reliability of the nation’s energy system. Reductions in the demand for electricity also may result in reduced costs for maintaining the reliability of the nation’s electricity system. DOE conducts a utility impact analysis to estimate how standards may affect the nation’s needed power generation capacity, as discussed in section IV.M.

The adopted standards also are likely to result in environmental benefits in the form of reduced emissions of air pollutants and greenhouse gases associated with energy production and use. DOE conducts an emissions impacts analysis to estimate how potential standards may affect these emissions, as discussed in section IV.K; the emissions impacts are reported in section V.B.6 of this final rule. DOE also estimates the economic value of emissions reductions resulting from the considered TSLs, as discussed in section IV.L.

g. Other Factors

EPCA allows the Secretary of Energy, in determining whether a standard is economically justified, to consider any other factors that the Secretary deems to be relevant. (42 U.S.C. 6295(o)(2)(B)(i)(VII)) To the extent interested parties submit any relevant information regarding economic justification that does not fit into the other categories described above, DOE could consider such information under "other factors." For this final rule, DOE did not consider other factors.

2. Rebuttable Presumption

As set forth in 42 U.S.C. 6295(o)(2)(B)(iii), EPCA creates a rebuttable presumption that an energy conservation standard is economically justified if the additional cost to the consumer of a product that meets the standard is less than three times the value of the first year's energy savings resulting from the standard, as calculated under the applicable DOE test procedure. DOE's LCC and PBP analyses generate values used to calculate the effect potential amended energy conservation standards would have on the payback period for consumers. These analyses include, but are not limited to, the 3-year payback period contemplated under the rebuttable-presumption test. In addition, DOE routinely conducts an economic analysis that considers the full range of impacts to consumers, manufacturers, the Nation, and the environment, as required under 42 U.S.C. 6295(o)(2)(B)(i). The results of this analysis serve as the basis for DOE's evaluation of the economic justification for a potential standard level (thereby supporting or rebutting the results of any preliminary determination of economic justification). The rebuttable presumption payback calculation is discussed in section V.B.1 of this final rule.

F. General Comments

During the April 30, 2015 public meeting, and in subsequent written comments in response to the March 2015 NOPR, stakeholders provided input regarding general issues pertinent to the rulemaking, such as issues regarding the proposed standard levels, as well as issues related to changes made to the test procedure. These issues are discussed in this section.

1. Proposed Standard Levels

In response to the levels proposed in the NOPR (TSL 3), the joint efficiency commenters stated their support for the proposed standard levels and encouraged DOE to evaluate condensing levels for hot water boilers, noting that the national energy savings at TSL 4 would be more than five times greater than the savings at TSL 3. (The joint efficiency commenters, No. 62 at pp. 1–2)

AHRI, Burnham, Lochinvar, Weil-McLain, and PHCC stated their opposition to the proposed standards at TSL 3 based on their concerns about several areas within the analysis. (AHRI, No. 64 at p. 1; Burnham, No. 60 at p. 1; Lochinvar, No. 63 at p. 1; Weil-McLain, No. 55 at p. 1; PHCC, No. 61 at p. 1) Lochinvar encouraged DOE to consider adopting TSL 2, and PHCC suggested that DOE make minimal increases (one percentage point) to standards. (Lochinvar, No. 63 at p. 5; PHCC, No. 61 at p. 1) AHRI and Lochinvar also suggested that the efficiency levels presented in the NOPR at TSL 4 are not economically justified as minimum standards. (AHRI, No. 64 at p. 1; Lochinvar, No. 63 at p. 5)

Burnham stated that under the proposed standards, tens of thousands of consumers will lose choice, be effectively required to retain and repair old, inefficient units, or be forced into costly and even dangerous retrofits. (Burnham, No. 60 at p. 1) Burnham stated that DOE's proposed standards are based in part on energy use characterizations, installation costs, operating costs, and lifecycle costs which are flawed and tend to overstate the benefit of the proposed standards, and thereby, they do not meet EPCA's requirements of maximum improvements in energy efficiency that are technologically feasible and economically justified. Burnham stated that after correcting for the various technical issues, the LCC savings for 85-percent AFUE and higher gas-fired hot water boilers decrease substantially, even becoming negative. (Burnham, No. 60 at pp. 2, 4) Burnham stated that the DOE analysis either needs to be

reanalyzed or that DOE needs to set standards for gas-fired hot water boilers at a level below 85-percent AFUE. (Burnham, No. 60 at p. 20)

Weil-McLain stated that significant additional costs will be imposed on consumers to achieve a hypothetical increase in energy savings by installing an 85-percent AFUE gas hot water boiler rather than an 82- or 83-percent AFUE boiler that would not entail all of these additional costs. (Weil-McLain, No. 55 at p. 3)

U.S. Boiler stated that a better alternative to the proposed rule would be to set a minimum efficiency level of 83 percent AFUE, which would allow most existing chimneys to stay in use without alteration. U.S. Boiler stated that such a standard gives homeowners choices regarding installation of higher-efficiency boilers. (U.S. Boiler, Public Meeting Transcript, No. 50 at p. 291)

ACCA stated that, if not properly addressed, the issues with the analysis can lead to unintended consequences, such as driving some homeowners to repair and maintain older systems instead of replacing their equipment. (ACCA, No. 65 at p. 3)

The Department appreciates stakeholder comments with regard to the TSL selection and notes that DOE is required to set a standard that achieves the maximum energy savings that is determined to be technologically feasible and economically justified. In making such a determination, DOE must consider, to the extent practicable, the benefits and burdens based on the seven criteria described in EPCA (see 42 U.S.C. 6295(o)(2)(B)(i)(I)–(VII)). DOE's weighing of the benefits and burdens based on the final rule analysis and rationale for the TSL selection is discussed in section V. DOE notes that much of the commentary regarding the selection of TSL levels for the standards is based on more detailed comments regarding specific portions of the final rule analysis. These comments related to specific analyses are addressed within the specific analysis section to which they pertain. However, as a general matter, DOE notes that in light of the comments and data provided by stakeholders, the agency carefully reexamined its data and analyses for residential boilers, ultimately reassessing the appropriate efficiency levels for some product classes. Specifically, DOE determined to adopt a standard level at 84-percent AFUE for gas-fired hot water boilers and 85-percent AFUE for oil-fired steam boilers, which DOE determined meet the criteria for TSL 3 without causing harms described by the stakeholders. Regarding safety issues at 84-percent

AFUE for gas-fired hot water boilers, DOE determined that at this efficiency, there is no difference in terms of their ability to meet minimum NFGC safety requirements, as compared to 82-percent and 83-percent AFUE models. Section III.F.3 further discusses the 84-percent efficiency level safety considerations. In regards to 85-percent AFUE for oil-fired steam boilers, such efficiency level results in oil-fired steam boilers being one AFUE point lower than the oil-fired hot water boilers standards, which is at 86-percent AFUE. This addresses stakeholder concerns about manufacturing burden associated with having separate tooling for oil-fired steam models and for oil-fired hot water models, because as AHRI noted, an oil-fired steam boiler will operate slightly less efficiently than an oil-fired hot water boiler of the same design. (AHRI No. 67, at p. 2) DOE reviewed the oil-fired boiler market, and found that a 1-percent AFUE difference between oil-fired steam and hot water boilers is typical, so the adopted standards of 86-percent AFUE for oil-fired hot water boilers and 85-percent AFUE for oil-fired steam boilers will allow manufacturers to maintain one design for both oil-fired steam and oil-fired hot water boilers. Results are discussed further in section V of this document and in the final rule TSD.

2. Simultaneous Changes in Test Procedures and Energy Conservation Standards

Several stakeholders expressed legal, procedural, and practical concerns regarding the timing of the proposed test procedures and energy conservation standards revisions for residential boilers. Several stakeholders requested that DOE delay any further work on the rulemakings to amend efficiency standards for residential boilers until after the finalization of the test procedure. (AHRI, No. 64 at p. 2; Lochinvar, No. 63 at p. 1; Burnham, No. 60 at p. 5; AGA/APGA, No. 54 at p. 11; ACCA, No. 65 at p. 1) Specifically, AHRI requested that DOE reopen the docket for the March 2015 residential boiler standards NOPR once the test procedure has been finalized. (AHRI, No. 64 at p. 2) AHRI argued that the non-final status of the test procedure inhibits stakeholders' fair evaluation of the proposed standards and stressed the importance of having a known efficiency test procedure. AHRI commented that when a test procedure is in flux, manufacturers must spend resources collecting potentially unusable data which undermines their ability to effectively provide input on the proposed efficiency standards.

Similarly, AHRI added that when a test procedure is not finalized, a manufacturer has no way of determining whether the test procedure will affect its ability to comply with a proposed revised standard. (AHRI, No. 64 at p. 2)

Many of these commenters were concerned about the timing of the energy conservation standards and test procedures rulemakings, given their expectation that the proposed changes to the test procedures for residential boilers would result in changes to the AFUE rating metric. Specifically, AHRI, Burnham, and Weil-McLain stated that the changes to the test procedure presented in the March 2015 TP NOPR would result in significant changes to the AFUE measurement. (AHRI, No. 64 at p. 1; Burnham, No. 60 at p. 6; Weil-McLain, No. 55 at p. 7) Burnham noted that the fact that the test procedure rulemaking is ongoing makes it impossible to gauge the effects of its final rule on proposed energy conservation standards. (Burnham, No. 60 at p. 6) AHRI stated that the proposed test procedure, if finalized, is not neutral and will require an adjustment of the AFUE standard to accommodate for the test effects. AHRI disagreed with DOE's tentative determination in the March 2015 TP NOPR that the proposed updates to the AFUE test method would not affect the AFUE ratings. AHRI stated that test data it is collecting shows that the proposed test procedure changes the resulting AFUE measurement. AHRI noted that one such change affecting AFUE is the proposed change to the procedure for burner set-up. (AHRI, No. 64 at p. 3)

Several stakeholders also contended that the timing of the test procedures and standards rulemakings violated certain procedural requirements, or DOE's own procedural policies. Burnham asserted that the simultaneous test procedure and standards rulemaking raises concerns under the Data Quality Act, and stated that the law and OMB guidelines require agency actions aimed at "maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by the agency." Burnham commented that DOE has considerable work ahead to comply with this requirement, and cited section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; HR 5658) at section 515(b)(2)(a). (Burnham, No. 60 at pp. 3, 6) AHRI, ACCA, and Burnham stated that by publishing the March 2015 TP NOPR within weeks of the proposed efficiency standards, DOE has failed to abide by its codified procedures at 10 CFR part 430, subpart

C, appendix A(7)(c). (AHRI, No. 64 at p. 2; ACCA, No. 65 at p. 1; Burnham, No. 60 at p. 6) AHRI stated that The Administrative Procedure Act (APA) requires agencies to abide by their policies and procedures, especially where those rules have a substantive effect, and that the non-final test procedure has the substantive effect of increasing costs to stakeholders and diminishing their ability to comment on the efficiency standards. (AHRI, No. 64 at p. 2) AHRI noted that DOE is required to give stakeholders the opportunity to provide meaningful comments (see 42 U.S.C. 6295(p)(2), 6306(a)), and asserted that the close timing of the test procedures and standards NOPRs diminishes that opportunity. (AHRI, No. 64 at p. 2)

DOE does not believe that the timing of the test procedure and standards rulemakings has negatively impacted stakeholder's ability to provide comment. DOE has afforded interested parties an opportunity to provide comment on both the residential boiler standards rulemaking and the residential furnace and boiler test procedure rulemaking, consistent with the requirements of EPCA and all other relevant statutory provisions. Further, given the publication of the boilers test procedure final rule and the fact that none of the adopted changes will impact AFUE, DOE has determined it is not necessary to delay this standards rulemaking.

With regard to the specific concerns raised by stakeholders regarding changes to the AFUE metric, DOE determined in the March 2015 TP NOPR that the proposed test procedure amendments would have a *de minimis* impact on products' measured efficiency. 80 FR 12876, 12878 (March 11, 2015). However, as discussed above, DOE received comments from stakeholders both in response to the March 2015 test procedure NOPR and to the March 2015 standards NOPR suggesting that several provisions within the March 2015 test procedure NOPR would significantly impact AFUE ratings. In the January 2016 test procedure final rule, DOE responded to each of these comments and ultimately did not adopt those provisions which were suggested to cause changes to the AFUE ratings. The specific comments and proposals that were and were not adopted are discussed in detail in the January 2016 TP final rule. As discussed in the January 2016 TP final rule, because DOE ultimately did not adopt the proposed changes that were suggested to impact the AFUE ratings, the Department has concluded that all of the recent updates to the test

procedure will have a *de minimis* impact on AFUE ratings. Furthermore, DOE is adopting its amended and new standards for residential boilers based upon use of the revised test procedures, so any changes to the test procedure that could affect measured energy efficiency were fully taken into account in those standards.

Second, with regard to Burnham's assertion that DOE has not met the requirements of the Data Quality Act (DQA), DOE does not believe that the timing of the test procedure and standards rulemakings are matters within the Department's guidelines implementing the DQA. DOE has concluded that the data, analysis, and models it has used in this rulemaking adhered to the requirements of the Data Quality Act. Further, DOE strived to maximize the quality, objectivity, utility, and integrity of the information disseminated in this rulemaking (see section VI.J for more information on these requirements and DOE's determination). As noted above, the January 2016 test procedure final rule removed all of the provisions within the March 2015 test procedure NOPR that could significantly impact AFUE ratings.

Finally, with regard to the comments stating that DOE has failed to abide by its codified procedures at 10 CFR 430, subpart C, appendix A (7)(c), Appendix A establishes procedures, interpretations, and policies to guide DOE in the consideration and promulgation of new or revised appliance efficiency standards under EPCA. (See section 1 of 10 CFR 430 subpart C, appendix A) Those procedures are a general guide to the steps DOE typically follows in promulgating energy conservation standards. The guidance recognizes that DOE can and will, on occasion, deviate from the typical process. Accordingly, DOE has concluded that there is no basis to delay the final rule adopting standards for residential boilers.

3. Safety Issues

Lochinvar stated that the DOE analysis does not account for the impact of the proposed residential boiler standards on public safety. Specifically, Lochinvar stated that if 85-percent AFUE becomes the standard for gas-fired hot water boilers, the likelihood that the boilers will consistently have proper product installations and venting system design diminishes. (Lochinvar, No. 63 at p. 5) AHRI stated that the consumer safety impacts should eliminate consideration of a minimum efficiency standard appreciably above the current minimum standards for gas-

fired and oil-fired boilers. (AHRI, No. 64 at pp. 3–4) Burnham stated that consumer safety hazards, along with the imposition of liability on manufacturers concordant with such safety hazards, alone justify the exclusion of Category I gas boilers at the 85-percent and 84-percent efficiency levels. (Burnham, No. 60 at p. 13)

Burnham stated that an 85-percent AFUE standard will risk hazards associated with old products being left in service long after it should be replaced due to higher replacement costs, and old boilers being replaced by less safe alternatives such as kerosene heaters. (Burnham, No. 60 at p. 3) Burnham stated that for 85-percent AFUE boilers, there are too many potential installations which breach acceptable safety levels. Furthermore, low-income consumers who do not have the resources to afford the necessary venting system upgrades required with condensing or near-condensing products will be imperiled. (Burnham, No. 60 at p. 7)

Burnham also stated that by selecting an 85-percent AFUE standard for gas-fired hot water boilers, DOE is risking carbon monoxide poisoning in situations where there are venting approaches used that meet building codes but which may not be adequate for full safety. (Burnham, No. 60 at pp. 3–4) Lochinvar stated that the condensation of flue gasses in venting will corrode conventional venting and may lead to spilling carbon monoxide into occupied spaces and death. (Lochinvar, No. 63 at p. 3)

Weil-McLain stated that the issues associated with the proposed retrofit venting requirements also create a potential safety hazard because positive pressure venting could push flue gases into the building. (Weil-McLain, No. 55 at p. 3) ACCA and Weil-McLain stated that there will be some less-skilled installers or do-it-yourselfers who may install the higher efficiency models incorrectly, resulting in safety problems. (ACCA, No. 65 at pp. 2–3; Weil-McLain, No. 55 at p. 3)

AHRI stated that the results of the analysis done by Gas Technology Institute (GTI), as contained in a report prepared for AHRI using a Vent-II tool, show that at an 84-percent or 85-percent AFUE level, the potential for excessive wetting in the vent system increases. As explained in the report, the "wet time" limits are values that have been used to establish the coverage for properly sized and configured vent systems for atmospheric gas-fired boilers in the National Fuel Gas Code (NFGC). When the Vent-II analysis shows wet times exceeding these limits,

it is an indication of excessive condensation which increases the potential for condensate-induced corrosion and subsequent vent system failure, resulting in safety problems. (AHRI, No. 67 at p. 1)

In response, DOE has concluded that manufacturers will provide adequate guidance for installers to ensure that the venting system is safe. Furthermore, DOE assumed that 85-percent AFUE boilers would either be Category I or Category III appliances, and DOE accounted for a fraction of installations that would require a stainless steel vent connector or stainless steel venting to mitigate the dangers of potential corrosion issues. In any case, DOE is not adopting a standard at 85-percent AFUE for gas-fired boilers, so the potential problems raised by the stakeholders will not be an issue.

Regarding safety issues at to 84-percent AFUE, based on Burnham's data, AHRI's contractors' survey, and models available in the AHRI directory, DOE determined that the fraction of shipments and model availability with mechanical draft for the 82-percent to 84-percent AFUE boilers is about the same. In addition, AHRI's Vent-II analysis showed that for all 21 different scenario cases, 82-percent to 84-percent AFUE boilers demonstrated no difference in terms of their ability to meet the dryout wet times required to achieve the minimum NFGC safety requirements.²¹

4. Other

The Laclede group stated that DOE is not adhering to the process transparency and scientific integrity policies as set forth in 1996 "Process Improvement Rule" and outlined in 10 CFR 430, subpart C, appendix A (7)(g). 61 FR 36974 (July 15, 1996). Laclede also asserted that through the inconsistent application of the process improvement rule, DOE is not adhering to the consistency and transparency requirements outlined in the Treasury and General Government Appropriations Act of 2001, the Paperwork Reduction Act of 1995 (primarily Section 515), and the "Presidential Scientific Integrity Memorandum" issued on March 9, 2009, which was further clarified by the Director of the Office of Science and Technology Policy "Memorandum to the Heads of Departments and Agencies" of December 17, 2010. (Laclede, No. 58 at pp. 7–9)

²¹ National Fire Protection Association, *NFPA 54 (ANSI Z223.1): National Fuel Gas Code* (2015) (Available at: <http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=54>).

As discussed in sections VI.C, J, and L and illustrated elsewhere in this document, DOE has developed analytical processes and data that ensure the quality of its information and the transparency of its analytical processes. In furtherance of these objectives and requirements, DOE has offered several opportunities for public comment on multiple documents, including documents made available prior to proposing any rule, and addressed stakeholder concerns at the April 30, 2015 public meeting, providing clarifications in an open and transparent fashion.

The Laclede group also stated that DOE failed to meet the requirements of Executive Order 12866, "Regulatory Planning and Review," through the refusal to consider the alternative of not regulating. (Laclede, No. 58 at p. 7) DOE considered alternatives to regulating, including no new regulatory action. A full discussion of the non-regulatory alternatives considered by DOE is presented in the regulatory impact analysis found in chapter 17 of the final rule TSD.

As discussed previously, DOE believes it is in compliance with the requirements of 515 of the Treasury and Gen. Government Appropriations Act for fiscal year 2001 (Public Law 106–554; HR 5658) at section 515(b)(2)(a). (See section VI.J of this document.) For the final rule stage, DOE has incorporated feedback from interested parties, as appropriate, related to the energy use characterization, installation costs, operating costs, and lifecycle costs, leading to revisions in this analysis as compared to the analysis presented for the March 2015 NOPR. The specific comments and any related revisions are discussed in more detail in the applicable subsections of section IV of this document.

AHRI stated that DOE bears the burden, on the basis of substantial evidence, to demonstrate that the proposed standards are technologically feasible and economically justified. AHRI claimed that the DOE has attempted to impermissibly shift its statutory burden of data production onto stakeholders by forcing them to disprove several unreasonable assumptions including the price elasticity of boilers, as well as the lifetime of condensing boilers. AHRI stated that at a minimum, DOE has the responsibility to explain the basis for its assumptions. (AHRI, No. 64 at p. 4)

In response to AHRI, DOE notes that it conducts its analyses with the best available information that it is aware of, and seeks comment from interested parties as a way to ensure analytical

robustness and verify the accuracy of the assumptions and information used in the rulemaking process. DOE then revises its analyses based on comments, information, and data collected through additional research and presented by stakeholders, as applicable, in later rulemaking stages. In some cases, additional relevant but unpublished data may reside with the regulated community and can be considered by DOE only if provided by those regulated parties. DOE has provided detailed comment responses regarding the specific assumptions outlined by AHRI in sections IV.F.2.d and IV.G.

In response to the NOPR, Weil-McLain stated that DOE had changed its position outlined in the NODA to not amend energy conservation standards for residential boilers. Weil-McLain added that DOE did so without explanation for the change in recommendation. (Weil-McLain, No. 55 at p.8)

In response, DOE emphasizes that the 2014 NODA was not a determination on whether to amend standards for residential boilers. Rather, it was a publication of the analysis and results at a preliminary stage (*i.e.*, before the NOPR) so that stakeholders could review and comment on the analytical output, the underlining assumptions, and the calculations that may ultimately be used to support amended standards. The DOE statement to which Weil-McLain refers is correct in that the 2014 NODA did not propose any amendments to the standards because at that early stage, DOE was not prepared to do so. It was not a statement that it had determined not to propose standards. Therefore, DOE did not change its position from the publication of the 2014 NODA to the publication of the 2015 NOPR.

IV. Methodology and Discussion of Related Comments

This section addresses the analyses DOE has performed for this rulemaking with regard to residential boilers. Separate subsections address each component of DOE's analyses.

DOE used several analytical tools to estimate the impact of the standards considered in this document. The first tool is a spreadsheet that calculates the LCC and BPB of potential amended or new energy conservation standards. The national impact analysis uses a second spreadsheet set that provides shipments forecasts and calculates national energy savings and net present value of total consumer costs and savings expected to result from potential energy conservation standards. DOE uses the third spreadsheet tool, the Government

Regulatory Impact Model (GRIM), to assess manufacturer impacts of potential standards. These spreadsheet tools are available on the DOE Web site for this rulemaking at: http://www1.eere.energy.gov/buildings/appliance_standards/rulemaking.aspx?ruleid=112.

Additionally, DOE used output from the latest version of EIA's *Annual Energy Outlook (AEO)*, a widely known energy forecast for the United States for the emissions and utility impact analyses.

A. Market and Technology Assessment

DOE develops information in the market and technology assessment that provides an overall picture of the market for the products concerned, including the purpose of the products, the industry structure, manufacturers, market characteristics, and technologies used in the products. This activity includes both quantitative and qualitative assessments, based primarily on publicly-available information. The subjects addressed in the market and technology assessment for this rulemaking include: (1) A determination of the scope of the rulemaking and product classes; (2) manufacturers and industry structure; (3) existing efficiency programs; (4) shipments information; (5) market and industry trends; and (6) technologies or design options that could improve the energy efficiency of residential boilers. The key findings of DOE's market assessment are summarized below. See chapter 3 of the final rule TSD for further discussion of the market and technology assessment.

1. Scope of Coverage

In the NOPR, DOE proposed to maintain the scope of coverage as defined by its current regulations for this analysis of new and amended standards, which includes six product classes of residential boilers: (1) Gas-fired hot water boilers, (2) gas-fired steam boilers, (3) oil-fired hot water boilers, (4) oil-fired steam boilers, (5) electric hot water boilers, and (6) electric steam boilers. As discussed in further detail in the paragraphs below, DOE excluded several types of residential boilers from the analysis in both the March 2015 NOPR and, subsequently, in this final rule.

DOE did not consider combination space and water heating appliances for this final rule. Combination appliances provide both space heating and domestic hot water to a residence. These products are available on the market in two major configurations, including a water heater fan-coil combination unit and a boiler tankless coil combination unit. Currently, manufacturers certify

combination appliances by rating the efficiency of the unit when performing their primary function (*i.e.*, space heating for boiler tankless coil combination units or water heating for water heater fan-coil units). As explained in the March 2015 NOPR, DOE proposed to exclude such products from the analysis conducted for this rulemaking. 80 FR 17222, 17238 (March 31, 2015). DOE did not receive any comments related to the coverage of combination appliances, and, thus, has not include them in this final rule.

DOE did not include electric boilers in the analysis of amended AFUE standards. (However, DOE has considered standby mode and off mode standards for electric boilers.) Electric boilers do not currently have an AFUE requirement under 10 CFR 430.32(e)(2)(ii). Electric boilers typically use electric resistance coils as their heating elements, which are highly efficient. Furthermore, the current DOE test procedure for determining AFUE classifies boilers as indoor units and, thus, considers jacket losses to be usable heat, because those losses would go to the conditioned space. The efficiency of these products already approaches 100 percent AFUE. Therefore, there are no options for increasing the rated AFUE of this product, and the impact of setting AFUE energy conservation standards for these products would be negligible. DOE proposed not to analyze amended AFUE standards for electric boilers in the March 2015 NOPR and did not receive any comments relating to this proposal. 80 FR 17222, 17238 (March 31, 2015).

DOE also did not include boilers that are manufactured to operate without the need for electricity in the analysis of amended AFUE standards. As was noted in the March 2015 NOPR, an exception already exists for boilers which are manufactured to operate without any need for electricity. (42 U.S.C. 6295(f)(3)(C); 10 CFR 430.32(e)(2)(iv)) 80 FR 17222, 17238 (March 31, 2015). Thus, DOE did not consider such products in the course of this analysis, and such products are not covered by the amended standards. DOE did not receive any comments in response to its proposal to exclude these products in the March 2015 NOPR.

In summary, DOE did not receive any comments in response to the NOPR regarding scope of coverage. Therefore, the scope used for the analysis of this final rule is the same as the scope used for the NOPR analysis.

2. Product Classes

When evaluating and establishing energy conservation standards, DOE

divides covered products into product classes by the type of energy used or by capacity or other performance-related features that justify a different standard. In making a determination whether a performance-related feature justifies a different standard, DOE must consider such factors as the utility to the consumer of the feature and other factors DOE determines are appropriate. (42 U.S.C. 6295(q)) For this rulemaking, as discussed in the preceding section, DOE proposes to maintain the scope of coverage as defined by its current regulations for this analysis of standards, which includes six product classes of boilers. Table IV.1 lists the six product classes examined in the final rule.

TABLE IV.1—PRODUCT CLASSES FOR RESIDENTIAL BOILERS

Boiler by fuel type	Heat transfer medium
Gas-fired Boiler	Steam. Hot Water.
Oil-fired Boiler	Steam. Hot Water.
Electric Boiler	Steam. Hot Water.

In response to the proposed product classes included in the March 2015 NOPR, AGA, APGA, and PGW requested that DOE establish separate product classes for residential condensing and non-condensing boilers. (AGA, No. 54 at p. 11; PGW, No. 57 at p. 2) AGA stated that non-condensing boilers provide customers unique performance-related characteristics and consumer utility due to distinct venting characteristics and building constraints on installations. AGA stated that failure to adopt separate product classes would be inconsistent with DOE precedent. (AGA, No. 54 at p. 6)

Burnham stated that loss of the ability to use Category I venting (suitable for non-condensing boilers) is a loss in utility because the circumstances of many real world installations offer no practical alternatives to Category I venting, particularly in urban areas with closely-spaced residences. Burnham argued that providing heat and hot water are not the only utility functions, features, and performance characteristics of boilers, and that designs that allow proper installation in a variety of dwellings are a critical aspect of utility so that such products can be installed and used safely. Burnham stated limited exterior wall space and building or safety code or physical restrictions on where exhaust terminals can be located can cause venting issues, and that these

constraints can be a particular problem in urban areas with homes that are either closely spaced or conjoined. Burnham gave the example of older “row homes” found in Northeastern cities, which Burnham asserted represent a large part of the U.S. residential boiler market. (Burnham, No. 60 at p. 14) In addition, Burnham stated that there is a point at which increasing installation costs become large enough to effectively create a “loss of utility,” and this situation in the real world is as likely to “result in the unavailability” of appropriate non-condensing boilers as a pure design issue. Burnham stated that this is a direct violation of the “safe harbor rule” in 42 U.S.C. 6295(o)(4), among other provisions. (Burnham, No. 60 at pp. 4–16)

DOE received similar comments in response to the February 11, 2014 NODA and preliminary analysis, and addressed the comments in the March 31, 2015 NOPR. 79 FR 8122; 80 FR 17222. DOE maintains its position from the NOPR and reiterates that the utility derived by consumers from boilers is in the form of the space heating function that a boiler performs, rather than the type of venting the boiler uses. Condensing and non-condensing boilers perform equally well in providing this heating function. Likewise, a boiler requiring Category I venting and a boiler requiring Category IV venting are capable of providing the same heating function to the consumer, and, thus, provide virtually the same utility with respect to their primary function. DOE does not consider reduced costs associated with Category I venting in certain installations as a special utility, but rather, as was done in the March 2015 NOPR, the costs were considered as an economic impact on consumers that is considered in the rulemaking’s cost-benefit analysis. DOE does not agree with Burnham’s assertion that costs can become so prohibitively expensive that they should be considered a loss of utility of the product. Rather, the larger expense should be considered as an economic impact on consumers in the rulemaking’s cost-benefit analysis and ultimately the analysis will determine if a cost is economically prohibitive. DOE considered the additional cost of adding vent length required to change the vent location to avoid the code limitations outlined by Burnham. Details regarding installation costs can be located in section IV.F.2. DOE maintains that this final rule is not in violation of the 42 U.S.C. 6295(o)(4), because it does not result in the unavailability of any covered product class of performance

characteristics, features, sizes, capacities and volumes. DOE does not consider the type of venting to be a “feature” that would provide utility to consumers, other than the economic benefits of the venting type which are properly considered in the economic analysis.

3. Technology Options

As part of the market and technology assessment, DOE develops a comprehensive list of technologies to improve the energy efficiency of residential boilers. In the final rule analysis, DOE identified ten technology options that would be expected to improve the AFUE of residential boilers, as measured by the DOE test procedure: (1) Heat exchanger improvements; (2) modulating operation; (3) dampers; (4) direct vent; (5) pulse combustion; (6) premix burners; (7) burner derating; (8) low-pressure air-atomized oil burner; (9) delayed-action oil pump solenoid valve; and (10) electronic ignition.²² In addition, DOE identified three technologies that would reduce the standby mode and off mode energy consumption of residential boilers: (1) Transformer improvements; (2) control relay for models with brushless permanent magnet motors; and (3) switching mode power supply.

DOE received no comments suggesting additional technology options in response to the NOPR analysis, and thus, DOE has maintained the same list of technologies in the final rule analysis. After identifying all potential technology options for improving the efficiency of residential boilers, DOE performed the screening analysis (see section IV.B of this final rule or chapter 4 of the final rule TSD) on these technologies to determine which could be considered further in the analysis and which should be eliminated.

B. Screening Analysis

DOE uses the following four screening criteria to determine which technology options are suitable for further consideration in an energy conservation standards rulemaking:

1. *Technological feasibility.* Technologies that are not incorporated in commercial products or in working prototypes will not be considered further.

2. *Practicability to manufacture, install, and service.* If it is determined

that mass production and reliable installation and servicing of a technology in commercial products could not be achieved on the scale necessary to serve the relevant market at the time of the compliance date of the standard, then that technology will not be considered further.

3. *Impacts on product utility or product availability.* If it is determined that a technology would have significant adverse impact on the utility of the product to significant subgroups of consumers or would result in the unavailability of any covered product type with performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as products generally available in the United States at the time, it will not be considered further.

4. *Adverse impacts on health or safety.* If it is determined that a technology would have significant adverse impacts on health or safety, it will not be considered further.

(10 CFR part 430, subpart C, appendix A, 4(a)(4) and 5(b))

In sum, if DOE determines that a technology, or a combination of technologies, fails to meet one or more of the above four criteria, it will be excluded from further consideration in the engineering analysis. Additionally, it is DOE policy not to include in its analysis any proprietary technology that is a unique pathway to achieving a certain efficiency level. The reasons for eliminating any technology are discussed below.

The subsequent sections include comments from interested parties pertinent to the screening criteria, DOE’s evaluation of each technology option against the screening analysis criteria, and whether DOE determined that a technology option should be excluded (“screened out”) based on the screening criteria.

1. Screened-Out Technologies

During the NODA and NOPR phases, DOE screened out pulse combustion as a technology option for improving AFUE and screened out control relay for boiler models with brushless permanent magnet motors as a technology option for reducing standby electric losses. DOE decided to screen out pulse combustion based on manufacturer feedback during the Framework public meeting indicating that pulse combustion boilers have had reliability issues in the past, and therefore, manufacturers do not consider this a viable option to improve efficiency. Further, manufacturers indicated that

similar or greater efficiencies than those of pulse combustion boilers can be achieved using alternative technologies. DOE did not receive any comments related to screening out pulse combustion and maintained this position for the final rule, and accordingly, maintained its position from the NOPR to screen out pulse combustion as a technology option.

In the NODA and NOPR analysis, DOE decided to screen out the option of using a control relay to depower BPM motors due to feedback received during the residential furnace rulemaking (which was reconfirmed during manufacturer interviews for the residential boiler rulemaking), which indicated that using a control relay to depower brushless permanent magnet motors could reduce the lifetime of the motors. The result of such a design would likely be excessively frequent repair and maintenance of the boiler to replace the motor.

DOE also screened out burner derating as a technology option in the NOPR and final rule analysis. Burner derating reduces the burner firing rate while keeping heat exchanger geometry and surface area and the fuel-air ratio the same, which increases the ratio of heat transfer surface area to energy input, and increases the efficiency. However, the lower energy input means that less heat is provided to the user than with conventional burner firing rates. As a result of the decreased heat output of the boiler with derated burners, DOE has screened out burner derating as a technology option, as it could reduce consumer utility.

The efficiency advocates recommended that DOE assess whether the de-powering could be done in a manner to minimize the number of power cycles to address concerns regarding potential product life impacts, for example by only disconnecting when the boiler has been inactive for more than 24 hours. The efficiency advocates suggested that this approach would achieve the desired results during long periods of inactivity, such as during the summer, without cycling on and off during periods of regular activity. (Efficiency Advocates, No. 62 at p. 2)

DOE has not found any residential boilers which utilize control relays to completely depower the BPM motors. The feedback received from the residential furnace rulemaking indicated that it was not only the number of power cycles which could reduce product utility but the potential for large current upon start up. Therefore, DOE has maintained its position from the NOPR in this final

²² Although DOE has identified vent dampers and electronic ignition as technologies that improve residential boiler efficiency, DOE did not consider these technologies further in the analysis as options for improving efficiency of baseline units, because they are already included in baseline residential boilers.

rule and screened out control relays for models with brushless permanent magnet motors as a technology option, as it would reduce consumer utility. However, DOE will continue to evaluate this technology further in future rulemakings if motor technology develops that would allow for the inclusion of such a design.

2. Remaining Technologies

Through a review of each technology, DOE found that all of the other identified technologies met all four screening criteria and consequently, are suitable for further examination in DOE's analysis. In summary, DOE did not screen out the following technology options to improve AFUE: (1) heat exchanger improvements; (2) modulating operation; (3) direct vent; (4) premix burners; (5) low-pressure air-atomized oil burner; and (6) delayed-action oil pump solenoid valve. DOE also maintained the following technology options to improve standby mode and off mode energy consumption: (1) transformer improvements; and (2) switching mode power supply. All of these technology options are technologically feasible, given that the evaluated technologies are being used (or have been used) in commercially-available products or working prototypes. Therefore, all of the trial standard levels evaluated in this notice are technologically feasible. DOE also finds that all of the remaining technology options also meet the other screening criteria (*i.e.*, practicable to manufacture, install, and service, and do not result in adverse impacts on consumer utility, product availability, health, or safety). For additional details, please see chapter 4 of the final rule TSD.

C. Engineering Analysis

In the engineering analysis (corresponding to chapter 5 of the final rule TSD), DOE establishes the relationship between the manufacturer selling price (MSP) and improved residential boiler energy efficiency. This relationship serves as the basis for cost-benefit calculations for individual consumers, manufacturers, and the Nation. DOE typically structures the engineering analysis using one of three approaches: (1) design option; (2) efficiency level; or (3) reverse engineering (or cost-assessment). The design-option approach involves adding the estimated cost and efficiency of various efficiency-improving design changes to the baseline to model different levels of energy efficiency. The efficiency-level approach uses estimates of cost and efficiency at distinct levels

of efficiency from publicly-available information, and information gathered in manufacturer interviews that is supplemented and verified through technology reviews. The reverse-engineering approach involves testing products for efficiency and determining cost from a detailed bill of materials (BOM) derived from the reverse-engineering of representative products. The efficiency values under consideration range from that of a least-efficient boiler sold today (*i.e.*, the baseline) to the maximum technologically feasible efficiency level. At each efficiency level examined, DOE determines the manufacturer production cost (MPC) and MSP; this relationship is referred to as a cost-efficiency curve.

As noted in section III.B, the AFUE metric fully accounts for the fossil-fuel energy consumption in active, standby and off modes, whereas the electrical energy consumption in standby mode and off mode is accounted for with separate metrics that measure the power drawn during standby mode and off mode ($P_{W,SB}$ and $P_{W,OFF}$ for standby mode and off mode, respectively). In analyzing the technologies that would likely be employed to effect changes in these metrics, DOE found that the changes that would be implemented to increase AFUE were mostly independent from the changes that would be implemented to reduce the electrical standby mode and off mode energy consumption ($P_{W,SB}$ and $P_{W,OFF}$). For example, the primary means of improving AFUE is to improve the heat exchanger design, which DOE expects would have little or no impact on standby mode and off mode electrical energy consumption. Similarly, the design options considered likely to be implemented for reducing standby mode and off mode electrical energy consumption are not expected to impact the AFUE. Therefore, DOE conducted separate engineering and cost-benefit analyses for the AFUE metric and the standby mode and off mode metrics and their associated systems (fuel and electrical). In order to account for the total impacts of both considered standards, DOE added the monetized impacts from these two separate analyses in the NIA, LCC, and MIA as a means of providing a cumulative impact of both residential boilers standards. For the PBB, to estimate the cumulative impact for both standards, DOE determined the combined installed cost to the consumer and the first-year operating costs for each household.

For the NOPR analysis of AFUE efficiency levels, DOE conducted the engineering analysis for residential boilers using a combination of the

efficiency level and cost-assessment approaches. More specifically, DOE identified the efficiency levels for analysis and then used the cost-assessment approach to determine the technologies used and the associated manufacturing costs at those levels.

For the standby mode and off mode analyses, DOE adopted a design option approach, which allowed for the calculation of incremental costs through the addition of specific design options to a baseline model. DOE decided on this approach because it did not have sufficient data to execute an efficiency-level analysis, as manufacturers typically do not rate or publish data on the standby mode and or off mode energy consumption of their products.

DOE continued to use the same analytical approaches for the final rule as used in the NOPR. In response to the NOPR, DOE received specific comments from interested parties on certain aspects of the engineering analysis. A brief overview of the methodology, a discussion of the comments DOE received, and DOE's response to those comments, as well as any adjustments made to the engineering analysis methodology or assumptions as a result of those comments, are presented in the sections below. See chapter 5 of the final rule TSD for additional details about the engineering analysis.

1. Efficiency Levels

As noted previously, for analysis of amended AFUE standards, DOE used an efficiency-level approach to identify incremental improvements in efficiency for each product class. The efficiency-level approach enabled DOE to identify incremental improvements in efficiency for efficiency-improving technologies that boiler manufacturers already incorporate in commercially-available models. After identifying efficiency levels for analysis, DOE used a cost-assessment approach (section IV.C.2) to determine the MPC at each efficiency level identified for analysis. This method estimates the incremental cost of increasing product efficiency. For the analysis of amended standby mode and off mode energy conservation standards, DOE used a design-option approach and identified efficiency levels that would result from implementing certain design options for reducing power consumption in standby mode and off mode.

a. Baseline Efficiency Level and Product Characteristics

In its analysis, DOE selected baseline units typical of the least-efficient commercially-available residential boilers. DOE selected baseline units as

reference points for each product class, against which it measured changes resulting from potential amended energy conservation standards. The baseline efficiency level in each product class represents the basic characteristics of products in that class. A baseline unit is a unit that just meets current Federal energy conservation standards and provides basic consumer utility.

DOE uses the baseline unit for comparison in several phases of the analyses, including the engineering analysis, LCC analysis, PBP analysis, and the NIA. To determine energy savings that will result from an amended energy conservation standard, DOE compares energy use at each of the higher energy efficiency levels to the energy consumption of the baseline unit. Similarly, to determine the changes in price to the consumer that will result from an amended energy conservation standard, DOE compares the price of a baseline unit to the price of a unit at each higher efficiency level.

DOE received no comments regarding the baseline efficiency levels chosen for the NOPR analysis of amended AFUE standards. Thus, DOE has maintained these baseline efficiency levels for the final rule analysis, which are equal to the current Federal minimum standards for each product class in the final rule analysis. Table IV.2 presents the baseline AFUE levels identified for each product class. Additional details on the selection of baseline AFUE efficiency levels are in chapter 5 of the final rule TSD.

TABLE IV.2—BASELINE AFUE EFFICIENCY LEVELS

Product class	AFUE (%)
Gas-Fired Hot Water Boilers	82
Gas-Fired Steam Boilers	80
Oil-Fired Hot Water Boilers ..	84
Oil-Fired Steam Boilers	82

The input capacity is a factor that influences the MPC of a residential boiler. The impact of efficiency ratings on residential boiler prices can be captured by calculating the incremental price for each efficiency level higher than the baseline at a given input capacity. To provide a singular set of incremental price results for the engineering analysis, DOE selected a single input capacity for each product class analyzed for AFUE standards. DOE selected these input capacities by referencing a number of sources, including information obtained during manufacturer interviews, information collected for the market and technology

assessment, as well as information obtained from product literature.

In response to the representative input capacities selected in the engineering analysis from each product class, Burnham presented shipment information of their aggregated subsidiaries indicating the average input capacity sold in for each product class. Based upon this data, Burnham suggested that the representative input capacity for gas-fired hot water boilers should be changed to 120 kBtu/hr. (Burnham, No. 60 at p. 20)

In response, DOE notes that the representative input capacity is meant to describe the most typical boiler sold. Therefore, DOE believes that although the average of all shipments sold may be 120 kBtu/hr, the most often sold would be 100 kBtu/hr. AHRI stated that the analysis does not adequately evaluate the effect of revised efficiency standards on larger input boilers. AHRI stated that boilers are a very small segment of the U.S. residential heating market and commented that larger input boilers are the smallest segment of the residential boiler market. For these larger input models, AHRI argued that there is no economy of scale, and because relatively so few are manufactured, the costs of components are higher. The units are physically larger and weigh more so their shipping costs are larger. Accordingly, AHRI asserted that the information developed by the tear down analysis cannot be validly scaled up to these models which have input rates 2 to 2.5 times higher than the baseline models. (AHRI, No. 64 at p. 14) Similarly, Burnham stated that due to the size of the residential boiler market, the manufacturing costs for a 250,000 Btu/hr boiler may not be a simple linear scale. (Burnham, public meeting transcript, No. 50 at p. 34)

In response to these comments, DOE examined the parts catalogs of various manufacturers for a variety of boiler types within each product class. From this examination, DOE determined that the same materials, as well as purchase parts are utilized in the manufacture of both representative and larger capacity boilers. For example, a representative capacity heat exchanger may be comprised of four cast iron sections, including two end sections with two intermediate sections. A larger capacity unit would generally be comprised of a larger number of the same sections, typically two end sections with six intermediate sections for a 250 kBtu/hr boiler. Although the amount of material used increases as capacity increases, DOE has not found reason to believe that the cost of the material would

increase due to a lack of economy of scale.

In addition, DOE found that the large majority of components used for larger-capacity boilers were identical to those used in lower capacity boilers, although larger quantities of those components may be necessary in the manufacturing of higher-capacity boilers. For example, a larger-capacity burner may require a larger number of burner tubes. In several cases, the cost of the higher-capacity unit could be expected to be less than the result of a linear scaling upward of the cost, due to the need for only one component per unit regardless of capacity. In other words, there are certain fixed production costs that are present no matter the size of the boiler and only the variable costs increase with boiler size. For instance, a larger boiler would utilize the same controls and wiring harness as a smaller boiler, the cost of which would remain fixed regardless of the input capacity. DOE did find one relevant example, a higher-capacity premix burner, which may be purchased at a higher cost due to a lack of economy of scale. However, DOE believes that the potential increase in price of this purchase part would be offset by the many instances in which the production costs remain fixed regardless of capacity.

DOE notes that shipping costs are considered a sales expense and not a production cost. As discussed in section IV.C.2.e, when translating MPCs to MSPs, DOE applies a manufacturer mark-up to the MPC. This mark-up, based on an analysis of manufacturer SEC 10-K reports, includes outbound freight costs. Therefore, any increase in MPC would account for larger shipping costs via a higher MSP.

“Standby mode” and “off mode” power consumption are defined in the DOE test procedure for residential furnaces and boilers. DOE defines “standby mode” as “any mode in which the furnace or boiler is connected to a mains power source and offers one or more of the following space heating functions that may persist: a.) To facilitate the activation of other modes (including activation or deactivation of active mode) by remote switch (including thermostat or remote control), internal or external sensors, or timer; b.) Continuous functions, including information or status displays or sensor based functions.” 10 CFR part 430, subpart B, appendix N, section 2.12. “Off mode” is defined as “a mode in which the furnace or boiler is connected to a mains power source and is not providing any active mode or standby mode function, and where the mode may persist for an indefinite time.

The existence of an off switch in off position (a disconnected circuit) is included within the classification of off mode.” 10 CFR part 430, subpart B, appendix N, section 2.9. Finally, an “off switch” is defined as “the switch on the furnace or boiler that, when activated, results in a measurable change in energy consumption between the standby and off modes.” 10 CFR part 430, subpart B, appendix N, section 2.10.

Through review of product literature and discussions with manufacturers, DOE has found that boilers typically do not have an off switch. Manufacturers stated that if a switch is included with a product, it is primarily used as a service/repair switch, not for turning off the product during the off season. However, these switches could possibly

be used as off switches by the consumer. In cases where no off switch is present, no separate measurement for off mode is taken during testing, and the DOE test procedure sets off mode power equal to standby mode power ($P_{W,OFF} = P_{W,SB}$). In the case where an off switch is present, a measurement for off mode is required. 10 CFR part 430, subpart B, appendix N, section 8.11.2. Because DOE’s review of product literature and discussions with manufacturers revealed that most boilers do not have seasonal off switches, DOE assumed that the standby mode and the off mode power consumption are equal for its analysis.

To determine the baseline standby mode and off mode power consumption, DOE identified baseline components as those that consume the most electricity

during the operation of those modes. Since it would not be practical for DOE to test every boiler on the market to determine the baseline and since manufacturers do not currently report standby mode and off mode energy consumption, DOE “assembled” the most consumptive baseline components from the models tested to model the electrical system of a boiler with the expected maximum system standby mode and off mode power consumption observed during testing of boilers and similar equipment. The baseline standby mode and off mode power consumption levels used in the NOPR and final rule analysis are presented in Table IV.3.

TABLE IV.3—BASELINE STANDBY MODE AND OFF MODE POWER CONSUMPTION

Component	Standby mode and off mode power consumption (watts)					
	Gas-fired hot water	Oil-fired hot water	Gas-fired steam	Oil-fired steam	Electric hot water	Electric steam
Transformer	4	4	4	4	4	4
ECM Burner Motor	1	N/A	N/A	N/A	N/A	N/A
Controls	2.5	2.5	2.5	2.5	2.5	2.5
Display	4	4	4	4	4	4
Oil Burner	N/A	3	N/A	3	N/A	N/A
Total (watts)	11.5	13.5	10.5	13.5	10.5	10.5

In response to the NOPR standby mode and off mode analysis, Lochinvar suggested DOE should not regulate standby electricity consumption, because the standby electrical power consumption releases useful heat inside the home. Lochinvar highlighted that DOE’s test method for residential boilers affirms its position by assigning a jacket loss factor of 0 for “boilers intended to be installed indoors.” However, Lochinvar agreed that DOE should regulate off mode power consumption. Lochinvar also agreed with DOE’s assumption that most consumers do not turn off power to their boilers seasonally and suggested that DOE should invest effort in promoting turning off power to the boiler when there is no need for heating. Lochinvar stated that baseline power consumption predicted by DOE is reasonable, but that the assumption that the standby mode energy consumption is the same as the off mode energy consumption is erroneous. (Lochinvar, No. 63 at pp. 1–4)

In response to the suggestion that DOE not regulate standby mode, DOE notes that it is statutorily required to consider both standby mode and off mode electrical power consumption under EPCA at 42 U.S.C. 6295(gg)(3). As outlined in section III.B, the DOE test

procedure references two industry standards, ASHRAE 103–1993, which is used to determine the heating efficiency of a residential boiler, and IEC 62301, which is used to determine the standby mode and off mode energy consumption of a residential boiler. As noted by Lochinvar, ASHRAE 103 considers the jacket losses as usable heat for boilers intended to be installed indoors. However, the power consumption as measured by IEC Standard 62301 is a consumption metric and not an efficiency metric and is considered separately from the AFUE. The DOE test procedure for standby mode does not treat those boilers intended to be installed indoors any differently than those intended to be installed outdoors or in other unconditioned spaces, where the heat produced by the standby mode use would be a loss. While the majority of residential boilers may be installed indoors (as is assumed by the DOE test procedure), there are boilers available on the market that are designed for installation in unconditioned spaces or outdoors where any heat released by standby electrical power consumption would not be useful. Therefore, DOE has concluded it is appropriate to regulate the standby mode power consumption.

In response to the assertion that standby mode and off mode consumption are not equal, DOE agrees that standby mode energy consumption and off mode energy consumption are not equal in all cases (*i.e.*, if there is an off switch present). However, DOE notes that in cases where no off switch is present (which based on DOE’s review of the market and information obtained during manufacturer interviews is the most common situation), off mode use is equal to the standby mode use when tested according to DOE’s test method. 10 CFR part 430, subpart B, appendix N, section 8.11.2. DOE notes that Lochinvar agreed with DOE’s assumption that most consumers do not turn off power to their boilers seasonally. As noted, DOE has determined that an off switch is generally not present, so DOE has maintained its assumption that standby mode and off mode are equivalent under the DOE test method.

In response to the methodology presented in the NOPR for determining the efficiency levels by focusing on energy consumptive components, AHRI stated the component analysis methodology did not include any analysis of the standby mode and off mode energy consumptions of current

boiler models. AHRI stated that information from their members indicated that some boiler models have standby mode and off mode energy consumptions significantly above the baseline values used in the analysis. AHRI added that depending on how they are counted, accessories can influence the final standby power consumption which might impact the decisions about which accessories are provided with the boiler. For example, AHRI commented that outdoor temperature reset controls, which are used by many equipment manufacturers to comply with DOE design requirements, were not included in the baseline model analysis. AHRI recommended that DOE recalibrate this analysis with a higher baseline reflective of current models. (AHRI, No. 64 at p. 14) Burnham provided standby mode and off mode power measurements in terms of Volt-Amps (VA),²³ rather than watts, for each representative product class and indicated that, with the possible exception of the gas-fired steam product class, DOE's baseline models for standby/off mode power overstate current consumption significantly. (Burnham, No. 60 at p. 21) Burnham also stated that the availability of data from actual control systems, not a hypothetical construct, should be used to determine baselines, and suggested that DOE should expend the time and resources needed to obtain a reasonable amount of data upon which to form a conclusion before proceeding with this rulemaking. (Burnham, No. 60 at p. 21)

In response, DOE tested the standby consumption of several boilers, including those with outdoor reset controls. However, DOE chose to use a component analysis approach in the standby mode and off mode analysis in order to take into account the energy use of all possible accessories so as to prevent any possible limitation on the use of such accessories. For each product class, the baseline selected was greater than any model tested by DOE. During manufacturer interviews, no manufacturer indicated that any of their models exceeded the baseline selected by DOE for each product class. In the absence of any data showing that the standby mode and off mode energy consumption is higher than the DOE baseline levels, DOE has maintained the same levels for the final rule. DOE believes that this approach benefits manufacturers by allowing for flexibility of designs and ensuring that the standard will be set at a reasonable level that does not restrict the inclusion of technologies that could improve energy efficiency or provide consumer utility. DOE notes that AHRI's comment regarding higher baselines contradicts Burnham's comment which indicate that the standby mode and off mode baseline levels are high for most product classes. Further, Lochinvar's comment indicated that the baseline power consumption predicted by DOE is reasonable.

Regarding the standby mode data provided by Burnham, DOE notes that the DOE test procedure measures standby and off mode electricity

consumption in terms of real power (watts) rather than apparent power (VA). The data provided by Burnham cannot be incorporated into the standby mode and off mode analysis without the power factor of the units tested. DOE notes that there are hundreds of residential boiler models on the market with varying accessories, control systems, and power supplies. The assumptions made in the component analysis used for the determination for the baseline levels are rooted upon actual test data. DOE used a component-focused analysis that considered the most energy consumptive individual components in order to prevent setting a standard which could limit manufacturers' ability to utilize accessories which may consume power in standby mode, but reduce active mode energy use, or provide other consumer utility.

b. Other Energy Efficiency Levels

Table IV.4 through Table IV.7 show the efficiency levels DOE selected for the final rule analysis of amended AFUE standards, along with a description of the typical technological change at each level. These efficiency levels are the same as were presented in the NOPR, and following the same rationale, they are based upon the most common efficiency levels found on the market or a significant technology (e.g., condensing technology). In addition, DOE is statutorily required to consider the maximum technologically feasible efficiency level ("max-tech").

TABLE IV.4—AFUE EFFICIENCY LEVELS FOR GAS-FIRED HOT WATER BOILERS

Efficiency level	AFUE (%)	Technology options
0—Baseline	82	Baseline.
1	83	EL0 + Increased Heat Exchanger (HX) Area, Baffles.
2	84	EL1 + Increased HX Area.
3	85	EL2 + Increased HX Area.
4	90	Condensing HX.
5	92	EL4 + Improved HX.
6—Max-Tech	96	EL5 + Improved HX.

TABLE IV.5—AFUE EFFICIENCY LEVELS FOR GAS-FIRED STEAM BOILERS

Efficiency level	AFUE (%)	Technology options
0—Baseline	80	Baseline.
1	82	EL0 + Increased HX Area.
2—Max-Tech	83	EL1+ Increased HX Area.

²³ The voltage and current of an AC circuit constantly change over time. Due to this, the following terms are used to describe energy flow in a system. Real power performs work and is

measured in Watts (W). Reactive power does not perform work and is measured in VA reactive (VAr). Complex power is the vector sum of real and reactive power measurement in volt amps (VA).

Apparent power is the magnitude of the complex power measured in volt amps (VA).

TABLE IV.6—AFUE EFFICIENCY LEVELS FOR OIL-FIRED HOT WATER BOILERS

Efficiency level	AFUE (%)	Technology options
0—Baseline	84	Baseline.
1	85	EL0 + Increased HX Area.
2	86	EL1 + Increased HX Area.
3—Max-Tech	91	EL2 + Improved HX, Baffles, and Secondary Condensing HX.

TABLE IV.7—AFUE EFFICIENCY LEVELS FOR OIL-FIRED STEAM BOILERS

Efficiency level	AFUE (%)	Technology options
0—Baseline	82	Baseline.
1	84	EL0 + Increased HX Area.
2	85	EL1 + Increased HX Area.
3—Max-Tech	86	EL2 + Improved HX.

Several stakeholders raised concerns in response to the consideration of efficiency levels 1 through 3 selected for the gas-fired hot water boiler product class in the NOPR analysis. (Burnham, No. 60 at p. 17; Lochinvar, No. 63 at p. 2; AGA, No. 54 at p. 11) Lochinvar and Burnham expressed concern that the designs necessary to reach these efficiency levels increase the cost of the boiler, as well as the risk of condensation and carbon monoxide issues occurring. Lochinvar and Burnham argued that more frequent and prolonged exposure to condensate as a result of these designs, as well as the automatic means requirement, will increase the potential of condensation-related problems, such as nuisance faults, blocked heat exchangers, and corroding vents. Lochinvar and Burnham further argued that the corrosion of conventional venting by condensate may lead to the spilling of carbon monoxide into occupied spaces, thereby resulting in safety concerns. (Lochinvar, No. 63 at p. 2; Burnham No. 60 at p. 4) Lochinvar also stated that the sizing, installation, and operating conditions also influence the potential for condensation. (Lochinvar, No. 63 at p. 3)

The Department recognizes that certain efficiency levels could pose

health or safety concerns under certain conditions if they are not installed properly in accordance with manufacturer specifications. However, these concerns can be resolved with proper product installations and venting system design. This is evidenced by the significant shipments of products that are currently commercially available at these efficiency levels, as well as the lack of restrictions on the installation location of these units in installation manuals. In addition, DOE notes that products achieving these efficiency levels have been on the market since at least 2002, which demonstrates their reliability, safety, and consumer acceptance. Given the significant product availability and the amount of time products at these efficiency levels have been available on the market, DOE continues to believe that products at these efficiency levels are safe and reliable when installed correctly. Therefore, DOE has maintained the efficiency levels above 82 percent and below 90 percent in its final rule analysis. Discussion related to the costs associated with the installation of venting systems to prevent condensation and corrosion issues are outlined in section IV.F.2 of this final rule.

In addition, DOE considered whether changes to the residential furnaces and boilers test procedure adopted by the January 2016 test procedure final rule would necessitate changes to the AFUE levels being analyzed. The primary changes adopted in the test procedure are listed in section III.B. Adopting these provisions was assessed as having no impact on the AFUE for residential boilers. (See EERE-2012-BT-TP-0024) In response to the March 2015 NOPR, several stakeholders submitted comments suggesting that the proposed changes outlined in the March 2015 TP NOPR would impact the measured AFUE of products and ultimately impact the standards rulemaking. As described in section III.F, the January 2016 TP FR did not adopt any provisions impacting AFUE. Consequently, DOE used the same AFUE efficiency levels in the final rule analysis as were used in the NOPR analysis.

Table IV.8 through Table IV.13 show the efficiency levels DOE selected for the final rule analysis of standby mode and off mode standards, along with a description of the typical technological change at each level. DOE maintained the efficiency levels used in the NOPR stage of the analysis.

TABLE IV.8—STANDBY MODE AND OFF MODE EFFICIENCY LEVELS FOR GAS-FIRED HOT WATER BOILERS

Efficiency level	Standby mode and off mode power consumption (W)	Technology options
0—Baseline	11.5	Linear Power Supply.*
1	10.0	Linear Power Supply with Low-Loss Transformer (LLTX).
2	9.7	Switching Mode Power Supply.**
3—Max-Tech	9.0	Switching Mode Power Supply with LLTX.

* A linear power supply regulates voltage with a series element.

** A switching mode power supply regulates voltage with power handling electronics.

TABLE IV.9—STANDBY MODE AND OFF MODE EFFICIENCY LEVELS FOR GAS-FIRED STEAM BOILERS

Efficiency level	Standby mode and off mode power consumption (W)	Technology options
0—Baseline	10.5	Linear Power Supply.
1	9.0	Linear Power Supply with LLTX.
2	8.7	Switching Mode Power Supply.
3—Max-Tech	8.0	Switching Mode Power Supply with LLTX.

TABLE IV.10—STANDBY MODE AND OFF MODE EFFICIENCY LEVELS FOR OIL-FIRED HOT WATER BOILERS

Efficiency level	Standby mode and off mode power consumption (W)	Technology options
0—Baseline	13.5	Linear Power Supply.
1	12.0	Linear Power Supply with LLTX.
2	11.7	Switching Mode Power Supply.
3—Max-Tech	11.0	Switching Mode Power Supply with LLTX.

TABLE IV.11—STANDBY MODE AND OFF MODE EFFICIENCY LEVELS FOR OIL-FIRED STEAM BOILERS

Efficiency level	Standby mode and off mode power consumption (W)	Technology options
0—Baseline	13.5	Linear Power Supply.
1	12.0	Linear Power Supply with LLTX.
2	11.7	Switching Mode Power Supply.
3—Max-Tech	11.0	Switching Mode Power Supply with LLTX.

TABLE IV.12—STANDBY MODE AND OFF MODE EFFICIENCY LEVELS FOR ELECTRIC HOT WATER BOILERS

Efficiency level	Standby mode and off mode power consumption (W)	Technology options
0—Baseline	10.5	Linear Power Supply.
1	9.0	Linear Power Supply with LLTX.
2	8.7	Switching Mode Power Supply.
3—Max-Tech	8.0	Switching Mode Power Supply with LLTX.

TABLE IV.13—STANDBY MODE AND OFF MODE EFFICIENCY LEVELS FOR ELECTRIC STEAM BOILERS

Efficiency level	Standby mode and off mode power consumption (W)	Technology options
0—Baseline	10.5	Linear Power Supply.
1	9.0	Linear Power Supply with LLTX.
2	8.7	Switching Mode Power Supply.
3—Max-Tech	8.0	Switching Mode Power Supply with LLTX.

2. Cost-Assessment Methodology

At the start of the engineering analysis, DOE identified the energy efficiency levels associated with residential boilers on the market using data gathered in the market assessment.

DOE also identified the technologies and features that are typically incorporated into products at the baseline level and at the various energy efficiency levels analyzed above the baseline. Next, DOE selected products

for the physical teardown analysis having characteristics of typical products on the market at the representative input capacity. DOE gathered information by performing a physical teardown analysis (see section

IV.C.2.a) to create detailed BOMs, which included all components and processes used to manufacture the products. DOE used the BOMs from the teardowns as an input to a cost model, which was then used to calculate the MPC for products at various efficiency levels spanning the full range of efficiencies from the baseline to the max-tech. DOE reexamined and revised its cost assessment performed for the NOPR analysis based on response to comments received on the NOPR analysis.

During the development of the engineering analysis for the NOPR, DOE held interviews with manufacturers to gain insight into the residential boiler industry, and to request feedback on the engineering analysis and assumptions that DOE used. DOE used the information gathered from these interviews, along with the information obtained through the teardown analysis and public comments, to refine the assumptions and data in the cost model. Next, DOE derived manufacturer markups using publicly-available residential boiler industry financial data in conjunction with manufacturers' feedback. The markups were used to convert the MPCs into MSPs. Further information on comments received and the analytical methodology is presented in the subsections below. For additional detail, see chapter 5 of the final rule TSD.

a. Teardown Analysis

To assemble BOMs and to calculate the manufacturing costs for the different components in residential boilers, DOE disassembled multiple units into their base components and estimated the materials, processes, and labor required for the manufacture of each individual component, a process referred to as a "physical teardown." Using the data gathered from the physical teardowns, DOE characterized each component according to its weight, dimensions, material, quantity, and the manufacturing processes used to fabricate and assemble it.

DOE also used a supplementary method, called a "virtual teardown," which examines published manufacturer catalogs and supplementary component data to estimate the major physical differences between a product that was physically disassembled and a similar product that was not. For supplementary virtual teardowns, DOE gathered product data such as dimensions, weight, and design features from publicly-available information, such as manufacturer catalogs. The initial teardown analysis for the NODA included 6 physical and 5 virtual teardowns of residential

boilers. The NOPR teardown analysis included 16 physical and 4 virtual teardowns of residential boilers. DOE performed no further teardowns in the final rule analysis, but updated the costs data inputs based on the most recent materials and purchased part price information available.

DOE selected the majority of the physical teardown units in the gas hot water product class because it has the largest number of shipments. DOE conducted physical teardowns of twelve gas hot water boilers, five of which were non-condensing cast iron boilers, two of which were non-condensing copper boilers, and the remaining five of which were condensing boilers. DOE performed an additional two virtual teardowns of gas hot water boilers.

DOE also performed physical teardowns on two gas-fired steam boilers, as well as two oil-fired hot water boilers. DOE conducted one virtual teardown of an oil-fired steam boiler, as well as a virtual teardown of an oil-fired hot water boiler.

The teardown analysis allowed DOE to identify the technologies that manufacturers typically incorporate into their products, along with the efficiency levels associated with each technology or combination of technologies. The end result of each teardown is a structured BOM, which DOE developed for each of the physical and virtual teardowns. The BOMs incorporate all materials, components, and fasteners (classified as either raw materials or purchased parts and assemblies), and characterize the materials and components by weight, manufacturing processes used, dimensions, material, and quantity. The BOMs from the teardown analysis were then used as inputs to the cost model to calculate the MPC for each product that was torn down. The MPCs resulting from the teardowns were then used to develop an industry average MPC for each product class analyzed.

More information regarding details on the teardown analysis can be found in chapter 5 of the final rule TSD.

b. Cost Model

The cost model is a spreadsheet that converts the materials and components in the BOMs into dollar values based on the price of materials, average labor rates associated with manufacturing and assembling, and the cost of overhead and depreciation, as determined based on manufacturer interviews. To convert the information in the BOMs to dollar values, DOE collected information on labor rates, tooling costs, raw material prices, and other factors. For purchased parts, the cost model estimates the purchase price based on volume-

variable price quotations and detailed discussions with manufacturers and component suppliers. For fabricated parts, the prices of raw metal materials²⁴ (e.g., tube, sheet metal) are estimated on the basis of 5-year averages (from 2009 to 2014). The cost of transforming the intermediate materials into finished parts is estimated based on current industry pricing.²⁵

c. Manufacturing Production Costs

Once the cost estimates for all the components in each teardown unit were finalized, DOE totaled the cost of materials, labor, and direct overhead used to manufacture a product in order to calculate the manufacturer production cost. The total cost of the product was broken down into two main costs: (1) The full manufacturer production cost, referred to as MPC; and (2) the non-production cost, which includes selling, general, and administration (SG&A) expenses; the cost of research and development; and interest from borrowing for operations or capital expenditures. DOE estimated the MPC at each efficiency level considered for each product class, from the baseline through the max-tech. After incorporating all of the assumptions into the cost model, DOE calculated the percentages attributable to each element of total production cost (*i.e.*, materials, labor, depreciation, and overhead). These percentages are used to validate the assumptions by comparing them to manufacturers' actual financial data published in annual reports, along with feedback obtained from manufacturers during interviews. DOE uses these production cost percentages in the manufacturer impact analysis (MIA) (see section IV.J).

DOE considered the draft type (*i.e.*, natural draft or fan-assisted draft) and whether the model would have fan-assisted draft at a given efficiency level. Some boilers utilize natural draft, in which the natural buoyancy of the combustion gases is sufficient to vent those gases. Other boilers employ fan-assisted draft to help vent the products of combustion. As product efficiency increases, more heat is extracted from the flue gases, thereby resulting in less natural buoyancy that can be used to vent the flue gases. Through market review, DOE determined that the use of fan-assisted draft was based not only on efficiency, but also on installation considerations that impact draft.

²⁴ American Metals Market (Available at: <http://www.amm.com/>) (Last accessed January, 2015).

²⁵ U.S. Department of Labor, Bureau of Labor Statistics, Producer Price Indexes (Available at: <http://www.bls.gov/ppi/>) (Last accessed January, 2015).

Therefore, DOE estimated the additional cost of adding an inducer fan to a product, and the costs were added to a certain percentage of boilers at each efficiency level in the LCC analysis (see section IV.F.2 of this final rule).

In response to the MPC's presented in the NOPR, Weil-McLain stated that increasing efficiencies would require not just larger heat exchangers, but also different burners and flue dampers, in addition to the mechanical venting inducer necessary for fan-assisted draft. Weil-McLain added that non-product cost increases would be created by additional electric power consumption required to run the inducer or blower, new electric service installation in some instances, new venting and/or chimney lining, re-piping, and higher maintenance costs due to inducers/blowers and positive pressure vent systems. (Weil-McLain, No. 55 at p. 3)

Similarly, AHRI stated that DOE mischaracterized the design changes required to achieve the proposed minimum standards, and, therefore, the resulting cost to manufacturers is underestimated. Specifically, AHRI stated that DOE assumed that the only design change necessary to achieve the proposed revised minimum AFUE levels is to increase the heat exchanger area. AHRI argued that this analysis is incomplete because it fails to recognize the additional changes. AHRI suggested that in some cases models may become

bigger to accommodate the larger heat exchanger. In those cases, a larger model will require more material for the jacket and other design modifications. (AHRI, No. 64 at p. 12) Burnham stated that DOE did not include the cost of the system pump that manufacturers send along with the residential boiler. (Burnham, No. 60 at p. 24)

In response to the commenters' statements, DOE notes that the intent of listing the technology option corresponding to each efficiency level was to give stakeholders information on the specific design change that has been observed as the primary driver of improved efficiency; it was not intended to convey every component that will change from one efficiency level to the next. The increase in heat exchanger surface area was the primary technological driver in improving efficiency for many of the efficiency levels, and is, therefore, the technology option listed in those cases. The ancillary costs associated with increasing efficiency were included in the development of the MPC's at all efficiency levels, including those that primarily rely on increases in heat exchanger surface area noted by AHRI and Weil-McLain. When DOE performed the physical teardown analysis, it observed and accounted for any differences in other ancillary components at higher efficiency levels. DOE notes that the cost of the system

pump is included in the manufacturer production costs for hot water boilers. The non-product costs highlighted by Weil-McLain related to installation and energy costs are captured in the installation and maintenance cost of the LCC analysis, described in section IV.F of this final rule.

Burnham suggested there would be a significant cost increase for oil-fired and steam boilers as a result of a reduction in the production of cast iron gas-fired hot water boilers due to standards. Burnham stated that the fixed cost associated with foundry operation would be spread over a smaller number of castings. (Burnham, No. 60 at p. 17)

DOE notes that the standard level set for gas-fired hot water boilers still allows for the use of cast iron heat exchanger designs. DOE does not anticipate a reduction in shipments for this product class as a result of new standards. Therefore, DOE does not anticipate an increase cost for oil-fired and steam product classes.

In the final rule analysis, DOE revised the cost model assumptions it used for the NOPR analysis based on updated pricing information (for raw materials and purchased parts). These changes resulted in refined MPCs and production cost percentages. Table IV.14 through Table IV.17 present DOE's estimates of the MPCs by AFUE efficiency level for this rulemaking.

TABLE IV.14—MANUFACTURING COST FOR GAS-FIRED HOT WATER BOILERS

Efficiency level	Efficiency level (AFUE) (%)	MPC * (\$)	Incremental cost (\$)
Baseline	82	627	.....
EL1	83	635	8
EL2	84	642	15
EL3	85	677	50
EL4	90	1,010	383
EL5	92	1,180	553
EL6	96	1,516	889

* Non-condensing boilers (< 90 percent AFUE) are available with or without an inducer. The costs shown reflect the MPC for a boiler without an inducer.

TABLE IV.15—MANUFACTURING COST FOR GAS-FIRED STEAM BOILERS

Efficiency level	Efficiency level (AFUE) (%)	MPC * (\$)	Incremental cost (\$)
Baseline	80	778	.....
EL1	82	793	15
EL2	83	925	147

* Non-condensing boilers (< 90 percent AFUE) are available with or without an inducer. The costs shown reflect the MPC for a boiler without an inducer.

TABLE IV.16—MANUFACTURING COST FOR OIL-FIRED HOT WATER BOILERS

Efficiency level	Efficiency level (AFUE) (%)	MPC * (\$)	Incremental cost (\$)
Baseline	84	1,228	.....
EL1	85	1,302	75
EL2	86	1,377	149
EL3	91	2,314	1,087

* Non-condensing boilers (< 90 percent AFUE) are available with or without an inducer. The costs shown reflect the MPC for a boiler without an inducer.

TABLE IV.17—MANUFACTURING COST FOR OIL-FIRED STEAM BOILERS

Efficiency level	Efficiency level (AFUE) (%)	MPC * (\$)	Incremental cost (\$)
Baseline	82	1,252	.....
EL1	84	1,401	149
EL2	85	1,475	224
EL3	86	1,625	373

* Non-condensing boilers (< 90 percent AFUE) are available with or without an inducer. The costs shown reflect the MPC for a boiler without an inducer.

Table IV.18 through Table IV.23 each standby mode and off mode
present DOE's estimates of the MPCs at each efficiency level for this rulemaking.

TABLE IV.18—MANUFACTURING COST FOR GAS-FIRED HOT WATER BOILERS STANDBY MODE AND OFF MODE

Efficiency level	Standby mode and off mode power consumption (W)	MPC (\$)	Incremental cost (\$)
Baseline	11.5	8.55	.....
EL1	10.0	10.40	1.85
EL2	9.7	18.53	9.98
EL3	9.0	19.02	10.47

TABLE IV.19—MANUFACTURING COST FOR GAS-FIRED STEAM BOILERS STANDBY MODE AND OFF MODE

Efficiency level	Standby mode and off mode power consumption (W)	MPC (\$)	Incremental cost (\$)
Baseline	10.5	8.55	.....
EL1	9.0	10.40	1.85
EL2	8.7	18.53	9.98
EL3	8.0	19.02	10.47

TABLE IV.20—MANUFACTURING COST FOR OIL-FIRED HOT WATER BOILERS STANDBY MODE AND OFF MODE

Efficiency level	Standby mode and off mode power consumption (W)	MPC (\$)	Incremental cost (\$)
Baseline	13.5	8.55	.....
EL1	12.0	10.40	1.85
EL2	11.7	18.53	9.98
EL3	11.0	19.02	10.47

TABLE IV.21—MANUFACTURING COST FOR OIL-FIRED STEAM BOILERS STANDBY MODE AND OFF MODE

Efficiency level	Standby mode and off mode power consumption (W)	MPC (\$)	Incremental cost (\$)
Baseline	13.5	8.55	.....
EL1	12.0	10.40	1.85
EL2	11.7	18.53	9.98
EL3	11.0	19.02	10.47

TABLE IV.22—MANUFACTURING COST FOR ELECTRIC HOT WATER BOILERS STANDBY MODE AND OFF MODE

Efficiency level	Standby mode and off mode power consumption (W)	MPC (\$)	Incremental cost (\$)
Baseline	10.5	8.55	.....
EL1	9.0	10.40	1.85
EL2	8.7	18.53	9.98
EL3	8.0	19.02	10.47

TABLE IV.23—MANUFACTURING COST FOR ELECTRIC STEAM BOILERS STANDBY MODE AND OFF MODE

Efficiency level	Standby mode and off mode power consumption (W)	MPC (\$)	Incremental cost (\$)
Baseline	10.5	8.55	.....
EL1	9.0	10.40	1.85
EL2	8.7	18.53	9.98
EL3	8.0	19.02	10.47

Chapter 5 of the final rule TSD presents more information regarding the development of DOE's estimates of the MPCs for this rulemaking.

d. Cost-Efficiency Relationship

The result of the engineering analysis is a cost-efficiency relationship. DOE created cost-efficiency curves representing the cost-efficiency relationship for each product class that it examined. To develop the cost-efficiency relationships for residential boilers, DOE examined the cost differential to move from one efficiency level to the next for each manufacturer. DOE used the results of teardowns on a market-share-weighted average basis to determine the industry average cost increase to move from one efficiency level to the next. Additional details on how DOE developed the cost-efficiency relationships and related results are available in chapter 5 of the final rule TSD, which also presents these cost-efficiency curves in the form of energy efficiency versus MPC.

The results indicate that cost-efficiency relationships are nonlinear. In other words, as efficiency increases, manufacturing becomes more costly. A

large cost increase is evident between non-condensing and condensing efficiency levels due to the requirement for a heat exchanger that can withstand corrosive condensate.

e. Manufacturer Markup

To account for manufacturers' non-production costs and profit margin, DOE applies a non-production cost multiplier (the manufacturer markup) to the full MPC. The resulting MSP is generally the price at which the manufacturer can recover all production and non-production costs and earn a profit. To meet new or amended energy conservation standards, manufacturers typically introduce design changes to their product lines that increase manufacturer production costs. Depending on the competitive environment for these particular products, some or all of the increased production costs may be passed from manufacturers to retailers and eventually to consumers in the form of higher purchase prices. As production costs increase, manufacturers typically incur additional overhead. For a profitable business, the MSP should be high enough to recover the full cost of

the product (*i.e.*, full production and non-production costs) and yield a profit. The manufacturer markup has an important bearing on profitability. A high markup under a standards scenario suggests manufacturers can readily pass along the increased variable costs and some of the capital and product conversion costs (the one-time expenditures) to consumers. A low markup suggests that manufacturers will not be able to recover as much of the necessary investment in plant and equipment.

To calculate the manufacturer markups, DOE used 10-K reports²⁶ submitted to the U.S. Securities and Exchange Commission (SEC) by the three publicly-owned residential boiler companies. The financial figures necessary for calculating the manufacturer markup are net sales, costs of sales, and gross profit. For boilers, DOE averaged the financial figures spanning the years 2008 to 2012 in order to calculate the markups. DOE used this approach because amended

²⁶ U.S. Securities and Exchange Commission, Annual 10-K Reports (Various Years) (Available at: <http://sec.gov>).

standards may transform high-efficiency products (which currently are considered premium products) into typical products. DOE acknowledges that there are numerous manufacturers of residential boilers that are privately-held companies, which do not file SEC 10-K reports. In addition, while the publicly-owned companies file SEC 10-K reports, the financial information summarized may not be exclusively for the residential boiler portion of their business and can also include financial information from other product sectors, whose margins could be quite different from the residential boiler industries. DOE discussed the manufacturer markup with manufacturers during interviews, and used the feedback to validate the markup calculated through review of SEC 10-K reports. DOE received no comments regarding the manufacturer markup used in the NODA and NOPR analysis. See chapter 5 of the final rule TSD for more details about the manufacturer markup calculation.

f. Manufacturer Interviews

Throughout the rulemaking process, DOE has sought feedback and insight from interested parties that would improve the information used in its analyses. DOE interviewed manufacturers as a part of the manufacturer impact analysis (see section IV.J.3). During the interviews, DOE sought feedback on all aspects of its analyses for residential boilers. For the engineering analysis, DOE discussed the analytical inputs, assumptions, and estimates, and cost-efficiency curves with residential boiler manufacturers. DOE considered all the information manufacturers provided when refining its analytical inputs and assumptions. However, DOE incorporated equipment and manufacturing process figures into the analysis as averages in order to avoid disclosing sensitive information about individual manufacturers' products or manufacturing processes. More details about the manufacturer interviews are contained in chapter 12 of the final rule TSD.

D. Markups Analysis

DOE uses appropriate markups (e.g., manufacturer markups, retailer markups, distributor markups, contractor markups) and sales taxes to convert the manufacturer selling price (MSP) estimates from the engineering analysis to consumer prices, which are then used in the LCC and PBP analysis and in the manufacturer impact analysis. DOE develops baseline and incremental markups based on the product markups at each step in the

distribution chain. The markups are multipliers that represent increases above the MSP for residential boilers. The incremental markup relates the change in the manufacturer sales price of higher-efficiency models (the incremental cost increase) to the change in the consumer price. Before developing markups, DOE defines key market participants and identifies distribution channels.

Commenting on the NOPR, AHRI stated that based on preliminary survey feedback, contractors only apply a single markup regardless of the product efficiency. (AHRI, Public Meeting Transcript, No. 50 at pp. 71–72) Burnham further stated that AHRI's comments demonstrate that DOE's use of "incremental" markups through the distribution channel has no foundation either in theory or actual practice. Burnham stated that DOE must eliminate the use of incremental markups before it promulgates a new rule for boilers. (Burnham, No. 60 at pp. 19–20)

DOE believes that AHRI's comments on the NOPR referred to more extensive comments that it provided in response to the 2014 NOPR for small, large, and very large commercial package air conditioning and heating equipment. (EERE–2013–BT–STD–0007) In these comments, AHRI included a report that laid out three main arguments: (1) The incremental markup approach relies on an assumption of perfect competition, which is an outdated model of the economy; (2) relatively constant percent gross margins observed in aggregated HVAC industry data imply the use of fixed-percent markups over time; and (3) interview responses from wholesalers and contractors are consistent with the use of fixed-percent markups. (Docket No. EERE–2013–BT–STD–0007, AHRI, No. 68 at p. 29)

DOE responds to these points as follows:

(1) DOE's incremental markup approach is based on the widely accepted economic view that prices closely reflect marginal costs in competitive markets and in those with a limited degree of concentration. Economic theory permits that an incremental cost can have a markup on it that is different from the markup on the baseline product, and DOE's incremental markup approach follows this assumption. AHRI does not provide sufficient proof that such theory should be abandoned in the case of the HVAC industry.

(2) In examining the relatively constant HVAC percent margin trend and its underlying prices, DOE found that the average inflation-adjusted

prices of HVAC products are relatively fixed during this period as well. This set of historical data has no bearing on firm markup behavior under product price increases, such as DOE projects would occur when higher-efficiency products are introduced. If prices are relatively constant, the incremental markup approach will arrive at the same price prediction as applying fixed-percent margin; hence, the historically constant percent margins do not necessarily imply a constant percent margin in the future, especially in the case of increased input prices. DOE evaluated time series margin and price data from three industries that experienced rapidly changing input prices—the LCD television retail market, the U.S. oil and gasoline market, and the U.S. housing market. The results indicate that dollar margins vary across different markets to reflect changes in input price, but the percent margins do not remain fixed over time in any of these industries. Appendix 6B in the final rule TSD describes DOE's findings.

(3) It is not clear whether the interview responses received by AHRI reflect an accurate understanding of DOE's incremental markup approach. In contrast to the characterization of those responses by AHRI, an in-depth interview with an HVAC consultant conducted by DOE indicates that while HVAC contractors aim to maintain fixed percent markups, market pressures force them to reevaluate and adjust markups over time to stay competitive.

DOE concludes that there is not sufficient evidence to support the application of fixed percent markups to the cost increment on efficient equipment. Further discussion is found in section 6.4 and appendix 6B of the final rule TSD. In spite of their efforts to do so, firms in this market generally cannot maintain fixed percent margins in the long run under changing cost conditions. DOE's incremental markup approach allows the part of the cost that is thought to be affected by the standard to scale with the change in manufacturer price.

For the NOPR, DOE characterized three distribution channels to describe how residential boiler products pass from the manufacturer to residential and commercial consumers: (1) Replacement market; (2) new construction, and (3) national accounts.²⁷ 80 FR 17222,

²⁷ The national accounts channel is an exception to the usual distribution channel that is only applicable to those residential boilers installed in the small to mid-size commercial buildings where the on-site contractor staff purchase equipment directly from the wholesalers at lower prices due

17249–50 (March 31, 2015). The replacement market distribution channel is characterized as follows:

Manufacturer → Wholesaler → Mechanical contractor → Consumer

The new construction distribution channel is characterized as follows:

Manufacturer → Wholesaler → Mechanical contractor → General contractor → Consumer

In the third distribution channel, the manufacturer sells the product to a wholesaler and then to the commercial consumer through a national account:

Manufacturer → Wholesaler → Consumer (National Account)

DOE did not receive any comments on the distribution channels, and used the same distribution channels for the final rule.

To develop markups for the parties involved in the distribution of the product, for the NOPR, DOE utilized several sources, including: (1) The Heating, Air-Conditioning & Refrigeration Distributors International (HARDI) 2012 Profit Report²⁸ to develop wholesaler markups; (2) U.S. Census Bureau's 2007 Economic Census data²⁹ for the commercial and institutional building construction industry to develop mechanical and general contractor markups. In addition, DOE used the 2005 Air Conditioning Contractors of America's (ACCA) Financial Analysis for the Heating, Ventilation, Air-conditioning, and Refrigeration (HVACR) Contracting Industry Report³⁰ to disaggregate the mechanical contractor markups into replacement and new construction markets.

Commenting on the NOPR, ACCA expressed its concern that DOE used ACCA's 2005 Financial Analysis for the HVACR Contracting Industry Report for its markup analysis because this report is more than a decade old and not a relevant resource. (ACCA, No. 65 at p. 2) In response, DOE only uses the ACCA 2005 Report to derive the ratios of the markup in new construction applications and in replacement applications to the markup for all

installations. ACCA's 2005 Financial Analysis is the only public source available that disaggregates HVAC contracting industry into replacement and new construction markets. DOE acknowledges that many financial conditions of the HVAC contracting industry have changed since 2005, but DOE believes that markups would tend to fluctuate in a similar manner for both new construction and replacement applications, and, thus, the ratios for 2005 mentioned above are not likely to change significantly over time. Therefore, DOE continued to use ACCA's 2005 Financial Analysis in the markup analysis for the final rule for this limited purpose.

In addition to the markups, DOE derived State and local taxes from data provided by the Sales Tax Clearinghouse.³¹ These data represent weighted-average taxes that include county and city rates. DOE derived shipment-weighted-average tax values for each region considered in the analysis.

Chapter 6 of the final rule TSD provides further detail on the estimation of markups.

E. Energy Use Analysis

The energy use analysis determines the annual energy consumption of residential boilers at different efficiencies in representative U.S. single-family homes, multi-family residences, and commercial buildings, and assesses the energy savings potential of increased boiler efficiency. DOE estimated the annual energy consumption of residential boilers at specified energy efficiency levels across a range of climate zones, building characteristics, and heating applications. The annual energy consumption includes the natural gas, liquid petroleum gas (LPG), oil, and/or electricity use by the boiler for space and water heating. The annual energy consumption of residential boilers is used in subsequent analyses, including the LCC and PBP analysis and the national impacts analysis.

1. Building Sample

For the NOPR, for the residential sector, DOE used the Energy Information Administration's (EIA) 2009 Residential Energy Consumption Survey (RECS 2009) to establish a sample of households using residential boilers for each boiler product class.³² The RECS

data provide information on the vintage of the home, as well as heating and water heating energy use in each home. The survey also included household characteristics such as the physical characteristics of housing units, household demographics, information about other heating and cooling products, fuels used, energy consumption and expenditures, and other relevant data. DOE used the household samples not only to determine boiler annual energy consumption, but also as the basis for conducting the LCC and PBP analysis. DOE used data from RECS 2009 together with AHRI shipment data by State³³ to project household weights and characteristics in 2020, the expected compliance date of any amended energy conservation standards for residential boilers at the time of the NOPR.

Commenting on the NOPR, AHRI stated that it appears that DOE significantly overestimated the number of buildings that use a residential boiler for space heating, as RECS 2009 indicates 11 million housing units use a gas-fired or oil-fired hydronic heating system, and not 16.6 million as shown in the NOPR TSD. (AHRI, No. 64 at p. 10) In response, it appears that AHRI is referring to Table 7.2.1 in the NOPR TSD, which shows the number of RECS records (and the corresponding number of houses represented by those records) used for each boiler product class. The total of these records and corresponding number of houses is not an estimate of the number of buildings that use a residential boiler for space heating. In fact, the total is not relevant in any way. Because RECS 2009 does not report the heating medium (hot water or steam), DOE used samples for hot water and steam boiler product classes that include all houses that might use either hot water or steam. For steam boilers in particular, this results in a sample size that represents many more houses than actually use steam boilers.

DOE accounted for applications of residential boilers in commercial buildings because the intent of the analysis of consumer impacts is to capture the full range of usage conditions for these products. DOE considers the definition of "residential boiler" to be limited only by its capacity.³⁴ DOE determined that these applications represent about 7 percent of the residential boiler market. DOE

to the large volume of equipment purchased, and perform the installation themselves.

²⁸ Heating, Air Conditioning & Refrigeration Distributors International 2013 Profit Report (Available at: <http://hardinet.org/>) (Last accessed April 10, 2014).

²⁹ U.S. Census Bureau, 2012 Economic Census Data (2012) (Available at: <http://www.census.gov/econ/>) (Last accessed March 4, 2015).

³⁰ Air Conditioning Contractors of America (ACCA), Financial Analysis for the HVACR Contracting Industry: 2005 (Available at: <https://www.acca.org/home>) (Last accessed April 10, 2013).

³¹ Sales Tax Clearinghouse Inc., State Sales Tax Rates Along with Combined Average City and County Rates, 2015 (Available at: <http://thetstc.com/SRates.stm>) (Last accessed Sept. 1, 2015).

³² U.S. Department of Energy: Energy Information Administration, Residential Energy Consumption

Survey: 2009 RECS Survey Data (2013) (Available at: <http://www.eia.gov/consumption/residential/data/2009/>) (Last accessed October, 2015).

³³ Air-Conditioning, Heating, and Refrigeration Institute (AHRI), Confidential Shipment data for 2003–2012.

³⁴ 42 U.S.C. 6291(23).

used the EIA's 2003 Commercial Building Energy Consumption Survey³⁵ (CBECS 2003) to establish a sample of commercial buildings using residential boilers for each boiler product class.³⁶ Criteria were developed to help size these boilers using several variables, including building square footage and estimated supply water temperature. For boilers used in multi-family housing, DOE used the RECS 2009 sample discussed above, accounting for situations where more than one residential boiler is used to heat a building.

AHRI stated that an analysis that uses national data is not adequately evaluating the market for residential boilers in the U.S., which is concentrated in the Northeast and in older homes, and for which national average statistics are not representative. (AHRI, No. 64 at p. 10) In response, DOE is well aware of the regionality of the residential boiler market. The LCC analysis does not select buildings across the nation at random, but rather selects the homes and buildings reported by RECS 2009 and CBECS 2003 that have residential boilers; the RECS 2009- and CBECS 2003-derived sample reflects the actual distribution of residential gas-fired or oil-fired boilers in the U.S., and the weighting of the samples is adjusted to match the shipments by State from 2008–2012 provided by AHRI.³⁷ Additionally, DOE did not use national average values in its LCC analysis, but rather the specific data for each household or building reported by RECS 2009 and CBECS 2003 to determine the energy use of each boiler. Most of the data used in the LCC analysis are disaggregated by RECS 2009 regions or CBECS 2003 Census divisions. See appendix 7A of the final rule TSD for more details.

2. Space Heating Energy Use

For the NOPR, to estimate the annual energy consumption of boilers meeting higher efficiency levels, DOE first calculated the heating load based on the RECS and CBECS estimates of the annual energy consumption of the boiler for each household. DOE estimated the

house heating load by reference to the existing boiler's characteristics, specifically its capacity and efficiency (AFUE), as well as by the heat generated from the electrical components. DOE used an oversize factor of 0.7 (*i.e.*, the boiler is 70 percent larger than it needs to be to fulfil the house heating load) from the DOE test procedure to determine the capacity of the existing boiler. The AFUE of the existing boilers was determined using the boiler vintage (the year of installation of the product) from RECS and historical data on the market share of boilers by AFUE. DOE then used the house heating load to determine the burner operating hours, which are needed to calculate the fossil fuel consumption and electricity consumption based on the DOE residential furnace and boiler test procedure.

Commenting on the NOPR, AHRI stated that DOE's average annual energy use estimates (95.3 MMBtu/year for gas-fired hot water boilers, 98.1 MMBtu/year for gas-fired steam boilers, 98.1 MMBtu/year for oil-fired hot water boilers, 99.9 MMBtu/year for oil-fired steam boilers) are almost twice the RECS national average annual space heating energy consumption for housing units using natural gas of 51.4 million Btus and almost 40 percent higher than the RECS national average annual space heating energy consumption for housing units using fuel oil of 70.3 million Btus. (AHRI, No. 64 at p. 12)

The primary reasons for the differences between the national RECS result and DOE's estimates are: (1) DOE's analysis recognizes that the boilers are mostly installed in colder climates, and (2) DOE accounts for residential boilers in commercial buildings. Since boilers are mostly installed in colder climates, the average energy use of boilers is significantly higher than the average space heating national energy use. Based on 2008–2012 AHRI shipments data by State and RECS 2009 households, almost 70 percent of gas-fired boilers and 90 percent of oil-fired boilers are installed in the Northeast. In 2009, based on RECS 2009 and 2008–2012 AHRI shipments data, the average annual space heating energy consumption is 75.8 MMBtu/yr for housing units with gas-fired hot water boilers. For the NOPR, DOE assumed that 7 percent of residential boilers are installed in commercial applications. In 2003, based on CBECS 2003 data and 2008–2012 AHRI shipments data, DOE estimated that average annual space heating energy consumption is 356.8 MMBtu/yr for buildings with gas-fired hot water boilers. The resulting weighted average

results are 95.3 MMBtu/yr for buildings with gas-fired hot water boilers. For the NOPR and final rule, these numbers are adjusted to take into account: 2008–2012 AHRI shipments data by State, typical heating degree days (HDD) for an average year, HDD trends, building shell efficiency, number of boilers per household or building, automatic means, and secondary heating equipment. Based on these adjustments, for the final rule, DOE estimated that the average annual shipment-weighted energy use is 56.7 MMBtu/yr for gas-fired hot water boilers in residential applications and 205.9 MMBtu/yr in commercial applications in 2021 (or 68.6 MMBtu/yr for both residential and commercial buildings). For gas-fired hot water boilers, the 2021 estimates are about 30 percent lower than the estimated values in RECS 2009 or CBECS 2003. The results for the other boiler product classes are similar. See chapter 7 of the final rule TSD for more details about the energy use methodology and results.

Commenting on the NOPR, Energy Kinetics stated that DOE should use both the 0.7 oversizing factor and the demonstrated oversizing factors between three and four used in the NODA for the installed base of equipment. (Energy Kinetics, No. 52 at p. 3) DOE agrees that the oversize factor varies for each household. For the final rule, DOE revised the equipment sizing criteria to match historical shipments by capacity, which accounts for the variability of the oversize factor found in the field.

DOE adjusted the energy use to normalize for weather by using long-term heating degree-day (HDD) data for each geographical region.³⁸ For the NOPR, DOE also accounted for change in building shell characteristics between 2009 and 2020 by applying the building shell efficiency indexes in the National Energy Modeling System (NEMS) based on EIA's *Annual Energy Outlook 2013* (AEO 2013).³⁹ DOE also accounted for future heating season climate based on AEO 2013 HDD projections.

AHRI questioned the applicability of the building shell efficiency index to multi-family or row houses with shared walls. (AHRI, Public Meeting Transcript, No. 50 at p. 83) In response, the AEO building shell efficiency index

³⁵ U.S. Department of Energy: Energy Information Administration, *Commercial Buildings Energy Consumption Survey* (2003) (Available at: <http://www.eia.gov/consumption/commercial/data/2003/index.cfm?view=microdata>) (Last accessed October, 2015).

³⁶ CBECS 2012 was not available at the time of the analysis. The full CBECS 2012 dataset is expected to be available in February 2016.

³⁷ Air-Conditioning Heating and Refrigeration Institute (AHRI), *2003–2012 Residential Boilers Shipments Data* (Provided to Lawrence Berkeley National Laboratory) (Last accessed November 15, 2013).

³⁸ National Oceanic and Atmospheric Administration, *NCDC Climate Data Online* (Available at: <http://www7.ncdc.noaa.gov/CDO/CDODivisionalSelect.jsp>) (Last accessed October 15, 2013).

³⁹ U.S. Department of Energy-Energy Information Administration, *Annual Energy Outlook 2013 with Projections to 2040* (Available at: <http://www.eia.gov/forecasts/aeo/>).

is an average intended to reflect all building types in general. Indexes that are specific to building types are not available. In any case, if DOE were to assume that the building shell efficiency of multi-family or row houses increases less than all buildings in general (as is likely to be the case), the projected heating load of such buildings would be higher than assumed in DOE's analysis, and the energy savings for the higher-efficiency boilers would be greater. DOE prefers to be conservative and not overestimate the savings for this building sub-type. For the final rule, DOE used the building shell efficiency index from *AEO 2015* and a compliance year of 2021.⁴⁰ DOE also used the latest HDD projections from *AEO 2015* and updated the long-term HDD data.⁴¹

a. Impact of Return Water Temperature on Efficiency

For the NOPR, DOE accounted for boiler operational efficiency in specific installations by adjusting the AFUE of the sampled boiler based on an average system return water temperature. The criteria used to determine the return water temperature of the boiler system included consideration of building vintage, product type (condensing or non-condensing, single-stage or modulating), and whether the boiler employed an automatic means for adjusting water temperature. Using product type and system return water temperature, DOE developed and applied the AFUE adjustments based on average heating season return water temperatures.

Commenting on the NOPR, Burnham tested a condensing gas boiler and a non-condensing oil boiler to determine the impact of return water temperature on boiler efficiency. Burnham stated that, based on its test results, DOE is overstating the impact of water temperature on both gas-fired and oil-fired non-condensing boilers. Burnham recommended that the correction factor for non-condensing boilers should be about half that estimated by DOE for the NOPR (which was 1 percent). (Burnham, No. 60 at pp. 21–22) For condensing boilers, Burnham stated that DOE's assumed 2.5-percent reduction to adjust for return water temperature is low, especially at 92-percent and 96-percent AFUE, where the reduction is

probably more like 4.5 percent and 6.5 percent, respectively. (Burnham, No. 60 at p. 66)

For the final rule, for non-condensing boilers, DOE used the data provided by Burnham to determine the impact of return water temperature on boiler efficiency. To determine the adjustment for condensing boilers, DOE collected data on several more model series in addition to the data provided by Burnham, which appear to refer to a 91-percent AFUE boiler and to show a decrease of approximately 3.3 to 3.5 percent in efficiency for boilers operating with return water temperatures between 120 and 140 °F. The other sources indicate a lower decrease than the data on a single Burnham boiler. Based upon all of the data, DOE estimated a reduction in efficiency of about 2.1 percent for condensing boilers. Regarding Burnham's comment that the reduction is higher at 92-percent and 96-percent AFUE, DOE did not find sufficient evidence to justify varying the percent decrease by AFUE. See appendix 7B of the final rule TSD for additional details.

b. Impact of Automatic Means for Adjusting Water Temperature on Energy Use

For the NOPR, DOE incorporated the impact of automatic temperature reset means on boiler energy use by adjusting AFUE based on a reduction in average return water temperature (RWT). DOE calculated the reduction in average RWT for single-stage boilers based on the duration of burner operating hours at reduced RWT. For modulating boilers, DOE used the average relationship⁴² between RWT and thermal efficiency to establish the magnitude of the efficiency adjustment required for the high- and low-temperature applications. DOE maintained the same approach for the final rule. See appendix 7B of the final rule TSD for details on how DOE calculated the adjustment for automatic means.

AHRI stated that DOE's underestimated the benefit of the "automatic means" that is now provided with residential boilers. AHRI acknowledged that the TSD provides the calculation for adjusting the AFUE to account for the benefit of the automatic means; however, the adjustment for

single-stage non-condensing boilers results in only a 0.05-percent AFUE improvement, which is based on the improvement of steady-state efficiency with a 2 °F reduction of the return water temperature. According to AHRI, studies have shown that this device or control feature does reduce the energy consumption of boilers in the field. A conservative estimate of the savings from automatic means would be 5 percent, but a more realistic range is 5 to 8 percent. (AHRI, No. 64 at p. 12)

DOE found that the majority of single-stage products sampled utilized a pre-purge control function that allows the purging of residual heat within the boiler prior to ignition of the burner. DOE also found that the majority of boiler models sampled incorporate a time limit and a low temperature limit function within the control strategy. The time limits range from two to three minutes (by default), with some boilers allowing for user-defined durations. DOE's research has shown that there is limited field and test data on the effectiveness of the pre-purge technology, which is the primary technology in single-stage non-condensing boilers to implement the automatic means design requirement. Based on the logic described in appendix 7B of the final rule TSD, the impact on boiler steady-state efficiency appears to be small. In its analysis, DOE accounts for the variability of idle losses during the non-heating season, which already takes into account for some automatic means improvements from different technologies (e.g., outdoor reset). For the rule, because of limited availability of field and test data, DOE kept its NOPR approach for determining the impact of the automatic means on residential boiler efficiency.

c. Impact of Jacket Losses on Energy Use

For the NOPR, DOE also accounted for jacket losses when the boiler is located in a non-conditioned space (i.e., unconditioned basement or garage). For boilers located in conditioned spaces, DOE assumed that jacket losses contribute to space heating as useful heat. See appendix 8C of the final rule TSD for details about how DOE determined the installation location of boilers.

AHRI stated that DOE assumes that 35 percent of residential gas-fired boilers and 53 percent of residential oil-fired boilers are installed in unconditioned spaces. AHRI questioned the validity of these estimates, since most boilers in homes in the Northeast Census region are installed in unconditioned basements that are part of the home, which still adds heat to the interior of

⁴⁰ U.S. Department of Energy-Energy Information Administration, *Annual Energy Outlook 2015 with Projections to 2040* (Available at: <<http://www.eia.gov/forecasts/aeo/>>).

⁴¹ National Oceanic and Atmospheric Administration, NNDC Climate Data Online (Available at: <http://www7.ncdc.noaa.gov/CDO/CDODivisionalSelect.jsp>) (Last accessed October 15, 2015).

⁴² Appendix 7B includes a list of references used to derive the relationship. No information is available about the relationship between AFUE and RWT, while manufacturers publish data on the relationship between boiler thermal efficiency and the RWT. DOE assumed that AFUE scales according to the relationship reported for the thermal efficiency.

the structure, such that it is not totally wasted energy. According to AHRI, the analysis should recognize that. Furthermore, AHRI argued that the jacket losses assumed in DOE's analysis randomly favor condensing boilers. According to AHRI, DOE assumes that jacket losses for high-mass boilers are equal to the jacket loss factor, CJ, for boilers installed as isolated combustion systems (ICS), but decides to assume that CJ for low-mass boilers is a tenth of this value (*i.e.*, 0.24), instead of using the value provided in ASHRAE 103–2007 for finned-tube boilers (*i.e.*, 0.5). This assumes that condensing boilers, which account for a greater proportion of low-mass boilers, will have lower jacket loss values than those assumed in the test procedure. Additionally, these jacket loss factors are only one portion of the total jacket loss, which is the jacket loss factor multiplied by the jacket loss measured during steady-state operation. Assuming these factors, DOE has made a determination that the jacket loss is equal to 1.0 percent, which is the default jacket loss used if this value is not measured by test. According to AHRI, the 1.0 percent value is a conservative estimate, and DOE should evaluate the total jacket losses with a more representative jacket loss value, suggesting that a value closer to 0.5 percent would be more appropriate. (AHRI, No. 64 at p. 14)

DOE estimates the location of the boiler based on the household characteristics in the RECS 2009 housing sample.⁴³ This takes into account that the majority of the boilers are installed in Northeast or Midwest, where basements are a commonly used to install boilers. RECS 2009 reports both if the household has a basement and whether the basement is conditioned or unconditioned. For the final rule, DOE used the same approach for determining the installation location of boilers. In regards to the jacket loss values, since there are very limited test data and because some of the jacket losses could contribute to heating the conditioned space, for the final rule, DOE revised its jacket loss factor value for condensing boilers so that it is equal to on average 0.5 (ASHRAE 103–2007 for finned-tube boilers), which would more closely approximate condensing boiler designs, and assumed 0.5 percent for the jacket loss fraction.

3. Water Heating Energy Use

DOE is aware that some residential boilers have the ability to provide both

space heating and domestic water heating, and that these products are widely available and may vary greatly in design. For these applications, DOE accounted for the boiler energy used for domestic water heating, which is part of the total annual boiler energy use. For the NOPR, DOE used the RECS 2009 and/or CBECS 2003 data to identify households or buildings with boilers that use the same fuel type for space and water heating, and then assumed that a fraction of these identified households/buildings use the boiler for both applications.

Burnham stated that gas-fired steam boilers are seldom used to make domestic hot water due to technological challenges, and gas-fired steam boilers that can produce domestic hot water are not readily available in the market. Burnham believes that the fraction of gas-fired steam boilers used to make domestic hot water is less than 10 percent of all such boilers. Burnham stated that there is greater incentive to use oil-fired steam boilers to also make domestic hot water, in order to eliminate the additional maintenance and potential fuel piping complexities of a second oil burner. (Burnham, No. 60 at pp. 22–24, 66) For the final rule, based on AHRI's contractor survey, DOE assumed that 5 percent of gas-fired steam boilers and 10 percent of oil-fired steam boilers are used to make domestic hot water.

For the NOPR, to calculate the annual water-heating energy use for each boiler efficiency level, DOE first calculated the water-heating load by multiplying the annual fuel consumption for water heating (derived from RECS or CBECS) by the recovery efficiency for water heating of the existing boiler, which was calculated based on an adjustment to AFUE. DOE then calculated the boiler energy use for each efficiency level by multiplying the water-heating load by the recovery efficiency of the selected efficiency level.

Commenting on the NOPR, AHRI stated that the average water heating energy use values seem high. (AHRI, Public Meeting Transcript, No. 50 at p. 114) In response, the water heating energy use is higher for the boiler sample than the national average because boilers are primarily located in the northeast, with colder inlet water and colder ambient temperature. In addition, the NOPR-reported value included idle losses and commercial applications, which comprise seven percent of the entire boiler sample and use significantly more hot water than residential households.

a. Idle Loss

Idle loss, as the term applies to residential heating boilers, is heat wasted when the burner is not firing. The idle losses are the heat from combustion that is not transferred to the heating of water, including the products of combustion up the flue, the loss out of the heat exchanger walls and boiler's jacket (in the form of radiant, conductive, or convective transfer), and the loss down the drain as a condensate. Because no fuel is being consumed in the off-cycle, off-cycle losses are important only to the extent that they must be replaced during the on-cycle by the burning of extra fuel (*i.e.*, longer burner on times or higher firing rates). The DOE test procedure accounts for idle losses associated with space heating in the heating season efficiency value, but the idle losses during non-space heating operation (*i.e.*, domestic water heating) are not captured in the existing DOE test procedure.

For the NOPR analysis, DOE accounted for idle losses during non-space heating operation based on the installation location of the boiler (conditioned or unconditioned space), type of boiler (high mass or low mass), and whether or not the boiler served domestic hot water loads. For boilers that serve only space heating loads, the idle losses are accounted for in the heating season efficiency. For boilers that provided domestic hot water heating, idle losses occur in both heating and non-heating seasons. These idle losses were accounted for by applying heat loss values to the boiler and storage tank (when necessary) for a fraction of the off-cycle time. DOE also accounted for the losses for boilers that are installed with indirect tanks or tankless coils.

Energy Kinetics and PHCC stated that for non-condensing boilers, increasing the heat exchanger area to increase efficiency will add mass to the boiler, thereby increasing the idle loss of the system. Energy Kinetics stated that this significantly impacts the actual annual efficiency, and PHCC further elaborated that the increased losses could offset the operating efficiency gains. (Energy Kinetics, Public Meeting Transcript, No. 50 at p. 286; PHCC, No. 61 at p. 1)

For non-condensing boilers, DOE assumes that the idle loss does not necessarily increase with increased efficiency, based upon DOE's models series at different efficiency and available test data.⁴⁴ In addition to

⁴³ DOE assumed that all residential boilers in commercial buildings are installed in a conditioned space.

⁴⁴ Butcher, Thomas A., *Performance of Integrated Hydronic Heating Systems*, Brookhaven National

increasing heat exchanger area, manufacturers have a number of ways they can achieve higher efficiency for non-condensing boilers, including applying improved heat transfer measures or adding mechanical draft. For the final rule, DOE's approach accounts for the idle losses varying significantly regardless of AFUE or mass based on the test data. See appendix 7B of the final rule TSD for additional details on the consideration of idle losses.

4. Electricity Use

For the NOPR, DOE calculated boiler electricity consumption for the circulating pump, the draft inducer,⁴⁵ and the ignition system. In addition, DOE included the electricity use for a condensate pump or heat tape, which is sometimes installed with higher-efficiency products. For single-stage boilers, DOE calculated the electricity consumption as the sum of the electrical energy used during boiler operation for space heating, water heating, and standby energy consumption. For two-stage and modulating products, this formula includes parameters for the operation at full, modulating, and reduced load.

Commenting on the NOPR, Weil-McLain and Burnham stated that boilers at 85-percent AFUE are likely to require mechanical draft assistance, which would increase electricity use. (Weil-McLain, No. 55 at pp. 2–3; Burnham, No. 60 at p. 25) As stated in section IV.F.2, for the final rule, DOE revised the mechanical draft fractions for 85-percent AFUE gas-fired hot water boilers based on shipments data from Burnham, AHRI's contractor survey, and the updated reduced set of residential boiler models (hereinafter referred to as the "reduced set"; see appendix 7D of the final rule TSD for details). (See Burnham, No. 60 at p. 18, 25; AHRI, No. 66 at p. 10–11)

Burnham stated that natural draft burner systems generally use a 40VA transformer to power the burner and controls, rendering DOE's estimate of 40W for non-condensing gas-fired hot water boilers and gas-fired steam boilers very conservative. (Burnham, No. 60 at p. 66) For the final rule, DOE revised the boiler power use estimates based on the

updated reduced set of residential boiler models, which resulted in an estimate of 92 W for non-condensing gas-fired hot water boilers and 84 W for non-condensing gas-fired steam boilers.

Burnham stated that all oil-fired boilers are equipped with a fan as part of burner, so it is unclear what model DOE would consider an oil-fired boiler without an induced/forced draft. (Burnham, No. 60 at p. 24) For the final rule, DOE agrees that all oil-fired boilers are equipped with burner fans and revised the boiler power use estimates to include the burner fan electricity.

Burnham stated that DOE's analysis failed to recognize that condensing boilers typically have a separate pump to circulate water through the boiler's heat exchanger in addition to the pump used to circulate water through the heating system. (Burnham, No. 60 at p. 24, 66) In addition, Burnham stated that the power consumption for the boiler pump should be at least 160W. (Burnham, No. 60 at p. 24) For the final rule, for condensing boilers, DOE included the electricity use of both a boiler pump and circulating pump. DOE maintained the NOPR assumption that the circulating pump uses 80W. The engineering analysis determined that the most commonly used boiler pumps (*i.e.*, pumps that circulate water through the hot water boiler heat exchanger) are the Taco 0015 or Grundfos UPS 15, which use 120W. DOE utilized this value for all boiler pumps used in condensing boiler installations.

a. Standby Mode and Off Mode Losses

Lochinvar stated that the DOE erroneously presumes that standby power consumption is lost energy, but because boilers are typically installed inside homes, standby power consumption is converted into heat that is transmitted into the home. In contrast, Lochinvar stated that off mode power consumption should be considered a loss because there is likely no need for heating when the boiler is in off mode. (Lochinvar, No. 63 at pp. 2–3) For the final rule, DOE assumed that a fraction of standby power used by boilers installed indoors contributes to heating the home during the heating season. DOE agrees that off mode energy use does not contribute to heating the home.

b. Air Conditioner Electricity Use

For the NOPR, DOE accounted for the impact of water heating energy use during the non-heating season on air conditioner (AC) electricity use for boilers installed in conditioned spaces. DOE assumed that only boilers installed in indoor spaces impact the cooling load

and that a fraction of this electricity use impacts the cooling load. EEI stated that if the boiler is not located near the thermostat, it will not have an impact on the cooling load, especially because the heat losses of the boiler are miniscule compared to the cooling load. (EEI, Public Meeting Transcript, No. 50 at p. 120) In NOPR and in the final rule, DOE assumed that about half of the energy use losses related water heating by the boiler as impacting cooling load to account boiler installation location, distance from thermostat, and non-coincidental loads.

5. Standby Mode and Off Mode

DOE calculated boiler standby mode and off mode electricity consumption for times when the boiler is not in use for each efficiency level identified in the engineering analysis for standby mode and off mode standards. DOE calculated boiler standby mode and off mode electricity consumption by multiplying the power consumption at each efficiency level by the number of standby mode and off mode hours. To calculate the annual number of standby mode and off mode hours for each sample household, DOE subtracted the estimated total burner operating hours (for both space heating and water heating) from the total hours in a year (8,760). Details of the method are provided in chapter 7 of the final rule TSD.

F. Life-Cycle Cost and Payback Period Analysis

DOE conducted LCC and PBP analyses to evaluate the economic impacts on individual consumers of potential energy conservation standards for residential boilers. The effect of new or amended energy conservation standards on individual consumers usually involves a reduction in operating cost and an increase in purchase cost. DOE used the following two metrics to measure consumer impacts:

- The LCC (life-cycle cost) is the total consumer expense of an appliance or product over the life of that product, consisting of total installed cost (manufacturer selling price, distribution chain markups, sales tax, and installation costs) plus operating costs (expenses for energy use, maintenance, and repair). To compute the operating costs, DOE discounts future operating costs to the time of purchase and sums them over the lifetime of the product.

- The PBP (payback period) is the estimated amount of time (in years) it takes consumers to recover the increased purchase cost (including installation) of a more-efficient product

Laboratory (December 2007) (Available at: <<https://www.bnl.gov/isd/documents/41399.pdf>>).

⁴⁵ In the case of modulating condensing boilers, to accommodate lower firing rates, the inducer will provide lower combustion airflow to regulate the excess air in the combustion process. DOE assumed that modulating condensing boilers are equipped with inducer fans with permanent split capacitor (PSC) motors and two-stage controls. The inducers are assumed to run at a 70-percent airflow rate when the modulating unit operates at low-fire.

through lower operating costs. DOE calculates the PBP by dividing the change in purchase cost at higher efficiency levels by the change in annual operating cost for the year that amended or new standards are assumed to take effect.

For any given efficiency level, DOE measures the change in LCC relative to the LCC in the no-new-standards case, which reflects the estimated efficiency distribution of residential boilers in the absence of new or amended energy conservation standards. In contrast, the PBP for a given efficiency level is measured relative to the baseline product.

For each considered efficiency level in each product class, DOE calculated the LCC and PBP for a nationally representative set of housing units and commercial buildings. As stated previously, DOE developed household and building samples from the RECS 2009 and CBECS 2003. For each sample building, DOE determined the energy consumption for the residential boilers and the appropriate energy prices. By developing a representative sample of buildings, the analysis captured the variability in energy consumption and energy prices associated with the use of residential boilers.

Inputs to the calculation of total installed cost include the cost of the product—which includes MPCs, manufacturer markups, retailer and distributor markups, and sales taxes—and installation costs. Inputs to the calculation of operating expenses include annual energy consumption, energy prices and price projections, repair and maintenance costs, product lifetimes, and discount rates. DOE created distributions of values for product lifetime, discount rates, and sales taxes, with probabilities attached to each value, to account for their uncertainty and variability.

DOE conducts a stochastic analysis that employs a computer spreadsheet model to calculate the LCC and PBP, which incorporates Crystal Ball™ (a

commercially-available software program) and relies on a Monte Carlo simulation to incorporate uncertainty and variability (e.g., energy prices, installation costs, and repair and maintenance costs) into the analysis. The Monte Carlo simulations randomly sample input values from the probability distributions and residential boiler user samples. It uses weighting factors to account for distributions of shipments to different building types and States to generate LCC savings by efficiency level. The model calculated the LCC and PBP for products at each efficiency level for 10,000 buildings per simulation run.

Commenting on the NOPR, AHRI stated that information from a recently completed study conducted by the Gas Technology Institute (GTI)⁴⁶ indicates that the random-choice Monte Carlo methodology used in the LCC fails to acknowledge the rational, economic factors involved in purchasing heating equipment, including boilers. AHRI stated that these factors may vary, but the ultimate decision on what unit is purchased is based on some logic underscored by the consumer's economic situation. (AHRI, No. 64 at p. 10) Burnham supported AHRI's position. (Burnham, No. 60 at p. 19)

In response, the method used to estimate the boiler efficiency that a given sample household would choose in the no-new-standards case is not entirely random. For gas boilers, DOE assigned a higher fraction of condensing boilers to regions with a higher fraction of condensing shipments, as reported in the shipments data. That is, the method assumes that the factors that currently cause consumers to choose condensing boilers in specific areas will continue to operate in the future. Development of a complete consumer choice model for boiler efficiency would require data that are not currently available, as well as recognition of the various factors that impact the purchasing decision, such as incentives, the value that some consumers place on efficiency apart

from economics (i.e., “green behavior”), and whether the purchaser is a homeowner, landlord, or builder. For the final rule, DOE used the same general method to assign boiler efficiency in the no-new-standards case, but made use of updated shipments data.

DOE calculated the LCC and PBP for all consumers of residential boilers as if each were to purchase a new product in the expected year of required compliance with amended standards. Any amended standards would apply to residential boilers manufactured 5 years after the date on which any amended standard is published.⁴⁷ At this time, DOE estimates publication of a final rule in 2016. Therefore, for purposes of its final rule analysis, DOE used 2021 as the first year of compliance with any amended standards for residential boilers.

As noted above, DOE's LCC and PBP analyses generate values that calculate the payback period for consumers under potential energy conservation standards, which includes, but is not limited to, the three-year payback period contemplated under the rebuttable presumption test. However, DOE routinely conducts a full economic analysis that considers the full range of impacts, including those to the consumer, manufacturer, Nation, and environment, as required under 42 U.S.C. 6295(o)(2)(B)(i). The results of this analysis serve as the basis for DOE to definitively evaluate the economic justification for a potential standard level (thereby supporting or rebutting the results of any preliminary determination of economic justification).

Table IV.24 summarizes the approach and data DOE used to derive inputs to the LCC and PBP calculations. The subsections that follow provide further discussion. Details of the spreadsheet model, and of all the inputs to the LCC and PBP analyses, are contained in chapter 8 of the final rule TSD and its appendices.

TABLE IV.24—SUMMARY OF INPUTS AND METHODS FOR THE FINAL RULE LCC AND PBP ANALYSIS*

Inputs	Source/method
Product Cost	Derived by multiplying MPCs by manufacturer, wholesaler, and contractor markups and sales tax, as appropriate. Used a constant product price trend to forecast product costs.
Installation Costs	Baseline installation cost determined with data from RS Means. Assumed cost changes with efficiency level.
Annual Energy Use	The total space heating and water heating fuel use plus electricity use per year. Number of operating hours and energy use based on RECS 2009 and CBECS 2003.

⁴⁶ Available at: http://www.gastechnology.org/reports_software/Documents/21693-Furnace-NOPR-Analysis-FinalReport_2015-07-15.pdf.

⁴⁷ DOE is conducting this rulemaking pursuant to 42 U.S.C. 6295(f)(4)(C), which provides a 5-year lead time for compliance with amended standards.

This rulemaking also satisfies DOE's 6-year-lookback review requirement under 42 U.S.C. 6295(m), which provides the same 5-year lead time.

TABLE IV.24—SUMMARY OF INPUTS AND METHODS FOR THE FINAL RULE LCC AND PBP ANALYSIS*—Continued

Inputs	Source/method
Energy Prices	Natural Gas: Based on EIA's Natural Gas Navigator data for 2013. Fuel Oil and LPG: Based on EIA's State Energy Consumption, Price, and Expenditures Estimates (SEDS) for 2013. Electricity: Based on EIA's Form 861 data for 2013. Variability: Regional energy prices determined for 30 regions for RECS 2009 sample and 9 Census divisions for the CBECS 2003 sample.
Energy Price Trends	Based on AEO 2015 price forecasts.
Repair and Maintenance Costs	Based on RS Means data and other sources. Assumed variation in cost by efficiency.
Product Lifetime	Based on shipments data, multi-year RECS and American Housing Survey data, and AHRI contractor survey.
Discount Rates	Approach involves identifying all possible debt or asset classes that might be used to purchase the considered appliances, or might be affected indirectly. Primary data source was the Federal Reserve Board's Survey of Consumer Finances.
Compliance Date	2021.

* References for the data sources mentioned in this table are provided in the sections following the table or in chapter 8 of the final rule TSD.

1. Product Cost

To calculate consumer product costs, DOE multiplied the MPCs developed in the engineering analysis by the markups described in section IV.D (along with sales taxes). DOE used different markups for baseline products and higher-efficiency products, because DOE applies an incremental markup to the increase in MSP associated with higher-efficiency products.

To project future product prices, DOE considered the historic trend in the Producer Price Index (PPI) for cast iron heating boilers and steel heating boilers⁴⁸ to estimate the change in price between the present and the compliance years. Due to the variability in the historical price trends, DOE assumed a constant product price trend.

2. Installation Cost

Installation cost includes labor, overhead, and any miscellaneous materials and parts needed to install the product, such as venting and piping modifications and condensate disposal that might be required when installing products at various efficiency levels. DOE estimated the costs associated with installing a boiler in a new housing unit or as a replacement for an existing boiler.

a. Basic Installation Cost

For the NOPR, DOE calculated the basic installation cost, which is applicable to both replacement and new construction boiler installations and includes the cost of putting in place and setting up the boiler, permitting, and removal or disposal fees.

b. Replacement Installations

For the NOPR, DOE considered additional costs ("adders") for a fraction

of replacement installations of non-condensing and condensing boilers. These additional costs may account for chimney relining, updating of flue vent connectors, vent resizing, and the costs for a stainless steel vent, if required. Each of these cost adders is discussed in further detail below.

(1) Chimney Relining

To determine the installations that would require chimney relining upon boiler replacement, DOE assumed for the NOPR that all boilers that were installed before 1995, the year that the National Fuel Gas Code (the first building code to require chimney lining) was established for all buildings built before 1995, would require relining upon boiler replacement in 2020.

Commenting on the NOPR, for the replacement of a non-condensing boiler with another non-condensing boiler, Crown Boiler stated that the National Fuel Gas Code (NFGC) does not always require relining indoor terracotta chimneys for all efficiency levels, and assuming that all boilers installed in homes built before 1995 or replaced before 1995 require relining upon replacement is incorrect and overstates the cost of a non-condensing boiler replacement. (Crown Boiler, Public Meeting Transcript, No. 50 at pp. 163–164, 197) Weil-McLain and AHRI stated that section 12.6.4.2 of the NFGC does not require chimneys to be relined when an appliance is replaced by an appliance of similar type. Therefore, the majority of boiler replacements involving a non-condensing cast iron boiler being replaced with the same type of equipment would not have included chimney relining, regardless of whether such replacement occurred prior to or after 1995. (Weil-McLain, No. 55 at p. 5; AHRI, No. 64 at p. 11)

For the final rule, DOE did not change its methodology to determine the fraction of unlined chimneys that would require relining applied in the NOPR

analysis. Similar to the NOPR, DOE estimated that only 6 percent of all replacement boiler installations in 2021 would require relining of unlined chimneys, which overall seems to coincide with stakeholder input regarding the fraction of non-condensing replacement installations requiring venting modifications. Regarding the comments by Weil-McLain and AHRI, DOE notes that the exception in section 12.6.4.2 of the NFGC states that existing chimneys shall be permitted to have their use continued when an appliance is replaced by an appliance of similar type, input rating, and efficiency. However, DOE has concluded that many of the current non-condensing boiler designs (82-percent to 83-percent AFUE) cannot be considered to be of similar input rating and efficiency compared to old boilers below 80-percent AFUE that were primarily installed before 1992. Furthermore, DOE notes that section 12.6.4.4 of the NFGC states that "When inspection reveals that an existing chimney is not safe for the intended application, it shall be repaired, rebuilt, relined, or replaced with a vent or chimney to conform to National Fire Protection Association (NFPA) 211."⁴⁹ Because the amended standard will be effective in 2021, many boilers installed before 1995 will be close to the end of their lifetime and they may be vented in chimneys that would require the relining of the existing chimney to meet safety requirements. Thus, for the final rule, DOE maintained the assumption that boilers that replace boilers installed before 1995, or first-time boilers installed in homes built before 1995, would require relining of the chimney.

⁴⁹ National Fire Protection Association, *NFPA 211: Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances* (2013) (Available at: <http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=211>).

⁴⁸ Cast iron heating boiler PPI series ID: PCU 3334143334141; Steel heating boiler PPI series ID: PCU 3334143334145 (Available at: <http://www.bls.gov/ppi/>).

Weil-McLain stated that DOE used incorrect assumptions to calculate the percentage of households with an unlined chimney and the percentage of masonry chimneys that would need to be relined in 2021, because DOE incorrectly applied the NFGC in determining the number of relined chimneys. Weil-McLain also stated that there are significantly more households with a boiler in the north than in the south; therefore, using a midpoint between the percentages assigned to the north and to the south significantly underestimates the actual percentage of households with unlined chimneys. (Weil-McLain, No. 55 at p. 5)

DOE did not apply a national average fraction to determine the number of chimneys that would need to be relined in 2021. Rather, DOE used regional fractions of the number of masonry chimneys and the age of each individual boiler to determine whether a chimney would need to be relined in 2021. For both the NOPR and the final rule, DOE assumed that 73 percent of buildings in the Northeast, 53 percent of buildings in the Midwest, 10 percent of buildings in the South, and 27 percent of buildings in the West have masonry chimneys.

For the NOPR, DOE assumed that any chimney relining would require an aluminum liner. Burnham questioned whether the unit costs DOE used for double wall kit “aluminum liners” are actually for “all fuel” stainless steel liner kits (which are appropriate for oil-fired boilers). (Burnham, No. 60 at p. 26) For the NOPR, DOE used an average cost of different liners, including double wall kit “aluminum liners” that are actually for “all fuel” stainless steel liner kits. Burnham also stated that DOE does not need to extrapolate costs for 5” and 6” liners, as costs that better reflect true market costs are provided by DOE’s data source.⁵⁰ (Burnham, No. 60 at p. 26) Furthermore, Weil-McLain stated that the fact that a chimney was re-lined for a non-condensing boiler does not necessarily mean that it was relined with stainless steel to meet the requirements for a condensing unit. (Weil-McLain, No. 55 at p. 5)

For the final rule, DOE updated its liner prices for different liner types and sizes (including 5” and 6”) from the mentioned data source. It also applied the “aluminum liner” kit costs to Category I non-condensing gas-fired boilers and AL29–4C stainless steel liner kit costs to Category III non-condensing gas-fired boilers to meet the requirements of each venting category.

Burnham stated that DOE erroneously assumed that aluminum would be used as the liner material for oil-fired boilers, when it should be stainless steel. Burnham provided the cost for stainless steel liner systems for use with fuel oil from DOE’s online vent source.⁵¹ (Burnham, No. 60 at p. 26) For the final rule, DOE assumed that oil-fired boilers require stainless steel chimney liners, and used the cost from the online vent source.

(2) Venting Characterization

For the NOPR, to determine the venting installation costs, DOE considered vent categories as defined in the National Fuel Gas Code. DOE determined that all natural draft boilers and a fraction of mechanical draft boilers would be vented as a Category I appliance (negative pressure vent system with high temperature flue gases). DOE determined that the remaining fraction of mechanical draft boilers would be vented as a Category III appliance (positive pressure vent system with high temperature flue gases). DOE determined that very few non-condensing would be installed as a Category II appliance (negative pressure vent system with low temperature flue gases) or a Category IV appliance (positive pressure vent system with low flue gases temperatures). However, DOE determined that all condensing installations would be vented as a Category IV appliance.

DOE included additional venting cost associated with Category III stainless steel venting for a fraction of non-condensing installations that require such venting. Such inclusion addresses potential safety concerns by preventing the corrosive impacts of condensation in the venting system. Because use of an inducer or forced draft fan is associated with conditions under which stainless steel venting is necessary to avoid condensation in some cases, DOE based the fraction of boilers requiring stainless steel venting on the percentage of models with inducer or forced draft fans in the AHRI directory⁵² and manufacturer literature. The fraction of stainless steel venting installations ranged from 11 percent for the baseline efficiency models to 32 percent for the 85-percent AFUE models.

Commenting on the NOPR, Weil-McLain, Burnham, AGA/APGA and

PGW stated that replacement of existing non-condensing boilers (installed with current venting systems) with near-condensing boilers that do not use an inducer or forced draft fan requires Category II venting, because such units operate with a non-positive vent static pressure and with vent gas temperature that may cause excessive condensate production in the vent. Such venting uses materials (such as stainless steel alloy, AL29–4C) that can resist the corrosive nature of the condensate. (Weil-McLain, No. 55 at pp. 1–2, 4; Burnham, No. 60 at p. 9; AGA and APGA, No. 54 at p. 2; PGW, No. 57 at p. 1)

For the final rule, DOE estimated that in cases of replacement with near-condensing gas-fired boilers (85–89 percent AFUE), instead of using Category II stainless steel venting, installers would use Category III stainless steel venting with mechanical draft.⁵³ Category II venting presents reliability issues, even with stainless steel venting, because of the variety of operating conditions encountered in the field. For this analysis, DOE assumed that such installations (that otherwise would require Category II venting) would have less safety and reliability issues by installing a mechanical draft boiler with Category III venting, which requires stainless steel venting. DOE included the cost of AL29–4C stainless steel venting for all Category III installations. DOE also determined that the installation costs associated with Category III vent installations would be equal to or higher than Category II vent installations in most cases.

Burnham stated that the ANSI Z223.1 code defers to the manufacturer’s installation and operation manual for Category II, III, and IV boilers. If the boiler has ANSI Z21.13 certification, the boiler manufacturer must either supply or specify venting materials meeting certain requirements for corrosion resistance and/or gas tightness in its manual. For Category II, III, and IV non-condensing boilers, the most common method of meeting this requirement is to specify the AL29–4C stainless steel special gas vent. (Burnham, No. 60 at p. 10) Burnham found from its review of 61 models in the AHRI directory that almost all non-condensing, non-Category I boilers are vented with an AL29–4C special gas vent, which increases the installation cost of these products. (Burnham, No. 60 at p. 27) For the NOPR and final rule, as stated

⁵⁰ Available at: <http://www.ventingpipe.com/gas-fuel-chimney-liners/c1650>.

⁵¹ Available at: <http://www.ventingpipe.com/gas-fuel-chimney-liners/c1650?f3378=oil>.

⁵² Air Conditioning, Heating, and Refrigeration Institute, Consumer’s Directory of Certified Efficiency Ratings for Heating and Water Heating Equipment (AHRI Directory) (September 2013) (Available at: <http://www.ahridirectory.org/ahridirectory/pages/home.aspx>) (Last accessed September 2013).

⁵³ For replacement with an 84-percent AFUE boiler, DOE found that it is necessary to use special venting in a small fraction of cases based on shipments data provided by Burnham.

above, DOE did not consider Category II or IV venting for non-condensing boilers, but instead for all category III non-condensing boilers, DOE included the cost for AL29–4C stainless steel venting.

Burnham stated that horizontal venting of a Category III or IV gas-fired boiler at 85-percent AFUE is limited by safety codes, building codes, I&O manuals, location of surrounding buildings, and limited access to an eligible exterior wall. It noted that this is particularly a problem in urban areas with homes that are closely spaced. Burnham stated that in cases where horizontal venting is impossible, it may be unreasonably expensive to use the old chimney as a chase for a special gas vent system. (Burnham, No. 60 at pp. 14–15) PGW stated that the installation of Category II and IV venting systems presents particular problems in Philadelphia's 400,000 row houses because replacing a boiler will require a new venting system, including abandonment of the existing venting system, structural changes to accommodate a new venting system path, and relocation of the boiler to meet the code and installation requirements of a new condensing boiler system. (PGW, No. 57 at p. 2) In addition, Burnham stated that conversion from a non-condensing Category I boiler to a non-condensing or condensing Category II, III, or IV boiler can result in an orphaned water heater. Burnham stated that if there is no way to horizontally vent the new boiler, and if the old chimney is used as a chase for the special vent system, the water heater and any other appliances vented into that chimney will need to be removed. Burnham stated that DOE needs to include the additional installation costs associated with complete replacement of "orphaned water heaters" for a fraction of installations. (Burnham, No. 60 at p. 28)

DOE acknowledges that a small fraction of replacement installations may be difficult, but DOE does not believe that the difficulties are insurmountable. DOE's analysis accounts for additional costs for those installations that would require re-routing of the vent system for Category III non-condensing boilers and Category IV condensing boilers to account for the limitations described by Burnham and PGW. The analysis does not include installations that would require the use of existing chimneys in lieu of horizontal venting, but rather included the cost for longer vent runs. DOE notes that in response to the NOPR for the current residential furnaces rulemaking, the American Council for an Energy-

Efficient Economy (ACEEE) stated that the Energy Coordinating Agency, a major weatherization program in Philadelphia that has installed many condensing furnaces in row houses, has developed moderate cost solutions (at most \$350) to common problems such as having no place to horizontally vent directly from the basement. ([Docket No. EERE–2014–BT–STD–0031], ACEEE, No. 113 at p. 7) Both in the NOPR and final rule, DOE accounted for a fraction of installations that would require chimney relining or vent resizing for the orphaned water heater. DOE did not consider the complete replacement of the orphaned water heater, but instead added additional installation costs associated with venting of the Category III or IV boiler, so that the orphaned water heater could be vented through the chimney.

Boilers that use mechanical draft (Category I) are required to meet the NFGC venting requirements, while Category III systems require mechanical draft and stainless steel venting. Burnham and Weil-McLain stated that DOE overstated the market share of units that use mechanical draft (Category I or III) because DOE used number of models instead of shipments. (Burnham, No. 60 at pp. 24–25; Weil-McLain, No. 55 at p. 5) In addition to data on models from the AHRI directory, for the final rule, DOE also used shipments data from Burnham and AHRI's contractor survey to estimate the share of installations that would use mechanical draft. (AHRI, No. 67) For the final rule, DOE also took into account a fraction of mechanical draft (Category I) gas-fired boilers that would need the vents to be resized to meet the NFGC venting requirements.

Weil-McLain stated that the vast majority of near-condensing gas-fired boilers⁵⁴ sold would have an inducer or fan (*i.e.*, mechanical draft). Weil-McLain stated that because boilers at 85 percent AFUE produce flue gases that have a low enough temperature that they do not have enough buoyancy to naturally be removed, they are more likely to require mechanical draft to vent the flue gases. Weil-McLain stated that in addition, the mandated use of an automatic means for adjusting water temperature also reduces the buoyancy of the flue gases, thereby necessitating mechanical draft. Weil-McLain also stated that the addition of a draft inducer or blower motor would increase the installation costs associated with new electric service installation (in

some instances), new venting and/or chimney lining, and re-piping. (Weil-McLain, No. 55 at pp. 2–3)

For the final rule, DOE used shipments data from Burnham⁵⁵ and the AHRI contractor survey, which resulted in about half of 85-percent AFUE gas-fired hot water boilers shipped in 2021 being mechanical draft. Using this data, DOE also estimated that 5 percent of gas-fired hot water boilers at efficiency levels below 85-percent AFUE use mechanical draft in 2021. For the NOPR and final rule, DOE assumed that adding mechanical draft would significantly increase the venting costs due to new flue venting and/or chimney lining. For the final rule, DOE updated its installation costs for mechanical draft as mentioned above. DOE did not assume additional cost for new electric service, since all new gas-fired boilers utilize electronic ignition, which already requires an electrical outlet. In addition, DOE did not assume additional re-piping (to change the installation location of the boiler), but instead assumed that the boiler would remain in the same installation location, which might require additional vent length to address restrictions on horizontal venting.

Commenting on the NOPR, Burnham stated that in addition to straight pipes, the installation manuals of the models in the AHRI directory require at least one other fitting (90 degree elbow) in almost all Category III/IV installations. (Burnham, No. 60 at p. 28) For the NOPR and the final rule, DOE accounted for other fittings, such as a 90 degree elbow, for all venting installations.

For the NOPR, the additional installation costs for condensing boilers in replacement installations included new either 2-inch or 3-inch polyvinyl chloride (PVC), polypropylene (PP), or chlorinated polyvinyl chloride (CPVC) combustion air venting for direct vent installations (PVC); concealing vent pipes for indoor installations, addressing an orphaned water heater (by updating flue vent connectors, vent resizing, or chimney relining), and condensate removal.

Weil-McLain stated that with a Category IV boiler, the venting system must be able to handle positive pressure. This often eliminates the ability for the boiler to continue to use the same chimney as other appliances, which makes a retrofit with such an appliance all the more costly to the

⁵⁴ Weil-McLain considers near-condensing gas-fired boilers to be those with AFUE from 84 percent to 89 percent.

⁵⁵ Burnham shipments data from 2014 showed that 38.7 percent of its 85-percent AFUE gas-fired hot water boilers shipped in 2014 were mechanical draft.

consumer because alternative venting and piping configurations would be necessary. It stated that the additional costs for installing a boiler as a Category IV appliance are at least \$1,000 to over \$1,400, if there are no further complications. (Weil-McLain, No. 55 at p. 3) For the NOPR and the final rule, DOE accounted for the additional installation cost of adding a category IV vent for condensing boiler designs, including eliminating the ability of the boiler to continue to use the same chimney when it is also being used by water heater, resizing of orphaned water heater, and all necessary installation costs for adding a new flue vent.

Commenting on the NOPR, Burnham reviewed 44 condensing boiler models in the AHRI directory and found that most of the units with an input capacity of 100 MBH use 3-inch venting. Burnham stated that if DOE uses a representative gas-fired hot water boiler input capacity of 120 MBH as it recommends, the use of 3-inch venting is almost universal. (Burnham, No. 60 at p. 28) AHRI stated that after a certain input level, the standard PVC pipe in the vent system will be 3 inches. (AHRI, Public Meeting Transcript, No. 50 at p. 168) Crown Boiler added that with input rates at the upper limit of the residential range, some condensing boilers may need 4-inch vents. (Crown Boiler, Public Meeting Transcript, No. 50 at p. 169) For the final rule, DOE assumed that most condensing boilers use 3-inch PVC, PP, or CPVC pipes, and those at the highest capacities use 4-inch vents.

The Advocates encouraged DOE to incorporate the lower-cost DuraVent technologies in the analysis, and more broadly to consider innovative installation technology that would likely emerge with increasing experience and learning. The Advocates stated that the DuraVent technology can help address difficult installation situations with condensing boilers by allowing for venting both a new condensing boiler and an existing atmospheric water heater through the existing chimney. (The Advocates, No. 62 at p. 2) DOE did not include lower-cost venting solutions for condensing boilers because these technologies are still immature.⁵⁶ However, DOE agrees that if the new venting technologies are successful in the market, they could decrease the installation cost of

condensing boilers in replacement situations.

(3) Other Issues

In the NOPR and final rule, DOE added condensate withdrawal costs for condensing boilers. Burnham stated that according to the I&O manuals of the boilers it examined, the vast majority of Category II, III, and IV vent systems require a means of disposing of condensate for non-condensing boilers, which DOE did not account for in its installation cost calculations. (Burnham, No. 60 at p. 28) Lochinvar stated that even non-condensing boilers will condense when the heat exchanger is cold. Lochinvar also stated that automatic means measures extend the time that heat exchangers are exposed to condensate, and increases the potential for condensate-related problems. (Lochinvar, No. 63 at pp. 2–3)

For the final rule, based on a review of installation manuals, DOE assumed that 75 percent of non-condensing mechanical draft category III boilers require condensate collection. DOE accounted for condensate issues in the venting by including a condensate trap and piping to either a collector or drain. DOE has determined that these measures also address the impact of automatic means as part of the overall condensate collection process.

For the NOPR, DOE assumed that the circulating pump and boiler pump are provided by the manufacturer, and, therefore, included the cost of both pumps as part of the product cost. Commenting on the NOPR, Burnham stated that in some cases, neither the circulation pump nor the boiler pump are supplied with the boiler, thereby increasing the installation cost. Burnham added that a second ramification of the need for two pumps are the associated piping requirements. In most cases, this piping is not supplied with the boiler and must be fabricated by the installer, which results in an additional cost. Burnham estimated that the contractor's cost associated with the second (boiler) pump and the piping is \$239. (Burnham, No. 60 at pp. 29–31) For the final rule, DOE assumed that neither the circulation pump nor the boiler pump is supplied with the boiler. DOE included the installation of the secondary and primary piping 75 percent of the time for condensing boiler installations.

Burnham stated that 35 percent of the condensing gas-fired hot water boiler models it investigated requires a Y strainer. Burnham estimated that the contractor's cost of a 1-inch Y strainer is \$45. (Burnham, No. 60 at pp. 29–31) For the final rule, DOE included the cost

of a Y-strainer for one-third of condensing boiler installations based on a review of condensing model installation manuals, with an average installed cost of \$48 (including labor and parts) from RS Means 2015.

c. New Construction Installations

DOE also included installation adders for new construction, as well as for new owner installations for hot water gas-fired boilers. For non-condensing boilers, the only adder is a new metal flue vent (including a fraction with stainless steel venting) and condensate withdrawal for a fraction of category III models. For condensing gas boilers, the additional costs for new construction installations related to potential amended standards include a new flue vent, combustion air venting for direct vent installations and accounting for a commonly-vented water heater, and condensate withdrawal.

d. Total Installation Cost

ACCA stated that its members found the installation cost for gas-fired hot water boilers, regardless of efficiency level or existing venting options, to be nearly twice as high as the average basic installation cost assumed by DOE of \$2,741. ACCA stated that, for gas-fired steam boilers, the DOE analysis produced an average basic installation cost of \$2,917, but feedback from ACCA's contractors suggest the real costs are twice that amount. ACCA also stated that the same discrepancy applies to both the oil-fired hot water boilers and the oil-fired steam boilers. (ACCA, No. 65 at p. 2)

In response, DOE notes that the basic installation cost, which consists of the installation costs that are common to all boilers, is only part of the total installation cost. In addition to the basic installation cost, the total installation cost includes venting costs and additional costs for condensing boiler installations. For the final rule, DOE's updated installation cost analysis, based on updated RS Means 2015 and stakeholder comments discussed above, resulted in an average total installation cost of \$4,288 for a baseline (82-percent AFUE) gas-fired hot water boiler, which is close to the value suggested by ACCA. DOE's value is also close to the \$4,500 installation cost for gas-fired hot water boilers (natural draft) from 82.0 to 83.9 percent AFUE in AHRI's contractor survey.

3. Annual Energy Consumption

For each sampled building, DOE determined the energy consumption for a residential boiler at different efficiency levels using the approach

⁵⁶ The chimney vent option, which would be most applicable to residential boilers, is still under development. The non-condensing (Category I) Type B vent + condensing (Category IV) venting option is currently available in the market: <http://duravent.com/Product.aspx?hProduct=49>.

described above in section IV.E of this document. The product energy consumption is the site energy use associated with providing space heating (and water heating in some cases) to the building.

DOE considered whether boiler energy use would likely be impacted by a direct rebound effect, which occurs when a product that is made more efficient is used more intensively, such that the expected energy savings from the efficiency improvement may not fully materialize. Such change in behavior when operating costs decline is known as a (direct) rebound effect. The take-back in energy consumption associated with the rebound effect provides consumers with increased value (e.g., more comfortable indoor temperature). DOE believes that, if it were able to monetize the increased value to consumers of the rebound effect, this value would be similar in value to the foregone energy savings. Therefore, the economic impacts on consumers with or without the rebound effect, as measured in the LCC analysis, are the same.

4. Energy Prices

For the NOPR, DOE derived 2012 average and marginal monthly residential and commercial natural gas, fuel oil, LPG, and electricity prices using monthly data by State from Energy Information Administration. DOE assigned an appropriate energy price to each household or commercial building in the sample, depending on its location. To do this, DOE used the average 2008–2012 fraction of boiler shipments by State⁵⁷ to assign average and marginal prices for 30 geographical regions and 9 Census divisions to match the residential boiler samples derived from RECS 2009 sample and CBECS 2003. For the final rule, DOE derived 2013 average and marginal monthly residential and commercial natural gas, fuel oil, LPG, and electricity prices using updated data for 2013.^{58 59 60}

Commenting on the NOPR, AGA and APGA argued that DOE's method of calculating marginal energy prices overstates the operating cost savings of higher-efficiency boilers. AGA and APGA stated that the marginal prices that AGA derived by deducting the fixed charge portion of the bill from the total bill range from 7 percent to 16 percent lower than the prices developed by DOE. (AGA and APGA, No. 54 at p. 2) Laclede stated that DOE's estimates for what is called "marginal monthly natural gas prices" are much higher than actual marginal prices that customers pay as reflected by impacts in energy consumption changes in their utility bills. (Laclede, No. 58 at p. 3)

In response to similar comments provided on the Residential Furnace notice of proposed rulemaking,⁶¹ DOE developed seasonal marginal price factors for 23 gas tariffs provided by the Gas Technology Institute.⁶² These marginal price factors can be compared to those developed by DOE from the EIA data. The winter price factors used by DOE are generally comparable to those computed from the tariff data, indicating that DOE's marginal price estimates are reasonable at average usage levels. The summer price factors, which are less relevant for analysis of boilers, are also generally comparable. Of the 23 tariffs analyzed, eight have multiple tiers, and of these eight, six have ascending rates and two have descending rates. Because this analysis uses an average of the two tiers as the commodity price, it will generally underestimate the marginal prices for consumers subject to the second tier. A full tariff-based analysis would require information about the household's total baseline gas usage (to establish which tier the consumer is in), and a weight factor for each tariff that determines how many customers are served by that utility on that tariff. These data are generally not available in the public domain. DOE's use of EIA State-level data effectively averages overall

consumer sales in each State, and so incorporates information about all utilities. DOE's approach is, therefore, more likely to provide prices representative of a typical consumer than any individual tariff. For more details on this comparative analysis, refer to Appendix 8D of the final rule TSD.

For the NOPR, to estimate energy prices in future years, DOE multiplied the average regional energy prices by the forecast of annual change in national-average residential energy prices in the Reference case from *AEO 2013*, which has an end year of 2040. To estimate price trends after 2040, DOE used the average annual rate of change in prices from 2020 to 2040.

AHRI and Laclede stated that DOE should use *AEO 2015* rather than *AEO 2013*. (AHRI, No. 64 at p. 9; Laclede, No. 58 at p. 4) AHRI stated that it is incumbent on DOE to issue a supplemental notice of proposed rulemaking that revises the analysis based on *AEO 2015* data so that stakeholders may comment upon the analysis done using the most up-to-date inputs. (AHRI, No. 64 at p. 9) For the final rule, DOE has updated its analysis using *AEO 2015*. DOE has concluded that the differences between *AEO 2013* and *AEO 2015* are not large enough to warrant a supplemental notice of proposed rulemaking.

For a detailed discussion of the development of energy prices, see appendix 8D of the final rule TSD.

5. Maintenance and Repair Costs

Maintenance costs are associated with maintaining the operation of the product. For the NOPR, DOE estimated maintenance costs at each considered efficiency level using a variety of sources, including *2013 RS Means Facility Repair and Maintenance Data*⁶³ and manufacturer product literature. For AFUE standards analysis, DOE accounted for additional maintenance costs for condensing boilers associated with checking the condensate withdrawal system, replacing the neutralizer filter, and flushing the secondary heat exchanger for condensing oil boilers in high-sulfur oil-fuel regions. For standby and off mode standards, DOE assumed no additional maintenance costs for the baseline or higher-efficiency design options. The frequency with which the maintenance occurs was derived from RECS 2009 and CBECS 2003, as well as a 2008

⁵⁷ Air-Conditioning Heating and Refrigeration Institute (AHRI), *2003–2012 Residential Boilers Shipments Data (Provided to Lawrence Berkeley National Laboratory)* (November 15, 2013).

⁵⁸ U.S. Department of Energy-Energy Information Administration, *Form EIA-826 Database Monthly Electric Utility Sales and Revenue Data: Data from 1994–2013* (Available at: <http://www.eia.doe.gov/cneaf/electricity/page/eia826.html>) (Last accessed October 15, 2015).

⁵⁹ U.S. Department of Energy-Energy Information Administration, *Natural Gas Navigator: Data from 1994–2013* (Available at: http://tonto.eia.doe.gov/dnav/ng/ng_pri_sum_dcu_nus_m.htm) (Last accessed October 15, 2015).

⁶⁰ U.S. Department of Energy-Energy Information Administration, *2013 State Energy Consumption, Price, and Expenditure Estimates (SEDS)* (Available

at: http://www.eia.doe.gov/emeu/states/_seds.html) (Last accessed October 15, 2015).

⁶¹ **Federal Register**: U.S. Department of Energy—Office of Energy Efficiency and Renewable Energy. Energy Conservation Program for Consumer Products: Energy Conservation Standards for Residential Furnaces; Notice of Proposed Rulemaking. **Federal Register**. March 12, 2015. vol. 80, no. 48.

⁶² GTI provides a reference located in the docket of DOE's rulemaking to develop energy conservation standards for residential furnaces. (Docket No. EERE-2014-BT-STD-0031-0118) (Available at <http://www.regulations.gov/#/documentDetail;D=EERE-2014-BT-STD-0031-0118>). DOE is also including this information in the docket for the present rulemaking at <http://www.regulations.gov/#/documentDetail;D=EERE-2012-BT-STD-0047-0068>.

⁶³ RS Means Company Inc., *RS Means Facilities Maintenance & Repair Cost Data* (2013) (Available at: <http://www.rsmeans.com>).

consumer survey⁶⁴ that provided the frequency with which owners of different types of boilers perform maintenance. For oil-fired boilers, the high quantity of sulfur in the fuel in States without regulation of sulfur content results in frequent cleaning of the heat exchanger, which DOE included in its analysis.

For the final rule, DOE update the maintenance cost using the latest *2015 RS Means Facility Repair and Maintenance Data*.⁶⁵ In addition, DOE updated the list of States that require low-sulfur oil (15 PPM or less) for space heating to reflect regulations that will take effect by the compliance date of amended boiler standards (2021) based on data provided by Energy Kinetics. (Energy Kinetics, No. 52 at pp. 2–3)

The repair cost is the cost to the consumer for replacing or repairing components in the boiler that have failed (such as ignition, controls, gas valve, and inducer fan). For the NOPR, DOE estimated repair costs at each considered efficiency level using a variety of sources, including *2013 RS Means Facility Repair and Maintenance Data* and manufacturer literature. Higher repair costs for ignition, controls, gas valve, and inducer fan were included for condensing boilers. To determine components service lifetime, DOE used a Gas Research Institute (GRI) study.⁶⁶

Crown Boiler questioned the applicability of the GRI data from the 1990s on the lifetimes of boiler parts because at that time, there were far fewer condensing boilers. (Crown Boiler, Public Meeting Transcript, No. 50 at p. 207) DOE understands that data from the GRI survey are still representative of the major furnace and boiler components. Further, due to improvements in the components of condensing boilers since the 1990s, the estimated service lifetime applied in DOE's analysis is likely conservative.

Based on typical contractor prices that Burnham collected from wholesalers for six non-condensing models and six condensing models, Burnham found

that the cost to repair non-condensing boiler parts (e.g., gas valve, blower, and controls) is significantly less than for condensing boilers. Furthermore, integrated controls for non-condensing boilers are on average significantly cheaper than a condensing boiler control. (Burnham, No. 60 at pp. 32–33) Weil-McLain stated that mechanical draft boilers would have higher repair costs due to the addition of draft inducers or blower motors, since there are more devices that will need adjustment, repair, and replacement, and the devices will need more frequent work. (Weil-McLain, No. 55 at p. 3) For the final rule, DOE updated its cost with the data provided by Burnham. For both the NOPR and final rule, DOE accounted for the additional repair cost associated with the draft inducers in boilers with mechanical draft.

For more details on DOE's methodology for calculating maintenance and repair costs, see appendix 8E of the final rule TSD.

6. Product Lifetime

Product lifetime is the age at which an appliance is retired from service. For the NOPR, DOE conducted an analysis of boiler lifetimes using a combination of historical boiler shipments (see section IV.G), American Housing Survey data on historical stock of boilers,⁶⁷ and RECS data⁶⁸ on the age of the boilers in homes. The data allowed DOE to develop a Weibull lifetime distribution function, which results in average and median lifetimes for the NOPR analysis of 25 years for all boiler product classes. In addition, DOE reviewed a number of sources to validate the derived boiler lifetime, including research studies (from the U.S. and Europe) and field data reports.⁶⁹

U.S. Boiler, Crown Boiler, Energy Kinetic, Burnham, Lochinvar, and AHRI stated that condensing boilers generally have a shorter lifetime than non-condensing boilers. Lochinvar, Burnham, Energy Kinetics, and Crown Boiler stated that various sources cite condensing boilers as having a lifetime of 15 years or less. (US Boiler, Public

Meeting Transcript, No. 50 at pp. 210–211; Crown Boiler, Public Meeting Transcript, No. 50 at p. 212; Energy Kinetic, No. 52 at p. 2; Burnham, No. 60 at pp. 33–36, pp. 54–55; Lochinvar, No. 63 at p. 4; AHRI, No. 64 at p. 4). Both Burnham and AHRI commented that their contractor surveys show a clear difference between condensing and non-condensing boiler lifetimes. (Burnham, No. 60 at pp. 35–36; AHRI, No. 66 at pp. 17–18) Burnham added that DOE's sources that are specific to condensing boilers^{70 71} indicate the life expectancy of condensing boilers is approximately 15 years, which is significantly shorter than the life of non-condensing boilers (at least 23 years). Burnham stated that sources listed by DOE that pre-date 2003 (i.e., around the time that the number of condensing boilers started to increase in the U.S.) cannot be used to estimate the life expectancy of condensing boilers. Burnham stated that references after 2003 should not be used either because statistically significant condensing boiler life expectancy data will take years to accumulate after these boilers were introduced into the U.S. market. Burnham also stated that a sample of manufacturers' warranties shows that condensing boilers have much shorter warranties than non-condensing boilers. (Burnham, No. 60 at pp. 33–36)

After carefully considering these comments, DOE has concluded that there is not enough data available to accurately distinguish the lifetime of condensing boilers because, as Burnham stated, they have not been prevalent in the U.S. market long enough to demonstrate whether their average lifetime is less than or greater than 15 years. In addition, condensing boiler technologies have been improving since their introduction to the U.S. market; therefore, the lifetime of the earliest condensing boilers may not be representative of current or future condensing boiler designs. Therefore, condensing lifetime results from the Burnham's and AHRI's contractor survey might be biased towards earliest condensing boiler designs and lack the number of condensing boilers installed 15 years or older. Based on the lack of clear and convincing information that condensing boilers have a shorter lifetime, DOE maintained the same

⁶⁴ Decision Analysts, *2008 American Home Comfort Study: Online Database Tool* (2009) (Available at: <http://www.decisionanalyst.com/Syndicated/HomeComfort.dai>).

⁶⁵ RS Means Company Inc., *RS Means Facilities Maintenance & Repair Cost Data* (2015) (Available at <http://www.rsmeans.com>).

⁶⁶ Jakob, F.E., J.J. Crisafulli, J.R. Menkedick, R.D. Fischer, D.B. Philips, R.L. Osbone, J.C. Cross, G.R. Whitacre, J.G. Murray, W.J. Sheppard, D.W. DeWirth, and W.H. Thrasher, *Assessment of Technology for Improving the Efficiency of Residential Gas Furnaces and Boilers, Volume I and II—Appendices* (September 1994) Gas Research Institute. Report No. GRI-94/0175 (Available at http://www.gastechnology.org/reports_software/Pages/default.aspx).

⁶⁷ U.S. Census Bureau: Housing and Household Economic Statistics Division, *American Housing Survey, Multiple Years* (1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1983, 1985, 1987, 1989, 1991, 1993, 1995, 1997, 1999, 2001, 2003, 2005, 2007, 2009, and 2011) (Available at: <http://www.census.gov/programs-surveys/ahs/>) (Last accessed October, 2015).

⁶⁸ U.S. Department of Energy: Energy Information Administration, *Residential Energy Consumption Survey Data, Multiple Years* (1987, 1990, 1993, 1997, 2002, 2005, and 2009) (Available at: <http://www.eia.gov/consumption/residential>) (Last accessed October, 2015).

⁶⁹ The sources used are listed in appendix 8F of the final rule TSD.

⁷⁰ Wohlfarth, R. *Boiler choices* (October 1, 2012) (Available at: <http://www.pmengineer.com/articles/90545-boiler-choices?v=preview>) (Last accessed October, 2015).

⁷¹ Keman, R., M. van Elburg, W. Li, and R. van Holsteijn, *Preparatory Study on Eco-design of Boilers, Task 2 (Final) Market Analysis* (2007) (Available at: http://www.ebpg.bam.de/de/ebpg_medien/001_studyf_07-11_part2.pdf) (Last accessed October, 2015).

lifetime for condensing and non-condensing boilers. However, DOE did include additional repair costs for condensing boilers that would likely allow a similar lifetime as non-condensing boilers by assuming different service lifetimes for heat exchangers for condensing boilers and non-condensing boilers based on warranty data from product literature and survey data provided by stakeholders. DOE also conducted a sensitivity analysis using a different heat exchanger and boilers lifetime scenarios.

For the final rule, DOE updated its estimate of boiler lifetime by adding 2013 AHS data. In addition, DOE used the AHRI contractor survey data to derive separate lifetime estimates for different product classes. The data allowed DOE to develop a Weibull lifetime distribution function, which results in an average lifetimes of 26.5 for hot water gas-fired boilers, 23.6 for steam gas-fired boilers, 24.7 for hot water oil-fired boilers, and 19.2 for steam oil-fired boilers. For electric boilers, DOE assumed the same lifetime as gas-fired boilers. For more details on how DOE derived the boiler lifetime and on the lifetime sensitivity analysis, see appendix 8F of the final rule TSD.

7. Discount Rates

In the calculation of LCC, DOE applies discount rates appropriate to households to estimate the present value of future operating costs. DOE estimated a distribution of residential and commercial discount rates for residential boilers based on consumer financing costs and opportunity cost of funds related to appliance energy cost savings and maintenance costs.

To establish residential discount rates for the LCC analysis, DOE identified all relevant household debt or asset classes in order to approximate a consumer's opportunity cost of funds related to appliance energy cost savings. For the NOPR, it estimated the average percentage shares of the various types of debt and equity by household income group using data from the Federal Reserve Board's Survey of Consumer Finances⁷² (SCF) for 1995, 1998, 2001, 2004, 2007, and 2010. Using the SCF and other sources, DOE developed a distribution of rates for each type of debt and asset by income group to represent the rates that may apply in the year in which amended standards

would take effect. DOE assigned each sample household a specific discount rate drawn from one of the distributions. The average rate across all types of household debt and equity and income groups, weighted by the shares of each type that was used in the NOPR, was 4.5 percent.

To establish commercial discount rates for the LCC analysis, DOE estimated the weighted-average cost of capital using data from Damodaran Online.⁷³ The weighted-average cost of capital is commonly used to estimate the present value of cash flows to be derived from a typical company project or investment. Most companies use both debt and equity capital to fund investments, so their cost of capital is the weighted average of the cost to the firm of equity and debt financing. DOE estimated the cost of equity using the capital asset pricing model, which assumes that the cost of equity for a particular company is proportional to the systematic risk faced by that company.

EI stated that it seems counterintuitive that the lowest income group has a lower discount rate than the higher income groups. (EEL, Public Meeting Transcript, No. 50 at p. 214) EEI stated that usually the lower income groups pay the highest interest rates for any sort of credit. (EEI, Public Meeting Transcript, No. 50 at p. 216) In DOE's analysis, the consumer discount rate is used to evaluate the present value of energy cost savings over the lifetime of the boiler. The interest rate on credit alone is not appropriate for this calculation. DOE instead calculates the residential discount rates by estimating the consumer's opportunity cost via a process analogous to the CAPM model used in the commercial sector, in which the discount rate is a weighted average of rates on debt and equity holdings. While consumers in the lowest income group are likely to face somewhat higher interest rates on credit than other income groups, this is balanced by the fact that they also tend to have assets with low interest rates (e.g., larger share of assets in savings accounts or CDs, rather than stocks and mutual funds).

For the final rule, DOE included data from the 2013 SCF⁷⁴ to update the residential discount rates and updated

Damodaran Online data⁷⁵ for commercial discount rates. See chapter 8 of the final rule TSD for further details on the development of consumer discount rates.

8. Efficiency Distribution in the No-New-Standards Case

To accurately estimate the share of consumers that would be affected by a potential energy conservation standard at a particular efficiency level, DOE's LCC analysis considered the projected distribution (market shares) of product efficiencies that consumers will purchase in the first compliance year under the no-new-standards case (i.e., the case without amended or new energy conservation standards).

For the NOPR, DOE first developed data on the current share of residential boiler models in each product class that are of the different efficiencies based on the September 2013 AHRI certification directory,⁷⁶ ENERGY STAR shipments data,⁷⁷ and historical shipments data by efficiency from AHRI.⁷⁸ To estimate shares in 2020, DOE took into account the potential impacts of the ENERGY STAR program, which updated its performance criteria: 90-percent AFUE for gas-fired boilers and 87-percent AFUE for oil-fired boilers.⁷⁹ In addition, for gas-fired hot water boilers, DOE accounted for the regional differences in the market shares for condensing boilers using the historical shipments data by efficiency from AHRI.

Commenting on the NOPR, Burnham stated that over the past 12 years, since condensing boilers started to gain significant market share, the sales of gas-fired hot water boiler models with efficiencies between 85 percent and 90 percent have virtually disappeared, even though some models remain in the AHRI directory. (Burnham, No. 60 at p. 17) For the final rule, DOE modified its efficiency distribution in the no-new-

⁷⁵ Damodaran Online, *Data Page: Costs of Capital by Industry Sector* (2015) (Available at: <http://pages.stern.nyu.edu/~adamodar/>) (Last accessed October, 2015).

⁷⁶ Air Conditioning, Heating, and Refrigeration Institute, *Consumer's Directory of Certified Efficiency Ratings for Heating and Water Heating Equipment* (AHRI Directory) (September 2013) (Available at: <http://www.ahridirectory.org/ahridirectory/pages/home.aspx>) (Last accessed September 2013).

⁷⁷ ENERGY STAR, *Unit Shipments Data* (2003–2012) (Available at: http://www.energystar.gov/index.cfm?c=partners.unit_shipment_data) (Last accessed October 2015).

⁷⁸ Air-Conditioning Heating and Refrigeration Institute (AHRI), *2003–2012 Residential Boilers Shipments Data (Provided to Lawrence Berkeley National Laboratory)* (November 15, 2013).

⁷⁹ ENERGY STAR, *Boiler Specification Version 3.0*. (Available at: https://www.energystar.gov/products/specs/boilers_specification_version_3_0.pdf) (Last accessed September 2013).

⁷² The Federal Reserve Board, *Survey of Consumer Finances*, Multiple Years: 1989, 1992, 1995, 1998, 2001, 2004, 2007, 2010 (Available at: <http://www.federalreserve.gov/pubs/oss/oss2/scfindex.html>) (Last accessed October, 2015).

⁷³ Damodaran Online, *Data Page: Costs of Capital by Industry Sector* (2012) (Available at: <http://pages.stern.nyu.edu/~adamodar/>) (Last accessed October, 2015).

⁷⁴ The Federal Reserve Board, *Survey of Consumer Finances* (2013) (Available at: <http://www.federalreserve.gov/pubs/oss/oss2/scfindex.html>) (Last accessed October, 2015).

standards case in 2021 based on shipments data from Burnham (Burnham, No. 60 at pp. 18, 25), data from the AHRI contractor survey (AHRI, No. 66 at pp. 10–11), updated 2013 and 2014 ENERGY STAR unit shipment data for residential boilers,⁸⁰ and a dataset of models based on the 2015 AHRI certification directory.⁸¹

For the NOPR boiler standby mode and off mode standards analysis, DOE

assumed that 50 percent of shipments would be at the baseline efficiency level and 50 percent would be at the max-tech efficiency level (EL 3) for all product classes, based on characteristics of available models.⁸² For the final rule, DOE updated its estimated efficiency distribution in the no-new-standards case in 2021 based on DOE's test data and data provided by Burnham. (Burnham, No. 60 at p. 21)

The estimated AFUE market shares for the no-new-standards case for residential boilers are shown in Table IV.25, and estimated standby mode and off mode market shares for the no-new-standards case are shown in Table IV.26.⁸³ See chapter 8 of the final rule TSD for further information on the derivation of the efficiency distributions.

TABLE IV.25—EFFICIENCY DISTRIBUTION IN THE NO-NEW-STANDARDS CASE FOR RESIDENTIAL BOILERS FOR AFUE STANDARDS

EL	Design option	2021 market share (%)
Gas-fired Hot Water Boiler		
0	82% AFUE—Baseline	22.8
1	83% AFUE—Increased HX Area	7.6
2	84% AFUE—Increased HX Area	11.3
3	85% AFUE—Increased HX Area	4.6
4	90% AFUE—Condensing Baseline	11.2
5	92% AFUE—Increased HX Area	41.3
6	96% AFUE—Max-Tech	1.2
Gas-fired Steam Boiler		
0	80% AFUE—Baseline	16.8
1	82% AFUE—Increased HX Area	71.6
2	83% AFUE—Max-Tech	11.6
Oil-fired Hot Water Boiler		
0	84% AFUE—Baseline	44.5
1	85% AFUE—Increased HX Area	18.4
2	86% AFUE—Increased HX Area	33.2
3	91% AFUE—Max-Tech	3.9
Oil-fired Steam Boiler		
0	82% AFUE—Baseline	44.9
1	84% AFUE—Increased HX Area	28.7
2	85% AFUE—Increased HX Area	18.9
3	86% AFUE—Max-Tech	7.6

TABLE IV.26—EFFICIENCY DISTRIBUTION IN THE NO-NEW-STANDARDS CASE FOR RESIDENTIAL BOILERS FOR STANDBY/OFF MODE STANDARDS

EL	Power (W)	Design option	2021 market share (%)
Gas-fired Hot Water Boiler			
0	11.5	Linear Power Supply *	3.0
1	10.0	Linear Power Supply with Low-Loss Transformer (LLTX)	3.0
2	9.7	Switching Mode Power Supply **	3.0
3	9.0	Max-Tech—Switching Mode Power Supply with LLTX	91.0
Gas-fired Steam Boiler			
0	10.5	Linear Power Supply *	1.0

⁸⁰ ENERGY STAR, *Unit Shipments* (2013–2014) (Available at: http://www.energystar.gov/index.cfm?c=partners.unit_shipment_data) (Last accessed October 2015).

⁸¹ Air Conditioning, Heating, and Refrigeration Institute, *Consumer's Directory of Certified Efficiency Ratings for Heating and Water Heating Equipment* (AHRI Directory) (August 2015)

(Available at: <http://www.ahridirectory.org/ahridirectory/pages/home.aspx>) (Last accessed October 19, 2015).

⁸² Air Conditioning, Heating, and Refrigeration Institute, *Consumer's Directory of Certified Efficiency Ratings for Heating and Water Heating Equipment* (AHRI Directory) (September 2013) (Available at: <http://www.ahridirectory.org/>

[ahridirectory/pages/home.aspx](http://www.ahridirectory.org/ahridirectory/pages/home.aspx)) (Last accessed September 2013).

⁸³ As discussed in section IV.C.1, because DOE's review of product literature and discussions with manufacturers revealed that most boilers do not have seasonal off switches, DOE assumed that the standby mode and the off mode power consumption are equal for its analysis.

TABLE IV.26—EFFICIENCY DISTRIBUTION IN THE NO-NEW-STANDARDS CASE FOR RESIDENTIAL BOILERS FOR STANDBY/OFF MODE STANDARDS—Continued

EL	Power (W)	Design option	2021 market share (%)
1	9.0	Linear Power Supply with Low-Loss Transformer (LLTX)	1.0
3	8.7	Switching Mode Power Supply **	1.0
3	8.0	Max-Tech—Switching Mode Power Supply with LLTX	97.0
Oil-fired Hot Water Boiler			
0	13.5	Linear Power Supply *	3.0
1	12.0	Linear Power Supply with Low-Loss Transformer (LLTX)	3.0
2	11.7	Switching Mode Power Supply **	3.0
3	11.0	Max-Tech—Switching Mode Power Supply with LLTX	91.0
Oil-fired Steam Boiler			
0	13.5	Linear Power Supply *	1.0
1	12.0	Linear Power Supply with Low-Loss Transformer (LLTX)	1.0
2	11.7	Switching Mode Power Supply **	1.0
3	11.0	Max-Tech—Switching Mode Power Supply with LLTX	97.0
Electric Hot Water Boiler			
0	10.5	Linear Power Supply *	1.0
1	9.0	Linear Power Supply with Low-Loss Transformer (LLTX)	1.0
2	8.7	Switching Mode Power Supply **	1.0
3	8.0	Max-Tech—Switching Mode Power Supply with LLTX	97.0
Electric Steam Boiler			
0	10.5	Linear Power Supply *	1.0
1	9.0	Linear Power Supply with Low-Loss Transformer (LLTX)	1.0
2	8.7	Switching Mode Power Supply **	1.0
3	8.0	Max-Tech—Switching Mode Power Supply with LLTX	97.0

* A linear power supply regulates voltage with a series element.

** A switching mode power supply regulates voltage with power handling electronics.

9. Payback Period Analysis

The payback period is the amount of time it takes the consumer to recover the additional installed cost of more-efficient products, compared to baseline products, through energy cost savings. Payback periods are expressed in years. Payback periods that exceed the life of the product mean that the increased total installed cost is not recovered in reduced operating expenses.⁸⁴

The inputs to the PBP calculation for each efficiency level are the change in total installed cost of the product and the change in the first-year annual operating expenditures relative to the baseline product. The PBP calculation uses the same inputs as the LCC analysis, except that discount rates are not needed.

As noted above, EPCA, as amended, establishes a rebuttable presumption that a standard is economically justified if the Secretary finds that the additional cost to the consumer of purchasing a product complying with an energy

conservation standard level will be less than three times the value of the first year's energy savings resulting from the standard, as calculated under the applicable test procedure. (42 U.S.C. 6295(o)(2)(B)(iii)) For each considered efficiency level, DOE determined the value of the first year's energy savings by calculating the energy savings in accordance with the applicable DOE test procedure, and multiplying those savings by the average energy price forecast for the year in which compliance with the amended standards would be required. However, DOE's LCC and PBP analyses generate values that calculate the payback period for consumers under potential energy conservation standards, which includes, but is not limited to, the three-year payback period contemplated under the rebuttable presumption test. DOE routinely conducts a full economic analysis that considers the full range of impacts, including those to the consumer, manufacturer, Nation, and environment, as required under 42 U.S.C. 6295(o)(2)(B)(i). The results of this analysis serve as the basis for DOE to definitively evaluate the economic

justification for a potential standard level (thereby supporting or rebutting the results of any preliminary determination of economic justification).

G. Shipments Analysis

DOE uses forecasts of annual product shipments to calculate the national impacts of potential amended energy conservation standards on energy use, NPV, and future manufacturer cash flows.⁸⁵ DOE develops shipment projections based on historical data and an analysis of key market drivers for each product. DOE estimated boiler shipments by projecting shipments in three market segments: (1) Replacements; (2) new housing/buildings; and (3) new owners in buildings that did not previously have a boiler.⁸⁶ DOE also considered the

⁸⁵ DOE uses data on manufacturer shipments as a proxy for national sales, as aggregate data on sales are lacking. In general, one would expect a close correspondence between shipments and sales.

⁸⁶ The new owners consists of both households that during a major remodel add or switch to hydronic heating, as well as, households switching between different boiler product classes.

⁸⁴ The ENERGY STAR specification for residential boilers was revised in October 2015 to 90-percent AFUE for gas boilers and 87-percent AFUE for oil boilers.

impact of standards that require more-efficient boilers on boiler shipments.

For the NOPR, to project boiler replacement shipments, DOE developed retirement functions based on the boiler lifetime estimates used in the LCC analysis and applied them to the existing products in the building stock. The existing stock of products is tracked by vintage and developed from historical shipments data.^{87 88} The shipments model for replacements uses a distribution of residential boiler lifetimes to estimate boiler replacement shipments, and it also accounts for the fraction of residential boiler units that were installed in demolished buildings. As the demolished units do not need to be replaced, they are deducted when calculating the required replacements.

For the NOPR, to project shipments to the new housing market, DOE utilized a forecast of new housing or building construction and historic saturation rates of various boiler product types in new housing or building construction. DOE used *AEO 2013* for forecasts of new housing. Boiler saturation rates in new housing were estimated based on a weighted-average of values in 1990–2013 presented in the U.S. Census Bureau's *Characteristics of New Housing*,⁸⁹ as well as RECS 2009 and CBECS 2003 data.

For the NOPR, to estimate future shipments to new owners, DOE based its estimates on market trends and historical shipment data from 2008 to 2012. The new owners primarily consist of households that during a major remodel add hydronic heating using a gas-fired hot water boiler and households that choose to install a boiler with a hydronic air handler to replace a gas furnace. New owners also include households switching between different boiler product classes (*i.e.*, from the steam to hot water boiler product classes and from the oil-fired to gas-fired boiler product classes).

Commenting on the NOPR, ACCA stated that, based on feedback from a select number of ACCA members, the percentage of gas-fired boiler installations associated with new construction falls within DOE's range (*i.e.*, 90 percent replacements and 10 percent new construction). For oil-fired

hot water boilers, the breakdown of 98 percent replacements and 2 percent new construction is also in line with ACCA's field experience. (ACCA, No. 65 at p. 2) Weil-McLain stated that approximately 90 percent of boiler sales in the U.S. are to the replacement market. (Weil-McLain, No. 55 at pp. 1–2) These comments align with the fractions of boiler shipments both for the NOPR and final rule analysis. For the final rule, DOE refined its analysis by including updated historical shipment data⁹⁰ and data from *AEO 2015*.

The NOPR analysis accounted for the impact of increased product price for the considered efficiency levels on shipments by incorporating relative price elasticity in the shipments model. This approach gives some weight to the operating cost savings from higher-efficiency products. In general, price elasticity reflects the expectation that demand will decrease when prices increase. The price elasticity value is derived from data on refrigerators, clothes washers, and dishwashers.⁹¹ To model the impact of the increase in relative price from a particular standard level on residential boiler shipments, DOE assumed that the shipments that do not occur represent consumers that would repair their product rather than replace it, extending the life of the product by 6 years.

AHRI stated that the price elasticity data used for DOE's analysis is not a good match for boilers because consumers look for different attributes, such as appearance or special functions, when buying refrigerators and clothes washers, whereas with boilers, the same considerations do not apply. (AHRI, Public Meeting Transcript, No. 50 at pp. 239–240) AHRI stated that DOE has a responsibility to explain why a price analysis for washing machines and refrigerators is an acceptable substitute for residential boilers. (AHRI, No. 64 at p. 5)

In response, DOE first notes that there are very few estimates of consumer demand elasticity for durable goods. For the final rule, DOE updated its price elasticity to a value calculated from price, shipments, and efficiency data over 1989–2009 for five common residential appliances (clothes washers, refrigerators, freezers, dishwashers, and

room air conditioners).⁹² DOE reasons that this cross-section of residential appliances provides a representative price elasticity and response of shipments to efficiency for residential consumers. The one study of price elasticity for a residential HVAC product, found in an extensive literature review, provides an estimated value (-0.24) that is less elastic than the value used by DOE in the final rule analysis (-0.45). DOE did not apply this value, however, because the long-run elasticity estimate of -0.24 is consistent with DOE's residential price elasticity and elasticity time trend, which starts with an elasticity of -0.45 in the first year following a price increase, decreasing to approximately -0.2 by the fifth year following a price increase.

Weil-McLain stated that a homeowner will often decide to repair their existing boiler and delay replacement if the total installed cost is too great. (Weil-McLain, No. 55 at p. 6) Burnham stated that *de facto* outlawing of Category I replacement cast iron boilers will result in some (particularly low-income) homeowners delaying the replacement of existing low-efficiency, decades-old boilers with newer and higher efficiency models. (Burnham, No. 60 at p. 17) PGW stated that the additional costs associated with the installation of near-condensing boilers in row houses are likely to delay the installation of higher-efficiency boilers, extend the use of existing boilers beyond their safe operating life, drive switching to alternative heating systems that may well be less safe and/or economical than currently installed boilers, or some combination of all these outcomes. (PGW, No. 57 at p. 2)

In response, at the higher efficiency levels where installed cost is much higher than the boiler in the no-new-standards case, DOE accounts for repair of old boilers to extend their lifetime through the price elasticity parameters described above. This parameter relates the repair decision to the incremental installed cost and the operating cost savings of higher-efficiency boilers, both of which have some weight in the consumer decision. DOE estimated that the average extension of life of the repaired unit would be six years, and then that unit is replaced with a new boiler. In the NIA, the cost of the repair and the energy costs of the repaired unit are accounted for.

⁸⁷ Appliance Magazine, *U.S. Appliance Industry Statistical Review*, Multiple years: 1970, 1979, 1987, 2000, 2009.

⁸⁸ Air-Conditioning Heating and Refrigeration Institute (AHRI), *2003–2012 Residential Boilers Shipments Data (Provided to Lawrence Berkeley National Laboratory)* (November 15, 2013).

⁸⁹ U. S. Department of Commerce—Bureau of the Census, *Characteristics of New Housing (1990–2013)* (Available at: <http://www.census.gov/construction/charindex.html>) (Last accessed March 15, 2013).

⁹⁰ Appliance Magazine, *Appliance Historical Statistical Review: 1954–2012* (2014).

⁹¹ Dale, L. and S. K. Fujita, *An Analysis of the Price Elasticity of Demand of Household Appliances* (2008) Lawrence Berkeley National Laboratory (Report No. LBNL–326E) (Available at: <http://eetd.lbl.gov/sites/all/files/lbnl-326e.pdf>) (Last accessed: October 2015).

⁹² Fujita, S. K., *Estimating Price Elasticity using Market-Level Appliance Data* (2015) Lawrence Berkeley National Laboratory (Report No. LBNL–188289) (Available at: <https://eaei.lbl.gov/sites/all/files/lbnl-188289.pdf>) (Last accessed: October 2015).

For the NOPR and final rule, DOE evaluated the potential for switching from gas-fired and oil-fired hot water boilers to other heating systems in response to amended standards. The main alternative to hot water boilers would be installation of an electric boiler, a forced-air furnace, heat pump, or a mini-split heat pump. These alternatives would require significant installation costs such as adding ductwork or an electrical upgrade, and an electric boiler would have very high relative energy costs. Given that the increase in installed cost of boilers meeting the amended standards, relative to the no-new-standards case, is small, DOE has concluded that consumer switching from hot water boilers would be rare.

The details and results of the shipments analysis can be found in chapter 9 of the final rule TSD.

H. National Impact Analysis

The NIA assesses the national energy savings (NES) and the national net present value (NPV) from a national perspective of total consumer costs and savings expected to result from new or amended energy conservation standards at specific efficiency levels. (“Consumer” in this context refers to

consumers of the product being regulated.) DOE calculates the NES and NPV for the potential standard levels considered for the residential boiler product classes analyzed based on projections of annual product shipments, along with the annual energy consumption and total installed cost data from the energy use and LCC analyses. For the NOPR analysis, DOE forecasted the energy savings, operating cost savings, product costs, and NPV of consumer benefits over the lifetime of residential boilers sold from 2020 through 2049. For the final rule analysis, DOE performed the same analyses over the lifetime of residential boilers sold from 2021 through 2050.

DOE evaluates the impacts of new and amended standards by comparing a case without such standards with standards-case projections. The no-new-standards case characterizes energy use and consumer costs for each product class in the absence of new or amended energy conservation standards. For this projection, DOE considers historical trends in efficiency and various forces that are likely to affect the mix of efficiencies over time. DOE compares the no-new-standards case with projections characterizing the market for each product class if DOE adopted new

or amended standards at specific energy efficiency levels (*i.e.*, the TSLs or standards cases) for that class. For the standards cases, DOE considers how a given standard would likely affect the market shares of products with efficiencies greater than the standard.

DOE uses a spreadsheet model to calculate the energy savings and the national consumer costs and savings from each TSL. Interested parties can review DOE’s analyses by changing various input quantities within the spreadsheet. The NIA spreadsheet model uses typical values (as opposed to probability distributions) as inputs. To assess the effect of input uncertainty on NES and NPV results, DOE developed its spreadsheet model to conduct sensitivity analyses by scenarios on specific input variables. In the NIA, DOE forecasted the lifetime energy savings, energy cost savings, product costs, and NPV of consumer benefit for each product class over the lifetime of products sold from 2021 through 2050.

Table IV.27 summarizes the inputs and methods DOE used for the NIA analysis for the final rule. Discussion of these inputs and methods follows the table. See chapter 10 of the final rule TSD for further details.

TABLE IV.27—SUMMARY OF INPUTS AND METHODS FOR THE FINAL RULE NATIONAL IMPACT ANALYSIS

Inputs	Method
Shipments	Annual shipments from shipments model.
Compliance Date of Standard	2021.
Efficiency Trends	Based on historical trends of shipments by efficiency and updated ENERGY STAR criteria.
Annual Energy Consumption per Unit	Annual weighted-average values are a function of energy use at each TSL.
Total Installed Cost per Unit	Annual weighted-average values are a function of cost at each TSL.
Annual Energy Cost per Unit	Projects constant future product prices based on historical data.
Rebound Effect	Annual weighted-average values as a function of the annual energy consumption per unit and energy prices.
Repair and Maintenance Cost per Unit	Applied a rebound effect value dependent on application and sector.
Energy Prices	Annual values do not change with efficiency level.
Energy Site-to-Primary and FFC Conversion	AE0 2015 forecasts (to 2040) and extrapolation through 2050.
Discount Rate	A time-series conversion factor based on AE0 2015.
Present Year	Three and seven percent.
	2015.

1. Product Efficiency Trends

A key component of the NIA is the trend in energy efficiency projected for the no-new-standards case and each of the standards cases. Section IV.F of this notice describes how DOE developed an energy efficiency distribution for the no-new-standards case (which yields a shipment-weighted average efficiency) for each of the considered residential boiler product classes for the first year of the forecast period (*i.e.*, the year of anticipated compliance with an amended standard).

For the NOPR, regarding the efficiency trend in the years after compliance, for the no-new-standards case, DOE estimated that the overall market share of condensing gas-fired hot water boilers would grow from 44 percent to 63 percent by 2049, and the overall market share of condensing oil-fired hot water boilers would grow from 7 percent to 13 percent. DOE estimated that the no-new-standards case market shares of condensing gas-fired and oil-fired steam boilers will be negligible during the period of analysis. DOE assumed similar trends for the standards

cases (albeit starting from a higher point). For the final rule, DOE modified its efficiency trend in the no-new-standards case in 2021, as described in section IV.F. Based on this updated data, DOE estimated that the overall market share of condensing gas-fired hot water boilers would grow from 54 percent in 2021 to 74 percent by 2050, and the overall market share of condensing oil-fired hot water boilers would grow from 4 percent to 8 percent. The no-new-standards case market shares of condensing gas-fired and oil-fired steam boilers remain negligible. Details on

how these efficiency trends were developed are provided in appendix 8H of the final rule TSD.

For the NOPR and final rule boiler standby mode and off mode standard analysis, DOE assumed that the efficiency level distributions would remain constant over the analysis period.

For the NOPR and final rule, for the standards cases, DOE used a “roll-up” scenario to establish the shipment-weighted efficiency for the year that standards are assumed to become effective. In this scenario, the market of products in the no-new-standards case that do not meet the standard under consideration would “roll up” to meet the new standard level, and the market share of products above the standard would remain unchanged.

Burnham stated that if DOE were to adopt the 85-percent level for gas-fired hot water boilers, most of the gas-fired hot water boiler sales would move to the condensing level due to the very limited ability to use Category I venting, combined with the cost of AL29-4C stainless steel generally required at near-condensing (85 to 89 percent) efficiencies. (Burnham, No. 60 at p. 16) AGA agreed that a certain percentage of the market will be forced to the condensing level with an 85-percent standard, which could incur a net cost for consumers. (AGA, Public Meeting Transcript, No. 50 at pp. 289–290)

In the current analysis, on average, going to 85-percent AFUE has a lower total installed cost than going to the condensing level (*i.e.*, 90-percent AFUE and above). DOE agrees there might be some switching for a small fraction of consumers that have high installation costs at 85-percent AFUE, but since DOE is not adopting an 85-percent AFUE standard, DOE did not assess this for the final rule. DOE notes that this final rule adopts an 84-percent AFUE level for gas-fired hot water boilers. From 82- to 84-percent AFUE, the installation cost is the same, and the equipment cost is similar, whereas at 85-percent AFUE, there is a large increase in installation costs for a fraction of replacement installations requiring new stainless steel venting for households replacing an 82- to 84-percent AFUE boiler with an 85-percent AFUE boiler. Therefore, DOE has determined that a consumer would be more likely to choose to switch to a condensing boiler if the standard were at 85-percent AFUE (as proposed in the NOPR) than at 84-percent (as is being adopted by this final rule). Thus, DOE has substantially lessened the likelihood of consumers being forced to install condensing equipment by adopting an

84-percent AFUE standard for gas-fired hot water boilers.

2. National Energy Savings

The national energy savings analysis involves a comparison of national energy consumption of the considered products between each potential standards case (TSL) and the case with no new or amended energy conservation standards. DOE calculated the national energy consumption by multiplying the number of units (stock) of each product (by vintage or age) by the unit energy consumption (also by vintage). Vintage represents the age of the product. DOE calculated annual NES based on the difference in national energy consumption for the case without amended efficiency standards and for each higher efficiency standard. For the NOPR, DOE estimated energy consumption and savings based on site energy and converted the electricity consumption and savings to primary energy using annual conversion factors derived from the *AEO 2013* version of NEMS. For the final rule, DOE used conversion factors derived from *AEO 2015*. Cumulative energy savings are the sum of the NES for each year over the timeframe of the analysis.

DOE considered whether boiler energy use would likely be impacted by a direct rebound effect, which occurs when a product that is made more efficient is used more intensively, such that the expected energy savings from the efficiency improvement may not fully materialize. For the NOPR, after reviewing several studies on the direct rebound effect, DOE included a 15-percent rebound effect for residential boilers due to an AFUE standard. For the final rule, DOE updated the rebound effect value to range from 9 to 11 percent depending on the product class, taking into account differences in the rebound effect associated with space heating and water heating energy use, as well as residential and commercial applications based on a review of the studies on the direct rebound effect. In both the NOPR and final rule, DOE did not consider a rebound effect for standby mode and off mode standards, because consumers typically have no awareness of any efficiency change in standby mode and off mode. See chapter 10 of the final rule TSD for DOE's assessments of rebound effect literature.

In 2011, in response to the recommendations of a committee on “Point-of-Use and Full-Fuel-Cycle Measurement Approaches to Energy Efficiency Standards” appointed by the National Academy of Sciences, DOE announced its intention to use full-fuel-cycle (FFC) measures of energy use and

greenhouse gas and other emissions in the national impact analyses and emissions analyses included in future energy conservation standards rulemakings. 76 FR 51281 (August 18, 2011). After evaluating the approaches discussed in the August 18, 2011 notice, DOE published a statement of amended policy in the **Federal Register** in which DOE explained its determination that EIA's National Energy Modeling System (NEMS) is the most appropriate tool for its full-fuel-cycle (FFC) analysis and its intention to use NEMS for that purpose. 77 FR 49701 (August 17, 2012). NEMS is a public domain, multi-sector, partial equilibrium model of the U.S. energy sector⁹³ that EIA uses to prepare its *Annual Energy Outlook*.

NPGA stated that it is not clear in the NOPR that DOE applied the FFC evaluation to the entire energy path of electric-powered residential boilers. NPGA requested that the agency apply to electric-powered residential boilers the same FFC analysis utilized to assess primary fuels. NPGA requested that DOE clarify the extent to which electric-powered residential boilers were evaluated through the FFC analysis. (NPGA, No. 53, pp. 1–3)

In response, DOE did not analyze electric boilers for AFUE standards because their efficiency is close to 100-percent AFUE. However, DOE did analyze electric boilers for the standby mode and off mode standards, and applied the FFC analysis, including power plant and upstream energy use, to electric boilers as well as gas-fired and oil-fired boilers.

The approach used for deriving FFC measures of energy use and emissions is described in appendix 10B of the final rule TSD.

3. Net Present Value Analysis

The inputs for determining NPV are: (1) Total annual installed cost; (2) total annual savings in operating costs; (3) a discount factor to calculate the present value of costs and savings; (4) present value of costs; and (5) present value of savings. DOE calculated net savings each year as the difference between the no-new-standards case and each standards case in terms of total savings in operating costs versus total increases in installed costs. DOE calculated savings over the lifetime of products shipped in the forecast period. DOE calculated NPV as the difference between the present value of operating cost savings and the present value of total installed costs.

⁹³ For more information on NEMS, refer to *The National Energy Modeling System: An Overview*, DOE/EIA-0581 (October 2009) (Available at: <http://www.eia.gov/>).

a. Total Annual Installed Cost

For the NPV analysis, DOE calculates increases in total installed costs as the difference in total installed cost between the no-new-standards case and standards cases (*i.e.*, once the new or amended standards take effect). For the NOPR and final rule, as discussed in section IV.F.1 of this notice, DOE assumed a constant residential boiler price trend. DOE applied the same trend to forecast prices for each product class at each considered efficiency level. DOE's projection of product prices is described in appendix 10C of the final rule TSD.

To evaluate the effect of uncertainty regarding the price trend estimates, DOE investigated the impact of different product price forecasts on the consumer NPV for the considered TSLs for residential boilers. In addition to the default price trend, DOE considered two product price sensitivity cases: (1) A high price decline case based on 1980–1998 PPI data; and (2) a low price decline case based on *AEO 2015* data. The derivation of these price trends and the results of these sensitivity cases are described in appendix 10C of the final rule TSD.

b. Total Annual Operating Cost Savings

Operating cost savings are estimated by comparing total energy expenditures and repair and maintenance costs for the no-new-standards case and the standards cases. Total savings in operating costs are the product of savings per unit and the number of units of each vintage that survive in a given year. DOE calculates annual energy expenditures from annual energy consumption by incorporating forecasted energy prices. To calculate future energy prices, DOE applied the projected trend in national-average commercial energy prices from the *AEO 2015* Reference case (which extends to 2040) to the recent prices derived in the LCC and PBP analysis. DOE used the trend from 2030 to 2040 to extrapolate beyond 2040. As part of the NIA, DOE also analyzed scenarios that used inputs from the *AEO 2015* Low Economic Growth and High Economic Growth cases. Those cases have higher and lower energy price trends compared to the Reference case. NIA results based on these cases are presented in appendix 10C of the final rule TSD.

c. Net Benefit

The aggregate difference each year between operating cost savings and increased equipment expenditures is the net savings or net costs. In calculating the NPV, DOE multiplies the net savings

in future years by a discount factor to determine their present value. For this final rule, DOE estimated the NPV of consumer benefits using both a 3-percent and a 7-percent real discount rate. DOE uses these discount rates in accordance with guidance provided by the Office of Management and Budget (OMB) to Federal agencies on the development of regulatory analysis.⁹⁴ The discount rates for the determination of NPV are in contrast to the discount rates used in the LCC analysis, which are designed to reflect a consumer's perspective. The 7-percent real value is an estimate of the average before-tax rate of return to private capital in the U.S. economy. The 3-percent real value represents the “social rate of time preference,” which is the rate at which society discounts future consumption flows to their present value.

I. Consumer Subgroup Analysis

In analyzing the potential impact of new or amended energy conservation standards on consumers, DOE evaluates the impact on identifiable subgroups of consumers that comprise a subset of the population that may be disproportionately affected by a new or amended national standard (*e.g.*, low-income consumers, seniors). The purpose of a subgroup analysis is to determine the extent of any such disproportional impacts. DOE evaluates impacts on particular subgroups of consumers by analyzing the LCC impacts and PBP for those particular consumers from alternative standard levels.

For the NOPR and final rule, DOE analyzed the impacts of the considered standard levels on two subgroups: (1) Low-income households and (2) senior-only households. DOE identified these households in the RECS 2009 sample and used the LCC and PBP spreadsheet model to estimate the impacts of the considered efficiency levels on these subgroups. To the extent possible, it utilized inputs appropriate for these subgroups.

The consumer subgroup results for the residential boilers TSLs are presented in section V.B.1.b of this notice and chapter 11 of the final rule TSD.

J. Manufacturer Impact Analysis

1. Overview

DOE performed an MIA to estimate the financial impacts of amended energy

conservation standards on manufacturers of residential boilers and to estimate the potential impacts of such standards on employment and manufacturing capacity. The MIA has both quantitative and qualitative aspects and includes analyses of forecasted industry cash flows, the industry net present value (INPV), investments in research and development (R&D) and manufacturing capital, and domestic manufacturing employment. Additionally, the MIA seeks to determine how amended energy conservation standards might affect manufacturing employment, capacity, and competition, as well as how standards contribute to overall regulatory burden. Finally, the MIA serves to identify any disproportionate impacts on manufacturer subgroups, including small business manufacturers.

The quantitative part of the MIA primarily relies on the Government Regulatory Impact Model (GRIM), an industry cash-flow model with inputs specific to this rulemaking. The key GRIM inputs include data on the industry cost structure, unit production costs, product shipments, manufacturer markups, and investments in R&D and manufacturing capital required to produce compliant products (conversion costs). The key GRIM outputs are the INPV, which is the sum of industry annual cash flows over the analysis period, discounted using the industry-weighted average cost of capital, and the impact to domestic manufacturing employment. The model uses standard accounting principles to estimate the impacts of more-stringent energy conservation standards on a given industry by comparing changes in INPV and domestic manufacturing employment between a no-new-standards case and the various TSLs (the standards cases). To capture the uncertainty relating to manufacturer pricing strategies and profitability following amended standards, the GRIM estimates a range of possible impacts under different markup scenarios.

The qualitative part of the MIA addresses manufacturer characteristics and market/product trends. Specifically, the MIA considers such factors as a potential standard's impact on manufacturing capacity, competition within the industry, the cumulative impact of other DOE and non-DOE regulations, and impacts on manufacturer subgroups. The complete MIA is outlined in chapter 12 of the final rule TSD.

DOE conducted the MIA for this rulemaking in three phases. In the first phase of the MIA, DOE prepared a profile of the residential boiler

⁹⁴ United States Office of Management and Budget, OMB Circular A–4: Regulatory Analysis (Sept. 17, 2003) section E, “Identifying and Measuring Benefits and Costs” (Available at: <http://www.whitehouse.gov/omb/memoranda/m03-21.html>).

manufacturing industry based on the market and technology assessment, preliminary manufacturer interviews, and publicly-available information. As part of its profile of the residential boilers industry, DOE also conducted a top-down cost analysis of residential boiler manufacturers that DOE used to derive preliminary financial inputs for the GRIM (e.g., revenues; materials, labor, overhead, and depreciation expenses; selling, general, and administrative expenses (SG&A); tax rates, and R&D expenses). DOE also used public sources of information to further calibrate its initial characterization of the residential boiler manufacturing industry, including company filings of form 10-K from the SEC,⁹⁵ corporate annual reports, the U.S. Census Bureau's *Economic Census*,⁹⁶ and reports from Hoover's.⁹⁷

In second phase of the MIA, DOE prepared an industry cash-flow analysis to quantify the potential impacts of new and amended energy conservation standards. The GRIM uses several factors to determine a series of annual cash flows starting with the announcement of the standard and extending over a 30-year period following the compliance date of the standard. These factors include annual expected revenues, costs of sales, SG&A and R&D expenses, taxes, and capital expenditures. In general, energy conservation standards can affect manufacturer cash flow in three distinct ways: (1) Creating a need for increased investment; (2) raising production costs per unit; and (3) altering revenue due to higher per-unit prices and changes in sales volumes. DOE estimated industry cash flows in the GRIM at various potential standard levels using industry financial parameters derived in the first phase and the shipment scenario used in the NIA. The GRIM modeled both impacts from the AFUE energy conservation standards and impacts from standby mode and off mode energy conservation standards (i.e., standards based on standby mode and off mode wattage). The GRIM results from the two standards were evaluated independent of one another.

In addition, during the second phase of the MIA, DOE developed interview guides to distribute to manufacturers of

residential boilers in order to develop other key GRIM inputs, including product and capital conversion costs, and to gather additional information on the anticipated effects of energy conservation standards on revenues, direct employment, capital assets, industry competitiveness, and subgroup impacts.

In the third phase of the MIA, DOE conducted structured, detailed interviews with a variety of manufacturers that represent approximately 46 percent of domestic residential boiler sales covered by this rulemaking. During these interviews, DOE discussed engineering, manufacturing, procurement, and financial topics to validate assumptions used in the GRIM and to identify key issues or concerns. See section IV.J.4 for a description of the key issues raised by manufacturers during the interviews.

Additionally, in the third phase, DOE also evaluated subgroups of manufacturers that may be disproportionately impacted by amended standards or that may not be accurately represented by the average cost assumptions used to develop the industry cash-flow analysis. For example, small manufacturers, niche players, or manufacturers exhibiting a cost structure that largely differs from the industry average could be more negatively affected by amended energy conservation standards. DOE identified one subgroup (small manufacturers) for a separate impact analysis.

To identify small businesses for this analysis, DOE applied the small business size standards published by the Small Business Administration (SBA) to determine whether a company is considered a small business. 65 FR 30836, 30848 (May 15, 2000), as amended at 65 FR 53533, 53544 (Sept. 5, 2000) and codified at 13 CFR part 121. To be categorized as a small business under North American Industry Classification System (NAICS) code 333414, "Heating Equipment (except Warm Air Furnaces) Manufacturing," a residential boiler manufacturer and its affiliates may employ a maximum of 500 employees. The 500-employee threshold includes all employees in a business's parent company and any other subsidiaries. Based on this classification, DOE identified at least 13 residential boiler companies that qualify as small businesses.

The residential boiler small manufacturer subgroup is discussed in section VI.B of this final rule and in chapter 12 of the final rule TSD.

2. Government Regulatory Impact Model

DOE uses the GRIM to quantify the potential changes in cash flow due to amended standards that result in a higher or lower industry value. The GRIM was designed to conduct an annual cash-flow analysis using standard accounting principles that incorporates manufacturer costs, markups, shipments, and industry financial information as inputs. DOE thereby calculated a series of annual cash flows, beginning in 2014 (the base year of the analysis) and continuing to 2050. DOE summed the stream of annual discounted cash flows during this period to calculate INPVs at each TSL. For residential boiler manufacturers, DOE used a real discount rate of 8.0 percent, which was derived from industry financial information and then modified according to feedback received during manufacturer interviews. DOE also used the GRIM to model changes in costs, shipments, investments, and manufacturer margins that could result from amended energy conservation standards.

After calculating industry cash flows and INPV, DOE compared changes in INPV between the no-new-standards case and each standards case. The difference in INPV between the no-new-standards case and a standards case represents the financial impact of the amended energy conservation standard on manufacturers at a particular TSL. As discussed previously, DOE collected this information on GRIM inputs from a number of sources, including publicly-available data and confidential interviews with a number of manufacturers. GRIM inputs are discussed in more detail in the next section. The GRIM results are discussed in section V.B.2. Additional details about the GRIM, the discount rate, and other financial parameters can be found in chapter 12 of the final rule TSD.

For consideration of standby mode and off mode regulations, DOE modeled the impacts of the technology options for reducing electricity usage discussed in the engineering analysis (chapter 5 of the final rule TSD). The GRIM analysis incorporates the incremental additions to the MPC of standby mode and off mode features and the resulting impacts on markups.

Due to the small cost of standby mode and off mode components relative to the overall cost of a residential boiler, DOE assumes that standards regarding standby mode and off mode features alone would not impact product shipment numbers. Additionally, DOE has concluded that the incremental cost

⁹⁵ U.S. Securities and Exchange Commission, Annual 10-K Reports (Various Years) (Available at: <http://www.sec.gov/edgar/searchedgar/companysearch.html>).

⁹⁶ U.S. Census Bureau, Annual Survey of Manufacturers: General Statistics: Statistics for Industry Groups and Industries (2011) (Available at: <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>).

⁹⁷ Hoovers Inc. Company Profiles, Various Companies (Available at: <http://www.hoovers.com>).

of standby mode and off mode features would not have a differentiated impact on manufacturers of different product classes. Consequently, DOE models the impact of standby mode and off mode for the industry as a whole.

The electric boiler product classes were not analyzed in the GRIM for AFUE energy conservation standards. As a result, quantitative numbers for those product classes are not available in the GRIM analyzing standby mode and off mode standards. However, the standby mode and off mode technology options considered for electric boilers are identical to the technology options for all other residential boiler product classes. As a result, DOE expects the standby mode and off mode impacts on electric boilers to be of the same order of magnitude as the impacts on all other residential boiler product classes.

a. Government Regulatory Impact Model Key Inputs

Manufacturer Production Costs

Manufacturing a higher-efficiency product is typically more expensive than manufacturing a baseline product due to the use of more complex components, which are typically more costly than baseline components. The changes in the MPCs of the analyzed products can affect the revenues, gross margins, and cash flow of the industry, making these product cost data key GRIM inputs for DOE's analysis.

In the MIA, DOE used the MPCs for each considered efficiency level calculated in the engineering analysis, as described in section IV.C and further detailed in chapter 5 of the final rule TSD. In addition, DOE used information from its teardown analysis (described in chapter 5 of the final rule TSD) to disaggregate the MPCs into material, labor, and overhead costs. To calculate the MPCs for products at and above the baseline, DOE performed teardowns and cost modeling that allowed DOE to estimate the incremental material, labor, and overhead costs for products above the baseline. These cost breakdowns and product markups were validated and revised with input from manufacturers during manufacturer interviews.

Shipments Forecast

The GRIM estimates manufacturer revenues based on total unit shipment forecasts and the distribution of these values by efficiency level. Changes in sales volumes and efficiency mix over time can significantly affect manufacturer finances. For this analysis, the GRIM uses the NIA's annual shipment forecasts derived from the

shipments analysis from 2014 (the base year) to 2050 (the end year of the analysis period). The shipments model divides the shipments of residential boilers into specific market segments. The model starts from a historical base year and calculates retirements and shipments by market segment for each year of the analysis period. This approach produces an estimate of the total product stock, broken down by age or vintage, in each year of the analysis period. In addition, the product stock efficiency distribution is calculated for the base case and for each standards case for each product class. The NIA shipments forecasts are, in part, based on a roll-up scenario. The forecast assumes that a product in the base case that does not meet the standard under consideration would "roll up" to meet the amended standard beginning in the compliance year of 2021. See section IV.G and chapter 9 of the final rule TSD for additional details.

Product and Capital Conversion Costs

Amended energy conservation standards would cause manufacturers to incur one-time conversion costs to bring their production facilities and product designs into compliance. DOE evaluated the level of conversion-related expenditures that would be needed to comply with each considered efficiency level in each product class. For the MIA, DOE classified these conversion costs into two major groups: (1) Capital conversion costs; and (2) product conversion costs. Capital conversion costs are one-time investments in property, plant, and equipment necessary to adapt or change existing production facilities such that new compliant product designs can be fabricated and assembled. Product conversion costs are one-time investments in research, development, testing, marketing, and other non-capitalized costs necessary to make product designs comply with amended energy conservation standards.

To evaluate the level of capital conversion expenditures manufacturers would likely incur to comply with amended energy conservation standards, DOE used manufacturer interviews to gather data on the anticipated level of capital investment that would be required at each efficiency level. Based on manufacturer feedback, DOE developed a market-share-weighted manufacturer average capital expenditure which it then applied to the entire industry. DOE also made assumptions about which manufacturers would develop their own condensing heat exchanger production lines, in the event that efficiency levels

using condensing technology were proposed. DOE supplemented manufacturer comments and tailored its analyses with estimates of capital expenditure requirements derived from the product teardown analysis and engineering analysis described in chapter 5 of the final rule TSD.

DOE assessed the product conversion costs at each considered efficiency level by integrating data from quantitative and qualitative sources. DOE considered market-share-weighted feedback regarding the potential costs of each efficiency level from multiple manufacturers to estimate product conversion costs (*e.g.*, R&D expenditures, certification costs) and validated those numbers against engineering estimates of redesign efforts. DOE combined this information with product listings to estimate how much manufacturers would have to spend on product development and product testing at each efficiency level. Manufacturer data were aggregated to better reflect the industry as a whole and to protect confidential information.

In general, DOE assumes that all conversion-related investments occur between the year of publication of the final rule and the year by which manufacturers must comply with the amended standards. The conversion cost figures used in the GRIM can be found in section V.B.2.a of this notice. For additional information on the estimated product and capital conversion costs, see chapter 12 of the final rule TSD.

b. Government Regulatory Impact Model Scenarios

Markup Scenarios

As discussed in the previous section, MSPs include direct manufacturing production costs (*i.e.*, labor, materials, and overhead estimated in DOE's MPCs) and all non-production costs (*i.e.*, SG&A, R&D, and interest), along with profit. To calculate the MSPs in the GRIM, DOE applied non-production cost markups to the MPCs estimated in the engineering analysis for each product class and efficiency level. Modifying these markups in the standards case yields different sets of impacts on manufacturers. For the MIA, DOE modeled two standards-case markup scenarios to represent the uncertainty regarding the potential impacts on prices and profitability for manufacturers following the implementation of amended energy conservation standards: (1) A preservation of gross margin percentage markup scenario; and (2) a preservation of per-unit operating profit markup

scenario. These scenarios lead to different markup values that, when applied to the inputted MPCs, result in varying revenue and cash-flow impacts.

Under the preservation of gross margin percentage markup scenario, DOE applied a single uniform “gross margin percentage” markup across all efficiency levels, which assumes that following amended standards, manufacturers would be able to maintain the same amount of profit as a percentage of revenue at all efficiency levels within a product class. As production costs increase with efficiency, this scenario implies that the absolute dollar markup will increase as well. Based on publicly-available financial information for manufacturers of residential boilers, as well as comments from manufacturer interviews, DOE assumed the average non-production cost markup—which includes SG&A expenses, R&D expenses, interest, and profit—to be 1.41 for all product classes. This markup scenario represents the upper bound of the residential boiler industry’s profitability in the standards case because manufacturers are able to fully pass through additional costs due to standards to consumers.

DOE decided to include the preservation of per-unit operating profit scenario in its analysis because manufacturers stated that they do not expect to be able to mark up the full cost of production in the standards case, given the highly competitive nature of the residential boiler market. In this scenario, manufacturer markups are set so that operating profit one year after the compliance date of amended energy conservation standards is the same as in the base case on a per-unit basis. In other words, manufacturers are not able to garner additional operating profit from the higher production costs and the investments that are required to comply with the amended standards; however, they are able to maintain the same operating profit in the standards case that was earned in the base case. Therefore, operating margin in percentage terms is reduced between the base case and standards case. DOE adjusted the manufacturer markups in the GRIM at each TSL to yield approximately the same earnings before interest and taxes in the standards case as in the base case. The preservation of per-unit operating profit markup scenario represents the lower bound of industry profitability in the standards case. This is because manufacturers are not able to fully pass through to consumers the additional costs necessitated by residential boiler standards, as they are able to do in the

preservation of gross margin percentage markup scenario.

3. Manufacturer Interviews

DOE interviewed manufacturers representing approximately 55 percent of the residential boiler market by revenue. DOE contractors endeavor to conduct interviews with a representative cross-section of manufacturers (including large and small manufacturers, covering all equipment classes and product offerings). DOE contractors reached out to all the small business manufacturers that were identified as part of the analysis, as well as larger manufacturers that have significant market share in the residential boilers market. These interviews were in addition to those DOE conducted as part of the engineering analysis. The information gathered during these interviews enabled DOE to tailor the GRIM to reflect the unique financial characteristics of the residential boiler industry. The information gathered during these interviews enabled DOE to tailor the GRIM to reflect the unique financial characteristics of the residential boiler industry. All interviews provided information that DOE used to evaluate the impacts of potential amended energy conservation standards on manufacturer cash flows, manufacturing capacities, and employment levels.

In interviews, DOE asked manufacturers to describe their major concerns with potential standards arising from a rulemaking involving residential boilers. Manufacturer interviews are conducted under non-disclosure agreements (NDAs), so DOE does not document these discussions in the same way that it does public comments in the comment summaries and DOE’s responses throughout the rest of this notice. The following sections highlight the most significant of manufacturers’ statements that helped shape DOE’s understanding of potential impacts of an amended standard on the industry. Manufacturers raised a range of general issues for DOE to consider, including a diminished ability to serve the replacement market, concerns that condensing boilers may not perform as rated without heating system modifications, and concerns about reduced product durability. (DOE also considered all other concerns expressed by manufacturers in this analysis.) Below, DOE summarizes these issues, which were raised in manufacturer interviews, in order to obtain public comment and related data.

Diminished Ability To Serve the Replacement Market

In interviews, several manufacturers pointed out that over 90 percent of residential boiler sales are transacted in the replacement channel, rather than the new construction channel. They stated that the current residential boiler market is structured around the legacy venting infrastructures that exist in the vast majority of homes and that any regulation that eliminated 82 to 83-percent efficient products would be very disruptive to the market. Manufacturers argued that under this scenario, consumers would face much higher installation costs, as well as complex challenges in changing the layout of the boiler room and upgrading their venting and heat distribution systems. Manufacturers argued that these considerations may induce consumers to explore other HVAC options and may cause them to leave the boiler market entirely. Manufacturers also asserted that the elimination of 82 to 83-percent efficient products could be disruptive to the market because several manufacturers would have to eliminate commodity products that generate a majority of their sales and be forced to sell products for which they are less vertically integrated, which may cause them to exit the market entirely. Some manufacturers speculated that if this scenario were to play out, it could result in the loss of a substantial number of American manufacturing jobs.

Accordingly, DOE has considered this feedback when developing its analysis of installation costs (see section IV.F.2), shipments analysis (see section IV.G), and employment impacts analysis (see section IV.N).

Condensing Boilers May Not Perform As Rated Without System Improvements

Several manufacturers argued that condensing boilers may have overstated efficiencies in terms of actual results in the field if they are installed as replacements in legacy distribution systems that were designed to maintain hot water supply temperatures of 180–200 °F. Manufacturers stated that in these systems, return water temperatures will often be too high for condensing boilers to operate in condensing mode, thereby causing the boiler to be less efficient than its express rating. Manufacturers also stated that because condensing boilers are designed for lower maximum supply water temperatures, the heat distribution output of the heating system as a whole is often reduced, and the boiler may not be able to meet heat distribution requirements. This may require the

implementation of additional heat distribution equipment within a particular system. Some manufacturers pointed out that reducing the supply water temperature also reduces the radiation component of some heat distribution units, which is essential for comfort and allows consumers to maintain a lower thermostat setting. Reducing the radiation component may require a higher thermostat setting to maintain comfort, thereby reducing overall system efficiency.

DOE recognizes this issue and considered it in the energy use analysis for residential boilers. See chapter 7 of the final rule TSD for additional details.

Reduced Product Durability and Reliability

Several manufacturers commented that higher-efficiency condensing boilers on the market have not demonstrated the same level of durability and reliability as lower-efficiency products. Manufacturers stated that condensing products require more upkeep and maintenance and generally do not last as long as non-condensing products. Several manufacturers pointed out that they generally incur large after-sale costs with their condensing products because of additional warranty claims. Maintenance calls for these boilers require more skilled technicians and occur more frequently than they do with non-condensing boilers.

DOE considered these comments when developing its estimates of repair and maintenance costs for residential boilers (see section IV.F.2.c) and product lifetime (IV.F.2.d).

4. Discussion of MIA Comments

During the NOPR public comment period, interested parties commented on assumptions and results described in the NOPR document and accompanying TSD, addressing several topics related to manufacturer impacts. These include: small business impacts and industry direct employment.

Small Business Impacts

Energy Kinetics commented that the introduction of new products in response to the proposed standard will put significant burden on small manufacturers due to the product development costs, carrying costs, distribution costs, and warehousing costs that will be incurred. Further, Energy Kinetics argued that the standard may result in consumers switching to high-mass cast iron products which would also put small manufacturers at a market disadvantage. (Energy Kinetics, No. 52 at p. 2) Consistent with the

requirements of the Regulatory Flexibility Act (5 U.S.C. 601, *et seq.*), as amended, the Department analyzes the expected impacts of an energy conservation standard on small business residential boiler manufacturers directly regulated by DOE's standards. DOE understands that small manufacturers may be disproportionately affected by an energy conservation standard, and these impacts are discussed in section VI.B.

Direct Employment

Burnham commented that a standard requiring condensing units would have significant impacts on direct employment due to the elimination of cast iron products. (Burnham, No. 60 at pp. 1 & 4) In the manufacturer impact analysis, DOE analyzes the impacts on regulated residential boiler manufacturers. In this analysis, DOE estimates the decrease in direct employment due to an energy conservation standard in section V.B.2.b. Burnham also raised concerns about the impact of a standard requiring condensing efficiency levels on their cast iron foundries. (Burnham, No. 60 at p. 38) However, this rule does not adopt a condensing level for any equipment classes. A full explanation of the efficiency requirements by product class is provided in section V.B.2.a.

K. Emissions Analysis

The emissions analysis consists of two components. The first component estimates the effect of potential energy conservation standards on power sector and site (where applicable) combustion emissions of CO₂, NO_x, SO₂, and Hg. The second component estimates the impacts of potential standards on emissions of two additional greenhouse gases, CH₄ and N₂O, as well as the reductions to emissions of all species due to "upstream" activities in the fuel production chain. These upstream activities comprise extraction, processing, and transporting fuels to the site of combustion. The associated emissions are referred to as upstream emissions.

For the final rule, the analysis of power sector emissions used marginal emissions factors that were derived from data in *AEO 2015*, as described in section IV.M. The methodology used in the final rule is described in chapters 13 and 15 of the final rule TSD.

Combustion emissions of CH₄ and N₂O are estimated using emissions intensity factors published by the EPA, Greenhouse Gas (GHG) Emissions

Factors Hub.⁹⁸ The FFC upstream emissions are estimated based on the methodology described in chapter 15 of the final rule TSD. The upstream emissions include both emissions from fuel combustion during extraction, processing, and transportation of fuel, and "fugitive" emissions (direct leakage to the atmosphere) of CH₄ and CO₂.

The emissions intensity factors are expressed in terms of physical units per MWh or MMBtu of site energy savings. Total emissions reductions are estimated using the energy savings calculated in the national impact analysis.

For CH₄ and N₂O, DOE calculated emissions reduction in tons and also in terms of units of carbon dioxide equivalent (CO₂eq). Gases are converted to CO₂eq by multiplying each ton of gas by the gas' global warming potential (GWP) over a 100-year time horizon. Based on the Fifth Assessment Report of the Intergovernmental Panel on Climate Change,⁹⁹ DOE used GWP values of 28 for CH₄ and 265 for N₂O.

Because the on-site operation of residential boilers requires use of fossil fuels and results in emissions of CO₂, NO_x, and SO₂ at the sites where these appliances are used, DOE also accounted for the reduction in these site emissions and the associated upstream emissions due to potential standards. Site emissions were estimated using emissions intensity factors from an EPA publication.¹⁰⁰

The amended standards will reduce use of fuel at the site and slightly reduce electricity use, thereby reducing power sector emissions. However, the highest efficiency levels (*i.e.*, the max-tech levels) considered for residential boilers would increase the use of electricity by the boiler. For the considered TSLs, DOE estimated the change in power sector and upstream emissions of CO₂, NO_x, SO₂, and Hg.¹⁰¹

The *AEO* incorporates the projected impacts of existing air quality regulations on emissions. *AEO 2015*

⁹⁸ Available at: <http://www.epa.gov/climateleadership/inventory/ghg-emissions.html>.

⁹⁹ IPCC (2013): *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Chapter 8.

¹⁰⁰ U.S. Environmental Protection Agency, *Compilation of Air Pollutant Emission Factors*, AP-42, Fifth Edition, Volume I: Stationary Point and Area Sources (1998) (Available at: <http://www.epa.gov/ttn/chieffap42/index.html>).

¹⁰¹ Note that in these cases, the reduction in site emissions of CO₂, NO_x, and SO₂ is larger than the increase in power sector emissions.

generally represents current legislation and environmental regulations, including recent government actions, for which implementing regulations were available as of October 31, 2014. DOE's estimation of impacts accounts for the presence of the emissions control programs discussed in the following paragraphs. The estimated CO₂ emissions reductions do not account for the effects of the Clean Power Plan (CPP) final rule, which was announced by EPA on August 3, 2015. 80 FR 64662 (Oct. 23, 2015). The CPP establishes guidelines for States to follow in developing plans to reduce CO₂ emissions from existing fossil fuel-fired electric generating units. Under the CPP, marginal emissions factors for CO₂ from the power sector would be significantly lower than the values that DOE derived from AEO 2015. The CPP would have a negligible effect on the CO₂ emissions reduction estimated to result from the adopted AFUE and standby/off mode standards for residential boilers, however, as the power sector accounts for only 2.7 percent of the total CO₂ emissions reduction. The bulk of the emissions reduction comes from site emissions. See section V.B.6 for further discussion.

SO₂ emissions from affected electric generating units (EGUs) are subject to nationwide and regional emissions cap-and-trade programs. Title IV of the Clean Air Act sets an annual emissions cap on SO₂ for affected EGUs in the 48 contiguous States and the District of Columbia (DC). (42 U.S.C. 7651 *et seq.*) SO₂ emissions from 28 eastern States and DC were also limited under the Clean Air Interstate Rule (CAIR). 70 FR 25162 (May 12, 2005). CAIR created an allowance-based trading program that operates along with the Title IV program. In 2008, CAIR was remanded to EPA by the U.S. Court of Appeals for the District of Columbia Circuit, but it remained in effect.¹⁰² In 2011, EPA issued a replacement for CAIR, the Cross-State Air Pollution Rule (CSAPR). 76 FR 48208 (August 8, 2011). On August 21, 2012, the DC Circuit issued a decision to vacate CSAPR,¹⁰³ and the court ordered EPA to continue administering CAIR. On April 29, 2014, the U.S. Supreme Court reversed the judgment of the DC Circuit and remanded the case for further proceedings consistent with the

Supreme Court's opinion.¹⁰⁴ On October 23, 2014, the DC Circuit lifted the stay of CSAPR.¹⁰⁵ Pursuant to this action, CSAPR went into effect (and CAIR ceased to be in effect) as of January 1, 2015.

EIA was not able to incorporate CSAPR into AEO 2015, so it assumes implementation of CAIR. Although DOE's analysis used emissions factors that assume that CAIR, not CSAPR, is the regulation in force, the difference between CAIR and CSAPR is not significant for the purpose of DOE's analysis of emissions impacts from energy conservation standards.

The attainment of emissions caps is typically flexible among EGUs and is enforced through the use of emissions allowances and tradable permits. Under existing EPA regulations, any excess SO₂ emissions allowances resulting from the lower electricity demand caused by the adoption of an efficiency standard could be used to permit offsetting increases in SO₂ emissions by any regulated EGU. In past rulemakings, DOE recognized that there was uncertainty about the effects of efficiency standards on SO₂ emissions covered by the existing cap-and-trade system, but it concluded that negligible reductions in power sector SO₂ emissions would occur as a result of standards.

Beginning in 2016, however, SO₂ emissions will fall as a result of the Mercury and Air Toxics Standards (MATS) for power plants. 77 FR 9304 (Feb. 16, 2012). In the MATS rule, EPA established a standard for hydrogen chloride as a surrogate for acid gas hazardous air pollutants (HAP), and also established a standard for SO₂ (a non-HAP acid gas) as an alternative equivalent surrogate standard for acid gas HAP. The same controls are used to reduce HAP and non-HAP acid gas; thus, SO₂ emissions will be reduced as a result of the control technologies installed on coal-fired power plants to comply with the MATS requirements for acid gas. AEO 2015 assumes that, in order to continue operating, coal plants must have either flue gas desulfurization or dry sorbent injection systems installed by 2016. Both technologies, which are used to reduce acid gas emissions, also reduce SO₂

emissions. Under the MATS, emissions will be far below the cap established by CAIR, so it is unlikely that excess SO₂ emissions allowances resulting from the lower electricity demand would be needed or used to permit offsetting increases in SO₂ emissions by any regulated EGU. Therefore, DOE believes that energy conservation standards will generally reduce SO₂ emissions in 2016 and beyond.¹⁰⁶

CAIR established a cap on NO_x emissions in 28 eastern States and the District of Columbia.¹⁰⁷ Energy conservation standards are expected to have little effect on NO_x emissions in those States covered by CAIR because excess NO_x emissions allowances resulting from the lower electricity demand could be used to permit offsetting increases in NO_x emissions from other facilities. However, standards would be expected to reduce NO_x emissions in the States not affected by the caps, so DOE estimated NO_x emissions reductions from the standards considered in this final rule for these States.

The MATS limit mercury emissions from power plants, but they do not include emissions caps, and as such, DOE's energy conservation standards would likely reduce Hg emissions. DOE estimated mercury emissions reduction using emissions factors based on AEO 2015, which incorporates the MATS.

AHRI criticized DOE's inclusion of CO₂ emissions impact over a time period greatly exceeding that used to measure the economic costs. (AHRI, No. 64 at pp. 6–7) In response, DOE considers the impacts over the lifetime of the residential boiler products shipped in the 30-year analysis period. With respect to energy cost savings, impacts continue until all of the equipment shipped in the 30-year analysis period are retired. Likewise, emissions impacts from purchased

¹⁰⁶ DOE notes that the Supreme Court recently determined that EPA erred by not considering costs in the finding that regulation of hazardous air pollutants from coal-fired and oil-fired electric utility steam generating units is appropriate. See *Michigan v. EPA* (Case No. 14–46, 2015). The Supreme Court did not vacate the MATS rule, and DOE has tentatively determined that the Court's decision on the MATS rule does not change the assumptions regarding the impact of energy efficiency standards on SO₂ emissions (see chapter 13 of the final rule TSD for further discussion). Further, the Court's decision does not change the impact of the energy efficiency standards on mercury emissions. DOE will continue to monitor developments related to this case and respond to them as appropriate.

¹⁰⁷ CSAPR also applies to NO_x and it supersedes the regulation of NO_x under CAIR. As stated previously, the current analysis assumes that CAIR, not CSAPR, is the regulation in force. The difference between CAIR and CSAPR with regard to DOE's analysis of NO_x emissions is slight.

¹⁰² See *North Carolina v. EPA*, 550 F.3d 1176 (D.C. Cir. 2008); *North Carolina v. EPA*, 531 F.3d 896 (D.C. Cir. 2008).

¹⁰³ See *EME Homer City Generation, LP v. EPA*, 696 F.3d 7, 38 (D.C. Cir. 2012), *cert. granted*, 81 U.S.L.W. 3567, 81 U.S.L.W. 3696, 81 U.S.L.W. 3702 (U.S. June 24, 2013) (No. 12–1182).

¹⁰⁴ See *EPA v. EME Homer City Generation*, 134 S.Ct. 1584, 1610 (U.S. 2014). The Supreme Court held in part that EPA's methodology for quantifying emissions that must be eliminated in certain States due to their impacts in other downwind States was based on a permissible, workable, and equitable interpretation of the Clean Air Act provision that provides statutory authority for CSAPR.

¹⁰⁵ See *Georgia v. EPA*, Order (D.C. Cir. filed October 23, 2014) (No. 11–1302).

products continue until all of the emissions produced by the boilers shipped during the analysis period are eliminated from the atmosphere. CO₂ that is emitted during the lifetime of the products has a long residence time in the atmosphere, and, thus, contributes to radiative forcing, which affects global climate, for a long time. In the case of both manufacturer economic costs and benefits and the value of CO₂ emissions reductions, DOE is accounting for the lifetime impacts of products shipped in the same analysis period.

EEI stated that the analysis and *AEO 2015* do not include the impact of the EPA power plant rule on coal power generation. (EEI, Public Meeting Transcript, No. 50 at pp. 270–272) *AEO 2015* is the only source that provides a comprehensive projection of Reference case emissions. The final rule for the Clean Power Plan was issued well after *AEO 2015* was finalized. DOE acknowledges that presuming the Clean Power Plan survives court challenges, projected emissions of CO₂ would be below those projected in *AEO 2015*. However, DOE notes that the adopted standards for residential boilers would be economically justified even if DOE did not account for any emissions benefits.

L. Monetizing Carbon Dioxide and Other Emissions Impacts

As part of the development of this rule, DOE considered the estimated monetary benefits from the reduced emissions of CO₂ and NO_x that are expected to result from each of the TSLs considered. In order to make this calculation analogous to the calculation of the NPV of consumer benefit, DOE considered the reduced emissions expected to result over the lifetime of products shipped in the forecast period for each TSL. This section summarizes the basis for the monetary values used for CO₂ and NO_x emissions and presents the values considered in this final rule.

For this final rule, DOE relied on a set of values for the social cost of carbon (SCC) that was developed by a Federal interagency process. The basis for these values is summarized in the next section, and a more detailed description of the methodologies used is provided as an appendix to chapter 14 of the final rule TSD.

1. Social Cost of Carbon

The SCC is an estimate of the monetized damages associated with an incremental increase in carbon emissions in a given year. It is intended to include (but is not limited to) climate-change-related changes in net

agricultural productivity, human health, property damages from increased flood risk, and the value of ecosystem services. Estimates of the SCC are provided in dollars per metric ton of CO₂. A domestic SCC value is meant to reflect the value of damages in the United States resulting from a unit change in CO₂ emissions, while a global SCC value is meant to reflect the value of damages worldwide.

Under section 1(b)(6) of Executive Order 12866, “Regulatory Planning and Review,” 58 FR 51735 (Oct. 4, 1993), agencies must, to the extent permitted by law, assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. The purpose of the SCC estimates presented here is to allow agencies to incorporate the monetized social benefits of reducing CO₂ emissions into cost-benefit analyses of regulatory actions. The estimates are presented with an acknowledgement of the many uncertainties involved and with a clear understanding that they should be updated over time to reflect increasing knowledge of the science and economics of climate impacts.

As part of the interagency process that developed these SCC estimates, technical experts from numerous agencies met on a regular basis to consider public comments, explore the technical literature in relevant fields, and discuss key model inputs and assumptions. The main objective of this process was to develop a range of SCC values using a defensible set of input assumptions grounded in the existing scientific and economic literatures. In this way, key uncertainties and model differences transparently and consistently inform the range of SCC estimates used in the rulemaking process.

a. Monetizing Carbon Dioxide Emissions

When attempting to assess the incremental economic impacts of CO₂ emissions, the analyst faces a number of challenges. A report from the National Research Council¹⁰⁸ points out that any assessment will suffer from uncertainty, speculation, and lack of information about: (1) Future emissions of GHGs; (2) the effects of past and future emissions on the climate system; (3) the impact of changes in climate on the physical and

biological environment; and (4) the translation of these environmental impacts into economic damages. As a result, any effort to quantify and monetize the harms associated with climate change will raise questions of science, economics, and ethics and should be viewed as provisional.

Despite the limits of both quantification and monetization, SCC estimates can be useful in estimating the social benefits of reducing CO₂ emissions. The agency can estimate the benefits from reduced (or costs from increased) emissions in any future year by multiplying the change in emissions in that year by the SCC values appropriate for that year. The NPV of the benefits can then be calculated by multiplying each of these future benefits by an appropriate discount factor and summing across all affected years.

It is important to emphasize that the interagency process is committed to updating these estimates as the science and economic understanding of climate change and its impacts on society improves over time. In the meantime, the interagency group will continue to explore the issues raised by this analysis and consider public comments as part of the ongoing interagency process.

b. Development of Social Cost of Carbon Values

In 2009, an interagency process was initiated to offer a preliminary assessment of how best to quantify the benefits from reducing carbon dioxide emissions. To ensure consistency in how benefits are evaluated across Federal agencies, the Administration sought to develop a transparent and defensible method, specifically designed for the rulemaking process, to quantify avoided climate change damages from reduced CO₂ emissions. The interagency group did not undertake any original analysis. Instead, it combined SCC estimates from the existing literature to use as interim values until a more comprehensive analysis could be conducted. The outcome of the preliminary assessment by the interagency group was a set of five interim values: Global SCC estimates for 2007 (in 2006\$) of \$55, \$33, \$19, \$10, and \$5 per metric ton of CO₂. These interim values represented the first sustained interagency effort within the U.S. government to develop an SCC for use in regulatory analysis. The results of this preliminary effort were presented in several proposed and final rules.

¹⁰⁸ National Research Council, *Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use*, National Academies Press: Washington, DC (2009).

c. Current Approach and Key Assumptions

After the release of the interim values, the interagency group reconvened on a regular basis to generate improved SCC estimates. Specially, the group considered public comments and further explored the technical literature in relevant fields. The interagency group relied on three integrated assessment models commonly used to estimate the SCC: The FUND, DICE, and PAGE models. These models are frequently cited in the peer-reviewed literature and were used in the last assessment of the Intergovernmental Panel on Climate Change (IPCC). Each model was given equal weight in the SCC values that were developed.

Each model takes a slightly different approach to model how changes in emissions result in changes in economic

damages. A key objective of the interagency process was to enable a consistent exploration of the three models, while respecting the different approaches to quantifying damages taken by the key modelers in the field. An extensive review of the literature was conducted to select three sets of input parameters for these models: climate sensitivity, socio-economic and emissions trajectories, and discount rates. A probability distribution for climate sensitivity was specified as an input into all three models. In addition, the interagency group used a range of scenarios for the socio-economic parameters and a range of values for the discount rate. All other model features were left unchanged, relying on the model developers' best estimates and judgments.

In 2010, the interagency group selected four sets of SCC values for use

in regulatory analyses. Three sets of values are based on the average SCC from the three integrated assessment models, at discount rates of 2.5 percent, 3 percent, and 5 percent. The fourth set, which represents the 95th-percentile SCC estimate across all three models at a 3-percent discount rate, was included to represent higher-than-expected impacts from climate change further out in the tails of the SCC distribution. The values grow in real terms over time. Additionally, the interagency group determined that a range of values from 7 percent to 23 percent should be used to adjust the global SCC to calculate domestic effects,¹⁰⁹ although preference is given to consideration of the global benefits of reducing CO₂ emissions. Table IV.28 presents the values in the 2010 interagency group report,¹¹⁰ which is reproduced in appendix 14A of the final rule TSD.

TABLE IV.28—ANNUAL SCC VALUES FROM 2010 INTERAGENCY REPORT, 2010–2050

[In 2007\$ per metric ton CO₂]

Year	Discount rate			
	5%	3%	2.5%	3%
	Average	Average	Average	95th-percentile
2010	4.7	21.4	35.1	64.9
2015	5.7	23.8	38.4	72.8
2020	6.8	26.3	41.7	80.7
2025	8.2	29.6	45.9	90.4
2030	9.7	32.8	50.0	100.0
2035	11.2	36.0	54.2	109.7
2040	12.7	39.2	58.4	119.3
2045	14.2	42.1	61.7	127.8
2050	15.7	44.9	65.0	136.2

The SCC values used for this document were generated using the most recent versions of the three integrated assessment models that have been published in the peer-reviewed literature, as described in the 2013 update from the interagency working

group (revised July 2015).¹¹¹ Table IV.29 shows the updated sets of SCC estimates from the latest interagency update in 5-year increments from 2010 to 2050. The full set of annual SCC estimates between 2010 and 2050 is reported in appendix 14B of the final rule TSD. The central

value that emerges is the average SCC across models at the 3-percent discount rate. However, for purposes of capturing the uncertainties involved in regulatory impact analysis, the interagency group emphasizes the importance of including all four sets of SCC values.

TABLE IV.29—ANNUAL SCC VALUES FROM 2013 INTERAGENCY UPDATE (REVISED JULY 2015), 2010–2050

[In 2007\$ per metric ton CO₂]

Year	Discount rate			
	5%	3%	2.5%	3%
	Average	Average	Average	95th-percentile
2010	10	31	50	86
2015	11	36	56	105
2020	12	42	62	123

¹⁰⁹ It is recognized that this calculation for domestic values is approximate, provisional, and highly speculative. There is no *a priori* reason why domestic benefits should be a constant fraction of net global damages over time.

¹¹⁰ *Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866*, Interagency

Working Group on Social Cost of Carbon, United States Government (February 2010) (Available at: <https://www.whitehouse.gov/sites/default/files/omb/inforeg/for-agencies/Social-Cost-of-Carbon-for-RIA.pdf>).

¹¹¹ *Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive*

Order 12866, Interagency Working Group on Social Cost of Carbon, United States Government (May 2013; revised July 2015) (Available at: <http://www.whitehouse.gov/sites/default/files/omb/inforeg/scs-td-final-july-2015.pdf>).

TABLE IV.29—ANNUAL SCC VALUES FROM 2013 INTERAGENCY UPDATE (REVISED JULY 2015), 2010–2050—Continued
[In 2007\$ per metric ton CO₂]

Year	Discount rate			
	5%	3%	2.5%	3%
	Average	Average	Average	95th-percentile
2025	14	46	68	138
2030	16	50	73	152
2035	18	55	78	168
2040	21	60	84	183
2045	23	64	89	197
2050	26	69	95	212

Commenting on the NOPR, The Associations objected to DOE's continued use of the Social Cost of Carbon ("SCC") and stated that the SCC calculation should not be used in any rulemaking or policymaking until it undergoes a more rigorous notice, review, and comment process. (The Associations, No. 56 at p. 4) Both The Associations¹¹² and AHRI stated that the interagency process was not transparent, that the SCC estimates were not subjected to peer review, and that the information generated violates the Information Quality Act (IAQ¹¹³). (AHRI, No. 64 at p. 8) In addition, AHRI stated that the SCC estimates relied on arbitrary damage functions. (AHRI, No. 64 at p. 8)

In response, DOE notes that the General Accounting Office (GAO) reviewed the Interagency Working Group's (IWG) development of SCC estimates and found that OMB and EPA participants reported that the IWG documented all major issues consistent with Federal standards for internal control. The GAO also found, according to its document review and interviews, that the IWG's development process followed three principles: (1) it used consensus-based decision making; (2) it relied on existing academic literature and models; and (3) it took steps to disclose limitations and incorporate new information.¹¹⁴ DOE has also

determined that this energy conservation standards rulemaking process has complied with the requirements of the Information Quality Act (see section VI.J).

AHRI and the Cato Institute criticized DOE's use of SCC estimates that DOE has acknowledged are subject to considerable uncertainty. (AHRI, No. 64 at pp. 5–6; Cato Institute, No. 51 at p. 3) The Cato Institute stated that until the integrated assessment models (IAMs) are made consistent with mainstream climate science, the SCC should be barred from use in this and all other Federal rulemakings. The Cato Institute criticized several aspects of the determination of the SCC values by the IWG as being discordant with the best climate science and not reflective of climate change impacts. (Cato Institute, No. 51 at p. 1–2, 4–22) AHRI also criticized the determination of the SCC values. (AHRI, No. 64 at p. 8)

In conducting the interagency process that developed the SCC values, technical experts from numerous agencies met on a regular basis to consider public comments, explore the technical literature in relevant fields, and discuss key model inputs and assumptions. Key uncertainties and model differences transparently and consistently inform the range of SCC estimates. These uncertainties and model differences are discussed in the interagency working group's reports, which are reproduced in appendices 14A and 14B of the final rule TSD, as are the major assumptions. Specifically, uncertainties in the assumptions regarding climate sensitivity, as well as other model inputs such as economic growth and emissions trajectories, are discussed and the reasons for the specific input assumptions chosen are explained. However, the three integrated assessment models used to estimate the SCC are frequently cited in the peer-reviewed literature and were

used in the last assessment of the IPCC. In addition, new versions of the models that were used in 2013 to estimate revised SCC values were published in the peer-reviewed literature (see appendix 14B of the final rule TSD for discussion). Although uncertainties remain, the revised estimates that were issued in November 2013 are based on the best available scientific information on the impacts of climate change. The current estimates of the SCC have been developed over many years, using the best science available, and with input from the public. In November 2013, OMB announced a new opportunity for public comment on the interagency technical support document underlying the revised SCC estimates. 78 FR 70586 (Nov. 26, 2013). In July 2015, OMB published a detailed summary and formal response to the many comments that were received.¹¹⁵ OMB also stated its intention to seek independent expert advice on opportunities to improve the estimates, including many of the approaches suggested by commenters. DOE stands ready to work with OMB and the other members of the interagency working group on further review and revision of the SCC estimates as appropriate.

AHRI, the Cato Institute, and Laclede criticized DOE's use of global rather than domestic SCC values, pointing out that EPCA references weighing of the need for national energy conservation. The Cato Institute recommended reporting the results of the domestic SCC calculation in the main body of the proposed regulation. (AHRI, No. 64 at p. 6; Cato Institute, No. 51 at pp. 2–3; Laclede, No. 58 at p. 9)

In response, DOE's analysis estimates both global and domestic benefits of CO₂ emissions reductions. The domestic benefits are reported in chapter 14 of the

¹¹² Comments submitted to the Commercial Refrigeration Equipment which the Associations incorporated by reference (Comments of the U.S. Chamber of Commerce, American Forest & Paper Association, American Fuel & Petrochemical Manufacturers, American Petroleum Institute, Council of Industrial Boiler Owners, National Association of Manufacturers, National Mining Association, and Portland Cement Association; Docket No. EERE-2010-BT-STD-0003-0079; <http://www.regulations.gov/#!documentDetail;D=EERE-2010-BT-STD-0003-0079>).

¹¹³ Public Law 106-554, § 515, 114 Stat. 2763 (Dec. 21, 2000). The IAQ is also set forth at 44 U.S.C. 3516, note.

¹¹⁴ U.S. Government Accountability Office, *Regulatory Impact Analysis: Development of Social Cost of Carbon Estimates* GAO-14-663 (July 24,

2014) (Available at: <http://www.gao.gov/products/GAO-14-663>).

¹¹⁵ The White House, *Estimating the Benefits from Carbon Dioxide Emissions Reductions* (July 2, 2015) (Available at: <https://www.whitehouse.gov/blog/2015/07/02/estimating-benefits-carbon-dioxide-emissions-reductions>).

final rule TSD. Following the recommendation of the Interagency Working Group, DOE places more focus on a global measure of SCC. As discussed in appendix 14A of the final rule TSD, the climate change problem is highly unusual in at least two respects. First, it involves a global externality: Emissions of most greenhouse gases contribute to damages around the world even when they are emitted in the United States. Consequently, to address the global nature of the problem, the SCC must incorporate the full (global) damages caused by GHG emissions. Second, climate change presents a problem that the United States alone cannot solve. Even if the United States were to reduce its greenhouse gas emissions to zero, that step would be far from enough to avoid substantial climate change. Other countries would also need to take action to reduce emissions if significant changes in the global climate are to be avoided. Emphasizing the need for a global solution to a global problem, the United States has been actively involved in seeking international agreements to reduce emissions and in encouraging other nations, including emerging major economies, to take significant steps to reduce emissions. When these considerations are taken as a whole, the interagency group concluded that a global measure of the benefits from reducing U.S. emissions is preferable. Therefore, DOE's approach is not in contradiction of the requirement to weigh the need for national energy conservation, as one of the main reasons for national energy conservation is to contribute to efforts to mitigate the effects of global climate change.

AHRI disputed DOE's assumption that SCC values will increase over time, because AHRI reasons that the more economic development that occurs, the more adaptation and mitigation efforts that will be undertaken. (AHRI, No. 64 at p. 7) In response, the SCC increases over time because future emissions are expected to produce larger incremental damages as physical and economic systems become more stressed in response to greater climatic change (see appendix 14A of the final rule TSD). The approach used by the Interagency Working Group allowed estimation of the growth rate of the SCC directly using the three IAMs, which helps to ensure that the estimates are internally consistent with other modeling assumptions. Adaptation and mitigation efforts, while necessary and important, are not without cost, particularly if their implementation is delayed.

Laclede recommended using market prices to value carbon reduction

benefits to U.S. residents. Laclede provided a chart of DOE's SCC values compared to three market prices from 2008 to 2015, which shows that the market prices are as low as or lower than the SCC value at a 5-percent discount rate (\$12). (Laclede, No. 58 at pp. 9–10) In response, DOE notes that market prices are simply a reflection of the conditions in specific emissions markets in which emissions caps have been set. Neither the caps nor the resulting prices of traded emissions are intended to reflect the full range of domestic and global impacts from anthropogenic climate change over the appropriate time scales.

Even though the SCC embodies the best data currently available, it is important to recognize that a number of key uncertainties remain, and that current SCC estimates should be treated as provisional and revisable because they will evolve with improved scientific and economic understanding. The interagency group also recognizes that the existing models are imperfect and incomplete. The National Research Council report mentioned previously points out that there is tension between the goal of producing quantified estimates of the economic damages from an incremental ton of carbon and the limits of existing efforts to model these effects. There are a number of analytical challenges that are being addressed by the research community, including research programs housed in many of the Federal agencies participating in the interagency process to estimate the SCC. The interagency group intends to periodically review and reconsider those estimates to reflect increasing knowledge of the science and economics of climate impacts, as well as improvements in modeling.

In summary, in considering the potential global benefits resulting from reduced CO₂ emissions, DOE used the values from the 2013 interagency report (revised July 2015), adjusted to 2014\$ using the implicit price deflator for gross domestic product (GDP) from the Bureau of Economic Analysis. For each of the four sets of SCC cases specified, the values for emissions in 2015 were \$12.2, \$40.0, \$62.3, and \$117 per metric ton avoided (values expressed in 2014\$). DOE derived values after 2050 using the relevant growth rates for the 2040–2050 period in the interagency update.

DOE multiplied the CO₂ emissions reduction estimated for each year by the SCC value for that year in each of the four cases. To calculate a present value of the stream of monetary values, DOE discounted the values in each of the four cases using the specific discount

rate that had been used to obtain the SCC values in each case.

2. Social Cost of Other Air Pollutants

As noted previously, DOE has estimated how the considered energy conservation standards would reduce site NO_x emissions nationwide and decrease power sector NO_x emissions in those 22 States not affected by the CAIR.

DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from Regulatory Impact Analysis, titled Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants, published in June 2014 by EPA's Office of Air Quality Planning and Standards. The report includes high and low values for NO_x (as PM_{2.5}) for 2020, 2025, and 2030 discounted at 3 percent and 7 percent, which are presented in chapter 14 of the direct final rule TSD. DOE assigned values for 2021–2024 and 2026–2029 using, respectively, the values for 2020 and 2025. DOE assigned values after 2030 using the value for 2030.

DOE multiplied the emissions reduction (tons) in each year by the associated \$/ton values, and then discounted each series using discount rates of 3 percent and 7 percent as appropriate. DOE will continue to evaluate the monetization of avoided NO_x emissions and will make any appropriate updates in energy conservation standards rulemakings.

DOE is evaluating appropriate monetization of avoided SO₂ and Hg emissions in energy conservation standards rulemakings. DOE has not included monetization of those emissions in the current analysis.

M. Utility Impact Analysis

The utility impact analysis estimates several effects on the electric power generation industry that would result from the adoption of new or amended energy conservation standards. The utility impact analysis estimates the changes in installed electrical capacity and generation that would result for each TSL. The analysis is based on published output from the NEMS associated with AEO 2015. NEMS produces the AEO Reference case, as well as a number of side cases that estimate the economy-wide impacts of changes to energy supply and demand. DOE uses published side cases to estimate the marginal impacts of reduced energy demand on the utility sector. These marginal factors are estimated based on the changes to electricity sector generation, installed capacity, fuel consumption, and

emissions in the AEO Reference case and various side cases. Details of the methodology are provided in the appendices to chapters 13 and 15 of the final rule TSD.

The output of this analysis is a set of time-dependent coefficients that capture the change in electricity generation, primary fuel consumption, installed capacity and power sector emissions due to a unit reduction in demand for a given end use. These coefficients are multiplied by the stream of electricity savings calculated in the NIA to provide estimates of selected utility impacts of new or amended energy conservation standards.

N. Employment Impact Analysis

DOE considers employment impacts in the domestic economy as one factor in selecting a standard. Employment impacts from new or amended energy conservation standards include both direct and indirect impacts. Direct employment impacts are any changes in the number of employees of manufacturers of the products subject to standards. The MIA addresses those impacts. Indirect employment impacts are changes in national employment that occur due to the shift in expenditures and capital investment caused by the purchase and operation of more-efficient appliances. Indirect employment impacts from standards consist of the net jobs created or eliminated in the national economy, other than in the manufacturing sector being regulated, caused by: (1) Reduced spending by end users on energy; (2) reduced spending on new energy supply by the utility industry; (3) increased consumer spending on new products to which the new standards apply; and (4) the effects of those three factors throughout the economy.

One method for assessing the possible effects on the demand for labor of such shifts in economic activity is to compare sector employment statistics developed by the Labor Department's Bureau of Labor Statistics (BLS).¹¹⁶ BLS regularly publishes its estimates of the number of jobs per million dollars of economic activity in different sectors of the

economy, as well as the jobs created elsewhere in the economy by this same economic activity. Data from BLS indicate that expenditures in the utility sector generally create fewer jobs (both directly and indirectly) than expenditures in other sectors of the economy.¹¹⁷ There are many reasons for these differences, including wage differences and the fact that the utility sector is more capital-intensive and less labor-intensive than other sectors. Energy conservation standards have the effect of reducing consumer utility bills. Because reduced consumer expenditures for energy likely lead to increased expenditures in other sectors of the economy, the general effect of efficiency standards is to shift economic activity from a less labor-intensive sector (*i.e.*, the utility sector) to more labor-intensive sectors (*e.g.*, the retail and service sectors). Thus, based on the BLS data alone, DOE believes net national employment may increase due to shifts in economic activity resulting from amended energy conservation standards for residential boilers.

DOE estimated indirect national employment impacts for the standard levels considered in this final rule using an input/output model of the U.S. economy called Impact of Sector Energy Technologies version 3.1.1 (ImSET).¹¹⁸ ImSET is a special-purpose version of the "U.S. Benchmark National Input-Output" (I-O) model, which was designed to estimate the national employment and income effects of energy-saving technologies. The ImSET software includes a computer-based I-O model having structural coefficients that characterize economic flows among 187 sectors most relevant to industrial, commercial, and residential building energy use.

DOE notes that ImSET is not a general equilibrium forecasting model, and understands the uncertainties involved in projecting employment impacts, especially changes in the later years of the analysis. Because ImSET does not incorporate price changes, the

employment effects predicted by ImSET may over-estimate actual job impacts over the long run for this rule.

Therefore, DOE generated results for near-term timeframes (through 2023), where these uncertainties are reduced. For more details on the employment impact analysis, see chapter 16 of the final rule TSD.

V. Analytical Results and Conclusions

The following section addresses the results from DOE's analyses with respect to the considered energy conservation standards for residential boilers. It addresses the TSLs examined by DOE, the projected impacts of each of these levels if adopted as energy conservation standards for residential boilers, and the standards levels that DOE is adopting in this final rule. Additional details regarding DOE's analyses are contained in the final rule TSD supporting this notice.

A. Trial Standard Levels

DOE analyzed the benefits and burdens of five TSLs for residential boilers for AFUE standards and three TSLs for standby mode and off mode standards. These TSLs were developed by combining specific efficiency levels for each of the product classes analyzed by DOE. DOE presents the results for the TSLs in this document, while the results for all efficiency levels that DOE analyzed are in the final rule TSD.

1. TSLs for AFUE Standards

Table V.1 and Table V.2 present the TSLs and the corresponding product classes that DOE considered for residential boilers by efficiency levels and AFUE levels, respectively. TSL 5 consists of the max-tech efficiency levels. TSL 4 consists of intermediate efficiency levels between the max-tech and TSL3, including the minimum condensing efficiency levels for hot water boiler product classes. TSL 3 consists of the efficiency levels that provide the highest NPV using a 7-percent discount rate (see section V.B.3 for NPV results), and that also result in a higher percentage of consumers that receive an LCC benefit than experience an LCC loss (see section V.B.1 for LCC results). TSL 2 consists of the intermediate efficiency levels. TSL 1 consists of the most common efficiency levels in the current market.

¹¹⁶ Data on industry employment, hours, labor compensation, value of production, and the implicit price deflator for output for these industries are available upon request by calling the Division of Industry Productivity Studies (202-691-5618) or by sending a request by email to dipsweb@bls.gov.

¹¹⁷ See Bureau of Economic Analysis, Regional Multipliers: A User Handbook for the Regional Input-Output Modeling System (RIMS II), U.S. Department of Commerce (1992).

¹¹⁸ J. M. Roop, M. J. Scott, and R. W. Schultz, *ImSET 3.1: Impact of Sector Energy Technologies*, PNNL-18412, Pacific Northwest National Laboratory, 2009. (Available at: http://www.pnl.gov/main/publications/exblen/technical_reports/PNNL-18412.pdf)

TABLE V.1—TRIAL STANDARD LEVELS FOR RESIDENTIAL BOILERS BY EFFICIENCY LEVEL

Product class *	Trial Standard Levels				
	1	2	3	4	5
Gas-Fired Hot Water Boiler	1	1	2	4	6
Gas-Fired Steam Boiler	1	1	1	1	2
Oil-Fired Hot Water Boiler	1	2	2	3	3
Oil-Fired Steam Boiler	1	1	2	3	3

*As discussed in section IV.A.1, although electric hot water and electric steam boilers are in the scope of this rulemaking, these products were not analyzed for AFUE energy conservation standards and accordingly are not shown in this table.

TABLE V.2—TRIAL STANDARD LEVELS FOR RESIDENTIAL BOILERS BY AFUE

Product class *	Trial Standard Levels				
	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)
Gas-Fired Hot Water Boiler	83	83	84	90	96
Gas-Fired Steam Boiler	82	82	82	82	83
Oil-Fired Hot Water Boiler	85	86	86	91	91
Oil-Fired Steam Boiler	84	84	85	86	86

*As discussed in section IV.A.1, electric hot water and electric steam boilers were not analyzed for AFUE energy conservation standards and accordingly are not shown in this table.

2. TSLs for Standby Mode and Off Mode Standards

Table V.3 presents the TSLs and the corresponding product class efficiency levels (by efficiency level) that DOE considered for boiler standby mode and off mode power consumption. Table V.4

presents the three TSLs and the corresponding product class efficiency levels (expressed in watts) that DOE considered for boiler standby mode and off mode power consumption. TSL 3 consists of efficiency levels that utilize the technology option Switching Mode Power Supply with Low-Loss

Transformer (LLTX). TSL 2 consists of efficiency levels that utilize the technology option Switching Mode Power Supply. TSL 1 consists of efficiency levels that utilize the technology option Linear Power Supply with LLTX.

TABLE V.3—STANDBY MODE AND OFF MODE TRIAL STANDARD LEVELS FOR RESIDENTIAL BOILERS BY EFFICIENCY LEVEL

Product class	Trial Standard Levels		
	1	2	3
Gas-Fired Hot Water Boiler	1	2	3
Gas-Fired Steam Boiler	1	2	3
Oil-Fired Hot Water Boiler	1	2	3
Oil-Fired Steam Boiler	1	2	3
Electric Hot Water Boiler	1	2	3
Electric Steam Boiler	1	2	3

TABLE V.4—STANDBY MODE AND OFF MODE TRIAL STANDARD LEVELS FOR RESIDENTIAL BOILERS BY WATTS

Product class	Trial Standard Levels		
	1	2	3
Gas-Fired Hot Water Boiler	10.0	9.7	9.0
Gas-Fired Steam Boiler	9.0	8.7	8.0
Oil-Fired Hot Water Boiler	12.0	11.7	11.0
Oil-Fired Steam Boiler	12.0	11.7	11.0
Electric Hot Water Boiler	9.0	8.7	8.0
Electric Steam Boiler	9.0	8.7	8.0

B. Economic Justification and Energy Savings

1. Economic Impacts on Individual Consumers

DOE analyzed the economic impacts on residential boilers consumers by looking at the effects potential amended

standards at each TSL would have on the LCC and PBP. DOE also examined the impacts of potential standards on consumer subgroups. These analyses are discussed below.

a. Life-Cycle Cost and Payback Period

In general, higher-efficiency products affect consumers in two ways: (1) Purchase price increases and (2) annual operating costs decrease. Inputs used for calculating the LCC and PBP include total installed costs (*i.e.*, product price

plus installation costs), and operating costs (*i.e.*, annual energy use, energy prices, energy price trends, repair costs, and maintenance costs). The LCC calculation also uses product lifetime and a discount rate. Chapter 8 of the final rule TSD provides detailed information on the LCC and PBP analyses.

Table V.5 through Table V.12 show the LCC and PBP results for the AFUE

TSLs considered for each product class. In the first of each pair of tables, the simple payback is measured relative to the baseline product. In the second table, the impacts are measured relative to the efficiency distribution in the no-new-standards case in the compliance year (see section IV.F.8 of this notice). Because some consumers purchase products with higher efficiency in the no-new-standards case, the average

savings are less than the difference between the average LCC of the baseline product and the average LCC at each TSL. The savings refer only to consumers who are affected by a standard at a given TSL. Those who already purchase a product with efficiency at or above a given TSL are not affected. Consumers for whom the LCC increases at a given TSL experience a net cost.

TABLE V.5—AVERAGE LCC AND PBP RESULTS FOR GAS-FIRED HOT WATER BOILERS: AFUE STANDARDS

TSL	AFUE (%)	Average costs (2014\$)				Simple payback (years)	Average lifetime (years)
		Total installed cost	First year's operating cost	Lifetime operating cost	LCC		
1	83	\$6,387	\$1,211	\$22,468	\$28,854	1.2	26.6
2	83	6,387	1,211	22,468	28,854	1.2	26.6
3	84	6,402	1,198	22,235	28,638	1.2	26.6
4	90	7,255	1,119	20,761	28,016	8.4	26.6
5	96	8,295	1,061	19,700	27,995	11.8	26.6

Note: The results for each TSL are calculated assuming that all consumers use products at that efficiency level. The PBP is measured relative to the baseline (EL 0) product.

TABLE V.6—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR GAS-FIRED HOT WATER BOILERS: AFUE STANDARDS

TSL	AFUE (%)	Life-cycle cost savings	
		% of consumers that experience net cost	Average savings* (2014\$)
1	83	0.3	\$210
2	83	0.3	210
3	84	0.4	364
4	90	21.9	632
5	96	55.5	303

* The savings represent the average LCC for affected consumers.

TABLE V.7—AVERAGE LCC AND PBP RESULTS FOR GAS-FIRED STEAM BOILERS: AFUE STANDARDS

TSL	AFUE (%)	Average costs (2014\$)				Simple payback (years)	Average lifetime (years)
		Total installed cost	First year's operating cost	Lifetime operating cost	LCC		
1	82	\$6,376	\$1,063	\$17,857	\$24,234	2.7	23.6
2	82	6,376	1,063	17,857	24,234	2.7	23.6
3	82	6,376	1,063	17,857	24,234	2.7	23.6
4	82	6,376	1,063	17,857	24,234	2.7	23.6
5	83	6,682	1,052	17,672	24,355	10.7	23.6

Note: The results for each TSL are calculated assuming that all consumers use products at that efficiency level. The PBP is measured relative to the baseline (EL 0) product.

TABLE V.8—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR GAS-FIRED STEAM BOILERS: AFUE STANDARDS

TSL	AFUE (%)	Life-cycle cost savings	
		% of consumers that experience net cost	Average savings* (2014\$)
1	82	0.9	\$333
2	82	0.9	333
3	82	0.9	333
4	82	0.9	333

TABLE V.8—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR GAS-FIRED STEAM BOILERS: AFUE STANDARDS—Continued

TSL	AFUE (%)	Life-cycle cost savings	
		% of consumers that experience net cost	Average savings* (2014\$)
5	83	30.8	207

* The savings represent the average LCC for affected consumers.

TABLE V.9—AVERAGE LCC AND PBP RESULTS FOR OIL-FIRED HOT WATER BOILERS: AFUE STANDARDS

TSL	AFUE (%)	Average costs (2014\$)				Simple payback (years)	Average lifetime (years)
		Total installed cost	First year's operating cost	Lifetime operating cost	LCC		
1	85	\$8,200	\$1,999	\$38,553	\$46,753	6.9	24.7
2	86	8,351	1,969	37,962	46,313	5.8	24.7
3	86	8,351	1,969	37,962	46,313	5.8	24.7
4	91	10,691	1,861	35,842	46,534	16.5	24.7
5	91	10,691	1,861	35,842	46,534	16.5	24.7

Note: The results for each TSL are calculated assuming that all consumers use products at that efficiency level. The PBP is measured relative to the baseline (EL 0) product.

TABLE V.10—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR OIL-FIRED HOT WATER BOILERS: AFUE STANDARDS

TSL	AFUE (%)	Life-cycle cost savings	
		% of consumers that experience net cost	Average savings* (2014\$)
1	85	10.4	\$260
2	86	8.8	626
3	86	8.8	626
4	91	58.9	192
5	91	58.9	192

* The savings represent the average LCC for affected consumers.

TABLE V.11—AVERAGE LCC AND PBP RESULTS FOR OIL-FIRED STEAM BOILERS: AFUE STANDARDS

TSL	AFUE (%)	Average costs (2014\$)				Simple payback (years)	Average lifetime (years)
		Total installed cost	First year's operating cost	Lifetime operating cost	LCC		
1	84	\$8,189	\$1,928	\$29,558	\$37,747	6.6	19.3
2	84	8,189	1,928	29,558	37,747	6.6	19.3
3	85	8,341	1,906	29,219	37,560	6.7	19.3
4	86	8,644	1,876	28,760	37,404	7.8	19.3
5	86	8,644	1,876	28,760	37,404	7.8	19.3

Note: The results for each TSL are calculated assuming that all consumers use products at that efficiency level. The PBP is measured relative to the baseline (EL 0) product.

TABLE V.12—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR OIL-FIRED STEAM BOILERS: AFUE STANDARDS

TSL	AFUE (%)	Life-cycle cost savings	
		Percent of consumers that experience net cost	Average savings* (2014\$)
1	84	11.9	\$400
2	84	11.9	400
3	85	19.7	434
4	86	34.2	505

TABLE V.12—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR OIL-FIRED STEAM BOILERS: AFUE STANDARDS—Continued

TSL	AFUE (%)	Life-cycle cost savings	
		Percent of consumers that experience net cost	Average savings* (2014\$)
5	86	34.2	505

* The savings represent the average LCC for affected consumers.

Table V.13 through Table V.24 show product class for standby mode and off the key LCC and PBP results for each mode.

TABLE V.13—AVERAGE LCC AND PBP RESULTS FOR GAS-FIRED HOT WATER BOILERS: STANDBY MODE AND OFF MODE STANDARDS

TSL	Average costs (2014\$)				Simple payback (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
1	\$32	\$12	\$225	\$257	2.0	26.6
2	49	12	218	267	8.9	26.6
3	50	11	202	251	6.7	26.6

Note: The results for each TSL are calculated assuming that all consumers use products at that efficiency level. The PBP is measured relative to the baseline (EL 0) product.

TABLE V.14—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR GAS-FIRED HOT WATER BOILERS: STANDBY MODE AND OFF MODE STANDARDS

TSL	Life-cycle cost savings	
	Percent of consumers that experience net cost	Average savings* (2014\$)
1	0.0	\$26
2	3.7	2
3	1.8	15

* The savings represent the average LCC for affected consumers.

TABLE V.15—AVERAGE LCC AND PBP RESULTS FOR GAS-FIRED STEAM BOILERS: STANDBY MODE AND OFF MODE STANDARDS

TSL	Average costs (2014\$)				Simple payback (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
1	\$31	\$12	\$194	\$226	1.9	23.6
2	48	11	188	236	8.5	23.6
3	49	10	172	221	6.4	23.6

Note: The results for each TSL are calculated assuming that all consumers use products at that efficiency level. The PBP is measured relative to the baseline (EL 0) product.

TABLE V.16—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR GAS-FIRED STEAM BOILERS: STANDBY MODE AND OFF MODE STANDARDS

TSL	Life-cycle cost savings	
	Percent of consumers that experience net cost	Average savings* (2014\$)
1	0.0	\$31
2	1.3	4

TABLE V.16—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR GAS-FIRED STEAM BOILERS: STANDBY MODE AND OFF MODE STANDARDS—Continued

TSL	Life-cycle cost savings	
	Percent of consumers that experience net cost	Average savings* (2014\$)
3	0.5	18

*The savings represent the average LCC for affected consumers.

TABLE V.17—AVERAGE LCC AND PBP RESULTS FOR OIL-FIRED HOT WATER BOILERS: STANDBY MODE AND OFF MODE STANDARDS

TSL	Average costs (2014\$)				Simple payback (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
1	\$31	\$16	\$281	\$313	1.8	24.7
2	48	16	274	322	8.2	24.7
3	49	15	258	307	6.2	24.7

Note: The results for each TSL are calculated assuming that all consumers use products at that efficiency level. The PBP is measured relative to the baseline (EL 0) product.

TABLE V.18—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR OIL-FIRED HOT WATER BOILERS: STANDBY MODE AND OFF MODE STANDARDS

TSL	Life-cycle cost savings	
	Percent of consumers that experience net cost	Average savings* (2014\$)
1	0.0	\$32
2	3.5	6
3	1.4	20

*The savings represent the average LCC for affected consumers.

TABLE V.19—AVERAGE LCC AND PBP RESULTS FOR OIL-FIRED STEAM BOILERS: STANDBY MODE AND OFF MODE STANDARDS

TSL	Average costs (2014)				Simple payback (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
1	\$31	\$17	\$236	\$268	1.8	19.3
2	48	16	230	278	8.0	19.3
3	49	15	216	265	6.1	19.3

Note: The results for each TSL are calculated assuming that all consumers use products at that efficiency level. The PBP is measured relative to the baseline (EL 0) product.

TABLE V.20—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR OIL-FIRED STEAM BOILERS: AFUE STANDARDS

TSL	Life-cycle cost savings	
	Percent of consumers that experience net cost	Average savings* (2014\$)
1	0.0	\$26
2	1.3	0.4
3	0.6	13

*The savings represent the average LCC for affected consumers.

TABLE V.21—AVERAGE LCC AND PBP RESULTS FOR ELECTRIC HOT WATER BOILERS: STANDBY MODE AND OFF MODE STANDARDS

TSL	Average costs (2014\$)				Simple payback (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
1	\$31	\$8	\$145	\$176	2.6	26.6
2	47	8	141	188	11.7	26.6
3	48	7	129	177	8.9	26.6

Note: The results for each TSL are calculated assuming that all consumers use products at that efficiency level. The PBP is measured relative to the baseline (EL 0) product.

TABLE V.22—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR ELECTRIC HOT WATER BOILERS: STANDBY MODE AND OFF MODE STANDARDS

TSL	Life-cycle cost savings	
	Percent of consumers that experience net cost	Average savings* (2014\$)
1	0.0	\$19
2	1.5	(3)
3	1.0	8

* The savings represent the average LCC for affected consumers.

Note: Parentheses indicate negative values.

TABLE V.23—AVERAGE LCC AND PBP RESULTS FOR ELECTRIC STEAM BOILERS: STANDBY MODE AND OFF MODE STANDARDS

TSL	Average costs (2014\$)				Simple payback (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
1	\$31	\$9	\$133	\$164	2.6	23.6
2	47	8	129	176	11.7	23.6
3	48	8	118	166	8.8	23.6

Note: The results for each TSL are calculated assuming that all consumers use products at that efficiency level. The PBP is measured relative to the baseline (EL 0) product.

TABLE V.24—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR ELECTRIC STEAM BOILERS: STANDBY MODE AND OFF MODE STANDARDS

TSL	Life-cycle cost savings	
	Percent of consumers that experience net cost	Average savings* (2014\$)
1	0	\$17
2	1.5	(5)
3	1.0	6

* The savings represent the average LCC for affected consumers.

Note: Parentheses indicate negative values.

b. Consumer Subgroup Analysis

In the consumer subgroup analysis, DOE estimated the impact of the considered AFUE TSLs on low-income households and senior-only households.

Table V.25 through Table V.28 compare the average LCC savings and simple PBPs at each efficiency level for the two consumer subgroups, along with the average LCC savings for the entire

sample. Chapter 11 of the final rule TSD presents the complete LCC and PBP results for the subgroups, as well as the standby mode and off mode standards results.

TABLE V.25.—COMPARISON OF IMPACTS FOR CONSUMER SUBGROUPS WITH ALL CONSUMERS, GAS-FIRED HOT WATER BOILERS: AFUE STANDARDS

TSL	Average life-cycle cost savings (2014\$)	Simple payback period (years)				
		Senior-only	Low-income	All households	Senior-only	Low-income
1	\$172	\$161	\$210	1.3	1.5	1.2
2	172	161	210	1.3	1.5	1.2
3	292	275	364	1.3	1.5	1.2
4	345	(89)	632	8.6	15.6	8.4
5	67	(200)	303	12.4	18.2	11.8

Note: Parentheses indicate negative values.

TABLE V.26.—COMPARISON OF IMPACTS FOR CONSUMER SUBGROUPS WITH ALL CONSUMERS, GAS-FIRED STEAM BOILERS: AFUE STANDARDS

TSL	Average life-cycle cost savings (2014\$)			Simple payback period (years)		
	Senior-only	Low-income	All households	Senior-only	Low-income	All households
1	\$306	\$265	\$333	3.2	2.9	2.7
2	306	265	333	3.2	2.9	2.7
3	306	265	333	3.2	2.9	2.7
4	306	265	333	3.2	2.9	2.7
5	124	116	207	12.0	12.7	10.7

TABLE V.27.—COMPARISON OF IMPACTS FOR CONSUMER SUBGROUPS WITH ALL CONSUMERS, OIL-FIRED HOT WATER BOILERS: AFUE STANDARDS

TSL	Average life-cycle cost savings (2014\$)			Simple payback period (years)		
	Senior-only	Low-income	All households	Senior-only	Low-income	All households
1	\$282	\$82	\$260	6.5	10.6	6.9
2	690	292	626	5.4	8.6	5.8
3	690	292	626	5.4	8.6	5.8
4	144	(1,260)	192	16.4	30.6	16.5
5	144	(1,260)	192	16.4	30.6	16.5

Note: Parentheses indicate negative values.

TABLE V.28.—COMPARISON OF IMPACTS FOR CONSUMER SUBGROUPS WITH ALL CONSUMERS, OIL-FIRED STEAM BOILERS: AFUE STANDARDS

TSL	Average life-cycle cost savings (2014\$)			Simple payback period (years)		
	Senior-only	Low-income	All households	Senior-only	Low-income	All households
1	\$425	\$138	\$400	6.3	10.4	6.6
2	425	138	400	6.3	10.4	6.6
3	465	141	434	6.4	10.5	6.7
4	543	96	505	7.4	12.2	7.8
5	543	96	505	7.4	12.2	7.8

c. Rebuttable Presumption Payback Period

As discussed in section III.E.2, EPCA establishes a rebuttable presumption that an energy conservation standard is economically justified if the increased purchase cost for a product that meets the standard is less than three times the value of the first-year energy savings resulting from the standard. In calculating a rebuttable presumption payback period for each of the

considered TSLs, DOE used discrete values, and, as required by EPCA, based the energy use calculation on the DOE test procedures for residential boilers. In contrast, the PBPs presented in section V.B.1.a were calculated using distributions that reflect the range of energy use in the field.

Table V.29 presents the rebuttable-presumption PBPs for the considered AFUE TSLs for the residential boilers product classes. Table V.30 shows the

rebuttable-presumption PBPs for the considered standby mode and off mode TSLs for the residential boilers product classes. While DOE examined the rebuttable-presumption criterion, it considered whether the standard levels considered for this rule are economically justified through a more detailed analysis of the economic impacts of those levels, pursuant to 42 U.S.C. 6295(o)(2)(B)(i), that considers the full range of impacts to the

consumer, manufacturer, Nation, and environment. The results of that analysis serve as the basis for DOE to

definitively evaluate the economic justification for a potential standard level, thereby supporting or rebutting

the results of any preliminary determination of economic justification.

TABLE V.29—REBUTTABLE-PRESUMPTION PAYBACK PERIODS FOR RESIDENTIAL BOILERS: AFUE STANDARDS

TSL	Gas-fired hot water boiler	Gas-fired steam boiler	Oil-fired hot water boiler	Oil-fired steam boiler
1	1.6	2.7	7.9	6.0
2	1.6	2.7	7.0	6.0
3	1.7	2.7	7.0	6.7
4	11.3	2.7	16.7	8.3
5	15.5	11.5	16.7	8.3

TABLE V.30—STANDBY MODE AND OFF MODE REBUTTABLE-PRESUMPTION PAYBACK PERIODS FOR RESIDENTIAL BOILERS: STANDBY MODE AND OFF MODE STANDARDS

TSL	Gas-fired hot water boiler	Gas-fired steam boiler	Oil-fired hot water boiler	Oil-fired steam boiler	Electric hot water boiler	Electric steam boiler
1	3.5	3.5	3.4	3.5	3.0	2.7
2	15.7	15.7	15.4	15.5	13.6	13.5
3	11.9	11.9	11.7	11.7	10.3	10.2

2. Economic Impacts on Manufacturers

DOE performed an MIA to estimate the impact of amended energy conservation standards on manufacturers of residential boilers. The section below describes the expected impacts on manufacturers at each considered TSL. DOE first discusses the impacts of potential AFUE standards and then turns to the impacts of potential standby mode and off mode standards. Chapter 12 of the final rule TSD explains the analysis in further detail.

a. Industry Cash-Flow Analysis Results

Cash-Flow Analysis Results for Residential Boilers AFUE Standards

Table V.31 and Table V.32 depict the estimated financial impacts (represented by changes in INPV) of amended energy conservation standards on manufacturers of residential boilers, as well as the conversion costs that DOE expects manufacturers would incur for all product classes at each TSL. To evaluate the range of cash-flow impacts on the residential boiler industry, DOE modeled two different markup scenarios using different assumptions that correspond to the range of anticipated market responses to amended energy conservation standards: (1) The

preservation of gross margin percentage scenario; and (2) the preservation of per-unit operating profit scenario. Each of these scenarios is discussed immediately below.

To assess the lower (less severe) end of the range of potential impacts, DOE modeled a preservation of gross margin percentage markup scenario, in which a uniform “gross margin percentage” markup is applied across all potential efficiency levels. In this scenario, DOE assumed that a manufacturer’s absolute dollar markup would increase as production costs increase in the standards case.

To assess the higher (more severe) end of the range of potential impacts, DOE modeled the preservation of per-unit operating profit markup scenario, which assumes that manufacturers would not be able to generate greater operating profit on a per-unit basis in the standards case as compared to the no-new-standards case. Rather, as manufacturers make the necessary investments required to convert their facilities to produce new standards-compliant products and incur higher costs of goods sold, their percentage markup decreases. Operating profit does not change in absolute dollars and decreases as a percentage of revenue.

As noted in the MIA methodology discussion (see IV.J.2), in addition to markup scenarios, the MPC, shipments, and conversion cost assumptions also affect INPV results.

The results in Table V.31 and Table V.32 show potential INPV impacts for residential boiler manufacturers; Table V.31 reflects the lower bound of impacts, and Table V.32 represents the upper bound of impacts.

Each of the modeled scenarios in the AFUE standards analysis results in a unique set of cash flows and corresponding industry values at each TSL. In the following discussion, the INPV results refer to the difference in industry value between the no-new-standards case and each standards case that results from the sum of discounted cash flows from the base year 2014 through 2050, the end of the analysis period.

To provide perspective on the short-run cash-flow impact, DOE discusses the change in free cash flow between the no-new-standards case and the standards case at each TSL in the year before new standards would take effect. These figures provide an understanding of the magnitude of the required conversion costs at each TSL relative to the cash flow generated by the industry in the no-new-standards case.

TABLE V.31—MANUFACTURER IMPACT ANALYSIS FOR RESIDENTIAL BOILERS FOR AFUE STANDARDS—PRESERVATION OF GROSS MARGIN PERCENTAGE MARKUP SCENARIO *

	Units	No-new-standards case	Trial Standard Level				
			1	2	3	4	5
INPV	2014\$ millions	367.83	367.50	368.69	369.45	349.47	366.71

TABLE V.31—MANUFACTURER IMPACT ANALYSIS FOR RESIDENTIAL BOILERS FOR AFUE STANDARDS—PRESERVATION OF GROSS MARGIN PERCENTAGE MARKUP SCENARIO *—Continued

	Units	No-new-standards case	Trial Standard Level				
			1	2	3	4	5
Change in INPV	2014\$ millions	.....	(0.33)	0.86	1.62	(18.35)	(1.12)
	%	.....	(0.09)	0.24	0.44	(4.99)	(0.30)
Product Conversion Costs	2014\$ millions	.....	1.34	1.60	1.66	24.53	37.19
Capital Conversion Costs	2014\$ millions	.....		0.43	0.61	61.10	69.52
Total Conversion Costs	2014\$ millions	.....	1.34	2.03	2.27	85.63	106.71
Free Cash Flow (no-new-standards case = 2019)	2014\$ millions	26.42	26.01	25.74	25.64	(8.43)	(16.02)
Change in Free Cash Flow (change from no-new-standards case)	2014\$ millions	.....	(0.4)	(0.7)	(0.8)	(34.9)	(42.4)
	%	.....	(1.52)	(2.55)	(2.92)	(131.93)	(160.65)

* Parentheses indicate negative values.

TABLE V.32—MANUFACTURER IMPACT ANALYSIS FOR RESIDENTIAL BOILERS FOR AFUE STANDARDS—PRESERVATION OF PER-UNIT OPERATING PROFIT MARKUP SCENARIO *

	Units	No-new-standards case	Trial Standard Level				
			1	2	3	4	5
INPV	2014\$ millions	367.83	365.70	364.94	365.20	284.21	225.88
Change in INPV	2014\$ millions	.....	(2.12)	(2.89)	(2.63)	(83.61)	(141.95)
	%	.....	(0.58)	(0.79)	(0.71)	(22.73)	(38.59)
Product Conversion Costs	2014\$ millions	.....	1.34	1.60	1.66	24.53	37.19
Capital Conversion Costs	2014\$ millions	.....		0.43	0.61	61.10	69.52
Total Conversion Costs	2014\$ millions	.....	1.34	2.03	2.27	85.63	106.71
Free Cash Flow (no-new-standards case = 2019)	2014\$ millions	26.42	26.01	25.74	25.64	(8.43)	(16.02)
Change in Free Cash Flow (change from the no-new-standards case)	2014\$ millions	.....	(0.4)	(0.7)	(0.8)	(34.9)	(42.4)
	%	.....	(1.52)	(2.55)	(2.92)	(131.93)	(160.65)

* Parentheses indicate negative values.

TSL 1 represents EL 1 for all product classes. At TSL 1, DOE estimates impacts on INPV for residential boiler manufacturers to range from – 0.58 percent to – 0.09 percent, or a change in INPV of – \$2.12 million to – \$0.33 million. At this potential standard level, industry free cash flow would be estimated to decrease by approximately 1.52 percent to \$26.01 million, compared to the no-new-standards case value of \$26.42 million in 2020, the year before the compliance date.

At TSL 1, DOE does not anticipate manufacturers would lose a significant portion of their INPV. This is largely due to the fact that the vast majority of shipments would already meet or exceed the efficiency levels prescribed at TSL 1. Today, approximately 85 percent of residential boiler product

listings would meet or exceed the efficiency levels at TSL 1. DOE expects residential boiler manufacturers to incur \$1.34 million in product conversion costs for boiler redesign and testing. DOE does not expect the modest efficiency gains at this TSL to require any major product upgrades or capital investments.

At TSL 1, under the preservation of gross margin percentage scenario, the shipment-weighted average MPC increases by approximately 1 percent relative to the no-new-standards case MPC. Manufacturers are able to fully pass on this cost increase to consumers by design in this markup scenario. This slight price increase would not mitigate the \$1.34 million in conversion costs estimated at TSL 1, resulting in slightly

negative INPV impacts at TSL 1 under the this scenario.

Under the preservation of per-unit operating profit markup scenario, manufacturers earn the same operating profit as would be earned in the no-new-standards case, but do not earn additional profit from their investments. The 1-percent MPC increase is outweighed by a slightly lower average markup and \$1.34 million in conversion costs, resulting in small negative impacts at TSL 1.

TSL 2 sets the efficiency level at EL 1 for three product classes (gas-fired steam boilers, gas-fired hot water boilers, and oil-fired steam boilers) and EL 2 for one product classes (oil-fired hot water boilers). At TSL 2, DOE estimates impacts on INPV for residential boiler manufacturers to range

from –0.79 percent to 0.24 percent, or a change in INPV of –\$2.89 million to \$0.86 million. At this potential standard level, industry free cash flow would be estimated to decrease by approximately 2.55 percent to \$25.74 million, compared to the no-new-standards case value of \$26.42 million in 2020, the year before the compliance date.

DOE does not anticipate manufacturers would lose a substantial portion of their INPV, because a large percentage of shipments would still meet or exceed the efficiency levels prescribed at this TSL. At TSL 2, DOE estimates that today, 74 percent of residential boiler product listings would meet or exceed the efficiency levels analyzed. The drop in the percentage of compliant products is due to the fact that the oil-fired hot water product class would move to EL 2. The non-compliant products would not have a large impact on INPV because oil-fired boilers would only comprise approximately 30 percent of residential boiler shipments in 2021 according to DOE projections, while gas-fired boilers would comprise over 70 percent of shipments.

DOE expects conversion costs would increase, but would still remain small compared to total industry value, as most manufacturers have gas-fired boilers at the prescribed efficiency levels on the market and would only have to make minor changes to their production processes. While the percentage of oil-fired boilers at these efficiency levels on the market is lower, manufacturers did not cite any major investments that would have to be made to reach the efficiency levels at EL 2 for oil-fired hot water products. Manufacturers also pointed out that gas-fired boiler shipments vastly out-pace oil-fired boiler shipments and that the market is continuing to trend towards gas-fired products. Overall, DOE estimates manufacturers would incur \$1.60 million in product conversion costs for product redesign and testing and \$0.43 million in capital conversion costs to make minor changes to their production lines.

At TSL 2, under the preservation of gross margin percentage scenario, the shipment-weighted average MPC increases by 2 percent relative to the no-new-standards case MPC. In this scenario, INPV impacts are slightly positive because of manufacturers' ability to pass the higher production costs to consumers outweighs the \$2.03 million in total conversion costs. Under the preservation of per-unit operating profit markup scenario, the 2-percent MPC increase is outweighed by a slightly lower average markup and \$2.03 million in total conversion costs,

resulting in minimally negative impacts at TSL 2.

TSL 3 represents EL 1 for one product class (gas-fired steam boilers) and EL 2 for three product classes (oil-fired hot water boilers, gas-fired hot water boilers, and oil-fired steam boilers). At TSL 3, DOE estimates impacts on INPV for residential boiler manufacturers to range from –0.71 percent to 0.44 percent, or a change in INPV of –\$2.63 million to \$1.62 million. At this potential standard level, industry free cash flow would be estimated to decrease by approximately 2.92 percent in 2020, the year before compliance, to \$25.64 million compared to the no-new-standards case value of \$26.42 million.

While more significant than the impacts at TSL 2, the impacts on INPV at TSL 3 would still be relatively minor compared to the total industry value. Percentage impacts on INPV would be slightly positive to slightly negative at TSL 3. DOE does not anticipate that manufacturers would lose a significant portion of their INPV at this TSL. While less than the previous TSLs, today, 63 percent of product listings already meet or exceed the efficiency levels prescribed at TSL 3. DOE expects conversion costs to remain small at TSL 3 compared to the total industry value. DOE estimates that product conversion costs would increase as manufacturers would have to redesign a larger percentage of their offerings and may have to design new products to replace lower-efficiency commodity products. At this TSL, DOE estimates that residential boiler manufacturers would incur \$1.66 million in product conversion costs. Manufacturers, however, did not cite any major changes that would need to be made to production equipment to achieve the efficiency levels at this TSL. DOE, therefore, estimates that capital conversion costs would remain relatively low at \$0.61 million for the industry.

At TSL 3, under the preservation of gross margin percentage markup scenario, the shipment-weighted average MPC increases by 2 percent relative to the no-new-standards case MPC. In this scenario, INPV impacts are slightly positive because manufacturers' ability to pass the higher production costs to consumers outweighs the \$2.27 million in total conversion costs. Under the preservation of per-unit operating profit markup scenario, the 2 percent MPC increase is slightly outweighed by a slightly lower average markup and \$2.27 million in total conversion costs, resulting in minimally positive impacts at TSL 3.

TSL 4 represents EL 1 for one product class (gas-fired steam boilers), EL 3 for two product classes (oil-fired hot water boilers and oil-fired steam boilers), and EL 4 for one product class (gas-fired hot water boilers). At TSL 4, DOE estimates impacts on INPV for residential boiler manufacturers to range from –22.73 percent to –4.99 percent, or a change in INPV of –\$83.61 million to –\$18.35 million. At this potential standard level, industry free cash flow would be estimated to decrease by approximately 131.93 percent in the year before compliance (2020) to –\$8.43 million relative to the no-new-standards case value of \$26.42 million.

Percentage impacts on INPV are moderately to significantly negative at TSL 4. Today, only 27 percent of residential boiler product listings would meet or exceed the efficiency levels at TSL 4. DOE expects that conversion costs would increase significantly at this TSL due to the fact that manufacturers would meet these efficiency levels by using condensing heat exchangers in their gas-fired and oil-fired hot water boiler products.¹¹⁹ Currently, the majority of gas-fired hot water boilers on the market is made from cast iron, carbon steel, or copper and contains noncondensing heat exchangers, because if these boilers were designed to condense, the acidic condensate from the flue gas would corrode these metals and cause the boiler to fail prematurely. If standards were set where manufacturers of gas-fired hot water boiler products could only meet the efficiency levels with condensing technology, companies that produce their own cast iron sections or their own carbon steel or copper heat exchangers would have to eliminate many of their commodity products, close foundries and casting facilities, and restructure their businesses. Domestic manufacturers who currently offer condensing products import their condensing heat exchangers (constructed from either stainless steel or aluminum) from Europe. DOE believes that if standards were set where manufacturers of gas-fired hot water boiler products could only meet the efficiency levels with condensing technology, some manufacturers may choose to develop their own condensing heat exchanger production capacity in order to gain a cost advantage and remain vertically integrated. This would

¹¹⁹ At these efficiency levels, manufacturers would also use a condensing heat exchanger for oil-fired hot water boiler products; however, these models are much less common, and DOE believes that the majority of the conversion costs at this TSL would be driven by gas-fired hot water boiler products.

require large capital investments in higher-tech, more-automated production lines and new equipment to handle the different metals that are required. Companies that are currently heavily invested in lower-efficiency products may not be able to make these investments and may choose to exit the market. As noted above, these companies also may choose to source condensing heat exchangers and assemble a product designed around the sourced part, rather than invest in their own heat exchanger production capacity. This strategy would remove a significant piece of the value chain for these companies.

While condensing products and condensing technology are not entirely unfamiliar to the companies that already make condensing products domestically, most manufacturers in the residential boiler industry have relatively little experience in manufacturing the heat exchanger itself. If manufacturers choose to develop their own heat exchanger production capacity, a great deal of testing, prototyping, design, and manufacturing engineering resources will be required to design the heat exchanger and the more advanced control systems found in more-efficient products.

These capital and production conversion expenses lead to the large reduction in cash flow in the years preceding the standard. DOE believes that only a few domestic manufacturers have the resources for this undertaking and believes that some large manufacturers and many smaller manufacturers would continue to source their heat exchangers. Ultimately, DOE estimates that manufacturers would incur \$24.53 million in product conversion costs, as some manufacturers would be expected to attempt to add production capacity for condensing heat exchangers and others would have to design baseline products around a sourced condensing heat exchanger. In addition, DOE estimates that manufacturers would incur \$61.10 million in capital conversion costs, which would be driven by capital investments in heat exchanger production lines.

At TSL 4, under the preservation of gross margin percentage markup scenario, the shipment-weighted average MPC increases by approximately 30 percent relative to the no-new-standards case MPC. In this scenario, INPV impacts are slightly negative because manufacturers' ability to pass the higher production costs to consumers is slightly outweighed by the \$85.63 million in total conversion costs. Under the preservation of per-unit

operating profit markup scenario, the 30-percent MPC increase is outweighed by a lower average markup of 1.39 (compared to 1.41 in the preservation of gross margin percentage markup scenario) and \$85.63 million in total conversion costs, resulting in significantly negative impacts at TSL 4.

TSL 5 represents EL 2 for one product class (gas-fired steam boilers), EL 3 for two product classes (oil-fired hot water boilers and oil-fired steam boilers), and EL 6 for one product class (gas-fired hot water boilers). TSL 5 represents max-tech for all product classes. At TSL 5, DOE estimates impacts on INPV for residential boiler manufacturers to range from -38.59 percent to -0.30 percent, or a change in INPV of -\$141.95 million to -\$1.12 million. At this potential standard level, industry free cash flow would be estimated to decrease by approximately 160.65 percent in the year before compliance (2020) to -\$16.02 million relative to the no-new-standards case value of \$26.42 million.

At TSL 5, percentage impacts on INPV range from slightly negative to significantly negative. Today, only 4 percent of residential boiler product listings would already meet or exceed the efficiency levels prescribed at TSL 5. DOE expects conversion costs to continue to increase at TSL 5, as almost all products on the market would have to be redesigned and new products would have to be developed. As with TSL 4, DOE believes that at these efficiency levels, some manufacturers would choose to develop their own condensing heat exchanger production, rather than continuing to source these components. DOE estimates that product conversion costs would increase to \$37.19 million, as manufacturers would have to redesign a larger percentage of their offerings, implement complex control systems, and meet max-tech for all product classes. DOE estimates that manufacturers would incur \$69.52 million in capital conversion costs due to some manufacturers choosing to develop their own heat exchanger production and others having to increase the throughput of their existing condensing boiler production lines.

At TSL 5, under the preservation of gross margin percentage markup scenario, the shipment-weighted average MPC increases by approximately 61 percent relative to the no-new-standards case MPC. In this scenario, INPV impacts are negative because manufacturers' ability to pass the higher production costs to consumers is outweighed by the \$106.71 million in total conversion costs. Under

the preservation of per-unit operating profit markup scenario, the 61-percent MPC increase is outweighed by a lower average markup of 1.36 and \$106.71 million in total conversion costs, resulting in significantly negative impacts at TSL 5.

Cash-Flow Analysis Results for Residential Boilers Standby Mode and Off Mode Standards

Standby mode and off mode standards results are presented in Table V.33 and Table V.34. The impacts of standby mode and off mode features were analyzed for the same product classes as the amended AFUE standards, but at different efficiency levels, which correspond to a different set of technology options for reducing standby mode and off mode energy consumption. Therefore, the TSLs in the standby mode and off mode analysis do not correspond to the TSLs in the AFUE analysis. Also, the electric boiler product classes were not analyzed in the GRIM for AFUE standards. As a result, quantitative numbers are also not available for the GRIM analyzing standby mode and off mode standards. However, the standby mode and off mode technology options considered for electric boilers are identical to the technology options for all other residential boiler product classes. Consequently, DOE expects the standby mode and off mode impacts on electric boilers to be of the same order of magnitude as the impacts on all other boiler product classes.

The impacts of standby mode and off mode features were analyzed for the same two markup scenarios to represent the upper and lower bounds of industry impacts for residential boilers that were used in the AFUE analysis: (1) A preservation of gross margin percentage scenario; and (2) a preservation of per-unit operating profit scenario. As with the AFUE analysis, the preservation of gross margin percentage represents the lower bound of impacts, while the preservation of per-unit operating profit scenario represents the upper bound of impacts.

Each of the modeled scenarios in the standby mode and off mode analyses results in a unique set of cash flows and corresponding industry values at each TSL. In the following discussion, the INPV results refer to the difference in industry value between the no-new-standards case and each standards case that results from the sum of discounted cash flows from the base year 2014 through 2050, the end of the analysis period.

To provide perspective on the short-run cash flow impact, DOE discusses

the change in free cash flow between the no-new-standards case and the standards case at each TSL in the year

before new standards would take effect. These figures provide an understanding of the magnitude of the required

conversion costs at each TSL relative to the cash flow generated by the industry in the no-new-standards case.

TABLE V.33—MANUFACTURER IMPACT ANALYSIS FOR RESIDENTIAL BOILERS FOR STANDBY MODE AND OFF MODE STANDARDS—PRESERVATION OF GROSS MARGIN PERCENTAGE MARKUP SCENARIO *

	Units	No-new-standards case	Trial Standard Level		
			1	2	3
INPV	2014\$ millions	367.83	367.73	367.74	368.28
Change in INPV	2014\$ millions		(0.10)	(0.09)	0.45
	%		(0.03)	(0.02)	0.12
Product Conversion Costs	2014\$ millions		0.21	0.21	0.21
Capital Conversion Costs	2014\$ millions				
Total Conversion Costs	2014\$ millions		0.21	0.21	0.21
Free Cash Flow (no-new-standards case = 2019)	2014\$ millions	26.42	26.35	26.35	26.35
Change in Free Cash Flow (change from no-new-standards case)	2014\$ millions		(0.06)	(0.06)	(0.06)
	%		(0.24)	(0.24)	(0.24)

* Parentheses indicate negative values.

TABLE V.34—MANUFACTURER IMPACT ANALYSIS FOR RESIDENTIAL BOILERS FOR STANDBY MODE AND OFF MODE STANDARDS—PRESERVATION OF PER-UNIT OPERATING PROFIT MARKUP SCENARIO *

	Units	No-new-standards case	Trial Standard Level		
			1	2	3
INPV	2014\$ millions	367.83	367.61	367.78	366.12
Change in INPV	2014\$ millions		(0.22)	(0.04)	(1.71)
	%		(0.06)	(0.01)	(0.46)
Product Conversion Costs	2014\$ millions		0.21	0.21	0.21
Capital Conversion Costs	2014\$ millions				
Total Conversion Costs	2014\$ millions		0.21	0.21	0.21
Free Cash Flow (no-new-standards case = 2019)	2014\$ millions	26.42	26.35	26.35	26.35
Decrease in Free Cash Flow (change from no-new-standards case)	2014\$ millions		(0.06)	(0.06)	(0.06)
	%		(0.24)	(0.24)	(0.24)

* Parentheses indicate negative values.

TSL 1 represents EL 1 for all product classes. At TSL 1, DOE estimates impacts on INPV for residential boiler manufacturers to decrease by less than one tenth of a percent in both markup scenarios, which corresponds to a change in INPV of –\$0.22 million to –\$0.10 million. At this potential standard level, industry free cash flow is estimated to decrease by approximately 0.24 percent to \$26.35 million, compared to the no-new-standards case value of \$26.42 million in 2020, the year before the compliance date.

At TSL 1, DOE does not anticipate that manufacturers would lose a significant portion of their INPV. This is largely due to the small incremental costs of standby mode and off mode components relative to the overall costs of residential boiler products. DOE expects residential boiler manufacturers to incur \$0.21 million in product conversion costs at TSL 1, primarily for

testing. DOE does not expect that manufacturers would incur any capital conversion costs, as the product upgrades will only involve integrating a purchase part.

TSL 2 sets the efficiency level at EL 2 for all product classes. At TSL 2, DOE estimates impacts on INPV for residential boilers manufacturers to range from –0.02 percent to –0.01 percent, or a change in INPV of –\$0.09 million to –\$0.04 million. At this potential standard level, industry free cash flow is estimated to decrease by approximately 0.24 percent to \$26.35 million, compared to the no-new-standards case value of \$26.42 million in 2020, the year before the compliance date.

At TSL 2, DOE does not anticipate that manufacturers would lose a significant portion of their INPV. This is largely due to the small incremental costs of standby mode and off mode components relative to the overall costs

of residential boiler products. DOE expects residential boiler manufacturers to incur \$0.21 million in product conversion costs at TSL 2, primarily for testing. DOE does not expect that manufacturers would incur any capital conversion costs, as the product upgrades will only involve integrating a purchase part.

TSL 3 represents EL 3 for all product classes. At TSL 3, DOE estimates impacts on INPV for residential boiler manufacturers to range from –0.46 percent to 0.12 percent, or a change in INPV of –\$1.71 million to \$0.45 million. At this potential standard level, industry free cash flow is estimated to decrease by approximately 0.24 percent in the year before compliance to \$26.35 million compared to the no-new-standards case value of \$26.42 million in 2020, the year before the compliance date.

At TSL 3, DOE does not anticipate that manufacturers would lose a

significant portion of their INPV. As with TSLs 1 and 2, this is largely due to the small incremental costs of standby mode and off mode components relative to the overall costs of residential boiler products. DOE expects residential boiler manufacturers to incur \$0.21 million in product conversion costs at TSL 3, primarily for testing. DOE does not expect that manufacturers would incur any capital conversion costs, as the product upgrades will only involve integrating a purchase part.

Combining Cash-Flow Analysis Results for Residential Boilers (AFUE Standard and Standby Mode and Off Mode Standard)

As noted in section III.B, DOE analyzed the AFUE standard and the standby mode and off mode standard independently. The AFUE metric accounts for the fossil fuel consumption, whereas the standby mode and off mode metric accounts for the electrical energy use in standby mode and off mode. There are five trial standard levels under consideration for the AFUE standard and three trial standard levels under consideration for the standby mode and off mode standard.

Both the AFUE standard and the standby mode and off mode standard could necessitate changes in manufacturer production costs, as well as conversion cost investments. The assumed design changes for the two standards in the engineering analysis are independent; therefore, changes in manufacturing production costs and the conversion costs are additive. DOE expects that the costs to manufacturers would be mathematically the same regardless of whether or not the standby mode and off mode standards were combined or analyzed separately.

Using the current approach that considers AFUE and standby mode and off mode standards separately, the range of potential impacts of combined standards on INPV is determined by summing the range of potential changes in INPV from the AFUE standard and from the standby mode and off mode standard. Similarly, to estimate the combined conversion costs, DOE sums the estimated conversion costs from the two standards. DOE does not present the combined impacts of all possible combinations of AFUE and standby mode and off mode TSLs in this notice. However, DOE expects the combined

impact of the TSLs proposed for AFUE and standby mode and off mode electrical consumption in this final rule to range from -1.18 to 0.56 percent, which is approximately equivalent to a reduction of \$4.34 million to an increase of \$2.08 million.

b. Impacts on Direct Employment

To quantitatively assess the impacts of energy conservation standards on direct employment in the residential boiler industry, DOE used the GRIM to estimate the domestic labor expenditures and number of employees in the no-new-standards case and at each TSL in 2021. DOE used statistical data from the U.S. Census Bureau's 2011 Annual Survey of Manufacturers (ASM),¹²⁰ the results of the engineering analysis, and interviews with manufacturers to determine the inputs necessary to calculate industry-wide labor expenditures and domestic employment levels. Labor expenditures related to manufacturing of the product are a function of the labor intensity of the product, the sales volume, and an assumption that wages remain fixed in real terms over time. The total labor expenditures in each year are calculated by multiplying the MPCs by the labor percentage of MPCs.

The total labor expenditures in the GRIM are converted to domestic production employment levels by dividing production labor expenditures by the annual payment per production worker (production worker hours times the labor rate found in the U.S. Census Bureau's 2011 ASM). The estimates of production workers in this section cover workers, including line-supervisors who are directly involved in fabricating and assembling a product within the manufacturing facility. Workers performing services that are closely associated with production operations, such as materials handling tasks using forklifts, are also included as production labor. DOE's estimates only account for production workers who manufacture the specific products covered by this rulemaking. The total direct employment impacts calculated in the GRIM are the sum of the changes in the number of production workers resulting

from the amended energy conservation standards for residential boilers, as compared to the no-new-standards case. In general, more-efficient boilers are more complex and more labor intensive and require specialized knowledge about control systems, electronics, and the different metals needed for the heat exchanger. Per-unit labor requirements and production time requirements increase with higher energy conservation standards. As a result, the total labor calculations described in this paragraph (which are generated by the GRIM) are considered an upper bound to direct employment forecasts.

On the other hand, some manufacturers may choose not to make the necessary investments to meet the amended standards for all product classes. Alternatively, they may choose to relocate production facilities where conversion costs and production costs are lower. To establish a lower bound to negative employment impacts, DOE estimated the maximum potential job loss due to manufacturers either leaving the industry or moving production to foreign locations as a result of amended standards. In the case of residential boilers, most manufacturers agreed that higher standards would probably not push their production overseas due to shipping considerations. Rather, high enough standards could force manufacturers to rethink their business models. Instead of vertically integrated manufacturers, they would become assemblers and would source most of their components from overseas. This would mean any workers involved in casting metals that would be corroded in a condensing product would likely lose their jobs. These lower bound estimates were based on GRIM results, conversion cost estimates, and content from manufacturers interviews. The lower bound of employment is presented in Table V.35 below.

DOE estimates that in the absence of amended energy conservation standards, there would be 761 domestic production workers in the residential boiler industry in 2021, the year of compliance. DOE estimates that 90 percent of residential boilers sold in the United States are manufactured domestically. Table V.35 shows the range of the impacts of potential amended energy conservation standards on U.S. production workers of residential boilers.

¹²⁰ U.S. Census Bureau, Annual Survey of Manufacturers: General Statistics: Statistics for Industry Groups and Industries (2011) (Available at: <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>).

TABLE V.35—POTENTIAL CHANGES IN THE TOTAL NUMBER OF RESIDENTIAL BOILERS PRODUCTION WORKERS IN 2021

	Trial Standard Level *					
	No-new-standards case	1	2	3	4	5
Total Number of Domestic Production Workers in 2021 (without changes in production locations).	761	761 to 770	753 to 773	745 to 775	381 to 898	190 to 958
Potential Changes in Domestic Production Workers in 2021 *.	.....	0 to 9	(8) to 12	(16) to 14	(380) to 137	(571) to 197

* DOE presents a range of potential employment impacts. Numbers in parentheses indicate negative values.

At the upper end of the range, all examined TSLs show positive impacts on domestic employment levels. Producing more-efficient boilers tends to require more labor, and DOE estimates that if residential boiler manufacturers chose to keep their current production in the U.S., domestic employment could increase at each TSL. In interviews, several manufacturers who produce high-efficiency boiler products stated that a standard that went to condensing levels could cause them to hire more employees to increase their production capacity. Others stated that a condensing standard would require additional engineers to redesign production processes, as well as metallurgy experts and other workers with experience working with higher-efficiency products. DOE, however, acknowledges that particularly at higher standard levels, manufacturers may not keep their production in the U.S. and also may choose to restructure their businesses or exit the market entirely.

DOE does not expect any significant changes in domestic employment at TSL 1 or TSL 2. Most manufacturers agreed that these efficiency levels would require minimal changes to their production processes and that most employees would be retained. DOE estimates that there could be a small loss of domestic employment at TSL 3 due to the fact that some manufacturers would have to drop their 82-percent-efficient products, except for their gas-fired steam boiler products. Several manufacturers commented that those products were their commodity products and drove a high percentage of their sales. Several manufacturers expressed that they could lose a significant number of employees at TSL 4 and TSL 5, due to the fact that these TSLs contain condensing efficiency levels for the gas-fired hot water boiler product class. These manufacturers have employees who work on production lines that produce cast iron sections and carbon steel or copper heat exchangers for lower to mid-efficiency

products. If amended energy conservation standards were to require condensing efficiency levels, these employees would no longer be needed for that function, and manufacturers would have to decide whether to develop their own condensing heat exchanger production, source heat exchangers from Asia or Europe and assemble higher-efficiency products, or leave the market entirely.

DOE notes that its estimates of the impacts on direct employment are based on the analysis of amended AFUE energy efficiency standards only. Standby mode and off mode technology options considered in the engineering analysis would result in component swaps, which would not make the product significantly more complex and would not be difficult to implement. While some product development effort would be required, DOE does not expect the standby mode and off mode standard to meaningfully affect the amount of labor required in production. Consequently, DOE does not anticipate that the proposed standby mode and off mode standards will have a significant impact on direct employment.

DOE notes that the employment impacts discussed here are independent of the indirect employment impacts to the broader U.S. economy, which are documented in chapter 15 of the final rule TSD.

c. Impacts on Manufacturing Capacity

Most residential boiler manufacturers stated that their current production is only running at 50-percent to 70-percent capacity and that any standard that does not propose efficiency levels where manufacturers would use condensing technology for hot water boilers would not have a large effect on capacity. The impacts of a potential condensing standard on manufacturer capacity are difficult to quantify. Some manufacturers who are already making condensing products with a sourced heat exchanger said they would likely be able to increase production using the equipment they already have by

utilizing a second shift. Others said a condensing standard would idle a large portion of their business, causing stranded assets and decreased capacity. These manufacturers would have to determine how to best increase their condensing boiler production capacity. DOE believes that some larger domestic manufacturers may choose to add production capacity for a condensing heat exchanger production line.

Manufacturers stated that in a scenario where a potential standard would require efficiency levels at which manufacturers would use condensing technology, there is concern about the level of technical resources required to redesign and test all products. The engineering analysis shows that increasingly complex components and control strategies are required as standard levels increase. Manufacturers commented in interviews that the industry would need to add electrical engineering and control systems engineering talent beyond current staffing to meet the redesign requirements of higher TSLs. Additional training might be needed for manufacturing engineers, laboratory technicians, and service personnel if condensing products were broadly adopted. However, because TSL 3 (the adopted level) would not require condensing standards, DOE does not expect manufacturers to face long-term capacity constraints due to the standard levels proposed in this notice.

d. Impacts on Subgroups of Manufacturers

Small manufacturers, niche equipment manufacturers, and manufacturers exhibiting a cost structure substantially different from the industry average could be affected disproportionately. Using average cost assumptions developed for an industry cash-flow estimate is inadequate to assess differential impacts among manufacturer subgroups.

For the residential boiler industry, DOE identified and evaluated the impact of amended energy conservation

standards on one subgroup—small manufacturers. The SBA defines a “small business” as having 500 employees or less for NAICS 333414, “Heating Equipment (except Warm Air Furnaces) Manufacturing.” Based on this definition, DOE identified 13 manufacturers in the residential boiler industry that qualify as small businesses. For a discussion of the impacts on the small manufacturer subgroup, see the Regulatory Flexibility Act analysis in section VI.B of this notice and chapter 12 of the final rule TSD.

e. Cumulative Regulatory Burden

While any one regulation may not impose a significant burden on manufacturers, the combined effects of recent or impending regulations may

have serious consequences for some manufacturers, groups of manufacturers, or an entire industry. Assessing the impact of a single regulation may overlook this cumulative regulatory burden. In addition to energy conservation standards, other regulations can significantly affect manufacturers’ financial operations. Multiple regulations affecting the same manufacturer can strain profits and lead companies to abandon product lines or markets with lower expected future returns than competing products. For these reasons, DOE conducts an analysis of cumulative regulatory burden as part of its rulemakings pertaining to appliance efficiency.

For the cumulative regulatory burden analysis, DOE looks at other regulations that could affect residential boiler

manufacturers that will take effect approximately three years before or after the 2021 compliance date of amended energy conservation standards for these products. In interviews, manufacturers cited Federal regulations on equipment other than residential boilers that contribute to their cumulative regulatory burden. The compliance years and expected industry conversion costs of relevant amended energy conservation standards are indicated in the Table V.36. DOE has included certain Federal regulations in the Table V.36 that have compliance dates beyond the three-year range of DOE’s analysis, because those regulations were cited multiple times by manufacturers in interviews and written comments; they are included here for reference.

TABLE V.36—COMPLIANCE DATES AND EXPECTED CONVERSION EXPENSES OF FEDERAL ENERGY CONSERVATION STANDARDS AFFECTING RESIDENTIAL BOILERS MANUFACTURERS

Federal energy conservation standards	Approximate compliance date	Estimated total industry conversion expense
2007 Residential Furnaces & Boilers 72 FR 65136 (Nov. 19, 2007)	2015	\$88M (2006\$).*
2011 Residential Furnaces 76 FR 37408 (June 27, 2011); 76 FR 67037 (Oct. 31, 2011).	2015	\$2.5M (2009\$).**
Commercial Refrigeration Equipment 79 FR 17726 (March 28, 2014)	2017	\$184.0M (2012\$).
Commercial Packaged Air Conditioners and Heat Pumps.***	2018	TBD.
Commercial Warm-Air Furnaces 80 FR 6182 (Feb. 4, 2015)	2018	\$19.9 Million (2013\$).
Furnace Fans 79 FR 38130 (July 3, 2014)	2019	\$40.6M (2014\$).
Single Package Vertical Air Conditioners and Heat Pumps 80 FR 57438 (Sept. 23, 2015).	2019	\$9.2M (2014\$).
Commercial Water Heaters.***	2019	TBD.
Packaged Terminal Air Conditioners and Heat Pumps † 80 FR 43162 (July 21, 2015).	2019	N/A.
Commercial Packaged Boilers.***	2021	TBD.
Non-weatherized Gas-fired Furnaces and Mobile Home Furnaces.***	2021	TBD.
Direct Heating Equipment/Pool Heaters.***	2021	TBD.
Residential Water Heaters.***	2021	TBD.
Central Air Conditioners.***	2022	TBD.
Room Air Conditioners.***	2022	TBD.
Commercial Packaged Air Conditioning and Heating Equipment (Evaporatively and Water Cooled).***	2023	TBD.

* Conversion expenses for manufacturers of oil-fired furnaces and gas-fired and oil-fired boilers associated with the November 2007 final rule for residential furnaces and boilers are excluded from this figure. The 2011 direct final rule for residential furnaces sets a higher standard and earlier compliance date for oil furnaces than the 2007 final rule. As a result, manufacturers will be required design to the 2011 direct final rule standard. The conversion costs associated with the 2011 direct final rule are listed separately in this table. EISA 2007 legislated higher standards and earlier compliance dates for residential boilers than were in the November 2007 final rule. As a result, gas-fired and oil-fired boiler manufacturers were required to design to the EISA 2007 standard beginning in 2012. The conversion costs listed for residential gas-fired and oil-fired boilers in the November 2007 residential furnaces and boilers final rule analysis are not included in this figure.

** Estimated industry conversion expenses and approximate compliance date reflect a court-ordered April 24, 2014 remand of the residential non-weatherized and mobile home gas furnaces standards set in the 2011 Energy Conservation Standards for Residential Furnaces and Residential Central Air Conditioners and Heat Pumps. The costs associated with this rule reflect implementation of the amended standards for the remaining furnace product classes (*i.e.*, oil-fired furnaces).

*** The NOPR and final rule for this energy conservation standard have not been published. The compliance date and analysis of conversion costs are estimates and have not been finalized at this time.

† No conversion costs are expected for packaged terminal air conditioners and heat pumps, as the entire market already meets the standard levels adopted.

Revised DOE Test Procedure for Residential Boilers

In addition to Federal energy conservation standards, DOE identified revisions to the DOE test procedure as another regulatory burdens that would affect manufacturers of residential

boilers. On July 28, 2008, DOE published a technical amendment to the 2007 furnaces and boilers final rule, whose purpose was to add design requirements established in the Energy Independence and Security Act of 2007 (EISA 2007). 73 FR 43611. In relevant

part, these design requirements mandate the use of an automatic means for adjusting the water temperature for gas-fired hot water boilers, oil-fired hot water boilers, and electric hot water boilers. DOE recently published revisions to its test procedure for

residential furnaces and boilers, which in part adopted test methods for verifying the presence of an automatic means for adjusting the water temperature in boilers. (See EERE–2012–BT–TP–0024). Specifically, the January 2016 test procedure includes two test methods to verify the functionality of the automatic means of adjusting the water temperature, which would increase the testing burden for residential boiler manufacturers and thereby the cumulative regulatory burden.

3. National Impact Analysis

a. Significance of Energy Savings

To estimate the energy savings attributable to potential standards for residential boilers, DOE compared their energy consumption under the no-new-standards case to their anticipated energy consumption under each TSL. The savings are measured over the entire lifetime of products purchased in the 30-year period that begins in the year of anticipated compliance with amended standards (2021–2050). Table

V.37 presents DOE's projections of the national energy savings for each TSL considered for residential boilers AFUE standards.

Table V.38 present DOE's projections of the national energy savings for each TSL considered for residential boilers standby mode and off mode standards. The savings were calculated using the approach described in section IV.H of this notice.

TABLE V.37—CUMULATIVE NATIONAL ENERGY SAVINGS FOR RESIDENTIAL BOILERS SHIPPED IN 2021–2050: AFUE STANDARDS

Energy savings	Quads				
	Trial Standard Level				
	1	2	3	4	5
Primary energy	0.06	0.09	0.14	0.67	1.38
FFC energy	0.07	0.10	0.16	0.77	1.56

TABLE V.38—CUMULATIVE NATIONAL ENERGY SAVINGS FOR RESIDENTIAL BOILERS SHIPPED IN 2021–2050: STANDBY MODE AND OFF MODE STANDARDS

Energy savings	Quads		
	Trial Standard Level		
	1	2	3
Primary energy	0.0009	0.0012	0.0025
FFC energy	0.0009	0.0013	0.0026

OMB Circular A–4¹²¹ requires agencies to present analytical results, including separate schedules of the monetized benefits and costs that show the type and timing of benefits and costs. Circular A–4 also directs agencies to consider the variability of key elements underlying the estimates of benefits and costs. For this rulemaking, DOE undertook a sensitivity analysis using nine, rather than 30, years of

product shipments. The choice of a nine-year period is a proxy for the timeline in EPCA for the review of certain energy conservation standards and potential revision of and compliance with such revised standards.¹²² The review timeframe established in EPCA is generally not synchronized with the product lifetime, product manufacturing cycles, or other factors specific to residential boilers.

Thus, such results are presented for informational purposes only and are not indicative of any change in DOE's analytical methodology. The NES sensitivity analysis results based on a nine-year analytical period are presented for the AFUE standards in Table V.39.¹²³ The impacts are counted over the lifetime of residential boilers purchased in 2021–2029.

TABLE V.39—CUMULATIVE NATIONAL ENERGY SAVINGS FOR RESIDENTIAL BOILERS; NINE YEARS OF SHIPMENTS (2021–2029)—AFUE STANDARDS

Energy savings	Quads				
	Trial Standard Level				
	1	2	3	4	5
Primary energy	0.02	0.03	0.05	0.21	0.41
FFC energy	0.02	0.04	0.06	0.25	0.47

¹²¹ U.S. Office of Management and Budget, "Circular A–4: Regulatory Analysis" (Sept. 17, 2003) (Available at: http://www.whitehouse.gov/omb/circulars_a004_a-4/).

¹²² Section 325(m) of EPCA requires DOE to review its standards at least once every 6 years, and requires, for certain products, a 3-year period after any new standard is promulgated before

compliance is required, except that in no case may any new standards be required within 6 years of the compliance date of the previous standards. While adding a 6-year review to the 3-year compliance period adds up to 9 years, DOE notes that it may undertake reviews at any time within the 6 year period and that the 3-year compliance date may yield to the 6-year backstop. A 9-year analysis

period may not be appropriate given the variability that occurs in the timing of standards reviews and the fact that for some consumer products, the compliance period is 5 years rather than 3 years.

¹²³ DOE presents results based on a nine-year analytical period only for the AFUE standards because the corresponding impacts for the standby mode and off mode TSLs are very small.

b. Net Present Value of Consumer Costs and Benefits

DOE estimated the cumulative NPV of the total costs and savings for consumers that would result from the

TSLs considered for residential boilers. In accordance with OMB's guidelines on regulatory analysis,¹²⁴ DOE calculated NPV using both a 7-percent and a 3-percent real discount rate. Table V.40 shows the consumer NPV results for

each TSL considered for AFUE standards for residential boilers. In each case, the impacts are counted over the lifetime of products purchased in 2021–2050.

TABLE V.40—CUMULATIVE NET PRESENT VALUE OF CONSUMER BENEFITS FOR RESIDENTIAL BOILERS SHIPPED IN 2021–2050—AFUE STANDARDS

Discount rate (%)	Billion 2014\$				
	Trial Standard Level				
	1	2	3	4	5
3	0.471	0.852	1.198	0.082	0.597
7	0.134	0.237	0.350	(1.349)	(2.127)

Note: Parentheses indicate negative values.

Table V.41 shows the consumer NPV results for each standby mode and off

mode TSL considered for residential boilers. In each case, the impacts cover

the lifetime of products purchased in 2021–2050.

TABLE V.41—CUMULATIVE NET PRESENT VALUE OF CONSUMER BENEFITS FOR RESIDENTIAL BOILERS SHIPPED IN 2021–2050—STANDBY MODE AND OFF MODE STANDARDS

Discount rate (%)	Billion 2014\$		
	Trial Standard Level		
	1	2	3
3	0.007	0.004	0.014
7	0.002	(0.00005)	0.003

Note: Parentheses indicate negative values.

The NPV results based on the aforementioned 9-year analytical period are presented in Table V.42 for AFUE standards. The impacts are counted over

the lifetime of products purchased in 2021–2029. As mentioned previously, such results are presented for informational purposes only and are not

indicative of any change in DOE's analytical methodology or decision criteria.

TABLE V.42—CUMULATIVE NET PRESENT VALUE OF CONSUMER BENEFITS FOR RESIDENTIAL BOILERS; NINE YEARS OF SHIPMENTS (2021–2029): AFUE STANDARDS

Discount rate (%)	Billion 2014\$				
	Trial Standard Level				
	1	2	3	4	5
3	0.179	0.325	0.462	(0.613)	(0.731)
7	0.065	0.114	0.173	(1.028)	(1.537)

Note: Parentheses indicate negative values.

The above results reflect the use of a constant price trend (reference case) to estimate the future prices for residential boilers over the analysis period (see section IV.H of this document). DOE also conducted a sensitivity analysis that considered one scenario with an increasing price trend than the reference case and one scenario with a decreasing price trend. The results of these alternative cases are presented in appendix 10C of the final rule TSD. In

the increasing price trend case, the NPV of consumer benefits is lower than in the reference case. In the decreasing price trend case, the NPV of consumer benefits is higher than in the reference case.

c. Indirect Impacts on Employment

DOE expects energy conservation standards for residential boilers to reduce energy bills for consumers of those products, with the resulting net

savings being redirected to other forms of economic activity. These expected shifts in spending and economic activity could affect the demand for labor. As described in section IV.N, DOE used an input/output model of the U.S. economy to estimate indirect employment impacts of the TSLs that DOE considered in this rulemaking. DOE understands that there are uncertainties involved in projecting employment impacts, especially changes in the later

¹²⁴ U.S. Office of Management and Budget, "Circular A-4: Regulatory Analysis," section E,

(Sept. 17, 2003) (Available at: http://www.whitehouse.gov/omb/circulars_a004_a-4/).

years of the analysis. Therefore, DOE generated results for near-term time frames (2021 to 2026), where these uncertainties are reduced.

The results suggest that the adopted standards are likely to have a negligible impact on the net demand for labor in the economy. The net change in jobs is so small that it would be imperceptible in national labor statistics and might be offset by other, unanticipated effects on employment. Chapter 16 of the final rule TSD presents detailed results regarding anticipated indirect employment impacts.

4. Impact on Utility or Performance of Products

DOE has concluded that the amended standards adopted in this final rule would not reduce the utility or performance of the residential boilers under consideration in this rulemaking. Manufacturers of these products currently offer units that meet or exceed the adopted standards.

5. Impact of Any Lessening of Competition

As discussed in section III.E.1.e, DOE considered any lessening of competition that is likely to result from new or amended standards. The Attorney General of the United States (Attorney General) determines the impact, if any, of any lessening of competition likely to result from a proposed standard and

transmits such determination in writing to the Secretary, together with an analysis of the nature and extent of such impact. To assist the Attorney General in making such determination, DOE provided the Department of Justice (DOJ) with copies of the NOPR and the TSD for review. In its assessment letter responding to DOE, DOJ concluded that the proposed energy conservation standards for residential boilers are unlikely to have a significant adverse impact on competition. DOE is publishing the Attorney General's assessment at the end of this final rule.

6. Need of the Nation To Conserve Energy

Enhanced energy efficiency, where economically justified, improves the Nation's energy security, strengthens the economy, and reduces the environmental impacts (costs) of energy production. Energy conservation resulting from amended AFUE and new standby mode and off mode standards for residential boilers is expected to yield environmental benefits in the form of reduced emissions of air pollutants and greenhouse gases. As a measure of this reduced demand, chapter 15 in the final rule TSD presents the estimated reduction in generating capacity, relative to the no-new-standards case, for the TSLs that DOE considered in this rulemaking.

Table V.43 and Table V.44 provide DOE's estimate of cumulative emissions reductions expected to result from the TSLs considered in this rulemaking for AFUE standards and standby mode and off mode standards, respectively. The tables include site and power sector emissions and upstream emissions. The emissions were calculated using the multipliers discussed in section IV.K. DOE reports annual emissions reductions for each TSL in chapter 13 of the final rule TSD.

As noted in section IV.K, the estimated CO₂ emissions reductions do not account for the effects of the Clean Power Plan (CPP). Including the CPP would have a negligible effect on the CO₂ emissions reduction estimated to result from the adopted AFUE standards for residential boilers, however, as the power sector accounts for only 0.9 percent of the CO₂ emissions reduction. The impact on the CO₂ emissions reduction estimated to result from the adopted standards for standby mode and off mode would be much larger, as the reduction is nearly all from power sector emissions. Under the CPP, the value of CO₂ emissions reductions for the adopted standby mode and off mode standards would be considerably lower—perhaps by as much as one third. Such reduction would not affect the decision to adopt TSL 3 for standby mode and off mode standards, however.

TABLE V.43—CUMULATIVE EMISSIONS REDUCTION FOR RESIDENTIAL BOILERS SHIPPED IN 2021–2050: AFUE STANDARDS

	Trial Standard Level				
	1	2	3	4	5
Site and Power Sector Emissions *					
CO ₂ (million metric tons)	3.38	5.53	8.14	37.70	75.50
SO ₂ (thousand tons)	0.672	1.84	1.94	2.40	3.45
NO _x (thousand tons)	37.9	98.4	105	355	408
Hg (lbs)	(0.0312)	0.125	0.342	(28.1)	(21.8)
CH ₄ (thousand tons)	0.084	0.157	0.216	0.502	1.382
N ₂ O (thousand tons)	0.031	0.076	0.084	0.228	0.321
Upstream Emissions					
CO ₂ (million metric tons)	0.497	0.821	1.19	6.06	11.41
SO ₂ (thousand tons)	0.046	0.125	0.131	0.362	0.402
NO _x (thousand tons)	7.37	11.5	17.4	92.2	178
Hg (lbs)	0.0368	0.103	0.108	0.0512	0.115
CH ₄ (thousand tons)	32.6	37.2	71.7	452	964
N ₂ O (thousand tons)	0.002	0.006	0.006	0.022	0.032
Total FFC Emissions					
CO ₂ (million metric tons)	3.88	6.35	9.33	43.76	86.90
SO ₂ (thousand tons)	0.718	1.97	2.07	2.76	3.85
NO _x (thousand tons)	45.3	110	122	447	586
Hg (lbs)	0.00561	0.227	0.450	(28.1)	(21.7)
CH ₄ (thousand tons)	32.7	37.4	71.9	452	965
CH ₄ (thousand tons CO ₂ eq) **	914	1,046	2,013	12,662	27,023
N ₂ O (thousand tons)	0.033	0.082	0.091	0.249	0.352

TABLE V.43—CUMULATIVE EMISSIONS REDUCTION FOR RESIDENTIAL BOILERS SHIPPED IN 2021–2050: AFUE STANDARDS—Continued

	Trial Standard Level				
	1	2	3	4	5
N ₂ O (thousand tons CO ₂ eq) **	8.73	21.7	24.0	66.0	93.3

* Primarily site emissions. Values include the increase in power sector emissions from higher electricity use at TSLs 4 and 5.

** CO₂eq is the quantity of CO₂ that would have the same global warming potential (GWP). Negative values refer to an increase in emissions.

Note: Parentheses indicate negative values.

TABLE V.44—CUMULATIVE EMISSIONS REDUCTION FOR RESIDENTIAL BOILERS SHIPPED IN 2021–2050: STANDBY MODE AND OFF MODE STANDARDS

	Trial Standard Level		
	1	2	3
Site and Power Sector Emissions			
CO ₂ (million metric tons)	0.052	0.072	0.144
SO ₂ (thousand tons)	0.031	0.043	0.085
NO _x (thousand tons)	0.057	0.080	0.160
Hg (lbs)	0.227	0.318	0.636
CH ₄ (thousand tons)	0.004	0.006	0.012
N ₂ O (thousand tons)	0.001	0.001	0.002
Upstream Emissions			
CO ₂ (million metric tons)	0.003	0.004	0.008
SO ₂ (thousand tons)	0.001	0.001	0.002
NO _x (thousand tons)	0.042	0.059	0.119
Hg (lbs)	0.00236	0.00331	0.00662
CH ₄ (thousand tons)	0.234	0.328	0.656
N ₂ O (thousand tons)	0.000	0.000	0.000
Total FFC Emissions			
CO ₂ (million metric tons)	0.055	0.076	0.153
SO ₂ (thousand tons)	0.031	0.043	0.087
NO _x (thousand tons)	0.099	0.139	0.278
Hg (lbs)	0.229	0.321	0.642
CH ₄ (thousand tons)	0.239	0.334	0.669
CH ₄ (thousand tons CO ₂ eq) *	6.69	9.36	18.7
N ₂ O (thousand tons)	0.001	0.001	0.002
N ₂ O (thousand tons CO ₂ eq) *	0.172	0.240	0.481

* CO₂eq is the quantity of CO₂ that would have the same global warming potential (GWP).

As part of the analysis for this final rule, DOE estimated monetary benefits likely to result from the reduced emissions of CO₂ and NO_x that DOE estimated for each of the considered TSLs for residential boilers. As discussed in section IV.L of this document, for CO₂, DOE used the most recent values for the SCC developed by an interagency process. The four sets of SCC values for CO₂ emissions reductions in 2015 resulting from that process (expressed in 2014\$) are represented by \$12.2/metric ton (the average value from a distribution that

uses a 5-percent discount rate), \$40.0/metric ton (the average value from a distribution that uses a 3-percent discount rate), \$62.3/metric ton (the average value from a distribution that uses a 2.5-percent discount rate), and \$117/metric ton (the 95th-percentile value from a distribution that uses a 3-percent discount rate). The values for later years are higher due to increasing damages (public health, economic, and environmental) as the projected magnitude of climate change increases. Table V.45 presents the global value of CO₂ emissions reductions at each TSL

for AFUE standards. Table V.46 presents the global value of CO₂ emissions reductions at each TSL for standby mode and off mode standards. For each of the four cases, DOE calculated a present value of the stream of annual values using the same discount rate as was used in the studies upon which the dollar-per-ton values are based. DOE calculated domestic values as a range from 7 percent to 23 percent of the global values; these results are presented in chapter 14 of the final rule TSD.

TABLE V.45—ESTIMATES OF GLOBAL PRESENT VALUE OF CO₂ EMISSIONS REDUCTION FOR RESIDENTIAL BOILERS SHIPPED IN 2021–2050: AFUE STANDARDS

TSL	SCC case * (Million 2014\$)			
	5% discount rate, average	3% discount rate, average	2.5% discount rate, average	3% discount rate, 95th percentile
Site and Power Sector Emissions **				
1	19.1	95.1	154	290
2	31.5	156	253	477
3	46.2	229	371	700
4	198	1,018	1,659	3,113
5	399	2,041	3,325	6,235
Upstream Emissions				
1	2.82	14.0	22.7	42.7
2	4.68	23.2	37.5	70.8
3	6.78	33.6	54.4	103
4	32.2	165	268	503
5	60.5	309	503	944
Total FFC Emissions				
1	22.0	109	176	333
2	36.2	179	290	548
3	53.0	263	425	802
4	230	1,183	1,927	3,616
5	459	2,350	3,828	7,180

* For each of the four cases, the corresponding SCC value for emissions in 2015 is \$12.2, \$40.0, \$62.3, and \$117 per metric ton (2014\$). The values are for CO₂ only (*i.e.*, not CO₂eq of other greenhouse gases).

** Includes the increase in power sector emissions from higher electricity use at TSLs 4 and 5.

TABLE V.46—ESTIMATES OF GLOBAL PRESENT VALUE OF CO₂ EMISSIONS REDUCTION FOR RESIDENTIAL BOILERS SHIPPED IN 2021–2050: STANDBY MODE AND OFF MODE STANDARDS

TSL	SCC Case * (Million 2014\$)			
	5% discount rate, average	3% discount rate, average	2.5% discount rate, average	3% discount rate, 95th percentile
Site and Power Sector Emissions				
1	0.287	1.43	2.32	4.37
2	0.401	2.01	3.25	6.12
3	0.803	4.01	6.50	12.2
Upstream Emissions				
1	0.016	0.081	0.132	0.249
2	0.023	0.114	0.185	0.348
3	0.045	0.228	0.370	0.696
Total FFC Emissions				
1	0.303	1.51	2.46	4.62
2	0.424	2.12	3.44	6.47
3	0.848	4.24	6.87	12.9

* For each of the four cases, the corresponding SCC value for emissions in 2015 is \$12.2, \$40.0, \$62.3, and \$117 per metric ton (2014\$). The values are for CO₂ only (*i.e.*, not CO₂eq of other greenhouse gases).

DOE is well aware that scientific and economic knowledge about the contribution of CO₂ and other GHG emissions to changes in the future global climate and the potential resulting damages to the world economy

continues to evolve rapidly. Thus, any value placed on reduced CO₂ emissions in this rulemaking is subject to change. DOE, together with other Federal agencies, will continue to review various methodologies for estimating

the monetary value of reductions in CO₂ and other GHG emissions. This ongoing review will consider the comments on this subject that are part of the public record for this and other rulemakings, as well as other methodological

assumptions and issues. However, consistent with DOE's legal obligations, and taking into account the uncertainty involved with this particular issue, DOE has included in this final rule the most recent values and analyses resulting from the interagency review process.

DOE also estimated the cumulative monetary value of the economic benefits

associated with NO_x emissions reductions anticipated to result from the considered TSLs for residential boilers. The dollar-per-ton values that DOE used is discussed in section IV.L of this document. Table V.47 presents the cumulative present values for NO_x emissions for each AFUE TSL

calculated using seven-percent and three-percent discount rates. Table V.48 presents the cumulative present values for NO_x emissions for each standby mode and off mode TSL calculated using seven-percent and three-percent discount rates.

TABLE V.47—ESTIMATES OF PRESENT VALUE OF NO_x EMISSIONS REDUCTION FOR RESIDENTIAL BOILERS SHIPPED IN 2021–2050: AFUE STANDARDS *

TSL	Million 2014\$	
	3% discount rate	7% discount rate
Site and Power Sector Emissions **		
1	101	33.3
2	264	87.6
3	282	93.8
4	801	184
5	932	224
Upstream Emissions		
1	19.5	6.5
2	30.6	10.2
3	46.1	15.4
4	228	67.5
5	437	131
Total FFC Emissions †		
1	121	39.8
2	294	97.8
3	328	109
4	1,029	251
5	1,369	354

* The results reflect use of the low benefits per ton values.

** Includes the increase in power sector emissions from higher electricity use at TSLs 4 and 5.

† Components may not sum to total due to rounding.

TABLE V.48—ESTIMATES OF PRESENT VALUE OF NO_x EMISSIONS REDUCTION FOR RESIDENTIAL BOILERS SHIPPED IN 2021–2050: STANDBY MODE AND OFF MODE STANDARDS *

TSL	Million 2014\$	
	3% discount rate	7% discount rate
Site and Power Sector Emissions		
1	0.147	0.048
2	0.206	0.067
3	0.411	0.134
Upstream Emissions		
1	0.108	0.034
2	0.151	0.048
3	0.302	0.096
Total FFC Emissions **		
1	0.255	0.082
2	0.357	0.115
3	0.713	0.231

* The results reflect use of the low benefits per ton values.

** Components may not sum to total due to rounding.

7. Other Factors

The Secretary of Energy, in determining whether a standard is economically justified, may consider any other factors that the Secretary deems to be relevant. (42 U.S.C. 6295(o)(2)(B)(i)(VII)) No other factors were considered in this analysis.

8. Summary of National Economic Impacts

The NPV of the monetized benefits associated with emissions reductions

can be viewed as a complement to the NPV of the consumer savings calculated for each TSL considered in this rulemaking. Table V.49 presents the NPV values that result from adding the estimates of the potential economic benefits resulting from reduced CO₂ and NO_x emissions in each of four valuation scenarios to the NPV of consumer savings calculated for each AFUE TSL considered in this rulemaking, at both a seven-percent and three-percent discount rate.

Table V.50 presents the NPV values that result from adding the estimates of the potential economic benefits resulting from reduced CO₂ and NO_x emissions in each of four valuation scenarios to the NPV of consumer savings calculated for each standby mode and off mode TSL considered in this rulemaking, at both a seven-percent and three-percent discount rate. The CO₂ values used in the columns of each table correspond to the four sets of SCC values discussed above.

TABLE V.49—NET PRESENT VALUE OF CONSUMER SAVINGS COMBINED WITH PRESENT VALUE OF MONETIZED BENEFITS FROM CO₂ AND NO_x EMISSIONS REDUCTIONS: AFUE STANDARDS

TSL	Consumer NPV at 3% discount rate added with:			
	SCC Case * \$12.2/metric ton and NO _x value at 3% discount rate	SCC Case * \$40.0/metric ton and NO _x value at 3% discount rate	SCC Case * \$62.3/metric ton and NO _x value at 3% discount rate	SCC Case * \$117/metric ton and NO _x Value at 3% discount rate
Billion 2014\$				
1	0.614	0.701	0.768	0.925
2	1.183	1.326	1.437	1.694
3	1.579	1.789	1.951	2.328
4	1.341	2.294	3.038	4.726
5	2.425	4.316	5.794	9.145
TSL	Consumer NPV at 7% Discount Rate added with:			
	SCC Case * \$12.2/metric ton and NO _x Value at 7% discount rate	SCC Case * \$40.0/metric ton and NO _x Value at 7% discount rate	SCC Case * \$62.3/metric ton and NO _x Value at 7% discount rate	SCC Case * \$117/metric ton and NO _x Value at 7% discount rate
Billion 2014\$				
1	0.196	0.283	0.350	0.506
2	0.371	0.515	0.625	0.883
3	0.512	0.722	0.884	1.261
4	(0.867)	0.086	0.830	2.519
5	(1.314)	0.577	2.055	5.407

*These label values represent the global SCC in 2015, in 2014\$. For NO_x emissions, to calculate present value of the total monetary sum from reduced NO_x emissions, DOE applied real discount rates of 3 percent and 7 percent to the appropriate \$/ton value listed in chapter 14 of the final rule TSD.

Note: Parentheses indicate negative values.

TABLE V.50—NET PRESENT VALUE OF CONSUMER SAVINGS COMBINED WITH PRESENT VALUE OF MONETIZED BENEFITS FROM CO₂ AND NO_x EMISSIONS REDUCTIONS: STANDBY MODE AND OFF MODE STANDARDS

TSL	Consumer NPV at 3% Discount Rate added with:			
	SCC Case * \$12.2/metric ton and NO _x Value at 3% discount rate	SCC Case * \$40.0/metric ton and NO _x Value at 3% discount rate	SCC Case * \$62.3/metric ton and NO _x Value at 3% discount rate	SCC Case * \$117/metric ton and NO _x Value at 3% discount rate
Billion 2014\$				
1	0.008	0.009	0.010	0.012
2	0.004	0.006	0.007	0.010
3	0.015	0.019	0.021	0.028

TABLE V.50—NET PRESENT VALUE OF CONSUMER SAVINGS COMBINED WITH PRESENT VALUE OF MONETIZED BENEFITS FROM CO₂ AND NO_x EMISSIONS REDUCTIONS: STANDBY MODE AND OFF MODE STANDARDS—Continued

TSL	Consumer NPV at 7% Discount Rate added with:			
	SCC Case * \$12.2/metric ton and NO _x Value at 7% discount rate	SCC Case * \$40.0/metric ton and NO _x Value at 7% discount rate	SCC Case * \$62.3/metric ton and NO _x Value at 7% discount rate	SCC Case * \$117/metric ton and NO _x Value at 7% discount rate
	Billion 2014\$			
1	0.003	0.004	0.005	0.007
2	0.000	0.002	0.004	0.007
3	0.004	0.008	0.010	0.017

* These label values represent the global SCC in 2015, in 2014\$. For NO_x emissions, to calculate present value of the total monetary sum from reduced NO_x emissions, DOE applied real discount rates of 3 percent and 7 percent to the appropriate \$/ton value listed in chapter 14 of the final rule TSD.

In considering the above results, two issues are relevant. First, the national operating cost savings are domestic U.S. consumer monetary savings that occur as a result of market transactions, while the value of CO₂ reductions is based on a global value. Second, the assessments of operating cost savings and the SCC are performed with different methods that use different time frames for analysis. The national operating cost savings is measured for the lifetime of products shipped in 2021–2050. Because CO₂ emissions have a very long residence time in the atmosphere,¹²⁵ the SCC values in future years reflect the present value of future climate-related impacts that continue beyond 2100.

C. Conclusion

When considering standards, the new or amended energy conservation standards that DOE adopts for any type (or class) of covered product, including residential boilers, must be designed to achieve the maximum improvement in energy efficiency that the Secretary determines is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A)) In determining whether a standard is economically justified, the Secretary must determine whether the benefits of the standard exceed its burdens by, to the greatest extent practicable, considering the seven statutory factors discussed previously. (42 U.S.C. 6295(o)(2)(B)(i)) The new or amended standard must also result in

significant conservation of energy. (42 U.S.C. 6295(o)(3)(B))

For this final rule, DOE considered the impacts of amended standards for residential boilers at each TSL, beginning with the maximum technologically feasible level, to determine whether that level was economically justified. Where the max-tech level was not justified, DOE then considered the next most efficient level and undertook the same evaluation until it reached the highest efficiency level that is both technologically feasible and economically justified and saves a significant amount of energy.

To aid the reader as DOE discusses the benefits and/or burdens of each TSL, tables in this section present a summary of the results of DOE's quantitative analysis for each TSL. In addition to the quantitative results presented in the tables, DOE also considers other burdens and benefits that affect economic justification. These include the impacts on identifiable subgroups of consumers who may be disproportionately affected by a national standard and impacts on employment.

DOE also notes that the economics literature provides a wide-ranging discussion of how consumers trade off upfront costs and energy savings in the absence of government intervention. Much of this literature attempts to explain why consumers appear to undervalue energy efficiency improvements. There is evidence that consumers undervalue future energy savings as a result of: (1) A lack of information; (2) a lack of sufficient salience of the long-term or aggregate benefits; (3) a lack of sufficient savings to warrant delaying or altering

purchases; (4) excessive focus on the short term, in the form of inconsistent weighting of future energy cost savings relative to available returns on other investments; (5) computational or other difficulties associated with the evaluation of relevant tradeoffs; and (6) a divergence in incentives (for example, between renters and owners, or builders and purchasers). Having less than perfect foresight and a high degree of uncertainty about the future, consumers may trade off these types of investments at a higher than expected rate between current consumption and uncertain future energy cost savings. This undervaluation suggests that regulation that promotes energy efficiency can produce significant net private gains (as well as producing social gains by, for example, reducing pollution).

In DOE's current regulatory analysis, potential changes in the benefits and costs of a regulation due to changes in consumer purchase decisions are included in two ways. First, if consumers forego the purchase of a product in the standards case, this decreases sales for product manufacturers, and the impact on manufacturers attributed to lost revenue is included in the MIA. Second, DOE accounts for energy savings attributable only to products actually used by consumers in the standards case; if a regulatory option decreases the number of products purchased by consumers, this decreases the potential energy savings from an energy conservation standard. DOE provides estimates of shipments and changes in the volume of product purchases in chapter 9 of the final rule TSD. However, DOE's current analysis does not explicitly control for

¹²⁵ The atmospheric lifetime of CO₂ is estimated of the order of 30–95 years. Jacobson, MZ, "Correction to 'Control of fossil-fuel particulate black carbon and organic matter, possibly the most effective method of slowing global warming,'" *J. Geophys. Res.* 110, pp. D14105 (2005).

heterogeneity in consumer preferences, preferences across subcategories of products or specific features, or consumer price sensitivity variation according to household income.¹²⁶

While DOE is not prepared at present to provide a fuller quantifiable framework for estimating the benefits and costs of changes in consumer purchase decisions due to an energy conservation standard, DOE is committed to developing a framework that can support empirical quantitative tools for improved assessment of the consumer welfare impacts of appliance standards. DOE has posted a paper that discusses the issue of consumer welfare

impacts of appliance energy conservation standards, and potential enhancements to the methodology by which these impacts are defined and estimated in the regulatory process.¹²⁷ DOE welcomes comments on how to more fully assess the potential impact of energy conservation standards on consumer choice and how to quantify this impact in its regulatory analysis in future rulemakings.

1. Benefits and Burdens of Trial Standard Levels Considered for Residential Boilers for AFUE Standards

Table V.51 and Table V.52 summarize the quantitative impacts estimated for

each AFUE TSL for residential boilers. The national impacts are measured over the lifetime of residential boilers purchased in the 30-year period that begins in the anticipated year of compliance with amended standards (2021–2050). The energy savings, emissions reductions, and value of emissions reductions refer to full-fuel-cycle results. The efficiency levels contained in each TSL are described in section V.A of this notice.

TABLE V.51—SUMMARY OF ANALYTICAL RESULTS FOR RESIDENTIAL BOILERS AFUE TSLs: NATIONAL IMPACTS

Category	Trial Standard Level				
	1	2	3	4	5
Cumulative FFC Energy Savings (quads) ...	0.07	0.10	0.16	0.77	1.56.
NPV of Consumer Costs and Benefits (2014\$ billion)					
3% discount rate	0.471	0.852	1.198	0.082	0.597.
7% discount rate	0.134	0.237	0.350	(1.349)	(2.127).
Cumulative FFC Emissions Reduction *					
CO ₂ (million metric tons)	3.88	6.35	9.33	43.76	86.90.
SO ₂ (thousand tons)	0.718	1.97	2.07	2.76	3.85.
NO _x (thousand tons)	45.3	110	122	447	586.
Hg (lbs)	0.00561	0.227	0.450	(28.1)	(21.7).
CH ₄ (thousand tons)	32.7	37.4	71.9	452	965.
CH ₄ (thousand tons CO ₂ eq) **	914	1,046	2,013	12,662	27,023.
N ₂ O (thousand tons)	0.033	0.082	0.091	0.249	0.352.
N ₂ O (thousand tons CO ₂ eq) **	8.73	21.7	24.0	66.0	93.3.
Value of Emissions Reduction (Cumulative FFC Emissions)					
CO ₂ (2014\$ million) †	22.0 to 333	36.2 to 548	53.0 to 802	230 to 3,616	459 to 7,180.
NO _x —3% discount rate (2014\$ million)	121 to 266	294 to 648	328 to 722	1029 to 2235	1369 to 2982.
NO _x —7% discount rate (2014\$ million)	39.8 to 89.1	97.8 to 219	109 to 244	251 to 566	354 to 796.

* Includes the increase in power sector emissions from higher electricity use at TSLs 4 and 5.

** CO₂eq is the quantity of CO₂ that would have the same global warming potential (GWP).

† Range of the economic value of CO₂ reductions is based on estimates of the global benefit of reduced CO₂ emissions.

Note: Parentheses indicate negative values.

TABLE V.52—SUMMARY OF ANALYTICAL RESULTS FOR RESIDENTIAL BOILERS AFUE TSLs: MANUFACTURER AND CONSUMER IMPACTS

Category	Trial Standard Level				
	1	2	3	4	5
Manufacturer Impacts					
Industry NPV (2014\$ million) (Base Case INPV = 367.83).	365.70 to 367.50 ..	364.94 to 368.69 ..	365.20 to 369.45 ..	284.21 to 349.47 ..	225.88 to 366.71.
Industry NPV (\$ change)	(2.12) to (0.33)	(2.89) to 0.86	(2.63) to 1.62	(83.61) to (18.35)	(141.95) to (1.12).
Industry NPV (% change)	(0.58) to (0.09)	(0.79) to 0.24	(0.71) to 0.44	(22.73) to (4.99) ...	(38.59) to (0.30).
Consumer Average LCC Savings (2014\$)					
Gas-fired Hot Water Boiler	210	210	364	632	303.
Gas-fired Steam Boiler	333	333	333	333	207.

¹²⁶ P.C. Reiss and M.W. White, Household Electricity Demand, Revisited, *Review of Economic Studies* (2005) 72, 853–883.

¹²⁷ Alan Sanstad, Notes on the Economics of Household Energy Consumption and Technology Choice, Lawrence Berkeley National Laboratory

(2010) (Available at: http://www1.eere.energy.gov/buildings/appliance_standards/pdfs/consumer_ee_theory.pdf).

TABLE V.52—SUMMARY OF ANALYTICAL RESULTS FOR RESIDENTIAL BOILERS AFUE TSLs: MANUFACTURER AND CONSUMER IMPACTS—Continued

Category	Trial Standard Level				
	1	2	3	4	5
Oil-fired Hot Water Boiler	260	626	626	192	192.
Oil-fired Steam Boiler	400	400	434	505	505.
Shipment-Weighted Average *	235	315	420	510	276.
Consumer Simple PBP (years)					
Gas-fired Hot Water Boiler	1.2	1.2	1.2	8.4	11.8.
Gas-fired Steam Boiler	2.7	2.7	2.7	2.7	10.7.
Oil-fired Hot Water Boiler	6.9	5.8	5.8	16.5	16.5.
Oil-fired Steam Boiler	6.6	6.6	6.7	7.8	7.8.
Shipment-Weighted Average *	2.7	2.4	2.4	9.7	12.7.
Percentage of Consumers that Experience a Net Cost					
Gas-fired Hot Water Boiler	0.3%	0.3%	0.4%	21.9%	55.5%.
Gas-fired Steam Boiler	0.9%	0.9%	0.9%	0.9%	30.8%.
Oil-fired Hot Water Boiler	10.4%	8.8%	8.8%	58.9%	58.9%.
Oil-fired Steam Boiler	11.9%	11.9%	19.7%	34.2%	34.2%.
Shipment-Weighted Average *	2.8%	2.5%	2.7%	28.5%	53.8%.

Note: Parentheses indicate negative values.

* Weighted by shares of each product class in total projected shipments in 2021.

DOE first considered TSL 5, which represents the max-tech efficiency levels. TSL 5 would save an estimated 1.6 quads of energy, an amount DOE considers significant. Under TSL 5, the NPV of consumer benefit would be \$–2.127 billion using a discount rate of 7 percent, and \$0.597 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 5 are 86.90 Mt of CO₂, 3.85 thousand tons of SO₂, 586 thousand tons of NO_x, –21.7 lbs of Hg, 965 thousand tons of CH₄, and 0.352 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 5 ranges from \$459 million to \$7,180 million.

At TSL 5, the average LCC impact is a savings of \$303 for gas-fired hot water boilers, \$207 for gas-fired steam boilers, \$192 for oil-fired hot water boilers, and \$505 for oil-fired steam boilers. The simple payback period is 11.8 years for gas-fired hot water boilers, 10.7 years for gas-fired steam boilers, 16.5 years for oil-fired hot water boilers, and 7.8 years for oil-fired steam boilers. The share of consumers experiencing a net LCC cost is 55.5 percent for gas-fired hot water boilers, 30.8 percent for gas-fired steam boilers, 58.9 percent for oil-fired hot water boilers, and 34.2 percent for oil-fired steam boilers.

At TSL 5, the projected change in INPV ranges from a decrease of \$141.95 million to a decrease of \$1.12 million. If the decrease of \$141.95 million were to occur, TSL 5 could result in a net loss of 38.59 percent in INPV to

manufacturers of covered residential boilers.

The Secretary concludes that at TSL 5 for residential boilers, the benefits of energy savings, positive NPV of consumer benefits at a 3-percent discount rate, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the negative NPV of consumer benefits at a 7-percent discount rate, the economic burden on some consumers, and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a large reduction in INPV. Consequently, the Secretary has concluded that TSL 5 is not economically justified.

DOE then considered TSL 4. TSL 4 would save an estimated 0.77 quads of energy, an amount DOE considers significant. Under TSL 4, the NPV of consumer benefit would be \$–1.349 billion using a discount rate of 7 percent, and \$0.082 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 4 are 43.76 Mt of CO₂, 2.76 thousand tons of SO₂, 447 thousand tons of NO_x, –28.1 lbs of Hg, 452 thousand tons of CH₄, and 0.249 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 4 ranges from \$230 million to \$3,616 million.

At TSL 4, the average LCC impact is a savings of \$632 for gas-fired hot water boilers, \$333 for gas-fired steam boilers, \$192 for oil-fired hot water boilers, and \$505 for oil-fired steam boilers. The

simple payback period is 8.4 years for gas-fired hot water boilers, 2.7 years for gas-fired steam boilers, 16.5 years for oil-fired hot water boilers, and 7.8 years for oil-fired steam boilers. The share of consumers experiencing a net LCC cost is 21.9 percent for gas-fired hot water boilers, 0.9 percent for gas-fired steam boilers, 58.9 percent for oil-fired hot water boilers, and 34.2 percent for oil-fired steam boilers.

At TSL 4, the projected change in INPV ranges from a decrease of \$83.61 million to a decrease of \$18.35 million. If the decrease of \$83.61 million were to occur, TSL 4 could result in a net loss of 22.73 percent in INPV to manufacturers of covered residential boilers.

The Secretary concludes that at TSL 4 for residential boilers, the benefits of energy savings, positive NPV of consumer benefits at a 3-percent discount rate, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the negative NPV of consumer benefits at a 7-percent discount rate, the economic burden on some consumers, and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a large reduction in INPV. Consequently, the Secretary has concluded that TSL 4 is not economically justified.

DOE then considered TSL 3. TSL 3 would save an estimated 0.16 quads of energy, an amount DOE considers significant. Under TSL 3, the NPV of consumer benefit would be \$0.350

billion using a discount rate of 7 percent, and \$1.198 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 3 are 9.33 Mt of CO₂, 2.07 thousand tons of SO₂, 122 thousand tons of NO_x, 0.450 lbs of Hg, 71.9 thousand tons of CH₄, and 0.091 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 3 ranges from \$53.0 million to \$802 million.

At TSL 3, the average LCC impact is a savings of \$364 for gas-fired hot water boilers, \$333 for gas-fired steam boilers, \$626 for oil-fired hot water boilers, and \$434 for oil-fired steam boilers. The simple payback period is 1.2 years for gas-fired hot water boilers, 2.7 years for gas-fired steam boilers, 5.8 years for oil-fired hot water boilers, and 6.7 years for oil-fired steam boilers. The share of

consumers experiencing a net LCC cost is 0.4 percent for gas-fired hot water boilers, 0.9 percent for gas-fired steam boilers, 8.8 percent for oil-fired hot water boilers, and 19.7 percent for oil-fired steam boilers.

At TSL 3, the projected change in INPV ranges from a decrease of \$2.63 million to an increase of \$1.62 million. If the decrease of \$2.63 million were to occur, TSL 3 could result in a net loss of 0.71 percent in INPV to manufacturers of covered residential boilers.

After considering the analysis and weighing the benefits and the burdens, the Secretary has concluded that at TSL 3 for residential boilers, the benefits of energy savings, positive NPV of consumer benefit at both 3-percent and 7-percent discount rates, emission reductions, the estimated monetary

value of the emissions reductions, and positive average LCC savings would outweigh the negative impacts on some consumers and on manufacturers, including the conversion costs that could result in a reduction in INPV for manufacturers. Accordingly, the Secretary of Energy has concluded that TSL 3 offers the maximum improvement in efficiency that is technologically feasible and economically justified, and would result in the significant conservation of energy.

Therefore, based on the above considerations, DOE is adopting the AFUE energy conservation standards for residential boilers at TSL 3. The amended energy conservation standards for residential boilers, which are expressed as AFUE, are shown in Table V.53.

TABLE V.53—AMENDED AFUE ENERGY CONSERVATION STANDARDS FOR RESIDENTIAL BOILERS

Product class	Standard: AFUE (%)	Design requirement
Gas-fired hot water boiler	84	Constant-burning pilot not permitted. Automatic means for adjusting water temperature required (except for boilers equipped with tankless domestic water heating coils).
Gas-fired steam boiler	82	Constant-burning pilot not permitted.
Oil-fired hot water boiler	86	Automatic means for adjusting temperature required (except for boilers equipped with tankless domestic water heating coils).
Oil-fired steam boiler	85	None.
Electric hot water boiler	None	Automatic means for adjusting temperature required (except for boilers equipped with tankless domestic water heating coils).
Electric steam boiler	None	None.

2. Benefits and Burdens of Trial Standard Levels Considered for Residential Boilers for Standby Mode and Off Mode

Table V.54 and Table V.55 summarize the quantitative impacts estimated for

each TSL considered for residential boiler standby mode and off mode power standards. The national impacts are measured over the lifetime of residential boilers purchased in the 30-year period that begins in the year of anticipated compliance with new

standards (2021–2050). The energy savings, emissions reductions, and value of emissions reductions refer to full-fuel-cycle results. The efficiency levels contained in each TSL are described in section V.A of this notice.

TABLE V.54—SUMMARY OF ANALYTICAL RESULTS FOR RESIDENTIAL BOILER STANDBY MODE AND OFF MODE TSLS: NATIONAL IMPACTS

Category	Trial Standard Level		
	1	2	3
Cumulative FFC Energy Savings (quads)	0.0009	0.0013	0.0026.
NPV of Consumer Costs and Benefits (2014\$ billion)			
3% discount rate	0.007	0.004	0.014.
7% discount rate	0.002	(0.00005)	0.003.
Cumulative FFC Emissions Reduction			
CO ₂ (million metric tons)	0.055	0.076	0.153.
SO ₂ (thousand tons)	0.031	0.043	0.087.
NO _x (thousand tons)	0.099	0.139	0.278.
Hg (lbs)	0.229	0.321	0.642.
CH ₄ (thousand tons)	0.239	0.334	0.669.
CH ₄ (thousand tons CO ₂ eq) *	6.69	9.36	18.7.
N ₂ O (thousand tons)	0.001	0.001	0.002.

TABLE V.54—SUMMARY OF ANALYTICAL RESULTS FOR RESIDENTIAL BOILER STANDBY MODE AND OFF MODE TSLs: NATIONAL IMPACTS—Continued

Category	Trial Standard Level		
	1	2	3
N ₂ O (thousand tons CO ₂ eq) *	0.172	0.240	0.481.
Value of Emissions Reduction (Cumulative FFC Emissions)			
CO ₂ (2014\$ million) **	0.303 to 4.62	0.424 to 6.47	0.848 to 12.9.
NO _x —3% discount rate (2014\$ million)	0.255 to 0.561	0.357 to 0.786	0.713 to 1.571.
NO _x —7% discount rate (2014\$ million)	0.082 to 0.184	0.115 to 0.258	0.231 to 0.516.

* CO₂eq is the quantity of CO₂ that would have the same global warming potential (GWP).

** Range of the economic value of CO₂ reductions is based on estimates of the global benefit of reduced CO₂ emissions.

Note: Parentheses indicate negative values.

TABLE V.55—SUMMARY OF ANALYTICAL RESULTS FOR RESIDENTIAL BOILER STANDBY MODE AND OFF MODE TSLs: MANUFACTURER AND CONSUMER IMPACTS

Category	Trial Standard Level		
	1	2	3
Manufacturer Impacts			
Industry NPV (2014\$ million) (Base Case INPV = 367.83)	367.61 to 367.73	367.74 to 367.78	366.12 to 368.28.
Industry NPV (\$ change)	(0.22) to (0.10)	(0.09) to (0.04)	(1.71) to 0.45.
Industry NPV (% change)	(0.06) to (0.03)	(0.02) to (0.01)	(0.46) to 0.12.
Consumer Average LCC Savings (2014\$)			
Gas-fired Hot Water Boiler	26	2	15.
Gas-fired Steam Boiler	31	4	18.
Oil-fired Hot Water Boiler	32	6	20.
Oil-fired Steam Boiler	26	0.4	13.
Electric Hot Water Boiler	19	(3)	8.
Electric Steam Boiler	17	(5)	6.
Shipment-Weighted Average *	27	3	16.
Consumer Simple PBP (years)			
Gas-fired Hot Water Boiler	2.0	8.9	6.7.
Gas-fired Steam Boiler	1.9	8.5	6.4.
Oil-fired Hot Water Boiler	1.8	8.2	6.2.
Oil-fired Steam Boiler	1.8	8.0	6.1.
Electric Hot Water Boiler	2.6	11.7	8.9.
Electric Steam Boiler	2.6	11.7	8.8.
Shipment-Weighted Average *	2.0	8.8	6.7.
Percentage of Consumers that Experience a Net Cost			
Gas-fired Hot Water Boiler	0.0%	3.7%	1.8%.
Gas-fired Steam Boiler	0.0%	1.3%	0.5%.
Oil-fired Hot Water Boiler	0.0%	3.5%	1.4%.
Oil-fired Steam Boiler	0.0%	1.3%	0.6%.
Electric Hot Water Boiler	0.0%	1.5%	1.0%.
Electric Steam Boiler	0.0%	1.5%	1.0%.
Shipment-Weighted Average *	0.0%	3.3%	1.5%.

* Weighted by shares of each product class in total projected shipments in 2021.

Note: Parentheses indicate negative (–) values.

DOE first considered TSL 3, which represents the max-tech efficiency levels. TSL 3 would save an estimated 0.0026 quads of energy. Under TSL 3, the NPV of consumer benefit would be \$0.003 billion using a discount rate of 7 percent, and \$0.014 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 3 are 0.153 Mt of CO₂, 0.087 thousand tons of SO₂, 0.278 thousand tons of NO_x, 0.642 lbs of Hg, 0.669 thousand tons of CH₄, and 0.002 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 3 ranges from \$0.848 million to \$12.9 million.

At TSL 3, the average LCC impact is a savings of \$15 for gas-fired hot water boilers, \$18 for gas-fired steam boilers, \$20 for oil-fired hot water boilers, \$13 for oil-fired steam boilers, \$8 for electric hot water boilers, and \$6 for electric steam boilers. The simple payback period is 6.7 years for gas-fired hot water boilers, 6.4 years for gas-fired

steam boilers, 6.2 years for oil-fired hot water boilers, 6.1 years for oil-fired steam boilers, 8.9 for electric hot water boilers, and 8.8 for electric steam boilers. The share of consumers experiencing a net LCC cost is 1.8 percent for gas-fired hot water boilers, 0.5 percent for gas-fired steam boilers, 1.4 percent for oil-fired hot water boilers, and 0.6 percent for oil-fired steam boilers, 1.0 percent for electric hot water boilers, and 1.0 percent for electric steam boilers.

At TSL 3, the projected change in INPV ranges from a decrease of \$1.71 million to an increase of \$0.45 million, depending on the manufacturer markup

scenario. If the larger decrease is realized, TSL 3 could result in a net loss of 0.46 percent in INPV to manufacturers of covered residential boilers.

Accordingly, the Secretary concludes that at TSL 3 for residential boiler standby mode and off mode power, the benefits of energy savings, positive NPV of consumer benefits at both 7-percent and 3-percent discount rates, emission reductions, the estimated monetary value of the emissions reductions, and positive average LCC savings would outweigh the negative impacts on some consumers and on manufacturers, including the conversion costs that

could result in a reduction in INPV for manufacturers. Accordingly, the Secretary has concluded that TSL 3 would offer the maximum improvement in efficiency that is technologically feasible and economically justified, and would result in the significant conservation of energy.

Therefore, based on the above considerations, DOE is adopting the standby mode and off mode energy conservation standards for residential boilers at TSL 3. The new energy conservation standards for standby mode and off mode, which are expressed as maximum power in watts, are shown in Table V.56.

TABLE V.56—STANDBY MODE AND OFF MODE ENERGY CONSERVATION STANDARDS FOR RESIDENTIAL BOILERS

Product class	P _{W,SB} (watts)	P _{W,OFF} (watts)
Gas-fired hot water boiler	9	9
Gas-fired steam boiler	8	8
Oil-fired hot water boiler	11	11
Oil-fired steam boiler	11	11
Electric hot water boiler	8	8
Electric steam boiler	8	8

3. Annualized Benefits and Costs of the Adopted Standards

The benefits and costs of the adopted standards can also be expressed in terms of annualized values. The annualized monetary value of net benefits is the sum of: (1) The annualized national economic value (expressed in 2014\$) of the benefits from operating products that meet the adopted standards (consisting primarily of operating cost savings from using less energy, minus increases in product purchase costs), which is another way of representing consumer NPV, and (2) the annualized

monetary value of the benefits of CO₂ and NO_x emission reductions.¹²⁸

Table V.57 shows the annualized benefit and cost values for residential boilers under TSL 3 for AFUE standards, expressed in 2014\$. The results under the primary estimate are as follows. Using a 7-percent discount rate for benefits and costs other than CO₂ reduction (for which DOE used a 3-percent discount rate along with the average SCC series that has a value of \$40.0/t in 2015),¹²⁹ the estimated cost of the AFUE standards in this rule is \$17.0 million per year in increased equipment costs, while the estimated benefits are \$56.5 million per year in reduced

equipment operating costs, \$15.5 million per year in CO₂ reductions, and \$12.3 million per year in reduced NO_x emissions. In this case, the net benefit amounts to \$67.4 million per year.

Using a 3-percent discount rate for all benefits and costs and the average SCC series that has a value of \$40.0/t in 2015, the estimated cost of the AFUE standards is \$15.9 million per year in increased equipment costs, while the estimated benefits are \$86.8 million per year in reduced operating costs, \$15.5 million per year in CO₂ reductions, and \$19.4 million per year in reduced NO_x emissions. In this case, the net benefit amounts to \$105.8.

TABLE V.57—ANNUALIZED BENEFITS AND COSTS OF ADOPTED AFUE STANDARDS (TSL 3) FOR RESIDENTIAL BOILERS *

	Million 2014\$/year			
	Discount rate (%)	Primary estimate *	Low-net-benefits estimate *	High-net-benefits estimate *
Benefits				
Consumer Operating Cost Savings	7	56.5	53.5	60.1
	3	86.8	81.6	92.8
CO ₂ Reduction Monetized Value (\$12.2/t case) **	5	4.4	4.3	4.5
CO ₂ Reduction Monetized Value (\$40.0/t case) **	3	15.5	15.3	15.8
CO ₂ Reduction Monetized Value (\$62.3/t case) **	2.5	23.0	22.7	23.4
CO ₂ Reduction Monetized Value (\$117/t case) **	3	47.5	46.8	48.3

¹²⁸ To convert the time-series of costs and benefits into annualized values, DOE calculated a present value in 2014, the year used for discounting the NPV of total consumer costs and savings. For the benefits, DOE calculated a present value associated with each year's shipments in the year in which the shipments occur (2021, 2030, etc.), and then

discounted the present value from each year to 2015. The calculation uses discount rates of 3 and 7 percent for all costs and benefits except for the value of CO₂ reductions, for which DOE used case-specific discount rates. Using the present value, DOE then calculated the fixed annual payment over

a 30-year period, starting in the compliance year that yields the same present value.

¹²⁹ DOE used a 3-percent discount rate because the SCC values for the series used in the calculation were derived using a 3-percent discount rate (see section IV.L).

TABLE V.57—ANNUALIZED BENEFITS AND COSTS OF ADOPTED AFUE STANDARDS (TSL 3) FOR RESIDENTIAL BOILERS*—Continued

	Million 2014\$/year			
	Discount rate (%)	Primary estimate *	Low-net-benefits estimate *	High-net-benefits estimate *
NO _x Reduction Monetized Value †	7	12.3	12.2	28.0
	3	19.4	19.2	43.2
Total Benefits††	7 plus CO ₂ range	73 to 116	70 to 112	93 to 136
	7	84.4	81.0	104.0
	3 plus CO ₂ range	111 to 154	105 to 148	141 to 184
	3	121.7	116.1	151.9
Costs				
Consumer Incremental Installed Costs	7	17.0	19.9	14.7
	3	15.9	19.2	13.4
Net benefits/costs				
Total ††	7 plus CO ₂ range	56 to 99	50 to 93	78 to 122
	7	67.4	61.1	89.3
	3 plus CO ₂ range	95 to 138	86 to 128	127 to 171
	3	105.8	96.9	138.5

* This table presents the annualized costs and benefits associated with residential boilers shipped in 2021–2050. These results include benefits to consumers which accrue after 2050 from the products purchased in 2021–2050. The Primary, Low Benefits, and High Benefits Estimates utilize projections of energy prices from the AEO 2015 Reference case, Low Economic Growth case, and High Economic Growth case, respectively. In addition, incremental product costs reflect a medium decline rate in the Primary Estimate, a low decline rate in the Low Benefits Estimate, and a high decline rate in the High Benefits Estimate. The methods used to derive projected price trends are explained in section IV.F.1.

** The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of the SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

† The \$/ton values used for NO_x are described in section IV.L. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the Regulatory Impact Analysis titled, “Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants,” published in June 2014 by EPA’s Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposalRIAFinal0602.pdf>.) For DOE’s Primary Estimate and Low Net Benefits Estimate, the agency is presenting a national benefit-per-ton estimate for particulate matter emitted from the Electric Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). For DOE’s High Net Benefits Estimate, the benefit-per-ton estimates were based on the Six Cities study (Lepuele et al., 2011), which are nearly two-and-a-half times larger than those from the ACS study. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emission, DOE intends to investigate refinements to the agency’s current approach of one national estimate by assessing the regional approach taken by EPA’s Regulatory Impact Analysis for the Clean Power Plan Final Rule.

†† Total benefits for both the 3% and 7% cases are derived using the series corresponding to the average SCC with the 3-percent discount rate (\$40.0/t in 2015) case. In the rows labeled “7% plus CO₂ range” and “3% plus CO₂ range,” the operating cost and NO_x benefits are calculated using the labeled discount rate, and those values are added to the full range of CO₂ values.

Table V.58 shows the annualized benefit and cost values for residential boilers under TSL 3 for standby mode and off mode standards, expressed in 2014\$. The results under the primary estimate are as follows. Using a 7-percent discount rate for benefits and costs other than CO₂ reduction (for which DOE used a 3-percent discount rate along with the average SCC series that has a value of \$40.0/t in 2015), the estimated cost of the residential boiler

standby mode and off mode standards in this rule is \$0.46 million per year in increased equipment costs, while the estimated benefits are \$0.84 million per year in reduced equipment operating costs, \$0.25 million per year in CO₂ reductions, and \$0.03 million per year in reduced NO_x emissions. In this case, the net benefit amounts to \$0.66 million per year.

Using a 3-percent discount rate for all benefits and costs and the average SCC

series that has a value of \$40.0/t in 2015, the estimated cost of the AFUE standards is \$0.46 million per year in increased equipment costs, while the estimated benefits are \$1.28 million per year in reduced operating costs, \$0.25 million per year in CO₂ reductions, and \$0.04 million per year in reduced NO_x emissions. In this case, the net benefit amounts to \$1.11 million per year.

TABLE V.58—ANNUALIZED BENEFITS AND COSTS OF ADOPTED STANDBY MODE AND OFF MODE STANDARDS (TSL 3) FOR RESIDENTIAL BOILERS*

	Million 2014\$/year			
	Discount rate (%)	Primary estimate *	Low-net-benefits estimate *	High-net-benefits estimate *
Benefits				
Consumer Operating Cost Savings	7	0.84	0.81	0.89
	3	1.28	1.25	1.38
CO ₂ Reduction Monetized Value (\$12.2/t case)**	5	0.07	0.07	0.07

TABLE V.58—ANNUALIZED BENEFITS AND COSTS OF ADOPTED STANDBY MODE AND OFF MODE STANDARDS (TSL 3) FOR RESIDENTIAL BOILERS*—Continued

	Million 2014\$/year			
	Discount rate (%)	Primary estimate*	Low-net-benefits estimate*	High-net-benefits estimate*
CO ₂ Reduction Monetized Value (\$40.0/t case)**	3	0.25	0.25	0.26
CO ₂ Reduction Monetized Value (\$62.3/t case)**	2.5	0.37	0.36	0.38
CO ₂ Reduction Monetized Value (\$117/t case)**	3	0.77	0.75	0.79
NO _x Reduction Monetized Value†	7	0.03	0.03	0.06
	3	0.04	0.04	0.10
Total Benefits††	7 plus CO ₂ range	0.94 to 1.63	0.91 to 1.59	1.02 to 1.74
	7	1.12	1.09	1.21
	3 plus CO ₂ range	1.40 to 2.09	1.36 to 2.04	1.54 to 2.26
	3	1.58	1.54	1.73
Costs				
Consumer Incremental Installed Costs	7	0.46	0.45	0.47
	3	0.46	0.45	0.47
Net benefits/costs				
Total††	7 plus CO ₂ range	0.48 to 1.17	0.46 to 1.14	0.55 to 1.26
	7	0.66	0.63	0.73
	3 plus CO ₂ range	0.93 to 1.63	0.91 to 1.59	1.07 to 1.78
	3	1.11	1.09	1.25

* This table presents the annualized costs and benefits associated with residential boilers shipped in 2021–2050. These results include benefits to consumers which accrue after 2050 from the products purchased in 2021–2050. The Primary, Low Benefits, and High Benefits Estimates utilize projections of energy prices from the AEO 2015 Reference case, Low Economic Growth case, and High Economic Growth case, respectively.

** The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of the SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

† The \$/ton values used for NO_x are described in section IV.L. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the Regulatory Impact Analysis titled, “Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants,” published in June 2014 by EPA’s Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposal/RIAFinal0602.pdf>.) For DOE’s Primary Estimate and Low Net Benefits Estimate, the agency is presenting a national benefit-per-ton estimate for particulate matter emitted from the Electric Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). For DOE’s High Net Benefits Estimate, the benefit-per-ton estimates were based on the Six Cities study (Lepule et al., 2011), which are nearly two-and-a-half times larger than those from the ACS study. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emission, DOE intends to investigate refinements to the agency’s current approach of one national estimate by assessing the regional approach taken by EPA’s Regulatory Impact Analysis for the Clean Power Plan Final Rule.

†† Total benefits for both the 3% and 7% cases are derived using the series corresponding to the average SCC with the 3-percent discount rate (\$40.0/t in 2015) case. In the rows labeled “7% plus CO₂ range” and “3% plus CO₂ range,” the operating cost and NO_x benefits are calculated using the labeled discount rate, and those values are added to the full range of CO₂ values.

In order to provide a complete picture of the overall impacts of this final rule, the following combines and summarizes the benefits and costs for both the amended AFUE standards and the new standby mode and off mode standards for residential boilers. Table V.59 shows the combined annualized benefit and cost values for the AFUE standards and the standby mode and off mode standards for residential boilers. The results under the primary estimate are as follows. Using a 7-percent discount rate for benefits and costs other than CO₂ reduction (for which DOE used a 3-

percent discount rate along with the average SCC series that has a value of \$40.0/t in 2015), the estimated cost of the residential boiler AFUE, standby mode, and off mode standards in this rule is \$17.4 million per year in increased equipment costs, while the estimated benefits are \$57.4 million per year in reduced equipment operating costs, \$15.8 million per year in CO₂ reductions, and \$12.4 million per year in reduced NO_x emissions. In this case, the net benefit amounts to \$68.1 million per year.

Using a 3-percent discount rate for all benefits and costs and the average SCC series that has a value of \$40.0/t in 2015, the estimated cost of the residential boiler AFUE, standby mode, and off mode standards in this rule is \$16.4 million per year in increased equipment costs, while the estimated benefits are \$88.1 million per year in reduced equipment operating costs, \$15.8 million per year in CO₂ reductions, and \$19.4 million per year in reduced NO_x emissions. In this case, the net benefit amounts to \$106.9 million per year.

TABLE V.59—ANNUALIZED BENEFITS AND COSTS OF ADOPTED AFUE AND STANDBY MODE AND OFF MODE ENERGY CONSERVATION STANDARDS (TSL 3) FOR RESIDENTIAL BOILERS *

	Discount rate (%)	Million 2014\$/year		
		Primary estimate *	Low-net-benefits estimate *	High-net-benefits estimate *
Benefits				
Consumer Operating Cost Savings.	7	57.4	54.3	61.0.
	3	88.1	82.8	94.2.
CO ₂ Reduction Value (\$12.2/t case) **.	5	4.5	4.4	4.6.
CO ₂ Reduction Value (\$40.0/t case) **.	3	15.8	15.6	16.1.
CO ₂ Reduction Value (\$62.3/t case) **.	2.5	23.4	23.0	23.8.
CO ₂ Reduction Value (\$117/t case) **.	3	48.2	47.5	49.1.
NO _x Reduction Value †	7	12.4	12.2	28.0.
	3	19.4	19.2	43.3.
Total Benefits ††	7 plus CO ₂ range	74.2 to 117.9	70.9 to 114	93.6 to 138.
	7	85.5	82.1	105.
	3 plus CO ₂ range	112 to 156	106 to 150	142 to 187.
	3	123.3	117.6	153.6.
Costs				
Consumer Incremental Installed Costs.	7	17.4	20.3	15.1.
	3	16.4	19.6	13.9.
Net Benefits/Costs				
Total ††	7 plus CO ₂ range	56.8 to 100	50.6 to 93.7	78.5 to 123.
	7	68.1	61.8	90.0.
	3 plus CO ₂ range	95.6 to 139	86.8 to 130	128 to 173.
	3	106.9	98.0	139.7.

* This table presents the annualized costs and benefits associated with residential boilers shipped in 2021–2050. These results include benefits to consumers which accrue after 2050 from the products purchased in 2021–2050. The Primary, Low Benefits, and High Benefits Estimates utilize projections of energy prices from the AEO 2015 Reference case, Low Economic Growth case, and High Economic Growth case, respectively. In addition, incremental product costs reflect a medium decline rate in the Primary Estimate, a low decline rate in the Low Benefits Estimate, and a high decline rate in the High Benefits Estimate. The methods used to derive projected price trends are explained in section IV.F.1.

** The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of the SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

† The \$/ton values used for NO_x are described in section IV.L. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the Regulatory Impact Analysis titled, “Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants,” published in June 2014 by EPA’s Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposal/RIAFinal0602.pdf>.) For DOE’s Primary Estimate and Low Net Benefits Estimate, the agency is presenting a national benefit-per-ton estimate for particulate matter emitted from the Electric Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). For DOE’s High Net Benefits Estimate, the benefit-per-ton estimates were based on the Six Cities study (Lepule et al., 2011), which are nearly two-and-a-half times larger than those from the ACS study. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emission, DOE intends to investigate refinements to the agency’s current approach of one national estimate by assessing the regional approach taken by EPA’s Regulatory Impact Analysis for the Clean Power Plan Final Rule.

†† Total benefits for both the 3% and 7% cases are derived using the series corresponding to the average SCC with the 3-percent discount rate (\$40.0/t in 2015) case. In the rows labeled “7% plus CO₂ range” and “3% plus CO₂ range,” the operating cost and NO_x benefits are calculated using the labeled discount rate, and those values are added to the full range of CO₂ values.

VI. Procedural Issues and Regulatory Review

A. Review Under Executive Orders 12866 and 13563

Section 1(b)(1) of Executive Order 12866, “Regulatory Planning and Review,” 58 FR 51735 (Oct. 4, 1993), requires each agency to identify the problem that it intends to address, including, where applicable, the failures of private markets or public institutions that warrant new agency action, as well as to assess the significance of that problem. The problems that the adopted

standards for residential boilers are intended to address are as follows:

(1) Insufficient information and the high costs of gathering and analyzing relevant information lead some consumers to miss opportunities to make cost-effective investments in energy efficiency.

(2) In some cases, the benefits of more-efficient equipment are not realized due to misaligned incentives between purchasers and users. An example of such a case is when the equipment purchase decision is made by a building contractor or building

owner who does not pay the energy costs of operating the equipment.

(3) There are external benefits resulting from improved energy efficiency of appliances that are not captured by the users of such equipment. These benefits include externalities related to public health, environmental protection, and national energy security that are not reflected in energy prices, such as reduced emissions of air pollutants and greenhouse gases that impact human health and global warming. DOE attempts to qualify some of the external

benefits through use of Social Cost of Carbon values.

The Administrator of the Office of Information and Regulatory Affairs (OIRA) in the OMB has determined that the regulatory action in this document is a “significant regulatory action” under section (3)(f) of Executive Order 12866. Accordingly, pursuant to section 6(a)(3)(B) of the Executive Order, DOE has provided to OIRA: (i) The text of the draft regulatory action, together with a reasonably detailed description of the need for the regulatory action and an explanation of how the regulatory action will meet that need; and (ii) An assessment of the potential costs and benefits of the regulatory action, including an explanation of the manner in which the regulatory action is consistent with a statutory mandate. DOE has included these documents in the rulemaking record.

In addition, the Administrator of OIRA has determined that the proposed regulatory action is an “economically significant regulatory action” under section (3)(f)(1) of Executive Order 12866. Accordingly, pursuant to section 6(a)(3)(C) of the Executive Order, DOE has provided to OIRA a regulatory impact analysis (RIA), including the underlying analysis, of benefits and costs anticipated from the regulatory action, together with, to the extent feasible, a quantification of those costs; and an assessment, including the underlying analysis, of costs and benefits of potentially effective and reasonably feasible alternatives to the planned regulation, and an explanation why the planned regulatory action is preferable to the identified potential alternatives. These assessments prepared pursuant to Executive Order 12866 can be found in the technical support document for this rulemaking. These documents have also been included in the rulemaking record.

DOE has also reviewed this regulation pursuant to Executive Order 13563, issued on January 18, 2011. 76 FR 3281 (Jan. 21, 2011). Executive Order 13563 is supplemental to and explicitly reaffirms the principles, structures, and definitions governing regulatory review established in Executive Order 12866. To the extent permitted by law, agencies are required by Executive Order 13563 to: (1) Propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs (recognizing that some benefits and costs are difficult to quantify); (2) tailor regulations to impose the least burden on society, consistent with obtaining regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of

cumulative regulations; (3) select, in choosing among alternative regulatory approaches, those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity); (4) to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt; and (5) identify and assess available alternatives to direct regulation, including providing economic incentives to encourage the desired behavior, such as user fees or marketable permits, or providing information upon which choices can be made by the public.

DOE emphasizes as well that Executive Order 13563 requires agencies to use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible. In its guidance, OIRA has emphasized that such techniques may include identifying changing future compliance costs that might result from technological innovation or anticipated behavioral changes. For the reasons stated in the preamble, DOE believes that this final rule is consistent with these principles, including the requirement that, to the extent permitted by law, benefits justify costs and that net benefits are maximized.

B. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires preparation of a final regulatory flexibility analysis (FRFA) for any final rule unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. As required by Executive Order 13272, “Proper Consideration of Small Entities in Agency Rulemaking,” 67 FR 53461 (August 16, 2002), DOE published procedures and policies on February 19, 2003, to ensure that the potential impacts of its rules on small entities are properly considered during the rulemaking process. 68 FR 7990. DOE has made its procedures and policies available on the Office of the General Counsel’s Web site (<http://energy.gov/gc/office-general-counsel>). DOE has prepared the following FRFA for the products that are the subject of this rulemaking.

For manufacturers of residential boilers, the Small Business Administration (SBA) has set a size threshold, which defines those entities classified as “small businesses” for the purposes of the statute. DOE used the SBA’s small business size standards to

determine whether any small entities would be subject to the requirements of the rule. See 13 CFR part 121. The size standards are listed by North American Industry Classification System (NAICS) code and industry description and are available at <http://www.sba.gov/category/navigation-structure/contracting/contracting-officials/small-business-size-standards>. Manufacturing of residential boilers is classified under NAICS 333414, “Heating Equipment (except Warm Air Furnaces) Manufacturing.” The SBA sets a threshold of 500 employees or less for an entity to be considered as a small business for this category.

1. Description and Estimated Number of Small Entities Regulated

To estimate the number of companies that could be small business manufacturers of products covered by this rulemaking, DOE conducted a market survey using publically-available information to identify potential small manufacturers. DOE’s research involved industry trade association membership directories (including AHRI), public databases (e.g., AHRI Directory,¹³⁰ the California Energy Commission Appliance Efficiency Database¹³¹), individual company Web sites, and market research tools (e.g., Hoovers reports¹³²) to create a list of companies that manufacture or sell products covered by this rulemaking. DOE also asked stakeholders and industry representatives if they were aware of any other small manufacturers during manufacturer interviews and at DOE public meetings. DOE reviewed publicly-available data and contacted select companies on its list, as necessary, to determine whether they met the SBA’s definition of a small business manufacturer of covered residential boilers. DOE screened out companies that do not offer products covered by this rulemaking, do not meet the definition of a “small business,” or are foreign owned and operated.

DOE identified 36 manufacturers of residential boilers sold in the U.S. DOE then determined that 23 are large manufacturers or manufacturers that are foreign owned and operated. The remaining 13 domestic manufacturers meet the SBA’s definition of a “small business.” Of these 13 small businesses, nine manufacture the boilers covered by this rulemaking, while the other four manufacturers rebrand imported

¹³⁰ See www.ahridirectory.org/ahriDirectory/pages/home.aspx.

¹³¹ See <http://www.energy.ca.gov/appliances/>.

¹³² See <http://www.hoovers.com>.

products or products manufactured by other small companies.

Before issuing this final rule, DOE attempted to contact all the small business manufacturers of residential boilers it had identified. Two of the small businesses agreed to take part in an MIA interview. DOE also obtained information about small business impacts while interviewing large manufacturers.

DOE estimates that small manufacturers control approximately 15 percent of the residential boiler market. Based on DOE's research, three small businesses manufacture all four product classes of boilers domestically; four small businesses primarily produce condensing boiler products (and rely heat exchangers sourced from other manufacturers); and two manufacturers primarily produce oil-fired hot water boiler products. The remaining four small businesses wholesale or rebrand products that are imported from Europe or Asia, or design products and source manufacturing to a domestic firm.

2. Description and Estimate of Compliance Requirements

When confronted with new or amended energy conservation standards, small businesses must make investments in research and development to redesign their products, but because they have lower sales

volumes, they must spread these costs across fewer units. Moreover, smaller manufacturers may experience higher per-model testing costs relative to larger manufacturers, as they may not possess their own test facilities and, therefore, must outsource all testing at a higher per-unit cost.

These considerations could affect the three small manufacturers that offer all four product classes, the two manufacturers that only produce one or two product classes, and the four small businesses that rebrand boilers that do their own design work could see negative impacts. Being small businesses, it is likely that these manufacturers have fewer engineers and product development resources and may have greater difficulty bringing their portfolio of products into compliance with the new and amended energy conservation standards within the allotted timeframe. Also, these small manufacturers may have to divert engineering resources from customer and new product initiatives for a longer period of time.

Smaller manufacturers often lack the purchasing power of larger manufacturers. For example, suppliers of bulk purchase parts and components (such as gas valves) give boiler manufacturers discounts based on the quantities purchased. Therefore, larger

manufacturers may have a pricing advantage because they have higher volume purchases. This purchasing power differential between high-volume and low-volume orders applies to other residential boiler components as well, such as ignition systems and inducer fan assemblies.

To meet the new and amended standards, manufacturers may have to seek outside capital to cover expenses related to testing and product design equipment. Smaller firms typically have a higher cost of borrowing due to higher perceived risk on the part of investors, largely attributed to lower cash flows and lower per-unit profitability. In these cases, small manufacturers may observe higher costs of debt than larger manufacturers.

While DOE does not expect high capital conversion costs at TSL 3, DOE does expect smaller businesses would have to make significant product conversion investments relative to larger manufacturers. As previously noted, some of these smaller manufacturers are heavily weighted toward baseline products and other products below the efficiency levels adopted in this notice. As Table VI.1 illustrates, smaller manufacturers would have to increase their R&D spending to bring products into compliance and to develop new products at TSL 3, the adopted level.

TABLE VI.1—IMPACTS OF CONVERSION COSTS ON A SMALL MANUFACTURER

	Capital conversion cost as a percentage of annual capital expenditures	Product conversion cost as a percentage of annual R&D expense	Total conversion cost as a percentage of annual revenue	Total conversion cost as a percentage of annual EBIT *
Average Large Manufacturer	3	10	0	3
Average Small Manufacturer	17	79	2	22

* EBIT means "earnings before interest and taxes."

At TSL 3, the level adopted in this notice, DOE estimates capital conversion costs of \$0.01 million and product conversion costs of \$0.05 million for an average small manufacturer. DOE estimates that an average large manufacturer will incur capital conversion costs of \$0.02 million and product conversion costs of \$0.05 million. Based on the results in Table VI.1, DOE recognizes that small manufacturers will generally face a relatively higher conversion cost burden than larger competitors.

Manufacturers that have the majority of their products and sales at efficiency levels above the adopted standards may have lower conversion costs than those listed in Table VI.1. In particular, the four small manufacturers that primarily

sell condensing products are unlikely to be affected by the efficiency levels at TSL 3, as all of their products are already above the efficiency levels being adopted.

Furthermore, DOE recognizes that small manufacturers that primarily sell low-efficiency products today will face a greater burden relative to the small manufacturers that primarily sell high-efficiency products. At TSL 3, the level adopted in this notice, DOE believes that the three manufacturers that manufacture across all four product classes would have higher conversion costs because many of their products do not meet the standard adopted in this notice and would require redesign. Consequently, these manufacturers would have to expend funds to redesign

their commodity products, or develop a new, higher-efficiency baseline product.

The two companies that primarily produce oil-fired hot water boilers could also be impacted, as they are generally much smaller than the small businesses that produce all product classes, have fewer shipments and smaller revenues, and are likely to have limited R&D resources. Both of these companies, however, do have oil-fired hot water boiler product listings that meet the efficiency standards adopted in this notice.

DOE estimates that one of the four companies that rebrands imported or sourced products does its own design work, while the other three import high-efficiency products from Europe or Asia. It is possible that the company that

designs its own products could be affected by product conversion costs at TSL 3, while it is unlikely that the other three would be greatly impacted.

Based on this analysis, DOE notes that on average, small businesses will experience total conversion costs on the order of \$60,000. However, some companies will fall below and above the average. In particular, DOE has identified two small manufacturers that could experience greater conversion costs burdens than indicated by the average due to not having any products meeting the standard in one or two product classes.

3. Duplication, Overlap, and Conflict With Other Rules and Regulations

DOE is not aware of any rules or regulations that duplicate, overlap, or conflict with the final rule being adopted.

4. Significant Alternatives to the Rule

The discussion in the previous section analyzes impacts on small businesses that would result from DOE's final rule, represented by TSL 3. In reviewing alternatives to the final rule, DOE examined energy conservation standards set at lower efficiency levels. While TSL 1 and TSL 2 would reduce the impacts on small business manufacturers, it would come at the expense of a reduction in energy savings. TSL 1 for the AFUE standards achieves 57 percent lower energy savings compared to the energy savings at TSL 3. TSL 2 for the AFUE standards achieves 36 percent lower energy savings compared to the energy savings at TSL 3.

DOE believes that establishing standards at TSL 3 balances the benefits of the energy savings at TSL 3 with the potential burdens placed on residential boiler manufacturers, including small business manufacturers. Accordingly, DOE is not adopting one of the other TSLs considered in the analysis, or the other policy alternatives examined as part of the regulatory impacts analysis and included in chapter 17 of the NOPR TSD.

Additional compliance flexibilities may be available through other means. For example, individual manufacturers may petition for a waiver of the applicable test procedure. (See 10 CFR 431.401) Further, EPCA provides that a manufacturer whose annual gross revenue from all of its operations does not exceed \$8 million may apply for an exemption from all or part of an energy conservation standard for a period not longer than 24 months after the effective date of a final rule establishing the standard. Additionally, section 504 of

the Department of Energy Organization Act, 42 U.S.C. 7194, provides authority for the Secretary to adjust a rule issued under EPCA in order to prevent "special hardship, inequity, or unfair distribution of burdens" that may be imposed on that manufacturer as a result of such rule. Manufacturers should refer to 10 CFR part 430, subpart E, and part 1003 for additional details.

C. Review Under the Paperwork Reduction Act of 1995

Manufacturers of residential boilers must certify to DOE that their products comply with any applicable energy conservation standards. In certifying compliance, manufacturers must test their products according to the DOE test procedure for residential boilers, including any amendments adopted for those test procedures. DOE has established regulations for the certification and recordkeeping requirements for all covered consumer products and commercial equipment, including residential boilers. 76 FR 12422 (March 7, 2011); 80 FR 5099 (Jan. 30, 2015). The collection-of-information requirement for the certification and recordkeeping is subject to review and approval by OMB under the Paperwork Reduction Act (PRA). This requirement has been approved by OMB under OMB control number 1910-1400. Public reporting burden for the certification is estimated to average 30 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA, unless that collection of information displays a currently valid OMB Control Number.

D. Review Under the National Environmental Policy Act of 1969

Pursuant to the National Environmental Policy Act (NEPA) of 1969, DOE has determined that this rule fits within the category of actions included in Categorical Exclusion (CX) B5.1 and otherwise meets the requirements for application of a CX. See 10 CFR part 1021, App. B, B5.1(b); 1021.410(b) and App. B, B(1)–(5). The rule fits within this category of actions because it is a rulemaking that establishes energy conservation standards for consumer products or industrial equipment, and for which none of the exceptions identified in CX

B5.1(b) apply. Therefore, DOE has made a CX determination for this rulemaking, and DOE does not need to prepare an Environmental Assessment or Environmental Impact Statement for this rule. DOE's CX determination for this rule is available at <http://energy.gov/nepa/categorical-exclusion-cx-determinations-cx>.

E. Review Under Executive Order 13132

Executive Order 13132, "Federalism," 64 FR 43255 (Aug. 10, 1999), imposes certain requirements on Federal agencies formulating and implementing policies or regulations that preempt State law or that have Federalism implications. The Executive Order requires agencies to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion of the States and to carefully assess the necessity for such actions. The Executive Order also requires agencies to have an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have Federalism implications. On March 14, 2000, DOE published a statement of policy describing the intergovernmental consultation process it will follow in the development of such regulations. 65 FR 13735. DOE has examined this rule and has determined that it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. EPCA governs and prescribes Federal preemption of State regulations as to energy conservation for the products that are the subject of this final rule. States can petition DOE for exemption from such preemption to the extent, and based on criteria, set forth in EPCA. (42 U.S.C. 6297) Therefore, no further action is required by Executive Order 13132.

F. Review Under Executive Order 12988

With respect to the review of existing regulations and the promulgation of new regulations, section 3(a) of Executive Order 12988, "Civil Justice Reform," imposes on Federal agencies the general duty to adhere to the following requirements: (1) Eliminate drafting errors and ambiguity; (2) write regulations to minimize litigation; (3) provide a clear legal standard for affected conduct rather than a general standard; and (4) promote simplification and burden reduction. 61 FR 4729 (Feb. 7, 1996). Regarding the review required by section 3(a), section 3(b) of Executive

Order 12988 specifically requires that Executive agencies make every reasonable effort to ensure that the regulation: (1) Clearly specifies the preemptive effect, if any; (2) clearly specifies any effect on existing Federal law or regulation; (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction; (4) specifies the retroactive effect, if any; (5) adequately defines key terms; and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of Executive Order 12988 requires Executive agencies to review regulations in light of applicable standards in section 3(a) and section 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE has completed the required review and determined that, to the extent permitted by law, this final rule meets the relevant standards of Executive Order 12988.

G. Review Under the Unfunded Mandates Reform Act of 1995

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA) requires each Federal agency to assess the effects of Federal regulatory actions on State, local, and Tribal governments and the private sector. Public Law 104–4, sec. 201 (codified at 2 U.S.C. 1531). For a regulatory action likely to result in a rule that may cause the expenditure by State, local, and Tribal governments, in the aggregate, or by the private sector of \$100 million or more in any one year (adjusted annually for inflation), section 202 of UMRA requires a Federal agency to publish a written statement that estimates the resulting costs, benefits, and other effects on the national economy. (2 U.S.C. 1532(a), (b)) The UMRA also requires a Federal agency to develop an effective process to permit timely input by elected officers of State, local, and Tribal governments on a “significant intergovernmental mandate,” and requires an agency plan for giving notice and opportunity for timely input to potentially affected small governments before establishing any requirements that might significantly or uniquely affect them. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820. DOE’s policy statement is also available at http://energy.gov/sites/prod/files/gcprod/documents/umra_97.pdf.

Although it does not contain a Federal intergovernmental mandate, DOE has concluded that this final rule adopting amended and new energy conservation

standards for residential boilers may require annual expenditures of \$100 million or more in any one year by the private sector. Such expenditures may include: (1) Investment in research and development and in capital expenditures by residential boiler manufacturers in the years between the final rule and the compliance date for the new standards, and (2) incremental additional expenditures by consumers to purchase higher-efficiency residential boilers, starting at the compliance date for the applicable standard.

Section 202 of UMRA authorizes a Federal agency to respond to the content requirements of UMRA in any other statement or analysis that accompanies the final rule. (2 U.S.C. 1532(c)) The content requirements of section 202(b) of UMRA relevant to a private sector mandate substantially overlap the economic analysis requirements that apply under section 325(o) of EPCA and Executive Order 12866. The **SUPPLEMENTARY INFORMATION** section of this document and the “Regulatory Impact Analysis” section of the TSD for this final rule respond to those requirements.

Under section 205 of UMRA, the Department is obligated to identify and consider a reasonable number of regulatory alternatives before promulgating a rule for which a written statement under section 202 is required. (2 U.S.C. 1535(a)) DOE is required to select from those alternatives the most cost-effective and least burdensome alternative that achieves the objectives of the rule unless DOE publishes an explanation for doing otherwise, or the selection of such an alternative is inconsistent with law. As required by 42 U.S.C. 6295(f) and (o), this final rule establishes amended and new energy conservation standards for residential boilers that are designed to achieve the maximum improvement in energy efficiency that DOE has determined to be both technologically feasible and economically justified. A full discussion of the alternatives considered by DOE is presented in the “Regulatory Impact Analysis” section of the TSD (chapter 17) for this final rule.

H. Review Under the Treasury and General Government Appropriations Act, 1999

Section 654 of the Treasury and General Government Appropriations Act, 1999 (Pub. L. 105–277) requires Federal agencies to issue a Family Policymaking Assessment for any rule that may affect family well-being. This rule would not have any impact on the autonomy or integrity of the family as an institution. Accordingly, DOE has

concluded that it is not necessary to prepare a Family Policymaking Assessment.

I. Review Under Executive Order 12630

Pursuant to Executive Order 12630, “Governmental Actions and Interference with Constitutionally Protected Property Rights,” 53 FR 8859 (March 18, 1988), DOE has determined that this rule would not result in any takings that might require compensation under the Fifth Amendment to the U.S. Constitution.

J. Review Under the Treasury and General Government Appropriations Act, 2001

Section 515 of the Treasury and General Government Appropriations Act, 2001 (44 U.S.C. 3516 note) provides for Federal agencies to review most disseminations of information to the public under information quality guidelines established by each agency pursuant to general guidelines issued by OMB. OMB’s guidelines were published at 67 FR 8452 (Feb. 22, 2002), and DOE’s guidelines were published at 67 FR 62446 (Oct. 7, 2002). DOE has reviewed this final rule under the OMB and DOE guidelines and has concluded that it is consistent with applicable policies in those guidelines.

K. Review Under Executive Order 13211

Executive Order 13211, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,” 66 FR 28355 (May 22, 2001), requires Federal agencies to prepare and submit to OIRA at OMB, a Statement of Energy Effects for any significant energy action. A “significant energy action” is defined as any action by an agency that promulgates or is expected to lead to promulgation of a final rule, and that: (1) Is a significant regulatory action under Executive Order 12866, or any successor order; and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy, or (3) is designated by the Administrator of OIRA as a significant energy action. For any significant energy action, the agency must give a detailed statement of any adverse effects on energy supply, distribution, or use should the proposal be implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use.

DOE has concluded that this regulatory action, which sets forth amended and new energy conservation standards for residential boilers, is not a significant energy action because the standards are not likely to have a significant adverse effect on the supply,

distribution, or use of energy, nor has it been designated as such by the Administrator at OIRA. Accordingly, DOE has not prepared a Statement of Energy Effects on this final rule.

L. Review Under the Information Quality Bulletin for Peer Review

On December 16, 2004, OMB, in consultation with the Office of Science and Technology Policy (OSTP), issued its Final Information Quality Bulletin for Peer Review (the Bulletin). 70 FR 2664 (Jan. 14, 2005). The Bulletin establishes that certain scientific information shall be peer reviewed by qualified specialists before it is disseminated by the Federal Government, including influential scientific information related to agency regulatory actions. The purpose of the bulletin is to enhance the quality and credibility of the Government's scientific information. Under the Bulletin, the energy conservation standards rulemaking analyses are "influential scientific information," which the Bulletin defines as "scientific information the agency reasonably can determine will have, or does have, a clear and substantial impact on important public policies or private sector decisions." *Id.* at FR 2667.

In response to OMB's Bulletin, DOE conducted formal in-progress peer reviews of the energy conservation standards development process and analyses and has prepared a Peer Review Report pertaining to the energy conservation standards rulemaking analyses. Generation of this report involved a rigorous, formal, and

documented evaluation using objective criteria and qualified and independent reviewers to make a judgment as to the technical/scientific/business merit, the actual or anticipated results, and the productivity and management effectiveness of programs and/or projects. The "Energy Conservation Standards Rulemaking Peer Review Report" dated February 2007, has been disseminated and is available at the following Web site:

www1.eere.energy.gov/buildings/appliance_standards/peer_review.html.

M. Congressional Notification

As required by 5 U.S.C. 801, DOE will report to Congress on the promulgation of this rule prior to its effective date. The report will state that it has been determined that the rule is a "major rule" as defined by 5 U.S.C. 804(2).

VII. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this final rule.

List of Subjects in 10 CFR Part 430

Administrative practice and procedure, Confidential business information, Energy conservation, Household appliances, Imports, Intergovernmental relations, Small businesses.

Issued in Washington, DC, on December 30, 2015.

David J. Friedman,

Principal Deputy Assistant Secretary, Energy Efficiency and Renewable Energy.

For the reasons set forth in the preamble, DOE amends part 430 of chapter II, subchapter D, of title 10 of the Code of Federal Regulations, as set forth below:

PART 430—ENERGY CONSERVATION PROGRAM FOR CONSUMER PRODUCTS

■ 1. The authority citation for part 430 continues to read as follows:

Authority: 42 U.S.C. 6291–6309; 28 U.S.C. 2461 note.

■ 2. Section 430.32 is amended by:

■ a. Adding in paragraph (e)(2)(ii) introductory text, the words "and before January 15, 2021," after "2012,";

■ b. Redesignating paragraphs (e)(2)(iii) and (iv) as paragraphs (e)(2)(iv) and (v), respectively; and

■ c. Adding new paragraph (e)(2)(iii).

The addition reads as follows:

§ 430.32 Energy and water conservation standards and their compliance dates.

* * * * *

(e) * * *

(2) * * *

(iii)(A) Except as provided in paragraph (e)(2)(v) of this section, the AFUE of residential boilers, manufactured on and after January 15, 2021, shall not be less than the following and must comply with the design requirements as follows:

Product class	AFUE ¹ (percent)	Design requirements
(1) Gas-fired hot water boiler	84	Constant-burning pilot not permitted. Automatic means for adjusting water temperature required (except for boilers equipped with tankless domestic water heating coils).
(2) Gas-fired steam boiler	82	Constant-burning pilot not permitted.
(3) Oil-fired hot water boiler	86	Automatic means for adjusting temperature required (except for boilers equipped with tankless domestic water heating coils).
(4) Oil-fired steam boiler	85	None.
(5) Electric hot water boiler	None	Automatic means for adjusting temperature required (except for boilers equipped with tankless domestic water heating coils).
(6) Electric steam boiler	None	None.

¹ Annual Fuel Utilization Efficiency, as determined in § 430.23(n)(2) of this part.

(B) Except as provided in paragraph (e)(2)(v) of this section, the standby mode power consumption ($P_{W,SB}$) and

off mode power consumption ($P_{W,OFF}$) of residential boilers, manufactured on and

after January 15, 2021, shall not be more than the following:

Product class	$P_{W,SB}$ (watts)	$P_{W,OFF}$ (watts)
(1) Gas-fired hot water boiler	9	9
(2) Gas-fired steam boiler	8	8
(3) Oil-fired hot water boiler	11	11
(4) Oil-fired steam boiler	11	11
(5) Electric hot water boiler	8	8

Product class	P _{W,SB} (watts)	P _{W,OFF} (watts)
(6) Electric steam boiler	8	8

* * * * *

Note: The following letter will not appear in the Code of Federal Regulations.

U.S. Department of Justice
Antitrust Division
William J. Baer
Assistant Attorney General
RFK Main Justice Building
950 Pennsylvania Ave., NW
Washington, DC 20530-0001
(202)514-2401/(202)616-2645 (Fax)

July 1, 2015

Anne Harkavy
Deputy General Counsel for Litigation,
Regulation and Enforcement
U.S. Department of Energy
1000 Independence Ave, SW.
Washington, DC 20585

Dear Deputy General Counsel Harkavy:

I am responding to your March 13, 2015 letters seeking the views of the Attorney

General about the potential impact on competition of proposed energy conservation standards for residential boilers. Your request was submitted under Section 325(o)(2)(B)(i)(V) of the Energy Policy and Conservation Act, as amended (ECPA), 42 U.S.C. 6295(o)(2)(B)(i)(V), which requires the Attorney General to make a determination of the impact of any lessening of competition that is likely to result from the imposition of proposed energy conservation standards. The Attorney General's responsibility for responding to requests from other departments about the effect of a program on competition has been delegated to the Assistant Attorney General for the Antitrust Division in 28 CFR 0.40(g).

In conducting its analysis, the Antitrust Division examines whether a proposed standard may lessen competition, for example, by substantially limiting consumer choice or increasing industry concentration. A lessening of competition could result in

higher prices to manufacturers and consumers.

We have reviewed the proposed energy conservation standards contained in the Notice of Proposed Rulemaking (80 FR 17222, March 31, 2015) (NOPR) and the related Technical Support Documents. We have also reviewed supplementary information submitted to the Attorney General by the Department of Energy, as well as material presented at the public meeting held on the proposed standards on April 30, 2015. Based on this review, our conclusion is that the proposed energy conservation standards for residential boilers are unlikely to have a significant adverse impact on competition.

Sincerely,

William J. Baer

[FR Doc. 2016-00025 Filed 1-14-16; 8:45 am]

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Part III

Department of Energy

10 CFR Part 431

Energy Conservation Program for Certain Industrial Equipment: Energy Conservation Standards for Small, Large, and Very Large Air-Cooled Commercial Package Air Conditioning and Heating Equipment and Commercial Warm Air Furnaces; Final Rule

DEPARTMENT OF ENERGY

10 CFR Part 431

[Docket Numbers EERE-2013-BT-STD-0007 and EERE-2013-BT-STD-0021]

RIN 1904-AC95 and 1904-AD11

Energy Conservation Program for Certain Industrial Equipment: Energy Conservation Standards for Small, Large, and Very Large Air-Cooled Commercial Package Air Conditioning and Heating Equipment and Commercial Warm Air Furnaces

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Direct final rule.

SUMMARY: The Energy Policy and Conservation Act of 1975, as amended (EPCA), prescribes energy conservation standards for various consumer products and certain commercial and industrial equipment, including small, large, and very large air-cooled commercial package air conditioning and heating equipment and commercial warm air furnaces. EPCA also requires that the U.S. Department of Energy (DOE) periodically review and consider amending its standards for specified categories of industrial equipment, including commercial heating and air conditioning equipment, in order to determine whether more-stringent, amended standards would be technologically feasible and economically justified, and save a significant additional amount of energy. In this direct final rule, DOE is amending the energy conservation standards for both small, large, and very large air-cooled commercial package air conditioning and heating equipment and commercial warm air furnaces after determining that the amended energy conservation standards being adopted for these equipment would result in the significant conservation of energy and be technologically feasible and economically justified.

DATES: The effective date of this rule is May 16, 2016 unless adverse comment is received by May 4, 2016. If adverse comments are received that DOE determines may provide a reasonable basis for withdrawal of the direct final rule, a timely withdrawal of this rule will be published in the **Federal Register**. If no such adverse comments are received, compliance with the amended standards in this final rule will be required for small, large, and very large air-cooled commercial package air conditioning and heating equipment as detailed in the

SUPPLEMENTARY INFORMATION.

Compliance with the amended standards established for commercial warm air furnaces in this final rule is required starting on January 1, 2023.

ADDRESSES: The dockets, which include **Federal Register** notices, public meeting attendee lists and transcripts, comments, and other supporting documents/materials, is available for review at www.regulations.gov. All documents in the dockets are listed in the www.regulations.gov index. However, some documents listed in the index, such as those containing information that is exempt from public disclosure, may not be publicly available.

A link to the docket Web page for small, large, and very large air-cooled commercial package air conditioning and heating equipment can be found at: www.regulations.gov/#!docketDetail;D=EERE-2013-BT-STD-0007. A link to the docket Web page for commercial warm air furnaces can be found at: www.regulations.gov/#!docketDetail;D=EERE-2013-BT-STD-0021. The www.regulations.gov Web page will contain instructions on how to access all documents, including public comments, in the docket.

For further information on how to review the dockets, contact Ms. Brenda Edwards at (202) 586-2945 or by email: Brenda.Edwards@ee.doe.gov.

FOR FURTHER INFORMATION CONTACT: Mr. John Cymbalsky, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies, EE-5B, 1000 Independence Avenue SW., Washington, DC 20585-0121. Telephone: (202) 286-1692. Email: John.Cymbalsky@ee.doe.gov.

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I. Synopsis of the Direct Final Rule

Title III, Part C¹ of the Energy Policy and Conservation Act of 1975 (EPCA or the Act), Public Law 94–163 (December 22, 1975), coupled with Section 441(a) Title IV of the National Energy Conservation Policy Act, Public Law 95–619 (November 9, 1978), (collectively codified at 42 U.S.C. 6311–6317), established the Energy Conservation Program for Certain Industrial Equipment, which includes the small, large, and very large air-cooled commercial package air conditioning and heating equipment and commercial warm air furnaces (“CWAFFs”) that are the subject of this rulemaking.² The former group of equipment (*i.e.* air-cooled commercial package air conditioning and heating equipment) is referred to herein as air-cooled commercial unitary air conditioners and heat pumps (“CUACs” and “CUHPs”).

DOE received a statement submitted jointly by interested persons that are fairly representative of relevant points of view (including representatives of manufacturers of the covered equipment at issue, States, and efficiency advocates) containing recommendations with respect to energy conservation standards for the above equipment (see section III.B for description of the jointly-submitted statement). DOE has determined that the recommended standards contained in that jointly-submitted statement (hereinafter “Joint Statement”) are in accordance with 42 U.S.C. 6313(a)(6)(B), which prescribes the conditions for adoption of a uniform national standard more stringent than the applicable levels prescribed by ASHRAE/IES Standard 90.1 for the above equipment. (The acronym “ASHRAE/IES” stands for the American Society of Heating, Refrigerating, and Air-Conditioning Engineers/Illuminating Engineering Society.) Under the authority provided by 42 U.S.C. 6295(p)(4) and 6316(b)(1), DOE is issuing this direct final rule establishing amended energy conservation standards for CUACs, CUHPs, and CWAFFs.

The amended minimum standards for CUACs and CUHPs are shown in Table I–1, with the CUAC and CUHP cooling efficiency standards presented in terms of an integrated energy efficiency ratio (“IEER”) and the CUHP heating efficiency standards presented as a coefficient of performance (“COP”). The

¹ Part C was codified as Part A–1 of the corresponding portion of the U.S. Code.

² All references to EPCA in this document refer to the statute as amended through the Energy Efficiency Improvement Act of 2015, Public Law 114–11 (April 30, 2015).

IEER metric would replace the currently used energy efficiency ratio (“EER”) metric on which DOE’s standards are currently based. The standards will adopt ASHRAE 90.1–2013 efficiency

levels in that will apply starting on January 1, 2018 and a higher level that will apply starting on January 1, 2023 as recommended by the ASRAC Working Group’s Joint Statement. The standards

contained in the recommendations apply to all equipment listed in Table I–1 manufactured in, or imported into, the United States starting on the dates shown in that table.

TABLE I–1—AMENDED ENERGY CONSERVATION STANDARDS FOR SMALL, LARGE, AND VERY LARGE COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT

Equipment type	Heating type	Proposed energy conservation standard	Compliance date
Small Commercial Packaged AC and HP (Air-Cooled)— ≥65,000 Btu/h and <135,000 Btu/h Cooling Capacity:			
AC	Electric Resistance Heating or No Heating.	12.9 IEER	January 1, 2018.
	All Other Types of Heating ...	14.8 IEER	January 1, 2023.
		12.7 IEER	January 1, 2018.
		14.6 IEER	January 1, 2023.
HP	Electric Resistance Heating or No Heating.	12.2 IEER, 3.3 COP	January 1, 2018.
	All Other Types of Heating ...	14.1 IEER, 3.4 COP	January 1, 2023.
		12.0 IEER, 3.3 COP	January 1, 2018.
		13.9 IEER, 3.4 COP	January 1, 2023.
Large Commercial Packaged AC and HP (Air-Cooled)— ≥135,000 Btu/h and <240,000 Btu/h Cooling Capacity:			
AC	Electric Resistance Heating or No Heating.	12.4 IEER	January 1, 2018.
	All Other Types of Heating ...	14.2 IEER	January 1, 2023.
		12.2 IEER	January 1, 2018.
		14.0 IEER	January 1, 2023.
HP	Electric Resistance Heating or No Heating.	11.6 IEER, 3.2 COP	January 1, 2018.
	All Other Types of Heating ...	13.5 IEER, 3.3 COP	January 1, 2023.
		11.4 IEER, 3.2 COP	January 1, 2018.
		13.3 IEER, 3.3 COP	January 1, 2023.
Very Large Commercial Packaged AC and HP (Air-Cooled)— ≥240,000 Btu/h and <760,000 Btu/h Cooling Capacity:			
AC	Electric Resistance Heating or No Heating.	11.6 IEER	January 1, 2018.
	All Other Types of Heating ...	13.2 IEER	January 1, 2023.
		11.4 IEER	January 1, 2018.
		13.0 IEER	January 1, 2023.
HP	Electric Resistance Heating or No Heating.	10.6 IEER, 3.2 COP	January 1, 2018.
	All Other Types of Heating ...	12.5 IEER, 3.2 COP	January 1, 2023.
		10.4 IEER, 3.2 COP	January 1, 2018.
		12.3 IEER, 3.2 COP	January 1, 2023.

For CWAFFs, the amended standards, which prescribe the minimum allowable thermal efficiency (“TE”), are shown in

Table I–2. These standards apply to all equipment listed in Table I–2 manufactured in, or imported into, the

United States starting on January 1, 2023.

TABLE I–2—ENERGY CONSERVATION STANDARDS FOR COMMERCIAL WARM AIR FURNACES

Equipment class	Input capacity* (Btu/h)	Thermal efficiency** (%)
Gas-Fired Furnaces	≥225,000	81
Oil-Fired Furnaces	≥225,000	82

* In addition to being defined by input capacity, a CWAFF is “a self-contained oil- or gas-fired furnace designed to supply heated air through ducts to spaces that require it and includes combination warm air furnace/electric air conditioning units but does not include unit heaters and duct furnaces.” CWAFFs coverage is further discussed in section IV.A.2, “Scope of Coverage and Equipment Classes.”

** Thermal efficiency is at the maximum rated capacity (rated maximum input), and is determined using the DOE test procedure specified at 10 CFR 431.76.

A. Benefits and Costs to Commercial Consumers

Table I–3 presents DOE’s evaluation of the economic impacts of the energy

conservation standards on commercial consumers of CUACs and CUHPs, as measured by the average life-cycle cost (“LCC”) savings and the payback period (“PBP”).³ The average LCC savings are

positive for all equipment classes, and the PBP is less than the average lifetime of the equipment, which is estimated to be 22 years (see section IV.F.6).

³ The average LCC savings are measured relative to the efficiency distribution in the no-new-standards case, which depicts the market in the compliance year in the absence of standards (see

section IV.F.8). The simple PBP, which is designed to compare specific CWAFF efficiency levels, is measured relative to the baseline model (see section IV.C.2.a).

TABLE I-3—IMPACTS OF AMENDED ENERGY CONSERVATION STANDARDS ON COMMERCIAL CONSUMERS OF SMALL, LARGE, AND VERY LARGE COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT

Equipment class	Average LCC savings (2014\$)	Payback period (years)
Small CUACs	104	13.4
Large CUACs	2,336	1.9
Very Large CUACs	2,468	6.2

Table I-4 presents DOE's evaluation of the economic impacts of the energy conservation standards on commercial consumers of CWAFFs, as measured by

the average LCC savings and the PBP. The average LCC savings are positive for both equipment classes, and the PBP is less than the average lifetime of the

equipment, which is estimated to be 23 years for both gas-fired and oil-fired CWAFFs (see section IV.F.6).

TABLE I-4—IMPACTS OF AMENDED ENERGY CONSERVATION STANDARDS ON COMMERCIAL CONSUMERS OF COMMERCIAL WARM AIR FURNACES

Equipment class	Average LCC savings (2014\$)	Simple pay-back period (years)
Gas-Fired CWAFFs	284	1.4
Oil-Fired CWAFFs	400	1.9

DOE's analysis of the impacts of the adopted standards on commercial consumers of CUACs/CUHPs and CWAFFs is described in section IV.F of this document.

B. Impact on Manufacturers

1. Commercial Unitary Air Conditioners and Heat Pumps

The industry net present value ("INPV") is the sum of the discounted cash flows to the industry from the base year through the end of the analysis period (2015 to 2048). Using a real discount rate of 6.2 percent, DOE estimates that the INPV for CUAC/ CUHP manufacturers is \$1,638.2 million in 2014\$. Under the standards adopted in this direct final rule, DOE expects INPV may change approximately – 26.8 percent to – 2.3 percent, which corresponds to approximately – \$440.4 million and – \$38.5 million in 2014\$. In order to bring equipment into compliance with the standards adopted in this direct final rule, DOE expects the industry to incur \$520.8 million in total conversion costs.

2. Commercial Warm Air Furnaces

As indicated above, the INPV is the sum of the discounted cash flows to the industry from the base year through the end of the analysis period (2015 to 2048). Using a real discount rate of 8.9 percent, DOE estimates that the INPV for CWAFF manufacturers is \$96.3 million in 2014\$. Under the standards adopted in this direct final rule, DOE expects INPV may be reduced by approximately 13.9 percent to 6.1

percent, which corresponds to – \$13.4 million and – \$5.9 million in 2014\$. In order to bring products into compliance with the standards in this direct final rule, DOE expects the industry to incur \$22.2 million in conversion costs.

DOE's analysis of the impacts of the standards in this direct final rule on manufacturers is described in section IV.J of this document.

C. National Benefits and Costs ⁴

1. Small, Large, and Very Large Commercial Package Air Conditioning and Heating Equipment

DOE's analyses indicate that energy conservation standards being adopted in this direct final rule for CUAC and CUHP equipment would save a significant amount of energy. Relative to the case without amended standards (referred to as the "no-new-standards case"), the lifetime energy savings for CUAC and CUHP equipment purchased in 2018–2048 amount to 14.8 quadrillion British thermal units (Btu), or "quads."⁵ This represents a savings of 24 percent relative to the energy use

of these products in the no-new-standards case.

The cumulative net present value ("NPV") of total consumer costs and savings of the standards for CUACs and CUHPs ranges from \$15.2 billion (at a 7-percent discount rate) to \$50 billion (at a 3-percent discount rate). This NPV expresses the estimated total value of future operating-cost savings minus the estimated increased product and installation costs for CUACs and CUHPs purchased in 2018–2048.

In addition, the CUAC and CUHP equipment standards that are being adopted in this direct final rule are projected to yield significant environmental benefits as a result of the improvement in the conservation of energy. DOE estimates that the standards would result in cumulative greenhouse gas ("GHG") emission reductions (over the same period as for energy savings) of 873 million metric tons (Mt)⁶ of carbon dioxide (CO₂), 454 thousand tons of sulfur dioxide (SO₂), 1,634 tons of nitrogen oxides (NO_x), 3,917 thousand tons of methane (CH₄), 9.54 thousand tons of nitrous oxide (N₂O), and 1.68 tons of mercury (Hg).³ The cumulative reduction in CO₂ emissions through 2030 amounts to 77 million Mt, which is equivalent to the

⁴ All monetary values in this section are expressed in 2014 dollars and, where appropriate, are discounted to 2015 unless explicitly stated otherwise. Energy savings in this section refer to the full-fuel-cycle savings (see section IV.H for discussion).

⁵ A quad is equal to 10¹⁵ British thermal units ("Btu"). The quantity refers to full-fuel-cycle ("FFC") energy savings. FFC energy savings includes the energy consumed in extracting, processing, and transporting primary fuels (i.e., coal, natural gas, petroleum fuels), and, thus, presents a more complete picture of the impacts of energy efficiency standards. For more information on the FFC metric, see section IV.H.2.

⁶ A metric ton is equivalent to 1.1 short tons. Results for NO_x and Hg are presented in short tons.

³ DOE calculated emissions reductions relative to the no-new-standards-case, which reflects key assumptions in the *Annual Energy Outlook 2015* (AEO 2015) Reference case, which generally represents current legislation and environmental regulations for which implementing regulations were available as of October 31, 2014.

emissions resulting from the annual electricity use of more than 10.6 million homes.

The value of the CO₂ reductions is calculated using a range of values per metric ton of CO₂ (otherwise known as the “Social Cost of Carbon,” or “SCC”) developed by a Federal interagency working group.⁷ The derivation of the SCC values is discussed in section IV.L.

Using discount rates appropriate for each set of SCC values, DOE estimates that the net present monetary value of the CO₂ emissions reduction (not including CO₂-equivalent emissions of other gases with global warming potential) is between \$5.0 billion and \$75.9 billion, with a value of \$24.9 billion using the central SCC case represented by \$40.0/t in 2015. DOE

also estimates that the net present monetary value of the NO_x emissions reduction to be \$1.4 billion at a 7-percent discount rate, and \$4.4 billion at a 3-percent discount rate.⁸

Table I-5 summarizes the national economic benefits and costs expected to result from the adopted standards for CUACs and CUHPs.

TABLE I-5—SUMMARY OF NATIONAL ECONOMIC BENEFITS AND COSTS OF AMENDED ENERGY CONSERVATION STANDARDS FOR SMALL, LARGE, AND VERY LARGE COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT *

Category	Present value (billion 2014\$)	Discount rate (%)
Benefits		
Consumer Operating Cost Savings	23.0	7
CO ₂ Reduction Value (\$12.2/t case) **	64.9	3
CO ₂ Reduction Value (\$40.0/t case) **	5.0	5
CO ₂ Reduction Value (\$62.3/t case) **	24.9	3
CO ₂ Reduction Value (\$117/t case) **	40.2	2.5
NO _x Reduction Value †	75.9	3
	1.4	7
	4.4	3
Total Benefits ††	49.3	7
	94.1	3
Costs		
Consumer Incremental Installed Costs	7.7	7
	14.9	3
Net Benefits		
Including CO ₂ and NO _x Reduction Value ††	41.6	7
	79.2	3

* This table presents the costs and benefits associated with equipment shipped in 2018–2048. These results include benefits to consumers which accrue after 2048 from the products purchased in 2018–2048. The costs account for the incremental variable and fixed costs incurred by manufacturers due to the standard, some of which may be incurred in preparation for the rule.

** The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

† The \$/ton values used for NO_x are described in section IV.L.2. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the *Regulatory Impact Analysis for the Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants*, published in June 2014 by EPA's Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposalRIAFinal0602.pdf>.) See section IV.L.2 for further discussion. Note that the agency is primarily using a national benefit-per-ton estimate for particulate matter emitted from the Electricity Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). If the benefit-per-ton estimates were based on the Six Cities study (Lepuele et al., 2011), the values would be nearly two-and-a-half times larger. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emissions, DOE intends to investigate refinements to the agency's current approach of one national estimate by assessing the regional approach taken by EPA's Regulatory Impact Analysis for the Clean Power Plan Final Rule.

†† Total Benefits for both the 3% and 7% cases are derived using the series corresponding to average SCC with 3-percent discount rate (\$40.0/t case).

The benefits and costs of the adopted CUAC and CUHP standards for equipment sold in 2018–2048 can also be expressed in terms of annualized values. The monetary values for the

total annualized net benefits are the sum of (1) the national economic value of the benefits in reduced operating costs, minus (2) the increases in product purchase prices and installation costs,

plus (3) the value of the benefits of CO₂ and NO_x emission reductions, all annualized.⁹

⁷ Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866. Interagency Working Group on Social Cost of Carbon, United States Government (May 2013; revised July 2015) (Available at: <https://www.whitehouse.gov/sites/default/files/omb/inforeg/scc-ts-final-july-2015.pdf>).

⁸ DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the *Regulatory Impact Analysis for the Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants*, published in June 2014 by EPA's Office of Air Quality Planning and Standards. (Available at:

<http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposalRIAFinal0602.pdf>.) See section IV.L.2 for further discussion. Note that the agency is primarily using a national benefit-per-ton estimate for particulate matter emitted from the Electricity Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). If the benefit-per-ton estimates were based on the Six Cities study (Lepuele et al., 2011), the values would be nearly two-and-a-half times larger. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emissions, DOE intends to investigate refinements to the agency's current approach of one

national estimate by assessing the regional approach taken by EPA's Regulatory Impact Analysis for the Clean Power Plan Final Rule. Note that DOE is currently investigating valuation of avoided and SO₂ and Hg emissions.

⁹ To convert the time-series of costs and benefits into annualized values, DOE calculated a present value in 2015, the year used for discounting the NPV of total consumer costs and savings. For the benefits, DOE calculated a present value associated with each year's shipments in the year in which the shipments occur (e.g., 2020 or 2030), and then discounted the present value from each year to 2015. The calculation uses discount rates of 3 and 7 percent for all costs and benefits except for the

Although the value of operating cost savings and CO₂ emission reductions are both important, two issues are relevant. First, the national operating cost savings are domestic U.S. consumer monetary savings that occur as a result of market transactions, whereas the value of CO₂ reductions is based on a global value. Second, the assessments of operating cost savings and CO₂ savings are performed with different methods that use different time frames for analysis. The national operating cost savings is measured for the lifetime of CUACs and CUHPs shipped in 2018–2048. Because CO₂ emissions have a very long residence time in the

atmosphere,¹⁰ the SCC values in future years reflect future CO₂-emissions impacts that continue beyond 2100.

Estimates of annualized benefits and costs of the adopted standards are shown in Table I–6. The results under the primary estimate are as follows. Using a 7-percent discount rate for benefits and costs other than CO₂ reduction, (for which DOE used a 3-percent discount rate along with the SCC series that has a value of \$40.0/t in 2015),¹¹ the estimated cost of the standards in this rule is \$708 million per year in increased equipment costs, while the estimated annual benefits are \$2,099 million in reduced equipment

operating costs, \$1,320 million in CO₂ reductions, and \$132.0 million in reduced NO_x emissions. In this case, the net benefit amounts to \$2,843 million per year. Using a 3-percent discount rate for all benefits and costs and the SCC series that has a value of \$40.0/t in 2015, the estimated cost of the standards is \$792 million per year in increased equipment costs, while the estimated annual benefits are \$3,441 million in reduced operating costs, \$1,320 million in CO₂ reductions, and \$231.3 million in reduced NO_x emissions. In this case, the net benefit amounts to \$4,201 million per year.

TABLE I–6—ANNUALIZED BENEFITS AND COSTS OF AMENDED STANDARDS FOR SMALL, LARGE, AND VERY LARGE COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT *

	Million 2014\$/year			
	Discount rate (%)	Primary estimate	Low net benefits estimate	High net benefits estimate
Benefits				
Consumer Operating Cost Savings	7	2,099	2,021	2,309
	3	3,441	3,287	3,830
CO ₂ Reduction Value (\$12.2/t case) **	5	357	355	361
CO ₂ Reduction Value (\$40.0/t case) **	3	1,320	1,313	1,337
CO ₂ Reduction Value (\$62.3/t case) **	2.5	1,973	1,964	1,999
CO ₂ Reduction Value (\$117/t case) **	3	4,028	4,009	4,080
NO _x Reduction Value †	7	132.0	131.3	299.1
	3	231.3	230.2	516.3
Total Benefits ††	7 plus CO ₂ range	2,588 to 6,259	2,507 to 6,160	2,970 to 6,689
	7	3,551	3,465	3,946
	3 plus CO ₂ range	4,029 to 7,701	3,872 to 7,525	4,708 to 8,427
	3	4,992	4,830	5,684
Costs				
Consumer Incremental Product Costs	7	708	888	275
	3	792	1028	231
Net Benefits				
Total ††	7 plus CO ₂ range	1,880 to 5,551	1,619 to 5,273	2,695 to 6,414
	7	2,843	2,578	3,671
	3 plus CO ₂ range	3,238 to 6,909	2,843 to 6,497	4,477 to 8,196
	3	4,201	3,802	5,453

* This table presents the annualized costs and benefits associated with CUACs and CUHPs shipped in 2018–2048. These results include benefits to consumers which accrue after 2048 from the CUACs and CUHPs purchased in 2018–2048. The results account for the incremental variable and fixed costs incurred by manufacturers due to the standard, some of which may be incurred in preparation for the rule. The Primary, Low Benefits, and High Benefits Estimates utilize projections of energy prices from the AEO 2015 Reference case, Low Economic Growth case, and High Economic Growth case, respectively. In addition, incremental product costs reflect a constant price trend in the Primary estimate, a slightly increasing price trend in the Low Benefits estimate, and a slightly decreasing price trend in the High Benefits estimate. The methods used to project price trends are explained in section IV.D.1.

** The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

† The \$/ton values used for NO_x are described in section IV.L.2. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the Regulatory Impact Analysis titled, “Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants,” published in June 2014 by EPA’s Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposalRIAFinal0602.pdf>.) For DOE’s Primary Estimate and Low Net Benefits Estimate, the agency used a national benefit-per-ton estimate for particulate matter emitted from the Electric Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). For DOE’s High Net Benefits Estimate, the benefit-per-ton estimates were based on the Six Cities study (Lepule et al., 2011), which are nearly two-and-a-half times larger than those from the ACS study. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emission, DOE intends to investigate refinements to the agency’s current approach of one national estimate by assessing the regional approach taken by EPA’s Regulatory Impact Analysis for the Clean Power Plan Final Rule.

value of CO₂ reductions, for which DOE used case-specific discount rates, as shown in Table I.3. Using the present value, DOE then calculated the fixed annual payment over the analysis period, starting in the compliance year, that yields the same present value.

¹⁰ The atmospheric lifetime of CO₂ is estimated of the order of 30–95 years. Jacobson, MZ (2005), “Correction to ‘Control of fossil-fuel particulate black carbon and organic matter, possibly the most effective method of slowing global warming.’” 110 J. Geophys. Res. D14105.

¹¹ DOE used a 3% discount rate because the SCC values for the series used in the calculation were derived using a 3% discount rate (see section IV.L).

†† Total Benefits for both the 3% and 7% cases are derived using the series corresponding to the average SCC with 3-percent discount rate (\$40.0/t) case. In the rows labeled “7% plus CO₂ range” and “3% plus CO₂ range,” the operating cost and NO_x benefits are calculated using the labeled discount rate, and those values are added to the full range of CO₂ values.

DOE’s analysis of the national impacts of the adopted standards is described in sections IV.H, IV.K and IV.L of this document.

2. Commercial Warm Air Furnaces

DOE’s analyses indicate that the adopted energy conservation standards for CWAFFs would save a significant amount of energy. Relative to the case without amended standards (referred to as the “no-new-standards case”), the lifetime energy savings for CWAFFs purchased in 2023–2048 amount to 0.23 quads. This represents a savings of 0.8 percent relative to the energy use of these products in the case without amended standards (*i.e.* the no-new-standards case).

The cumulative NPV of total consumer costs and savings of the standards for CWAFFs ranges from \$0.3 billion (at a 7-percent discount rate) to \$1.0 billion (at a 3-percent discount

rate). This NPV expresses the estimated total value of future operating-cost savings minus the estimated increased product and installation costs for CWAFFs purchased in 2023–2048.

In addition, the CWAFF equipment standards that are being adopted in this direct final rule are projected to yield significant environmental benefits as a result of the improvement in the conservation of energy. Specifically, these standards are projected to result in cumulative GHG emission reductions (over the same period as for energy savings) of 12.4 Mt of CO₂, 0.40 thousand tons of SO₂, 41.2 tons of NO_x, 146 thousand tons of CH₄, 0.03 thousand tons of N₂O, and 0.001 tons of mercury. The cumulative reduction in CO₂ emissions through 2030 amounts to 0.9 Mt, which is equivalent to the emissions resulting from the annual electricity use of about 79,000 homes.

The value of the CO₂ reductions is calculated using a range of values per metric ton of CO₂ developed by the Federal interagency Working Group. The derivation of the SCC values is discussed in section IV.L. Using discount rates appropriate for each set of SCC values, DOE estimates that the net present monetary value of the CO₂ emissions reduction (not including CO₂-equivalent emissions of other gases with global warming potential) ranges from \$71.4 million to \$1,078 million, with a value of \$353 million using the central SCC case represented by \$40.0/t in 2015. DOE also estimates that the net present monetary value of the NO_x emissions reduction to be \$36.1 million at a 7-percent discount rate, and \$110 million at a 3-percent discount rate.

Table I–7 summarizes the national economic benefits and costs expected to result from the adopted CWAFF standards.

TABLE I–7—SUMMARY OF NATIONAL ECONOMIC BENEFITS AND COSTS OF AMENDED ENERGY CONSERVATION STANDARDS FOR COMMERCIAL WARM AIR FURNACES *

Category	Present value (billion 2014\$)	Discount Rate (%)
Benefits		
Operating Cost Savings	0.4	7
	1.0	3
CO ₂ Reduction Value (\$12.2/t case) **	0.07	5
CO ₂ Reduction Value (\$40.0/t case) **	0.35	3
CO ₂ Reduction Value (\$62.3/t case) **	0.57	2.5
CO ₂ Reduction Value (\$117/t case) **	1.08	3
NO _x Reduction Value †	0.04	7
	0.11	3
Total Benefits ††	0.75	7
	1.5	3
Costs		
Consumer Incremental Installed Costs	0.03	7
	0.06	3
Net Benefits		
Including CO ₂ and NO _x Reduction Monetized Value ††	0.72	7
	1.4	3

* This table presents the costs and benefits associated with CWAFFs shipped in 2023–2048. These results include benefits to commercial consumers which accrue after 2048 from the products purchased in 2023–2048. The costs account for the incremental variable and fixed costs incurred by manufacturers due to the standard, some of which may be incurred in preparation for the rule.

** The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

† The \$/ton values used for NO_x are described in section IV.L.2. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the Regulatory Impact Analysis titled, “Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants,” published in June 2014 by EPA’s Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposalRIAFinal0602.pdf>.) See section IV.L.2 for further discussion. Note that the agency is primarily using a national benefit-per-ton estimate for particulate matter emitted from the Electricity Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). If the benefit-per-ton estimates were based on the Six Cities study (Lepule et al., 2011), the values would be nearly two-and-a-half times larger. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emissions, DOE intends to investigate refinements to the agency’s current approach of one national estimate by assessing the regional approach taken by EPA’s Regulatory Impact Analysis for the Clean Power Plan Final Rule.

†† Total Benefits for both the 3% and 7% cases are derived using the series corresponding to average SCC with 3-percent discount rate (\$40.0/t case).

The benefits and costs of the adopted standards, for CWAFFs sold in 2023–2048, can also be expressed in terms of annualized values. The monetary values for the total annualized net benefits are the sum of (1) the national economic value of the benefits in reduced operating costs, minus (2) the increases in product purchase prices and installation costs, plus (3) the value of the benefits of CO₂ and NO_x emission reductions, all annualized.¹²

Estimates of annualized benefits and costs of the adopted standards are

shown in Table I–8. The results under the primary estimate are as follows. Using a 7-percent discount rate for benefits and costs other than CO₂ reduction, (for which DOE used a 3-percent discount rate along with the SCC series that has a value of \$40.0/t in 2015), the estimated cost of the standards in this rule is \$4.31 million per year in increased equipment costs, while the estimated annual benefits are \$49 million in reduced equipment operating costs, \$24 million in CO₂ reductions, and \$4.91 million in

reduced NO_x emissions. In this case, the net benefit amounts to \$74 million per year. Using a 3-percent discount rate for all benefits and costs and the SCC series has a value of \$40.0/t in 2015, the estimated cost of the standards is \$4.38 million per year in increased equipment costs, while the estimated annual benefits are \$71 million in reduced operating costs, \$24 million in CO₂ reductions, and \$7.59 million in reduced NO_x emissions. In this case, the net benefit amounts to \$99 million per year.

TABLE I–8—ANNUALIZED BENEFITS AND COSTS OF AMENDED STANDARDS FOR COMMERCIAL WARM AIR FURNACES *

	Discount rate (%)	Million 2014\$/year		
		Primary estimate	Low estimate	High estimate
Benefits				
Operating Cost Savings	7	49	48	54.
	3	71	70	81.
CO ₂ Reduction Value (\$12.2/t case) **	5	6.99	7.08	7.37.
CO ₂ Reduction Value (\$40.0/t case) **	3	24	25	26.
CO ₂ Reduction Value (\$62.3/t case) **	2.50	36	36	38.
CO ₂ Reduction Value (\$117/t case) **	3	74	75	79.
NO _x Reduction Value †	7	4.91	4.98	11.44.
	3	7.59	7.70	17.61.
Total Benefits ††	7 plus CO ₂ range	61 to 128	60 to 128	73 to 144.
	7	78	78	91.
	3 plus CO ₂ range	86 to 153	84 to 152	106 to 177.
	3	103	102	124.
Costs				
Consumer Incremental Product Costs	7	4.31	5.04	3.92
	3	4.38	5.22	3.94.
Net Benefits				
Total ††	7 plus CO ₂ range	57 to 124	55 to 123	69 to 140.
	7	74	72	87.
	3 plus CO ₂ range	82 to 149	79 to 147	102 to 173.
	3	99	97	120.

* This table presents the annualized costs and benefits associated with CWAFFs shipped in 2023–2048. These results include benefits to commercial consumers which accrue after 2048 from the CWAFFs purchased from 2023–2048. The results account for the incremental variable and fixed costs incurred by manufacturers due to the standard, some of which may be incurred in preparation for the rule. The Primary, Low Benefits, and High Benefits Estimates utilize projections of energy prices from the AEO 2015 Reference case, Low Economic Growth case, and High Economic Growth case, respectively. In addition, incremental product costs reflect a medium decline rate in the Primary Estimate, a low decline rate in the Low Benefits Estimate, and a high decline rate in the High Benefits Estimate. The methods used to derive projected price trends are explained in section IV.H.3.

** The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

† The \$/ton values used for NO_x are described in section IV.L.2. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the Regulatory Impact Analysis for the Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants, published in June 2014 by EPA's Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposalRIAFinal0602.pdf>.) For DOE's Primary Estimate and Low Net Benefits Estimate, the agency used a national benefit-per-ton estimate for particulate matter emitted from the Electric Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). For DOE's High Net Benefits Estimate, the benefit-per-ton estimates were based on the Six Cities study (Lepule et al., 2011), which are nearly two-and-a-half times larger than those from the ACS study. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emission, DOE intends to investigate refinements to the agency's current approach of one national estimate by assessing the regional approach taken by EPA's Regulatory Impact Analysis for the Clean Power Plan Final Rule.

†† Total Benefits for both the 3% and 7% cases are derived using the series corresponding to the average SCC with 3-percent discount rate (\$40.0/t) case. In the rows labeled "7% plus CO₂ range" and "3% plus CO₂ range," the operating cost and NO_x benefits are calculated using the labeled discount rate, and those values are added to the full range of CO₂ values.

¹² To convert the time-series of costs and benefits into annualized values, DOE calculated a present value in 2015, the year used for discounting the NPV of total consumer costs and savings. For the benefits, DOE calculated a present value associated with each year's shipments in the year in which the

shipments occur (e.g., 2020 or 2030), and then discounted the present value from each year to 2015. The calculation uses discount rates of 3 and 7 percent for all costs and benefits except for the value of CO₂ reductions, for which DOE used case-specific discount rates, as shown in Table I.7. Using

the present value, DOE then calculated the fixed annual payment over the analysis period, starting in the compliance year to 2048, that yields the same present value.

DOE's analysis of the national impacts of the adopted standards is described in sections IV.H, IV.K and IV.L of this document.

3. Small, Large, and Very Large Commercial Package Air Conditioning and Heating Equipment and Commercial Warm Air Furnaces

DOE's analyses indicate that energy conservation standards being adopted in this direct final rule for CUAC and CUHP equipment and CWAFFs would save a significant amount of energy. Relative to the no-new-standards case, the lifetime energy savings for CUAC and CUHP equipment purchased in 2018–2048 and CWAFFs purchased in 2023–2048 amount to 15.0 quads. This represents a savings of 24 percent relative to the energy use of these products in the no-new-standards case.

The cumulative NPV of total consumer costs and savings of the standards for CUACs and CUHPs and CWAFFs ranges from \$15.5 billion (at a

7-percent discount rate) to \$51 billion (at a 3-percent discount rate). This NPV expresses the estimated total value of future operating-cost savings minus the estimated increased product and installation costs for CUACs and CUHPs purchased in 2018–2048 and CWAFFs purchased in 2023–2048.

In addition, the standards that are being adopted in this direct final rule are projected to yield significant environmental benefits as a result of the improvement in the conservation of energy. DOE estimates that the standards would result in cumulative GHG emission reductions (over the same period as for energy savings) of 885 million Mt of CO₂, 454 thousand tons of SO₂, 1,675 tons of NO_x, 4,063 thousand tons of CH₄, 10 thousand tons of N₂O, and 1.68 tons of Hg. The cumulative reduction in CO₂ emissions through 2030 amounts to 78 million Mt, which is equivalent to the emissions resulting from the annual electricity use of approximately 10.7 million homes.

The value of the CO₂ reductions is calculated using a range of values per metric ton of CO₂ developed by a Federal interagency working group. The derivation of the SCC values is discussed in section IV.L. Using discount rates appropriate for each set of SCC values, DOE estimates that the net present monetary value of the CO₂ emissions reduction (not including CO₂-equivalent emissions of other gases with global warming potential) is between \$5.1 billion and \$77 billion, with a value of \$25.3 billion using the central SCC case represented by \$40.0/t in 2015. DOE also estimates that the net present monetary value of the NO_x emissions reduction to be \$1.4 billion at a 7-percent discount rate, and \$4.5 billion at a 3-percent discount rate.

Table I–9 summarizes the combined national economic benefits and costs expected to result from the adopted standards for CUACs and CUHPs and CWAFF.

TABLE I–9—SUMMARY OF NATIONAL ECONOMIC BENEFITS AND COSTS OF AMENDED ENERGY CONSERVATION STANDARDS FOR SMALL, LARGE, AND VERY LARGE COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT AND COMMERCIAL WARM AIR FURNACES *

Category	Present value (billion 2014\$)	Discount rate (%)
Benefits		
Operating Cost Savings	23.3	7
	65.9	3
CO ₂ Reduction Value (\$12.2/t case) **	5.1	5
CO ₂ Reduction Value (\$40.0/t case) **	25.2	3
CO ₂ Reduction Value (\$62.3/t case) **	40.8	2.5
CO ₂ Reduction Value (\$117/t case) **	77.0	3
NO _x Reduction Value †	1.5	7
	4.5	3
Total Benefits ††	50.1	7
	95.6	3
Costs		
Consumer Incremental Installed Costs	7.8	7
	15.0	3
Net Benefits		
Including CO ₂ and NO _x Reduction Value ††	42.3	7
	80.6	3

* This table presents the costs and benefits associated with CUACs and CUHPs shipped in 2018–2048 and CWAFFs shipped in 2023–2048. These results include benefits to commercial consumers which accrue after 2048. The costs account for the incremental variable and fixed costs incurred by manufacturers due to the standard, some of which may be incurred in preparation for the rule.

** The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

† The \$/ton values used for NO_x are described in section IV.L.2. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the *Regulatory Impact Analysis for the Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants*, published in June 2014 by EPA's Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposalRIAFinal0602.pdf>.) See section IV.L.2 for further discussion. Note that the agency is primarily using a national benefit-per-ton estimate for particulate matter emitted from the Electricity Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). If the benefit-per-ton estimates were based on the Six Cities study (Lepuele et al., 2011), the values would be nearly two-and-a-half times larger. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emissions, DOE intends to investigate refinements to the agency's current approach of one national estimate by assessing the regional approach taken by EPA's Regulatory Impact Analysis for the Clean Power Plan Final Rule.

†† Total Benefits for both the 3% and 7% cases are derived using the series corresponding to average SCC with 3-percent discount rate (\$40.0/t case).

The benefits and costs of the adopted standards for CUAC and CUHP and CWAf's can also be expressed in terms of annualized values. Estimates of annualized benefits and costs of the adopted standards are shown in Table I-10. The results under the primary estimate are as follows. Using a 7-percent discount rate for benefits and costs other than CO₂ reduction (for which DOE used a 3-percent discount rate along with the SCC series that has

a value of \$40.0/t in 2015), the estimated cost of the standards in this rule is \$711 million per year in increased equipment costs, while the estimated annual benefits are \$2,132 million in reduced equipment operating costs, \$1,339 million in CO₂ reductions, and \$135 million in reduced NO_x emissions. In this case, the net benefit amounts to \$2,895 million per year. Using a 3-percent discount rate for all benefits and costs and the SCC series

has a value of \$40.0/t in 2015, the estimated cost of the standards is \$795 million per year in increased equipment costs, while the estimated annual benefits are \$3,496 million in reduced operating costs, \$1,339 million in CO₂ reductions, and \$237 million in reduced NO_x emissions. In this case, the net benefit amounts to \$4,277 million per year.

TABLE I-10—ANNUALIZED BENEFITS AND COSTS OF AMENDED STANDARDS FOR SMALL, LARGE, AND VERY LARGE COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT AND COMMERCIAL WARM AIR FURNACES *

	Million 2014\$/year			
	Discount rate (%)	Primary estimate	Low estimate	High estimate
Benefits				
Operating Cost Savings	7	2,132	2,053	2,346.
	3	3,496	3,340	3,892.
CO ₂ Reduction Value (\$12.2/t case) **	5	362	360	367.
CO ₂ Reduction Value (\$40.0/t case) **	3	1,339	1,332	1,357.
CO ₂ Reduction Value (\$62.3/t case) **	2.50	2,002	1,992	2,029.
CO ₂ Reduction Value (\$117/t case) **	3	4,085	4,067	4,141.
NO _x Reduction Value †	7	135	135	307.
	3	237	236	530.
Total Benefits ††	7 plus CO ₂ range	2,629 to 6,353	2,548 to 6,254	3,019 to 6,794.
	7	3,606	3,520	4,010.
	3 plus CO ₂ range	4,095 to 7,819	3,937 to 7,643	4,789 to 8,563.
	3	5,072	4,909	5,779.
Costs				
Consumer Incremental Product Costs	7	711	891	277.
	3	795	1033	234.
Net Benefits				
Total ††	7 plus CO ₂ range	1,918 to 5,642	1,657 to 5,363	2,742 to 6,516.
	7	2,895	2,629	3,732.
	3 plus CO ₂ range	3,300 to 7,024	2,904 to 6,610	4,555 to 8,330.
	3	4,277	3,876	5,545.

* This table presents the annualized costs and benefits associated with CUACs and CUHPs shipped in 2018–2048 and CWAf's shipped in 2023–2048. These results include benefits to commercial consumers which accrue after 2048. The results account for the incremental variable and fixed costs incurred by manufacturers due to the standard, some of which may be incurred in preparation for the rule. The Primary, Low Benefits, and High Benefits Estimates utilize projections of energy prices from the AEO 2015 Reference case, Low Economic Growth case, and High Economic Growth case, respectively. In addition, incremental product costs reflect a medium decline rate in the Primary Estimate, a low decline rate in the Low Benefits Estimate, and a high decline rate in the High Benefits Estimate. The methods used to derive projected price trends are explained in section IV.H.3.

** The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

† The \$/ton values used for NO_x are described in section IV.L.2. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the *Regulatory Impact Analysis for the Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants*, published in June 2014 by EPA's Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposalRIAFinal0602.pdf>.) For DOE's Primary Estimate and Low Net Benefits Estimate, the agency is primarily using a national benefit-per-ton estimate for particulate matter emitted from the Electric Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). For DOE's High Net Benefits Estimate, the benefit-per-ton estimates were based on the Six Cities study (Lepule et al., 2011), which are nearly two-and-a-half times larger than those from the ACS study. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emission, DOE intends to investigate refinements to the agency's current approach of one national estimate by assessing the regional approach taken by EPA's Regulatory Impact Analysis for the Clean Power Plan Final Rule.

†† Total Benefits for both the 3% and 7% cases are derived using the series corresponding to the average SCC with 3-percent discount rate (\$40.0/t) case. In the rows labeled "7% plus CO₂ range" and "3% plus CO₂ range," the operating cost and NO_x benefits are calculated using the labeled discount rate, and those values are added to the full range of CO₂ values.

D. Conclusion

DOE has determined that the statement containing recommendations with respect to energy conservation

standards for CUACs, CUHPs and CWAf's was submitted jointly by interested persons that are fairly representative of relevant points of

view, in accordance with 42 U.S.C.

6295(p)(4)(A) and 6313(a)(6)(B).¹³ After considering the analysis and weighing the benefits and burdens, DOE has determined that the recommended standards are in accordance with 42 U.S.C. 6313(a)(6)(B), which contains provisions for adopting a uniform national standard more stringent than the amended ASHRAE Standard 90.1 for the equipment considered in this document. Specifically, the Secretary has determined, supported by clear and convincing evidence, that the adoption of the recommended standards would result in significant additional conservation of energy and is technologically feasible and economically justified. In determining whether the recommended standards are economically justified, the Secretary has determined that the benefits of the recommended standards exceed the burdens, given that, when considering the benefits of energy savings, positive NPV of consumer benefits, emission reductions, the estimated monetary value of the emissions reductions, and positive average LCC savings would yield benefits outweighing the negative impacts on some consumers and on manufacturers, including the conversion costs that could result in a reduction in INPV for manufacturers.

Under the authority provided by 42 U.S.C. 6295(p)(4) and 6316(b)(1), DOE is issuing this direct final rule establishing amended energy conservation standards for CUACs/CUHPs and CWFs. Consistent with this authority, DOE is also publishing elsewhere in this **Federal Register** a notice of proposed rulemaking proposing standards that are identical to those contained in this direct final rule.¹⁴ See 42 U.S.C. 6295(p)(4)(A)(i).

II. Introduction

The following section briefly discusses the statutory authority underlying this direct final rule, as well as some of the relevant historical background related to the establishment of standards for small, large, and very large, CUAC/CUHP and CWF equipment.

A. Authority

As indicated above, EPCA includes provisions covering the equipment

addressed by this document.¹⁵ EPCA addresses, among other things, the energy efficiency of certain types of commercial and industrial equipment. Relevant provisions of the Act specifically include definitions (42 U.S.C. 6311), energy conservation standards (42 U.S.C. 6313), test procedures (42 U.S.C. 6314), labeling provisions (42 U.S.C. 6315), and the authority to require information and reports from manufacturers (42 U.S.C. 6316).

Section 342(a) of EPCA concerns energy conservation standards for small, large, and very large, CUACs and CUHPs. (42 U.S.C. 6313(a)) This category of equipment has a rated capacity between 65,000 Btu/h and 760,000 Btu/h. This equipment is designed to heat and cool commercial buildings and is often located on the building's rooftop.

The initial Federal energy conservation standards for CWFs were added to EPCA by the Energy Policy Act of 1992 (EPACT 1992), Public Law No. 102–486 (Oct. 24, 1992). See 42 U.S.C. 6313(a)(4). These types of covered equipment have a rated capacity (rated maximum input¹⁶) greater than or equal to 225,000 Btu/h, can be gas-fired or oil-fired, and are designed to heat commercial and industrial buildings. *Id.*

Pursuant to section 342(a)(6) of EPCA, DOE is to consider amending the energy efficiency standards for certain types of commercial and industrial equipment whenever ASHRAE amends the standard levels or design requirements prescribed in ASHRAE/IES Standard 90.1, and whenever more than 6 years had elapsed since the issuance of the most recent final rule establishing or amending a standard for the equipment as of the date of AEMTCA's enactment, December 18, 2012. (42 U.S.C. 6313(a)(6)(C)(vi)) Because more than six years had elapsed since DOE issued a final rule with standards for CUACs and CUHPs or CWFs on October 18, 2005 (see 70 FR 60407), DOE initiated the process to review these standards.

Pursuant to EPCA, DOE's energy conservation program for covered equipment consists essentially of four parts: (1) Testing; (2) labeling; (3) the establishment of Federal energy conservation standards; and (4) certification and enforcement procedures. Subject to certain criteria and conditions, DOE is required to

develop test procedures to measure the energy efficiency, energy use, or estimated annual operating cost of covered equipment. (42 U.S.C. 6314) Manufacturers of covered equipment must use the prescribed DOE test procedure as the basis for certifying to DOE that their equipment comply with the applicable energy conservation standards adopted under EPCA and when making representations to the public regarding their energy use or efficiency. (42 U.S.C. 6314(d)) Similarly, DOE must use these test procedures to determine whether a given manufacturer's equipment complies with standards adopted pursuant to EPCA. The DOE test procedures for small, large, and very large CUACs/CUHPs and CWFs currently appear at title 10 of the Code of Federal Regulations ("CFR") parts 431.96 and 431.76, respectively.

When setting standards for the equipment addressed by this document, EPCA prescribes specific statutory criteria for DOE to consider. See generally 42 U.S.C. 6313(a)(6)(A)–(C). In deciding whether a proposed standard is economically justified, DOE must determine whether the benefits of the standard exceed its burdens. DOE must make this determination after receiving comments on the proposed standard, and by considering, to the maximum extent practicable, the following seven statutory factors:

1. The economic impact of the standard on manufacturers and consumers of products subject to the standard;
2. The savings in operating costs throughout the estimated average life of the covered products in the type (or class) compared to any increase in the price, initial charges, or maintenance expenses for the covered products which are likely to result from the standard;
3. The total projected amount of energy savings likely to result directly from the standard;
4. Any lessening of the utility or the performance of the covered products likely to result from the standard;
5. The impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the standard;
6. The need for national energy conservation; and
7. Other factors the Secretary of Energy considers relevant. (42 U.S.C. 6313(a)(6)(B)(ii))

With respect to the types of equipment at issue in this rule, EPCA also contains what is known as an "anti-backsliding" provision, which prevents the Secretary from prescribing any

¹³ See 42 U.S.C. 6313(b) (applying 42 U.S.C. 6295(p)(4) to energy conservation standard rulemakings involving a variety of industrial equipment, including CUACs, CUHPs, and CWFs).

¹⁴ Because DOE has already published initial notices of proposed rulemaking for CUACs, CUHPs, and CWFs, DOE is publishing a supplemental notice of proposed rulemaking that proposes the identical energy conservation standards detailed in this direct final rule.

¹⁵ All references to EPCA in this document refer to the statute as amended through the Energy Efficiency Improvement Act of 2015, Public Law 114–11 (April 30, 2015).

¹⁶ "Rated maximum input" means the maximum gas-burning capacity of a CWF in Btus per hour, as specified by the manufacturer.

amended standard that either increases the maximum allowable energy use or decreases the minimum required energy efficiency of a covered product. (42 U.S.C. 6313(a)(6)(B)(iii)(I)) Also, the Secretary may not prescribe an amended or new standard if interested persons have established by a preponderance of the evidence that the standard is likely to result in the unavailability in the United States of any covered product type (or class) of performance characteristics (including reliability, features, sizes, capacities, and volumes) that are substantially the same as those generally available in the United States. (42 U.S.C. 6313(a)(6)(B)(iii)(II)(aa))

With respect to the equipment addressed by this direct final rule, DOE notes that EPCA prescribes limits on the Agency's ability to promulgate a standard if DOE has made a finding that interested persons have established by a preponderance of the evidence that a standard is likely to result in the unavailability of any product type (or class) of performance characteristics that are substantially the same as those generally available in the United States at the time of the finding. See 42 U.S.C. 6313(B)(iii)(II).

With particular regard to direct final rules, the Energy Independence and Security Act of 2007 ("EISA 2007"), Public Law 110-140 (December 19,

2007), amended EPCA, in relevant part, to grant DOE authority to issue a type of final rule (*i.e.*, a "direct final rule") establishing an energy conservation standard for a product on receipt of a statement that is submitted jointly by interested persons that are fairly representative of relevant points of view (including representatives of manufacturers of covered products, States, and efficiency advocates), as determined by the Secretary, and that contains recommendations with respect to an energy or water conservation standard. If the Secretary determines that the recommended standard contained in the statement is in accordance with 42 U.S.C. 6295(o) or 42 U.S.C. 6313(a)(6)(B), as applicable, the Secretary may issue a final rule establishing the recommended standard. A notice of proposed rulemaking ("NOPR") that proposes an identical energy efficiency standard is published simultaneously with the direct final rule. A public comment period of at least 110 days is provided. See 42 U.S.C. 6295(p)(4). Not later than 120 days after the date on which a direct final rule issued under this authority is published in the **Federal Register**, the Secretary shall withdraw the direct final rule if the Secretary receives 1 or more adverse public comments relating to the direct

final rule or any alternative joint recommendation and based on the rulemaking record relating to the direct final rule, the Secretary determines that such adverse public comments or alternative joint recommendation may provide a reasonable basis for withdrawing the direct final rule under subsection 42 U.S.C. 6295(o), 6313(a)(6)(B), or any other applicable law. On withdrawal of a direct final rule, the Secretary shall proceed with the notice of proposed rulemaking published simultaneously with the direct final rule and publish in the **Federal Register** the reasons why the direct final rule was withdrawn. This direct final rule provision applies to the equipment at issue in this direct final rule. See 42 U.S.C. 6316(b)(1).

B. Background

1. Current Standards

DOE last amended its standards for small, large, and very large, CUACs/ CUHPs on October 18, 2005. At that time, DOE codified both the amended standards for small and large equipment and the then-new standards for very large equipment set by the Energy Policy Act of 2005 ("EPAct 2005"), Pub. L. 109-58. See also 70 FR 60407 (August 8, 2005). The current standards are set forth in Table II-1.

TABLE II-1—MINIMUM COOLING AND HEATING EFFICIENCY LEVELS FOR SMALL, LARGE, AND VERY LARGE COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT

Equipment type	Cooling capacity	Sub-category	Heating type	Efficiency level	Compliance date
Small Commercial Packaged Air-Conditioning and Heating Equipment (Air-Cooled).	>=65,000 Btu/h and <135,000 Btu/h.	AC	Electric Resistance Heating or No Heating.	EER = 11.2	1/1/2010
			All Other Types of Heating.	EER = 11.0	1/1/2010
		HP	Electric Resistance Heating or No Heating.	EER = 11.0 COP = 3.3 ..	1/1/2010
			All Other Types of Heating.	EER = 10.8 COP = 3.3 ..	1/1/2010
Large Commercial Packaged Air-Conditioning and Heating Equipment (Air-Cooled).	>=135,000 Btu/h and <240,000 Btu/h.	AC	Electric Resistance Heating or No Heating.	EER = 11.0	1/1/2010
			All Other Types of Heating.	EER = 10.8	1/1/2010
		HP	Electric Resistance Heating or No Heating.	EER = 10.6 COP = 3.2 ..	1/1/2010
			All Other Types of Heating.	EER = 10.4 COP = 3.2 ..	1/1/2010
Very Large Commercial Packaged Air-Conditioning and Heating Equipment (Air-Cooled).	>=240,000 Btu/h and <760,000 Btu/h.	AC	Electric Resistance Heating or No Heating.	EER = 10.0	1/1/2010
			All Other Types of Heating.	EER = 9.8	1/1/2010
		HP	Electric Resistance Heating or No Heating.	EER = 9.5 COP = 3.2	1/1/2010

TABLE II-1—MINIMUM COOLING AND HEATING EFFICIENCY LEVELS FOR SMALL, LARGE, AND VERY LARGE COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT—Continued

Equipment type	Cooling capacity	Sub-category	Heating type	Efficiency level	Compliance date
			All Other Types of Heating.	EER = 9.3 COP = 3.2	1/1/2010

As noted above, EPACT 1992 amended EPCA to set the current minimum energy conservation

standards for CWAFFs. (42 U.S.C. 6313(a)(4)(A) and (B)) These standards, which apply to all CWAFFs

manufactured on or after January 1, 1994, are set forth in Table II-2.

TABLE II-2—FEDERAL ENERGY EFFICIENCY STANDARDS FOR CWAFFS

Equipment type	Input capacity (Btu/h)	Thermal efficiency * %	Compliance date
Gas-Fired Furnaces	≥225,000	80	1/1/1994
Oil-Fired Furnaces	≥225,000	81	1/1/1994

* At the maximum rated capacity (rated maximum input).

2. History of Standards Rulemakings

a. Commercial Unitary Air Conditioners and Heat Pumps

On October 29, 1999, the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)/Illuminating Engineering Society of North America (IESNA) adopted Standard 90.1-1999, “Energy Standard for Buildings Except Low-Rise Residential Building,” which included amended efficiency levels for CUACs and CUHPs. On June 12, 2001, the Department published a Framework Document that described a series of analytical approaches to evaluate energy conservation standards for CUACs and CUHPs with rated capacities between 65,000 Btu/h and 240,000 Btu/h, and presented this analytical framework to stakeholders at a public workshop. On July 29, 2004, DOE issued an Advance Notice of Proposed Rulemaking (“ANOPR”) (hereafter referred to as the “2004 ANOPR”) to solicit public comments on its preliminary analyses for this equipment. 69 FR 45460. Subsequently, Congress enacted EPAct 2005, which, among other things, established amended standards for small and large CUACs and CUHPs and new standards for very large CUACs and CUHPs. As a result, EPAct 2005 displaced the rulemaking effort that DOE had already begun. DOE codified these new statutorily-prescribed standards on October 18, 2005. 70 FR 60407.

Section 5(b) of AEMTCA amended Section 342(a)(6) of EPCA (42 U.S.C. 6313(a)(6)) by requiring DOE to initiate a rulemaking to consider amending the standards for any covered equipment as

to which more than 6 years has elapsed since the issuance of the most recent final rule establishing or amending a standard for the equipment as of the date of AEMTCA’s enactment, December 18, 2012. (42 U.S.C. 6313(a)(6)(C)(vi)) Under this provision, DOE was also obligated to publish a notice of proposed rulemaking to amend the applicable standards by December 31, 2013. See 42 U.S.C. 6313(a)(6)(C)(vi). Consequently, DOE initiated a rulemaking effort to determine whether to amend the current standards for CUACs and CUHPs.

On February 1, 2013, DOE published a request for information (“RFI”) and notice of document availability for small, large, and very large, air cooled CUACs and CUHPs. 78 FR 7296. The document sought to solicit information from the public to help DOE determine whether national standards more stringent than those already in place would result in a significant amount of additional energy savings and whether those national standards would be technologically feasible and economically justified. Separately, DOE also sought information on the merits of adopting the IEER metric as the energy efficiency descriptor characterizing cooling-mode efficiency for small, large, and very large CUACs and CUHPs, rather than the current EER metric. (See section III.G for more details).

DOE notes that in October 2010, ASHRAE published ASHRAE Standard 90.1-2010, which amended its requirements for CUACs and CUHPs to include, among other things, new requirements for IEER. In October 2013, ASHRAE published ASHRAE Standard 90.1-2013, which further amended

those IEER requirements. The provisions relating to EER and COP contained in ASHRAE Standard 90.1-2010 and ASHRAE Standard 90.1-2013, however, remained the same as the current DOE standards for this equipment. As discussed in section IV.C.2, DOE considered efficiency levels associated with the IEER requirements in both ASHRAE Standard 90.1-2010 and ASHRAE Standard 90.1-2013.

On September 30, 2014, DOE published a NOPR for small, large, and very large CUACs and CUHPs. 79 FR 58948. The document solicited information from the public to help DOE determine whether more-stringent energy conservation standards for small, large, and very large CUACs and CUHPs would result in a significant additional amount of energy savings and whether those standards would be technologically feasible and economically justified.

The September 2014 document also announced that a public meeting would be held on November 6, 2014 at DOE headquarters in Washington, DC. At this meeting, DOE presented the methodologies and results of the analyses set forth in the NOPR, and interested parties that participated in the public meeting discussed a variety of topics.

DOE also received a number of written comments from interested parties in response to the NOPR. DOE considered these comments, as well as comments from the public meeting, in preparing the direct final rule. The commenters are summarized in Table II-3. Relevant comments, and DOE’s responses, are provided in the appropriate sections of this document.

TABLE II-3—INTERESTED PARTIES PROVIDING WRITTEN COMMENT ON THE NOPR FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED CUACS AND CUHPs

Name	Acronyms	Type
A2H, Inc	A2H	E
Air-Conditioning, Heating and Refrigeration Institute	AHRI	TA
Appliance Standards Awareness Project (ASAP), Alliance to Save Energy (ASE), American Council for an Energy-Efficient Economy (ACEEE), Natural Resources Defense Council (NRDC), Northeast Energy Efficiency Partnerships (NEEP), and Northwest Energy Efficiency Alliance (NEEA)	Joint Efficiency Advocates	EA
Applied Engineering of East Tennessee, Inc	Applied Engineering	E
American Society of Heating, Refrigerating and Air-Conditioning Engineers	ASHRAE	TA
Balanced Principles, LLC	Balanced Principles	E
Pacific Gas and Electric Company (PG&E), Southern California Gas Company (SCGC), San Diego Gas and Electric (SDG&E), and Southern California Edison (SCE)	California IOUs	U
Cato Institute .....	.....	PP
Coradini, Michael; Doss, Eddie; Heinrich, Michael; Huntley, John; Long, Robert .....	.....	I
Danfoss	Danfoss	CS
Environmental Investigation Agency	EIA Global	EA
Gardiner Trane, H & H Sales Associates, Inc., Havtech, Heat Transfer Solutions, HVAC Equipment Sales, Inc., MWSK Equipment Sales Inc., Slade Ross, Inc. ....	.....	D
Goodman Manufacturing	Goodman	M
Sofie Miller (George Washington University Regulatory Studies Center)	Miller	EI
I.C. Thomasson Associates, Inc	IC Thomasson	E
Ingersoll Rand (Trane)	Trane	M
KJWW	KJWW	E
Lennox International Inc	Lennox	M
Merryman-Farr, LLC	Merryman-Farr	C
Nidec Motor Corporation	Nidec	CS
Nortek Global HVAC LLC	Nordyne	M
Policy Navigation Group .....	.....	PP
Regal-Beloit Corporation	Regal-Beloit	CS
Rheem Manufacturing Company	Rheem	M
Smith-Goth Engineers, Inc	Smith-Goth	E
Southern Company	Southern Company	U
Thompson Engineers, Inc	Thompson	E
United Technologies Corporation	Carrier	M
University of Michigan Plant Operations	UM	EI
Viridis Engineering	Viridis	E

C: Mechanical Contractor; CS: Component Supplier; D: Equipment Distributor; E: Engineering Consulting Firm; EA: Efficiency/Environmental Advocate; EI: Educational Institution; I: Individual; M: Manufacturer; PP: Public Policy Research Organization; TA: Trade Association; U: Utility; UR: Utility Representative.

b. Commercial Warm Air Furnaces

On October 21, 2004, DOE published a final rule in the **Federal Register** that adopted definitions for “commercial warm air furnace” and “TE,” promulgated test procedures for this equipment, and recodified the energy conservation standards to place them contiguously with the test procedures in the Code of Federal Regulations (“CFR”). 69 FR 61916, 61917, 61939–41. In the same final rule, DOE incorporated by reference (see 10 CFR 431.75) a number of industry test standards relevant to commercial warm air furnaces, including: (1) American National Standards Institute (“ANSI”) Standard Z21.47–1998, “Gas-Fired Central Furnaces,” for gas-fired CWFAs; (2) Underwriters Laboratories (“UL”) Standard 727–1994, “Standard for Safety Oil-Fired Central Furnaces,” for oil-fired CWFAs; (3) provisions from Hydronics Institute (HI) Standard BTS–2000, “Method to Determine Efficiency of Commercial Space Heating Boilers,”

to calculate flue loss for oil-fired CWFAs, and (4) provisions from the American Society of Heating, Refrigerating, and Air-conditioning Engineers (“ASHRAE”) Standard 103–1993, “Method of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers,” to determine the incremental efficiency of condensing furnaces under steady-state conditions. *Id.* at 61940. DOE later updated the test procedures for CWFAs to match the procedures specified in ASHRAE Standard 90.1–2010, which referenced ANSI Z21.47–2006, “Gas-Fired Central Furnaces,” for gas-fired CWFAs, and UL 727–2006, “Standard for Safety for Oil-Fired Central Furnaces,” for oil-fired furnaces. 77 FR 28928, 28987–88 (May 16, 2012).

As with CUACs and CUHPs, DOE was obligated to publish either: (1) A notice of determination that the current standards do not need to be amended, or (2) a notice of proposed rulemaking containing proposed standards for CWFAs by December 31, 2013. (42

U.S.C. 6313(a)(6)(C)(i) and (vi)) Consequently, DOE initiated a rulemaking to determine whether to amend the current standards for CWFAs.

In starting this rulemaking process, DOE published an RFI and notice of document availability for CWFAs. See 78 FR 25627 (May 2, 2013). The document solicited information from the public to help DOE determine whether more-stringent energy conservation standards for CWFAs would result in a significant additional amount of energy savings and whether those standards would be technologically feasible and economically justified.

Based on feedback and additional analysis, on February 4, 2015, DOE published a NOPR for CWFAs. See 80 FR 6182. The NOPR, in addition to announcing a public meeting to discuss the proposal’s details, solicited information from the public to help DOE determine whether more-stringent energy conservation standards for

CWAFs would result in a significant additional amount of energy savings and whether those standards would be technologically feasible and economically justified. The public meeting, which took place on March 2, 2015 at DOE headquarters in Washington, DC, centered on the

methodologies and results of the analyses set forth in the NOPR. Participating interested parties also raised a variety of topics, which are discussed throughout this document.

DOE received a number of written comments from interested parties in response to the NOPR. DOE considered

these comments, as well as comments from the public meeting, in the preparation of this final rule. The commenters are identified in Table II–4. Relevant comments, and DOE’s responses, are provided in the appropriate sections of this document.

TABLE II–4—INTERESTED PARTIES PROVIDING WRITTEN COMMENTS ON THE NOPR FOR COMMERCIAL WARM AIR FURNACES

Name	Acronyms	Commenter Type*
Air-Conditioning, Heating and Refrigeration Institute	AHRI	TA
American Council for an Energy-Efficient Economy	ACEEE	EA
American Gas Association	AGA	IR
Appliance Standards Awareness Project, Alliance to Save Energy, American Council for an Energy-Efficient Economy, Natural Resources Defense Council.	ASAP, ASE, ACEEE, NRDC (The Advocates).	EA
Gas Technology Institute	GTI	RO
Goodman Global, Inc.	Goodman	M
Ingersoll Rand	Trane	M
Lennox International Inc.	Lennox	M
Nortek Global HVAC LLC	Nordyne	M
Rheem Manufacturing Company	Rheem	M
United Technologies Corporation	Carrier	M
The U.S. Chamber of Commerce, the American Chemistry Council, the American Coke and Coal Chemicals Institute, the American Forest & Paper Association, the American Fuel & Petrochemical Manufacturers, the American Petroleum Institute, the Brick Industry Association, the Council of Industrial Boiler Owners, the National Association of Manufacturers, the National Mining Association, the National Oilseed Processors Association, and the Portland Cement Association.	U.S. Chamber of Commerce	TA
U.S. Small Business Administration’s Office of Advocacy	SBA	GA

*EA: Efficiency Advocate; GA: Government Agency; IR: Industry Representative; M: Manufacturer; RO: Research Organization; TA: Trade Association.

III. General Discussion

A. Combined Rulemaking

As discussed in section II.B.2, DOE had been conducting separate standards rulemakings for two sets of interrelated equipment: (1) Small, large, and very large, CUACs and CUHPs; and (2) CWAFs. In response to the CUAC/CUHP NOPR, Lennox and Goodman requested that DOE align the rulemakings for these equipment because of their inherent impact on each other. The commenters asserted that combining the rulemakings would reduce manufacturer burden by allowing manufacturers to consider both of these regulatory changes in one design cycle. (CUAC: Lennox, No. 60 at p. 8; Goodman, No. 65 at p. 5)¹⁷

¹⁷ In this direct final rule, DOE discusses comments received in regards to both the CUAC/CHUP and CWAF rulemakings. Comments received in regards to the CUAC/CUHP rulemaking and filed in the docket for this standards rulemaking (Docket No. EERE–2013–BT–STD–0007) are identified by “CUAC” preceding the comment citation. Comments received in regards to the CWAF rulemaking and filed in the docket for this standards rulemaking (Docket No. EERE–2013–BT–STD–0021) are identified by “CWAF” preceding the comment citation. Comments received in regards to the ASRAC Working Group activities (discussed in section III.B), while filed in the dockets for both the CUAC/CUHP and CWAF rulemakings, are

In light of the broad overlap between these equipment, DOE agreed that a combined rulemaking for small, large, and very large, CUACs and CUHPs and CWAFs had certain advantages. For example, DOE observed that a large fraction of CWAFs are part of combined single-package CUACs/CWAF equipment, combining both air conditioning and gas-fired heating. Combining the rulemakings allowed simultaneous consideration of both functions of what is generally a single piece of equipment, thus allowing DOE to accurately account for the relations between the different systems. This approach also ensured that there would be no divergence of equipment development timelines for the separate functions, thus reducing costs and manufacturer impacts. As a result, DOE is setting standards for these equipment that aligns the effective dates of the CUAC/CUHP and CWAF rulemakings. DOE expects that aligning the effective dates will reduce total conversion costs and cumulative regulatory burden, while also allowing industry to gain clarity on potential regulations that could affect refrigerant availability

identified by the equipment in regards to which the comment was made.

before the higher appliance standard takes effect in 2023. Approximately 68.5 percent of industry equipment listings currently meet the 2018 standard, while 20.4 percent of current industry equipment listings meet the 2023 standard level.

B. Consensus Agreement

1. Background

In response to the September 2014 CUAC/CUHP NOPR, Lennox suggested that DOE adopt the ASHRAE 90.1–2013 standards for the equipment subject to this rulemaking but also offered in the alternative that DOE should convene a negotiated rulemaking to address potential amendments to the current standards, which would enhance stakeholder input into the discussion, analysis and outcome of the rulemaking. (CUAC: Lennox, No. 60 at p. 3) Other manufacturers made similar suggestions. (CUAC: Trane, No. 63 at p. 14; Goodman, No. 65 at p. 22) In response to the CWAF NOPR, AHRI stated that the best approach to resolve the issues it identified, as well as the concerns of other stakeholders on this rulemaking and on the CUAC rulemaking, would be for DOE to conduct a negotiated rulemaking at

which stakeholders can work together to develop standards that will result in energy savings using technology that is feasible and economically justified. (CWAFF: AHRI, No. 26 at p. 15) In addition, AHRI and ACEEE submitted a joint letter to the Appliance Standards and Rulemaking Federal Advisory Committee (“ASRAC”) requesting that it consider approving a recommendation that DOE initiate a negotiated rulemaking for commercial package air conditioners and commercial furnaces. (EERE–2013–BT–STD–0007–0080) ASRAC carefully evaluated this request and the Committee voted to charter a working group to support the negotiated rulemaking effort requested by these parties.

Subsequently, after careful consideration, DOE determined that, given the complexity of the CUAC/ CUHP rulemaking and the logistical challenges presented by the related CWAFF proposal, a combined effort to address these equipment types was appropriate to ensure a comprehensive vetting of issues and related analyses that would support any final rule setting standards for this equipment. To this end while highly unusual to do so after issuing a proposed rule, DOE solicited the public for membership nominations to the working group that would be formed under the ASRAC charter by issuing a Notice of Intent to Establish the Commercial Package Air Conditioners and Commercial Warm Air Furnaces Working Group To Negotiate Potential Energy Conservation Standards for Commercial Package Air Conditioners and Commercial Warm Air Furnaces. 80 FR 17363 (April 1, 2015). The CUAC/CUHP–CWAFF Working Group (in context, “the Working Group”) was established under ASRAC in accordance with the Federal Advisory Committee Act and the Negotiated Rulemaking Act—with the purpose of discussing and, if possible, reaching consensus on a set of energy conservation standards to propose or finalize for CUACs, CUHPs and CWAFFs. The Working Group was to consist of fairly representative parties having a defined stake in the outcome of the proposed standards, and would consult, as appropriate, with a range of experts on technical issues.

DOE received 17 nominations for membership. Ultimately, the Working Group consisted of 17 members, including one member from ASRAC and one DOE representative.¹⁸ The Working

Group met six times (five times in-person and once by teleconference). The meetings were held on April 28, May 11–12, May 20–21, June 1–2, June 9–10, and June 15, 2015.¹⁹ As a result of these efforts, the Working Group successfully reached consensus on energy conservation standards for CUACs, CUHPs, and CWAFFs. On June 15, 2015, it submitted a Term Sheet to ASRAC outlining its recommendations, which ASRAC subsequently adopted.²⁰

DOE carefully considered the consensus recommendations submitted by the Working Group in the form of a single Term Sheet, and adopted by ASRAC, related to amending the energy conservation standards for CUACs, CUHPs, and CWAFFs. Based on this consideration, DOE has determined that these recommendations comprise a statement submitted by interested persons that are fairly representative of relevant points of view, consistent with 42 U.S.C. 6295(p)(4). In reaching this determination, DOE took into consideration the fact that the Working Group, in conjunction with ASRAC members who approved the recommendations, consisted of representatives of manufacturers of the covered equipment at issue, States, and efficiency advocates. Thus all of the groups specifically identified by

Southern California Gas Company), Andrew deLaski (Appliance Standards Awareness Project), Louis Starr (Northwest Energy Efficiency Alliance), Meg Waltner (Natural Resources Defense Council), Jill Hootman (Trane), John Hurst (Lennox), Karen Meyers (Rheem Manufacturing Company), Charlie McCrudden (Air Conditioning Contractors of America), Harvey Sachs (American Council for an Energy Efficient Economy), Paul Doppel (Mitsubishi Electric), Robert Whitwell (United Technologies Corporation (Carrier)), Michael Shows (Underwriters Laboratories), Russell Tharp (Goodman Manufacturing), Sami Zindah (Emerson Climate Technologies), Mark Tezigni (Sheet Metal and Air Conditioning Contractors National Association, Inc.), Nick Mislak (Air-Conditioning, Heating, and Refrigeration Institute).

¹⁹ In addition, most of the members of the ASRAC Working Group held several informal meetings on March 19–20, 2015, March 30, 2015, and April 13, 2015. The purpose of these meetings was to initiate work on some of the analytical issues raised in stakeholder comments on the CUAC NOPR.

²⁰ Available at <http://www.regulations.gov/documentDetail;D=EERE-2013-BT-STD-0007-0093>. The following individuals served as members of ASRAC that received and approved the Term Sheet: Co-Chair John Mandayck (Carrier/United Technologies Corporation), Co-Chair Andrew deLaski (Appliance Standards Awareness Project), Ashley Armstrong (U.S. Department of Energy), John Caskey (National Electrical Manufacturers Association), Jennifer Cleary (Association of Home Appliance Manufacturers), Thomas Eckman (Northwest Power and Conservation Council), Charles Hon (True Manufacturing Company), Dr. David Hungerford (California Energy Commission), Dr. Diane Jakobs (Rheem Manufacturing Company), Kelley Kline (General Electric, Appliances), Deborah Miller (National Association of State Energy Officials), and Scott Blake Harris (Harris, Wiltshire & Grannis, LLP).

Congress as potentially relevant parties to any consensus recommendation submitted by ASRAC participated in approving the recommendations submitted to DOE. (42 U.S.C. 6295(p)(4)(A)) As delineated above, the Term Sheet was signed and submitted by a broad cross-section of interests, including the manufacturers of the subject equipment, trade associations representing these manufacturers and installation contractors, environmental and energy-efficiency advocacy organizations, and electric utility companies. The ASRAC Committee approving the Working Group’s recommendations included at least two members representing States—one representing the National Association of State Energy Officials (NASEO) and one representing the State of California.²¹ DOE is not aware of a relevant point of view that was not represented by one or more of the participants in the Working Group or ASRAC.

By its plain terms, the statute contemplates that the Secretary will exercise discretion to determine whether a given statement is “submitted jointly by interested persons that are fairly representative of relevant points of view (including representatives of manufacturers of covered products, States, and efficiency advocates).” In this case, given the broad range of persons participating in the process that led to the submission—in the Working Group and in ASRAC—and given the breadth of perspectives expressed in that process, DOE has determined that the statement it received meets this criterion.

Pursuant to 42 U.S.C. 6295(p)(4), the Secretary must also determine whether a jointly-submitted recommendation for an energy or water conservation standard satisfies 42 U.S.C. 6295(o) or 42 U.S.C. 6313(a)(6)(B), as applicable. In making this determination, DOE has conducted an analysis to evaluate whether the potential energy conservation standards under consideration would meet these requirements. This evaluation is similar to the comprehensive approach that DOE typically conducts whenever it considers potential energy conservation standards for a given type of product or equipment. DOE applies these principles to any consensus recommendations it may receive to satisfy its statutory obligation to ensure that any energy conservation standard that it adopts achieves the maximum improvement in energy efficiency that is

¹⁸ The group members were John Cymbalsky (U.S. Department of Energy), Marshall Hunt (Pacific Gas & Electric Company, San Diego Gas & Electric Company, Southern California Edison, and

²¹ These individuals were Deborah E. Miller (NASEO) and David Hungerford (California Energy Commission).

technologically feasible and economically justified and will result in the significant conservation of energy. Upon review, the Secretary determined that the Term Sheet's recommendations submitted in the instant rulemaking comports with the standard-setting criteria set forth under 42 U.S.C. 6313(a)(6)(B). Accordingly, the efficiency levels recommended to DOE by the Working Group through ASRAC were included as the "recommended trial standard level (TSL)" for CUACs/ CUHPs and as TSL 2 for CWAFs in this rule (see section V.A for description of all of the considered TSLs). The details regarding how the consensus-recommended TSLs comply with the standard-setting criteria are discussed and demonstrated in the relevant sections throughout this document.

In sum, as the relevant criteria under 42 U.S.C. 6295(p)(4) have been satisfied, the Secretary has determined that it is appropriate to adopt the amended energy conservation standards recommended in the Joint Statement for CUACs, CUHPs, and CWAFs through this direct final rule.

Pursuant to the same statutory provision, DOE is also simultaneously publishing a NOPR proposing that the identical standard levels contained in this direct final rule be adopted. Consistent with the statute, DOE is providing a 110-day public comment period on both the direct final rule and the NOPR. Based on the comments received during this period, the direct final rule will either become effective or DOE will withdraw it if (1) one or more adverse comments is received and (2) DOE determines that those comments, when viewed in light of the rulemaking record related to the direct final rule, provide a reasonable basis for withdrawal of the direct final rule under 42 U.S.C. 6313(a)(6)(B) and for DOE to continue this rulemaking under the NOPR. (Receipt of an alternative joint recommendation may also trigger a DOE withdrawal of the direct final rule in the same manner.) See 42 U.S.C. 6295(p)(4)(C). Typical of other rulemakings, it is the substance, rather than the quantity, of comments that will ultimately determine whether a direct final rule will be withdrawn. To this end, the substance of any adverse

comment(s) received will be weighed against the anticipated benefits of the jointly-submitted recommendations and the likelihood that further consideration of the comment(s) would change the results of the rulemaking. DOE notes that, to the extent an adverse comment had been previously raised and addressed in the rulemaking proceeding, such a submission will not typically provide a basis for withdrawal of a direct final rule.

2. Recommendations

For commercial package air conditioners and heat pumps (*i.e.* CUACs/CUHPs), the Working Group recommended two sets of standards along with two sets of compliance dates—one would apply starting on January 1, 2018, and the other would apply on January 1, 2023. The 2018 standards for CUACs and CUHPs—excluding double-duct air conditioners and heat pumps (see discussion below)—recommended by the Working Group are contained in Table III–1 and Table III–2. The 2023 standards for the same equipment are contained in Table III–3 and Table III–4.

TABLE III–1—CONSENSUS RECOMMENDED MINIMUM COOLING EFFICIENCY STANDARDS FOR COMMERCIAL PACKAGE AIR-COOLED AIR CONDITIONERS AND HEAT PUMPS MANUFACTURED STARTING ON JANUARY 1, 2018

Equipment category	Rated cooling capacity	Sub-category	Heating type	Minimum energy efficiency standard
Small Commercial Split and Single Package Air-Conditioners and Heat Pumps (Air-Cooled).	≥65,000 Btu/h and <135,000 Btu/h.	AC	Electric Resistance Heating or No Heating All Other Types of Heating	IEER = 12.9. IEER = 12.7.
		HP	Electric Resistance Heating or No Heating All Other Types of Heating	IEER = 12.2. IEER = 12.0.
Large Commercial Split and Single Package Air-Conditioners and Heat Pumps (Air-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	AC	Electric Resistance Heating or No Heating All Other Types of Heating	IEER = 12.4. IEER = 12.2.
		HP	Electric Resistance Heating or No Heating All Other Types of Heating	IEER = 11.6. IEER = 11.4.
Very Large Commercial Split and Single Package Air-Conditioners and Heat Pumps (Air-Cooled).	≥240,000 Btu/h and <760,000 Btu/h.	AC	Electric Resistance Heating or No Heating All Other Types of Heating	IEER = 11.6. IEER = 11.4.
		HP	Electric Resistance Heating or No Heating All Other Types of Heating	IEER = 10.6. IEER = 10.4

TABLE III–2—CONSENSUS RECOMMENDED MINIMUM HEATING EFFICIENCY STANDARDS FOR AIR-COOLED HEAT PUMPS MANUFACTURED STARTING ON JANUARY 1, 2018

Equipment category	Rated cooling capacity	Heating type	Minimum energy efficiency standard
Small Commercial Split and Single Package Heat Pumps (Air-Cooled).	≥65,000 Btu/h and <135,000 Btu/h.	Electric Resistance Heating or No Heating All Other Types of Heating	COP = 3.3.
Large Commercial Split and Single Package Heat Pumps (Air-Cooled) (Air-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	Resistance Heating or No Heating	COP = 3.2.
Very Large Commercial Split and Single Package Heat Pumps (Air-Cooled).	≥240,000 Btu/h and <760,000 Btu/h.	All Other Types of Heating	COP = 3.2

TABLE III-3—CONSENSUS RECOMMENDED MINIMUM COOLING EFFICIENCY STANDARDS FOR COMMERCIAL PACKAGE AIR-COOLED AIR CONDITIONERS AND HEAT PUMPS MANUFACTURED STARTING ON JANUARY 1, 2023

Equipment category	Rated cooling capacity	Sub-category	Heating type	Minimum energy efficiency standard
Small Commercial Split and Single Package Air-Conditioners and Heat Pumps (Air-Cooled).	≥65,000 Btu/h and <135,000 Btu/h.	AC	Electric Resistance Heating or No Heating All Other Types of Heating	IEER = 14.8. EER = 14.6.
		HP	Electric Resistance Heating or No Heating All Other Types of Heating	IEER = 14.1. IEER = 13.9.
Large Commercial Split and Single Package Air-Conditioners and Heat Pumps (Air-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	AC	Electric Resistance Heating or No Heating All Other Types of Heating	IEER = 14.2. IEER = 14.0.
		HP	Electric Resistance Heating or No Heating All Other Types of Heating	IEER = 13.5. IEER = 13.3.
Very Large Commercial Split and Single Package Air-Conditioners and Heat Pumps (Air-Cooled).	≥240,000 Btu/h and <760,000 Btu/h.	AC	Electric Resistance Heating or No Heating All Other Types of Heating	IEER = 13.2. IEER = 13.0.
		HP	Electric Resistance Heating or No Heating All Other Types of Heating	IEER = 12.5. IEER = 12.3

TABLE III-4—CONSENSUS RECOMMENDED MINIMUM COOLING EFFICIENCY STANDARDS FOR COMMERCIAL PACKAGE AIR-COOLED AIR CONDITIONERS AND HEAT PUMPS MANUFACTURED STARTING ON JANUARY 1, 2023

Equipment category	Rated cooling capacity	Heating type	Minimum energy efficiency standard
Small Commercial Split and Single Package Heat Pumps (Air-Cooled).	≥65,000 Btu/h and <135,000 Btu/h.	Electric Resistance Heating or No Heating All Other Types of Heating	COP = 3.4.
Large Commercial Split and Single Package Heat Pumps (Air-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	Resistance Heating or No Heating All Other Types of Heating	COP = 3.3.
Very Large Commercial Split and Single Package Heat Pumps (Air-Cooled).	≥240,000 Btu/h and <760,000 Btu/h.	Resistance Heating or No Heating All Other Types of Heating	COP = 3.2

The ASRAC Working Group also recommended that DOE separately define double-duct air conditioners and heat pumps, as discussed further in section IV.A.2.a, and that the current

energy conservation standards continue to apply to these equipment. See 10 CFR 431.97, Table 1.

For CWAFs, the Working Group recommended that the standards

provided in Table III-5 apply to equipment manufactured starting on January 1, 2023.

TABLE III-5—CONSENSUS RECOMMENDED MINIMUM ENERGY CONSERVATION STANDARDS FOR COMMERCIAL WARM AIR FURNACES

Equipment category	Minimum energy efficiency standard (%)
Gas-fired Commercial Warm Air Furnaces	Thermal efficiency* = 81.
Oil-fired Commercial Warm Air Furnaces	Thermal efficiency* = 82.

* At the maximum rated capacity (rated maximum input).

C. Compliance Dates

When DOE amends the standards for CUACs, CUHPs, and CWAFs through an ordinary notice-and-comment process, EPCA prescribes a set of timelines based on the particular circumstances surrounding that amendment. The proposed rule that eventually led to the formation of the Working Group was the beginning of DOE's six-year evaluation of the standards for these products. Consistent with 42 U.S.C. 6313(a)(6)(C)(iv), DOE originally

proposed a compliance date of December 2018.²²

Commenting on the CUAC/CUHP NOPR, AHRI, Nordyne and Goodman disagreed with DOE's interpretation of the statutory lead time requirements for amended standards for CUACs and CUHPs. They argued that section 6313(a)(6)(D), which specifies a lead time of four years, should apply to any new standard that DOE promulgates. (CUAC: AHRI, No. 68 at pp. 14–17; Nordyne, No. 61 at pp. 11–15; Goodman, No. 65 at p. 3) Lennox added

²² For purposes of its analysis, DOE used 2019, which would be the first full year of compliance.

that DOE's proposed 3-year time frame is not feasible and stated that at least a 5-year development cycle would be required to meet the proposed standard. (CUAC: Lennox, No. 60 at p. 8)

In resolving these timeline differences, the Working Group gave careful consideration to these concerns and recommended to ASRAC, which ASRAC then adopted, a set of jointly-submitted recommendations that specified a compliance date of January 1, 2018, for the first tier of standards, and January 1, 2023 for the second tier. These tiered dates were accepted and recommended by the signatories to the Term Sheet, which included

manufacturers who critiqued the initial proposed lead times presented by DOE.

While the January 1, 2018 compliance date is earlier than the proposed three-year lead time, DOE has the authority under section 325(p)(4) to accept recommendations for compliance dates contained in a joint submission recommending amended standards. In DOE's view, the direct final rule authority provision specifies the finding DOE has to make. Specifically, Congress specified that if DOE determines that the recommended standard is in accordance with 42 U.S.C. 6295(o) or section 342(a)(6)(B) of EPCA (*i.e.* 42 U.S.C. 6313(a)(6)(B)), DOE may issue a final rule establishing those standards. See 42 U.S.C. 6295(p)(4)(A)(i). Applying the direct final rule provision in this manner meets Congress's goal to promote consensus agreements that reflect broad input from interested parties who can fashion agreements that best promote the aims of the statute. In the absence of that kind of agreement, DOE notes that the more specific prescriptions of EPCA would ordinarily prevail. However, when DOE receives a recommendation resulting from the appropriate process—in this case, the detailed procedure laid out in the direct final rule provision of EPCA—that process provides the necessary fidelity to the statute, along with compliance with section 6295(o) (or, in this case, 42 U.S.C. 6313(a)(6)(B)), that Congress instructed DOE to apply. DOE also notes that the January 1, 2018 standard levels are the same as the efficiency levels already adopted in ASHRAE Standard 90.1–2013, which has an effective date of January 1, 2016. In light of this fact, most manufacturers are already developing equipment designs and planning the production of equipment that will meet this efficiency level.

For CWAFFs, the consensus agreement specifies a compliance date of January 1, 2023. As with the lead time for CUACs and CUHPs, DOE has the authority when adopting recommended standards submitted in a consensus agreement pursuant to section 325(p)(4), to accept recommendations regarding compliance dates. See 42 U.S.C. 6295(p)(4) and 6316(b)(1). See also 76 FR at 37426. DOE has made the determination that the rulemaking record in this case supports the adoption of this recommended lead time for CWAFFs.

In its analysis of the other TSLs considered for the direct final rule, DOE used a compliance date that is 3 years after the expected publication of the final rule establishing amended standards (see discussion at the beginning of this section).

D. Technological Feasibility

1. General

In each energy conservation standards rulemaking, DOE conducts a screening analysis based on information gathered on all current technology options and prototype designs that could improve the efficiency of the products or equipment that are the subject of the rulemaking. As the first step in such an analysis, DOE develops a list of technology options for consideration in consultation with manufacturers, design engineers, and other interested parties. See chapter 3 of the direct final rule's Technical Support Documents (“TSDs”) for a discussion of the list of technology options that were identified. DOE then determines which of those means for improving efficiency are technologically feasible. DOE considers technologies incorporated in commercially-available equipment or in working prototypes to be technologically feasible. 10 CFR part 430, subpart C, appendix A, section 4(a)(4)(i).

After DOE has determined that particular technology options are technologically feasible, it further evaluates each technology option in light of the following additional screening criteria: (1) Practicability to manufacture, install, and service; (2) adverse impacts on equipment utility or availability; and (3) adverse impacts on health or safety. 10 CFR part 430, subpart C, appendix A, section 4(a)(4)(ii)–(iv). Section IV.B of this document discusses the results of the screening analysis, particularly the designs DOE considered, those it screened out, and those that are the basis for the trial standard levels (TSLs) in this rulemaking. For further details on the screening analysis for this rulemaking, see chapter 4 of the direct final rule TSDs.

Additionally, DOE notes that these screening criteria do not directly address the proprietary status of design options. DOE only considers efficiency levels achieved through the use of proprietary designs in the engineering analysis if they are not part of a unique path to achieve that efficiency level (*i.e.*, if there are other non-proprietary technologies capable of achieving the same efficiency). DOE believes the amended standards for the equipment covered in this rulemaking would not mandate the use of any proprietary technologies, and that all manufacturers would be able to achieve the amended levels through the use of non-proprietary designs. Specifically, the efficiency levels considered in the analysis are all represented by commercially-available equipment

examples. Further, the technologies used in these equipment are available to all manufacturers.

2. Maximum Technologically Feasible Levels

DOE assessed the recommended standards by accounting for the elements contained in 42 U.S.C. 6313(a)(6)(B). That provision requires DOE to determine in cases where standards more stringent than those already prescribed by ASHRAE 90.1 whether those more stringent standards will yield a significant amount of additional conservation of energy and will be technologically feasible and economically justified. In determining whether the “economically justified” prong is met, DOE must, after receiving views and comments on the standard, determine whether the benefits of the standard exceed the burdens that the standard would impose by, to the maximum extent practicable, considering seven different factors. See generally, 42 U.S.C. 6313(a)(6)(B)(ii)(I)–(VII). Consistent with this approach, DOE's engineering analysis helped identify the maximum technologically feasible (“max-tech”) improvements in energy efficiency for CUACs/CUHPs and CWAFFs by using the design parameters for the most efficient equipment available on the market. (See chapter 5 of the direct final rule TSDs.) The max-tech levels that DOE determined for this rulemaking are described in section IV.C.2.b of this direct final rule.

E. Energy Savings

1. Determination of Savings

For the adopted standards, DOE projected energy savings over the entire lifetime of equipment purchased in 2018–2048 for CUACs/CUHPs and 2023–2048 for CWAFFs. DOE quantified the energy savings attributable to each TSL as the difference in energy consumption between each standards case and the no-new-standards case. The no-new-standards case represents a projection of energy consumption that reflects how the market for a type of equipment would likely evolve in the absence of amended energy conservation standards.

DOE used its national impact analysis (“NIA”) spreadsheet model to estimate energy savings from potential amended standards for CUACs/CUHPs and CWAFFs. The NIA spreadsheet model (described in section IV.H of this document) calculates savings in site energy, which is the energy directly consumed by products at the locations where they are used. Based on the calculated site energy, DOE calculates

national energy savings (“NES”) in terms of primary energy savings at the site or at power plants, and also in terms of full-fuel-cycle (“FFC”) energy savings. The FFC metric includes the energy consumed in extracting, processing, and transporting primary fuels (*i.e.*, coal, natural gas, petroleum fuels), and thus, presents a more complete picture of the impacts of energy conservation standards.²³ DOE’s approach is based on the calculation of an FFC multiplier for each of the energy types used by covered products or equipment. For more information on FFC energy savings, see section IV.H of this document. For CWAfs, the energy savings are primarily in the form of natural gas, of which the primary energy savings are considered to be equal to the site energy savings.²⁴

2. Significance of Savings

To adopt more-stringent standards for the covered equipment at issue, DOE must determine on the basis of clear and convincing evidence that such action would result in the significant additional conservation of energy over levels that would be achieved through the adoption of the relevant ASHRAE standards. (42 U.S.C. 6313(a)(6)(A)(ii)(II)) Although the term “significant” is not defined in the Act, the U.S. Court of Appeals, in *Natural Resources Defense Council v. Herrington*, 768 F.2d 1355, 1373 (D.C. Cir. 1985), indicated that Congress intended “significant” energy savings in the context of EPCA to be savings that were not “genuinely trivial.” The energy savings for all the TSLs considered in the rulemakings for CUACs/CHHPs and CWAfs, including the adopted standards, are nontrivial, and, therefore, DOE considers them “significant” within the meaning of section 325 of EPCA. To this end, DOE views the considerable data and analysis in support of the standards being adopted as satisfying the clear and convincing threshold set out in EPCA for the adoption of energy conservation standards more stringent than the relevant ASHRAE levels.

F. Economic Justification

1. Specific Criteria

As noted above, EPCA provides seven factors to be evaluated in determining

whether a potentially more-stringent energy conservation standard for the equipment addressed by this direct final rule is economically justified. (42 U.S.C. 6313(a)(6)(B)(ii)(I)–(VII)) The following sections discuss how DOE has addressed each of those seven factors in this rulemaking.

Commenting on the CUAC/CHHP NOPR, AHRI stated that DOE is not performing the full cost-benefit analysis that EPCA Section 6313(a)(6)(B)(ii) requires. It stated that DOE performed cost-benefit considerations at various points of its analysis yet never fully reconciled those analyses or the assumptions and scope of coverage underlying them. It added that DOE’s cost-benefit analyses to the Nation, to manufacturers, and on employment take very different geographic scopes, ignore the immediately apparent effects on employment, and rely on unsupported analyses for effects on the general economy. In its view, DOE must reconcile these various approaches and their assumptions and also make available any models or inputs/outputs it relies upon. AHRI stated that DOE should remedy these shortcomings by performing an integrated, full cost-benefit analysis considering all factors including the effects on all directly related domestic industries. (CUAC: AHRI, No. 68 at pp. 26–29)

As noted above, EPCA Section 6313(a)(6)(B)(ii) lays out the factors DOE shall, to the maximum extent practicable, consider in determining whether the benefits of a given standard exceed the burdens. EPCA does not mention or require the type of integrated cost-benefit analysis that AHRI envisions. It does not state or imply that all of the benefits and burdens need to be quantified in monetary terms. DOE’s historical practice has been to analyze each of the factors to the maximum extent practicable. EPCA does not provide guidance as to the relative importance that DOE should attach to the listed factors. Therefore, in considering the factors listed in EPCA, DOE has historically used data and analysis to determine whether standards that satisfy other EPCA requirements are also economically justified.

DOE also notes that it laid out a process to elaborate on the procedures, interpretations and policies that will guide the Department in establishing new or revised energy efficiency standards for consumer products. 61 FR 36974 (July 15, 1996). That process provides for greatly enhanced opportunities for public input, improved analytical approaches, and encouragement of consensus-based standards. This enhanced approach was

developed by the Department on the basis of extensive consultations with many stakeholders.

a. Economic Impact on Manufacturers and Consumers

In determining the impacts of a potential amended standard on manufacturers, DOE conducts a manufacturer impact analysis (“MIA”), as discussed in section IV.J. (42 U.S.C. 6313(a)(6)(B)(ii)(I)) DOE first uses an annual cash-flow approach to determine the quantitative impacts. This step includes both a short-term assessment—based on the cost and capital requirements during the period between when a regulation is issued and when entities must comply with the regulation—and a long-term assessment over the analysis period. The industry-wide impacts analyzed include: (1) Industry net present value (“INPV”), which values the industry on the basis of expected future cash flows; (2) cash flows by year; (3) changes in revenue and income; and (4) other measures of impact, as appropriate. Second, DOE analyzes and reports the impacts on different subgroups of manufacturers, including impacts on small manufacturers. Third, DOE considers the impact of standards on domestic manufacturer employment and manufacturing capacity, as well as the potential for standards to result in plant closures and loss of capital investment. Finally, DOE takes into account cumulative impacts of various DOE regulations and other regulatory requirements on manufacturers.

For individual commercial consumers, measures of economic impact include the changes in LCC and PBP associated with new or amended standards. These measures are discussed further in the following section. For consumers in the aggregate, DOE also calculates the national net present value of the economic impacts applicable to a particular rulemaking. DOE also evaluates the LCC impacts of potential standards on identifiable subgroups of consumers that may be affected disproportionately by a national standard.

b. Savings in Operating Costs Compared to Increase in Price (LCC and PBP)

EPCA requires DOE to consider the savings in operating costs throughout the estimated average life of the covered equipment in the type (or class) compared to any increase in the price of, or in the initial charges for, or maintenance expenses of, the covered product that are likely to result from a standard. (42 U.S.C. 6313(a)(6)(B)(ii)(II))

²³ The FFC metric is discussed in DOE’s statement of policy and notice of policy amendment. 76 FR 51282 (August 18, 2011), as amended at 77 FR 49701 (August 17, 2012).

²⁴ Primary energy consumption refers to the direct use at the source, or supply to users without transformation, of crude energy; that is, energy that has not been subjected to any conversion or transformation process.

DOE conducts this comparison in its LCC and PBP analysis.

The LCC is the sum of the purchase price of a product (including its installation) and the operating cost (including energy, maintenance, and repair expenditures) discounted over the lifetime of the equipment. The LCC analysis requires a variety of inputs, such as equipment prices, equipment energy consumption, energy prices, maintenance and repair costs, equipment lifetime, and discount rates appropriate for commercial consumers. To account for uncertainty and variability in specific inputs, such as equipment lifetime and discount rate, DOE uses a distribution of values, with probabilities attached to each value.

The PBP is the estimated amount of time (in years) it takes commercial consumers to recover the increased purchase cost (including installation) of more-efficient equipment through lower operating costs. DOE calculates the PBP by dividing the change in purchase cost due to a more-stringent standard by the change in annual operating cost for the year that standards are assumed to take effect.

For its LCC and PBP analysis, DOE assumes that commercial consumers will purchase the covered equipment in the first year of compliance with amended standards. The LCC savings for the considered efficiency levels are calculated relative to the case that reflects projected market trends in the absence of amended standards. DOE's LCC and PBP analysis is discussed in further detail in section IV.F.

c. Energy Savings

Although the significant conservation of energy is a separate statutory requirement for adopting an energy conservation standard, EPCA requires DOE, in determining the economic justification of a standard, to consider the total projected energy savings that are expected to result directly from the standard. (42 U.S.C. 6313(a)(6)(B)(ii)(III)) As discussed in section IV.H, DOE uses the NIA spreadsheet to project national energy savings.

Commenting on the CUAC NOPR, AHRI stated that DOE gave energy savings disproportionate weight in its analysis, which conflicts with 42 U.S.C. 6313(a)(6)(A)(ii)(II) and 6313(a)(6)(B)(ii)(I)–(VII). In its view, DOE should consider seven different factors in determining whether the benefits of a proposed standard exceed its burdens, and stated that there is no indication in the statute or otherwise that Congress intended this to be anything other than a roughly equal

weighting of factors where no particular factor is king over all the others. (CUAC: AHRI, No. 68 at p. 22)

Section 6313(a)(6)(A)(ii)(II) concerns DOE's authority to adopt a national standard more stringent than the amended ASHRAE/IES Standard 90.1 if such standard would result in the significant additional conservation of energy and is technologically feasible and economically justified. Section V.C of this document sets forth in detail the reasons why DOE has concluded that the adopted standards for CUACs/ CUHPs would result in the significant additional conservation of energy and are technologically feasible and economically justified.

Section 6313(a)(6)(B)(ii)(I)–(VII) lists the factors that DOE must consider in determining whether a standard is economically justified for the purposes of subparagraph (A)(ii)(II). Weighing these factors, in DOE's view, requires a careful balancing of each factor to help ensure the comprehensiveness of the Agency's review of any potential standard under consideration. Accordingly, DOE has weighed these factors in assessing the energy efficiency levels recommended by the Working Group.

d. Lessening of Utility or Performance of Equipment

In establishing equipment classes, and in evaluating design options and the impact of potential standard levels, DOE evaluates potential standards that would not lessen the utility or performance of the considered equipment. (42 U.S.C. 6313(a)(6)(B)(ii)(IV)) Based on data available to DOE, the standards adopted in this final rule would not reduce the utility or performance of the equipment under consideration in this rulemaking.

e. Impact of Any Lessening of Competition

EPCA directs DOE to consider the impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from a proposed standard. (42 U.S.C. 6313(a)(6)(B)(ii)(V)) Specifically, it instructs DOE to consider the impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the imposition of the standard. DOE is simultaneously publishing a NOPR containing proposed energy conservation standards identical to those set forth in this direct final rule and has transmitted a copy of the rule and the accompanying TSD to the Attorney General, requesting that the U.S. Department of Justice ("DOJ") provide its determination on this issue.

DOE will consider DOJ's comments on the direct final rule in determining whether to proceed with finalizing its standards. DOE will also publish and respond to the DOJ's comments in the **Federal Register** in a separate notice.

f. Need for National Energy Conservation

DOE also considers the need for national energy conservation in determining whether a new or amended standard is economically justified. (42 U.S.C. 6313(a)(6)(B)(ii)(VI)) The energy savings from the adopted standards for CUACs/ CUHPs and CWAfFs are likely to provide improvements to the security and reliability of the Nation's energy system. Reductions in the demand for electricity also may result in reduced costs for maintaining the reliability of the Nation's electricity system. DOE conducts a utility impact analysis to estimate how standards may affect the Nation's needed power generation capacity, as discussed in section IV.M.

The adopted standards also are likely to result in environmental benefits in the form of reduced emissions of air pollutants and GHGs associated with energy production and use. DOE conducts an emissions analysis to estimate how potential standards may affect these emissions, as discussed in section IV.K; the emissions impacts are reported in section V.B.6 of this document. DOE also estimates the economic value of emissions reductions resulting from the considered TSLs, as discussed in section IV.L.

Commenting on the CUAC/ CUHP NOPR, AHRI questioned DOE's inclusion of environmental benefits in its consideration since none of the more specific factors in section 6313(a)(6)(B)(ii)(I)–(VI) refer to environmental matters. (AHRI asserted that DOE must have based its inclusion of environmental and SCC benefits on the catch-all "other factors" provision of 42 U.S.C. 6313(a)(6)(B)(ii)(VII).) AHRI stated that DOE must clarify precisely why and how it believes that it has the statutory authority under section 6313(a)(6)(B)(ii) to consider SCC issues in any fashion, and, if so, under what sub-provision (*i.e.*, which of the seven factors) such analysis comes. (CUAC: AHRI, No. 68 at p. 28)

DOE maintains that environmental and public health benefits associated with the more efficient use of energy are important to take into account when considering the need for national energy and water conservation, which is one of the factors to consider under EPCA. (42 U.S.C. 6295(o)(2)(B)(i)(VI)) Given the threats posed by global climate change to the economy, public health,

ecosystems, and national security,²⁵ combined with the well-recognized potential of well-designed energy conservation measures to reduce GHG emissions, DOE believes that evaluation of the potential benefits from slowing anthropogenic climate change must be part of the consideration of the need for national energy conservation.

g. Other Factors

In determining whether an energy conservation standard is economically justified, DOE may consider any other factors that the Secretary deems to be relevant. (42 U.S.C.

6313(a)(6)(B)(ii)(VII)) In developing the direct final rule, DOE has also considered the submission of the jointly-submitted Term Sheet from the Working Group and approved by ASRAC. In DOE's view, the Term Sheet sets forth a statement by interested persons that are fairly representative of relevant points of view (including representatives of manufacturers of covered equipment, States, and efficiency advocates) and contains recommendations with respect to energy conservation standards that are in accordance with 42 U.S.C. 6313(a)(6)(B), as required by EPCA's direct final rule provision. See 42 U.S.C. 6295(p)(4). DOE has encouraged the submission of agreements such as the one developed and submitted by the CUAC-CUHP-CWAF Working Group as a way to bring diverse stakeholders together, to develop an independent and probative analysis useful in DOE standard setting, and to expedite the rulemaking process. DOE also believes that standard levels recommended in the Term Sheet may increase the likelihood for regulatory compliance, while decreasing the risk of litigation.

2. Rebuttable Presumption

EPCA creates a rebuttable presumption that an energy conservation standard is economically justified if the additional cost to the commercial consumer of an equipment that meets the standard is less than three times the value of the first year's energy savings resulting from the standard, as calculated under the applicable DOE test procedure. 42 U.S.C. 6295(o)(2)(B)(iii) Although this rebuttable presumption is not specifically mentioned in section 6316(b)(1) as applying to CUACs/CUHPs

and CWAFFs, DOE nonetheless considered the rebuttable presumption criteria as part of its analysis. DOE's LCC and PBP analyses generate values used to calculate the effect potential amended energy conservation standards would have on the payback period for consumers. These analyses include, but are not limited to, the 3-year payback period contemplated under the rebuttable-presumption test. In addition, DOE routinely conducts an economic analysis that considers the full range of impacts to consumers, manufacturers, the Nation, and the environment, as required under 42 U.S.C. 6295(o)(2)(B)(i), and 42 U.S.C. 6313(a)(6)(B)(ii). The results of this analysis serve as the basis for DOE's evaluation of the economic justification for a potential standard level (thereby supporting or rebutting the results of any preliminary determination of economic justification). The rebuttable presumption payback calculation is discussed in section IV.F of this document.

G. Energy Efficiency Descriptors for Commercial Unitary Air Conditioners and Heat Pumps

The current energy conservation standards for CUACs and CUHPs are based on the metrics EER for cooling efficiency and COP for CUHP heating efficiency. See 10 CFR 431.97(b). In this direct final rule, DOE is adopting energy conservation standards based on IEER for cooling efficiency and is continuing to use COP for denoting CUHP heating efficiency.

1. Cooling Efficiency Metric

In the CUAC/CUHP RFI, DOE noted that it was considering whether to replace the existing cooling efficiency descriptor, EER, with a new energy-efficiency descriptor, IEER. 78 FR at 7299. Unlike the EER metric, which only uses the efficiency of the equipment operating at full-load in high-ambient-temperature conditions (*i.e.*, 95 degrees Fahrenheit (°F)), the IEER metric factors in the efficiency of equipment operating at part-loads of 75 percent, 50 percent, and 25 percent of capacity at reduced ambient temperature consistent with part-load operation as well as the efficiency at full-load. This is accomplished by weighting the full- and part-load efficiencies with a representative average amount of time operating at each loading point. The IEER metric incorporates part-load efficiencies measured with outside temperatures appropriate for the load levels, *i.e.* at lower temperatures for lower load levels. As part of a final rule published

on May 16, 2012, DOE amended the test procedure for this equipment to incorporate by reference AHRI Standard 340/360—2007, "Performance Rating of Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment" ("AHRI Standard 340/360—2007"). 77 FR 28928. DOE notes that AHRI Standard 340/360—2007 already includes methods and procedures for testing and rating equipment with the IEER metric. ASHRAE, through its Standard 90.1, includes requirements based on the part-load performance metric, IEER. These IEER requirements were first established in *Addenda* to the 2008 Supplement to Standard 90.1—2007, and were required for compliance with ASHRAE Standard 90.1 on January 1, 2010.²⁶

EPCA requires that test procedures be reasonably designed to produce test results that measure the energy efficiency of covered equipment during a representative average use cycle or period of use. (42 U.S.C. 6314(a)(2)) As discussed above, the IEER metric weights the efficiency of operating at different part-loads and full-load based on usage patterns, which collectively provide a more representative measure of annual energy use than the EER metric. A manufacturer that was involved in the development of the IEER metric indicated that the usage pattern weights for the IEER metric were developed by analyzing equipment usage patterns of several buildings across the 17 ASHRAE Standard 90.1—2010 (appendix B) climate zones. (Docket ID: EERE-2013-BT-STD-0007-0018, Carrier, at p. 1) These usage patterns and climate zones were based on a comprehensive analysis performed by industry in assessing the manner in which CUAC and CUHP equipment operate in the field, both in terms of actual usage and the climatic conditions in which they are used. The weighting factors accounted for the hours of operation where mechanical cooling was active—*i.e.*, the associated analysis assumed use of economizing (use of cool outdoor air for cooling) for appropriate hours in climate zones for which equipment would be installed with this feature. *Id.* As a result, DOE stated in the CUAC/CUHP NOPR that the IEER metric, as a whole, provides a more accurate representation of the annual energy use for this equipment than the EER metric, which only considers full-load energy use. For these reasons, DOE proposed to amend its

²⁵ National Climate Assessment 2014. Available at: <http://nca2014.globalchange.gov/>. The National Security Implications of a Changing Climate. May 2015. The White House. Available at: <https://www.whitehouse.gov/the-press-office/2015/05/20/white-house-report-national-security-implications-changing-climate>.

²⁶ ASHRAE. ASHRAE Addenda. 2008 Supplement. http://www.ashrae.org/File%20Library/docLib/Public/20090317_90_1_2007_supplement.pdf.

energy conservation standards for CUACs/CHUPs to be based on the IEER metric. 79 FR at 58959.

AHRI, Nordyne, Rheem, Trane, the Joint Efficiency Advocates, and Southern Company all generally supported using IEER as the proposed metric. (CUAC: AHRI, No. 68 at p. 42; Nordyne, No. 61 at p. 35; Rheem, No. 70 at p. 2; Trane, No. 63 at p. 6; Joint Efficiency Advocates, No. 69 at pp. 1–2; Southern Company, Public Meeting Transcript, No. 104 at p. 25) The Joint Efficiency Advocates supported DOE's proposal to replace EER with IEER. In their view, DOE could retain the EER standards while adding IEER. They added that if DOE decided to use a single metric, IEER would better reflect annual energy consumption than EER since this equipment rarely operates at full-load. (CUAC: Joint Efficiency Advocates, No. 69 at pp. 1–2)

While supporting the use of IEER, AHRI, Nordyne, and Lennox recognized that EER will continue to be an important metric for utilities when managing peak load electricity usage. (CUAC: AHRI, No. 68 at p. 42; Nordyne, No. 61 at p. 35; Lennox, No. 60 at p. 14) The California IOUs recommended that DOE establish standards using both EER and IEER metrics to prevent poor equipment performance at high temperature full-load conditions. Given the low weighting (2 percent) of the full-load condition for the IEER metric, there is an incentive for manufacturers to optimize equipment at the part-load conditions with ambient temperatures between 65 °F and 82 °F. The California IOUs indicated that moving to an IEER-only metric could potentially mean that a new standard could result in equipment that is designed with full-load EER values lower than the current standards. (CUAC: California IOUs, No. 67 at p. 2; California IOUs, ASRAC Public Meeting, No. 102 at p. 99) The California IOUs commented that, in the absence of dual metrics using both EER and IEER, they supported standards based on EER, or use of IEER accompanied by required reporting of each of the IEER test points, including full-load EER. (CUAC: California IOUs, No. 67 at pp. 2, 7–8) The Joint Efficiency Advocates similarly supported the reporting of each IEER test point. (CUAC: Joint Efficiency Advocates, No. 69 at p. 8)

However, the California IOUs and other members of the ASRAC Working Group more recently agreed as Term Sheet signatories to recommend that DOE adopt standards for CUACs and CHUPs based on IEER for cooling efficiency. (CUAC: ASRAC Term Sheet, No. 93 at pp. 2–4) DOE also notes that

ASHRAE Standard 90.1 includes requirements and reporting for both EER and IEER. As a result, although DOE is setting energy conservation standards for CUACs and CHUPs based on the IEER metric, EER ratings of equipment would still be available through the AHRI certification database. DOE notes that AHRI and manufacturers agreed to continue to require verification and reporting of EER for equipment through AHRI's certification program. AHRI also agreed to submit a letter to the docket for this rulemaking committing to continuing to require verification and reporting of EER for its certification program. (CUAC: ASRAC Public Meeting, No. 101 at pp. 9, 55; ASRAC Public Meeting, No. 103 at pp. 113–116) Thus, utilities, and others, would still be able to consider full-load efficiency in their energy efficiency programs. For these reasons, and for the reasons stated previously that the IEER metric provides a more accurate representation of the annual energy use for this equipment, DOE is adopting standards for small, large, and very large, CUACs and CHUPs cooling efficiency based on the IEER metric.

DOE notes that a change in metrics (*i.e.*, from EER to IEER) necessitates an initial DOE determination that the new requirement would not result in backsliding when compared to the current standards. See 42 U.S.C. 6313(a)(6)(B)(iii)(I). As discussed in section IV.A, DOE conducted energy modeling by selecting actual models available on the market that comply with the current DOE energy conservation standards for these equipment based on EER, to evaluate each IEER efficiency level (by analyzing the efficiency at each loading condition, including full-load EER). Based on this analysis, staged-air volume (“SAV”) and variable-air volume (“VAV”) equipment—two types of CUAC/CHUP equipment that include design features focused on improved part-load performance as opposed to full-load EER performance²⁷—that already meet

²⁷ SAV units typically use a multiple-speed indoor fan motor, which is achieved by incorporating a variable frequency drive (“VFD”) to adjust the motor speed to provide two stages of indoor air flow to match staged compressor operation and thus provide improved part-load performance. For the first stage of operation, the indoor fan motor is controlled to provide two-thirds of the total air flow established for the unit. For the second stage, the VFD adjusts the indoor fan motor to provide the total air flow established for the unit (*i.e.*, 100-percent air flow). VAV units are capable of providing more accurate control of supply air temperature by varying cooling capacity and air flow rates. VAV units are typically equipped with a VFD to control the indoor fan speed based on supply air pressure and operate at multiple stages of air flow rates to match the variable cooling

the energy conservation standard levels adopted in this direct final rule had EER values higher than the current standard levels for this equipment—*i.e.*, these equipment were more efficient than what the current EER-based standards require. Even with the design changes that are focused on improved part-load performance (as with SAV and VAV units), the equipment exceeded the current EER standard levels, which suggests that the risk of backsliding is low.

As discussed in section IV.A.2.a, DOE is establishing separate equipment classes for double-duct CUACs and CHUPs and is maintaining the current energy conservation standards for this equipment. As a result, DOE is maintaining the existing EER metric for the double-duct CUAC and CHUP equipment classes.

2. Heating Efficiency Metric

The current energy conservation standards for small, large, and very large air-cooled CHUPs heating efficiency are based on the COP metric.²⁸ 10 CFR 431.97(b) For the CUAC/CHUP NOPR, DOE proposed standards for heating efficiency based on the COP metric. See 79 FR at 58960.

AHRI, Nordyne, Goodman and Rheem supported the continued use of COP as the heating efficiency metric for CHUPs. (CUAC: AHRI, No. 68 at p. 42; Nordyne, No. 61 at p. 35; Goodman, No. 65 at p. 12; Rheem, No. 70 at p. 2) In addition, members of the ASRAC Working Group agreed as signatories to the Term Sheet to standards for air-cooled CHUPs based on COP for heating efficiency. (CUAC: ASRAC Term Sheet, No. 93 at pp. 2–4) As discussed in section IV.A, DOE is adopting standards for air-cooled CHUPs in this direct final rule based on COP for heating efficiency.

H. Other Issues

1. Economic Justification of the Proposed Standards

a. Small, Large, and Very Large Commercial Package Air Conditioning and Heating Equipment

In response to the CUAC/CHUP NOPR, AHRI commented that DOE did not explain how it concluded that the proposed rulemaking would result in the significant additional conservation

capacity (either by multiple compressor staging or variable-speed compressors). In contrast, constant air volume (CAV) CUACs and CHUPs typically use a single speed indoor fan motor and operate by controlling cooling capacity based on temperature/humidity in the conditioned space and operate at a fixed indoor air flow rate supplying variable temperature air.

²⁸ COP is defined as the ratio of the produced heating effect to its net work input.

of energy and is technologically feasible and economically justified by clear and convincing evidence, as required by 42 U.S.C. 6313(a)(6)(A)(ii)(II). (CUAC: AHRI, No. 68 at pp. 12–13) Lennox and Nordyne made similar comments. (CUAC: Lennox, No. 60 at pp. 4–5; Nordyne, No. 61 at pp. 6–8) AHRI stated that DOE's analysis fell short of this elevated requirement of proof. AHRI added that instead of starting with the max-tech standard level, DOE was obliged by Section 6313(a)(6)(A)(ii) to first consider the amended ASHRAE standard for adoption, and consider a higher level only based on clear and convincing evidence. (CUAC: AHRI, No. 68 at p. 13)

Trane stated that DOE's CUAC/CUHP NOPR analysis grossly underestimated the costs at all the TSL levels and, therefore, overstated the benefits to the nation. (CUAC: Trane, No. 63 at p. 8)

AHRI also commented that the proposed minimum efficiency level (EL3) represents a significant increase from the ASHRAE 90.1–2013 levels that will become effective in 2016. It stated that in order to achieve EL 3 levels it will be necessary to redesign approximately 80 percent of all units that are commercially-available today, and as a result, many classes of products will be eliminated, causing a significant contraction of the market. AHRI stated that the required design modifications will come at a significant cost to the consumer, and consumers who are unable to afford more efficient units will likely continue to repair and not replace units in service. It added that the situation could potentially alter the competitive landscape as other technologies are favored as alternatives (e.g., water-cooled, evaporatively-cooled, and variable refrigerant flow mult-split air conditioners and heat pumps). (CUAC: AHRI, Public Meeting Transcript, No. 104 at pp. 15–16) Lennox also stated that the proposed standards would require over 90 percent of its current products to be redesigned. (CUAC: Lennox, No. 60 at p. 8)

b. Commercial Warm Air Furnaces

Trane stated that the LCC savings for gas-fired CWFAs at the proposed standard are hardly measurable, and any slight change in the increase in product cost, installation or maintenance costs, and energy prices can change these savings to an increase in LCC. Similar results would occur in the NPV calculation where a positive NPV could easily become an increase in costs to the nation. (CWFAs: Trane, No. 27 at p. 7)

c. Response

DOE notes that while it is not adopting the proposed standards from the CUAC/CUHP and CWFAs NOPRs, these comments, along with the intensive feedback received during the Working Group discussions contributed to the modified approach and revised standards recommended by the ASHRAE Working Group that DOE is presenting in this direct final rule. As discussed in section V.C, DOE has determined that the recommendations are in accordance with the provisions of 42 U.S.C. 6313(a)(6)(B), as required by 42 U.S.C. 6295(p)(4) and 6316(b)(1). The evidence supporting this determination is clearly described in detail in the direct final rule TSDs and the accompanying spreadsheets. The evidence that the adopted standards would result in the significant additional conservation of energy and are technologically feasible is convincing, as the projected energy savings exceed the threshold for significance by a wide margin (see section III.E.2), and their technological feasibility, based on DOE's examination, is well-established (see section III.D). The evidence that the adopted standards are economically justified is also convincing. In particular, the economic impact of the standards on the consumers of CUACs/CUHPs and CWFAs is positive by a wide margin, as discussed in section V.C.

2. ASHRAE 90.1 Process

Commenting on the CUAC/CUHP NOPR, a number of parties stated that DOE should rely on the ASHRAE process in setting amended commercial equipment efficiency standards.

ASHRAE urged DOE to rely on the efficiencies established in ASHRAE Standard 90.1–2013 for the equipment listed in this rulemaking. It noted that: (1) ASHRAE 90.1–2013 underwent the fully open ANSI/ASHRAE consensus process with buy-in and consensus from manufacturers, energy advocates, representatives from DOE, and other materially affected and interested parties; (2) the efficiency levels were established in a cost-effective manner using the ASHRAE “scalar ratio” economic analysis methodology; and (3) many interested parties, including DOE, invested a significant amount of time and energy in establishing the efficiency levels currently found in ASHRAE 90.1–2013 with ample opportunities to provide input. ASHRAE recommended that DOE no longer pursue the proposed rulemaking, and approve the ASHRAE 90.1–2013 efficiency levels for this equipment. (CUAC: ASHRAE, No. 59 at pp. 1–4). AHRI, Goodman and Lennox

made a similar comment. (CUAC: AHRI, No. 68 at pp. 2, 10–11; Goodman, No. 65 at pp. 2–3; Lennox, No. 60 at pp. 8–9) A number of other parties made similar comments. (CUAC: Huntley, No. 62 at p. 1; Viridis, No. 56 at p. 1; Merryman-Farr, No. 49 at p. 1; KJWW, No. 46 at p. 1; Smith-Goth, No. 45 at p. 1; A2H, No. 44 at p. 1)

Notwithstanding DOE's participation in the development of ASHRAE Standard 90.1–2013, which did not impact the EER standards for which DOE already incorporated into its regulations, amendments to EPCA established by AEMTCA required DOE to initiate the current rulemaking, which DOE began in advance of the ASHRAE 90.1–2013 amendments (see section II.A). EPCA, as amended, also directs DOE to prescribe standards that are designed to achieve the maximum improvement in energy efficiency that is technologically feasible and economically justified, and would result in the significant additional conservation of energy. (42 U.S.C. 6313(a)(6)(A)(ii)(II)) It also provides the factors that DOE has considered to select and adopt standards for which the benefits exceed the burdens. (42 U.S.C. 6313(a)(6)(B)(ii)) In DOE's view, the standards being adopted in this direct final rule satisfy these elements. DOE further notes that AHRI, Goodman and Lennox are parties to the recommendations that form the basis for this direct final rule, pursuant to 42 U.S.C. 6295(p)(4) and 6316(b)(1), indicating that the direct final rule's standard levels and supporting analyses resolved their concerns related to DOE's initial NOPR.

3. Other

Referring to section VI.A of the CUAC/CUHP NOPR, AHRI stated that DOE did not present evidence to support two of the market failures that it identified pursuant to section 1(b)(1) of Executive Order 12866.²⁹ (CUAC: AHRI, No. 68 at pp. 24–25) AHRI stated that DOE must demonstrate that such market failures actually exist in the real world and that once quantified, DOE's assessment of costs and benefits for its

²⁹ Specifically, in AHRI's view, DOE did not establish that the following market failures exist: (1) There is a lack of customer information in the commercial space conditioning market, and the high costs of gathering and analyzing relevant information leads some customers to miss opportunities to make cost-effective investments in energy efficiency; and (2) In some cases, the benefits of more efficient equipment are not realized due to misaligned incentives between purchasers and users. (E.g. where an equipment purchase decision is made by a building contractor or building owner who does not pay the energy costs.) See CUAC: AHRI, No. 68 at 24.

rules in this area align with such an important external validity check on its analysis.

Section 1(b)(1) of Executive Order (E.O.) 12866, "Regulatory Planning and Review," 58 FR 51735 (Oct. 4, 1993), requires each agency to identify the problem that it intends to address (including, where applicable, the failures of private markets or public institutions that warrant new agency action), as well as to assess the significance of that problem. As discussed in section VI.A of this direct final rule, DOE identified two problems that would generally be considered "market barriers" (numbers 1 and 2 in section VI.A, which are related to certain features concerning consumer decision-making), and one problem that most economists would consider a "market failure" (number 3, which concerns environmental externalities).³⁰ E.O. 12866 does not require any quantification of the problems, which in any case would be extremely difficult. Such quantification would unlikely bear any relationship to the costs and benefits estimated for energy conservation standards. E.O. 12866 does not provide any specific guidance regarding how agencies should assess the significance of the identified problems. However, DOE's extensive activities in promoting energy conservation over several decades have demonstrated that the problems of (1) lack of consumer information and/or information processing capability about energy efficiency opportunities, and (2) and asymmetric information and/or high transactions costs are significant enough to warrant policy actions designed to help overcome them.

Miller indicated that neither of the potential market failures cited by DOE (externalities related to GHG emissions and asymmetric information (and related misaligned incentives) regarding high-efficiency commercial appliances is solved by its proposed energy efficiency standards, leaving the proposal economically unjustifiable. Miller further stated that DOE does not explain why sophisticated, profit-motivated purchasers of CUACs and CUHPs would suffer from either informational deficits or cognitive biases that would cause them to purchase products with high lifetime costs without demanding higher-price, higher-efficiency products. Miller added that this asymmetric information, if it exists, could be remedied by improved

labeling or other types of consumer education campaigns rather than banning products from the marketplace. (Miller, No. 39 at p. 13)

The proposed standards, as well as the adopted standards contained in this direct final rule, are intended to address the above-cited problems, but DOE's action is primarily responsive to the statutes that govern the amendment of energy efficiency standards (see section II.A). Neither the relevant statutes nor the relevant Executive Order (Executive Order 12866, "Regulatory Planning and Review")³¹ make any mention of solving the problems that DOE has identified. Incorporating external costs into energy prices is outside the scope of any existing DOE authority. DOE agrees that improved labeling or other types of consumer education campaigns could help to ameliorate information problems, but DOE is still required to follow the statutory obligations concerning amendment of energy efficiency standards.

Miller stated that DOE expects only 10 percent of the externality benefits of carbon reductions to accrue to Americans, so the costs to American citizens outweigh the social benefits of the standard by almost 3 to 1, calling into question whether the proposal is economically justified. (Miller, No. 39 at p. 13)

DOE notes that the domestic SCC values were estimated by the interagency Working Group as a range from 7 percent to 23 percent of the global values. Using the central SCC value, the domestic CO₂ reduction monetized value from the proposed standards amounts to \$2.2 to \$7.1 billion. The incremental costs range from \$4.1 to \$8.8 billion for 7-percent and 3-percent discount rates, respectively, but the operating cost savings are far larger, such that the NPV of consumer benefit ranges from \$16.5 billion to \$50.8 billion for 7-percent and 3-percent discount rates, respectively.

Miller stated that DOE's proposal does not maintain flexibility and freedom of choice for purchasers of CUAC and CUHP equipment. (Miller, No. 39 at p. 13) In contrast to the proposed standards, which DOE is not adopting, the standards adopted for CUACs and CUHPs allow a much higher share of currently-produced models to remain on the market. The models that would be allowed under the standards cover a wide range of efficiencies and other attributes, thereby maintaining considerable choice for purchasers of CUACs and CUHPs.

IV. Methodology and Discussion of Related Comments

This section addresses the analyses DOE has performed for this rulemaking. Separate subsections address each component of DOE's analyses.

DOE used several analytical tools to estimate the impact of the standards considered in support of this direct final rule. The first tool is a spreadsheet that calculates the LCC savings and PBP of potential amended or new energy conservation standards. The national impacts analysis uses a second spreadsheet set that provides shipments forecasts and calculates national energy savings and net present value of total consumer costs and savings expected to result from potential energy conservation standards. DOE uses the third spreadsheet tool, the Government Regulatory Impact Model (GRIM), to assess manufacturer impacts of potential standards. These spreadsheet tools are available on the DOE Web site for the rulemaking for CUACs/CUHPs: http://www1.eere.energy.gov/buildings/appliance_standards/rulemaking.aspx?ruleid=59; and for CWAfFs: http://www1.eere.energy.gov/buildings/appliance_standards/rulemaking.aspx/ruleid/70. Additionally, DOE used output from the latest version of EIA's *Annual Energy Outlook (AEO)*, a widely known energy forecast for the United States, for the emissions and utility impact analyses.

A. Market and Technology Assessment

1. General

For the market and technology assessment, DOE developed information that provided an overall picture of the market for the equipment concerned, including the purpose of the equipment, the industry structure, market characteristics, and the technologies used in the equipment. This activity included both quantitative and qualitative assessments, based primarily on publicly-available information. The subjects addressed in the market and technology assessment for this rulemaking include scope of coverage, equipment classes, types of equipment sold and offered for sale, manufacturers, and technology options that could improve the energy efficiency of the equipment under examination. The key findings of DOE's market and technology assessment are summarized below. For additional detail, see chapter 3 of the CUAC/CUHP and CWAfF direct final rule TSDs.

³⁰ Note that since the publication of the CUAC/CUHP NOPR, DOE has refined the description of the problems identified pursuant to E.O. 12866. See section VI.A.

³¹ 58 FR 51735 (Oct. 4, 1993).

2. Scope of Coverage and Equipment Classes

a. Commercial Unitary Air Conditioners and Heat Pumps

The energy conservation standards adopted in this direct final rule cover small, large, and very large, CUACs and CUHPs under section 342(a) of EPCA. (42 U.S.C. 6313(a)) This category of equipment has a rated capacity between 65,000 Btu/h and 760,000 Btu/h. It is designed to heat and cool commercial buildings. In the case of single-package units, which house all of the components (*i.e.*, compressor, condenser and evaporator coils and fans, and associated operating and control devices) within a single cabinet,

these units are typically located on the building's rooftop. In the case of split-system units, the compressor and condenser coil and fan (or in the case of CUHPs, the outdoor coil and fan) are housed in a cabinet typically located on the outside of the building, and the evaporator coil and fan (or in the case of CUHPs, the indoor coil and fan) are housed in a cabinet typically located inside the building.

When evaluating and establishing energy conservation standards, DOE divides covered equipment into equipment classes by the type of energy used, capacity, or other performance-related features that would justify a different standard. In determining

whether a performance-related feature would justify a different standard, DOE considers such factors as the utility to the consumer of the feature and other factors DOE determines are appropriate. All of the different air conditioning and heat pump equipment addressed by this rule are air-cooled unitary air-conditioners and heat pumps.

The current equipment classes that EPCAct 2005 established for small, large, and very large CUACs and CUHPs divide this equipment into twelve classes characterized by rated cooling capacity, equipment type (air conditioner versus heat pump), and heating type. Table IV–1 shows the current equipment class structure.

TABLE IV–1—CURRENT AIR-COOLED CUAC AND CUHP EQUIPMENT CLASSES

Equipment class	Equipment type	Cooling capacity	Sub-category	Heating type
1	Small Commercial Packaged Air-Conditioning and Heating Equipment (Air-Cooled).	≥65,000 Btu/h and <135,000 Btu/h.	AC	Electric Resistance Heating or No Heating.
2 .....	.....	.....	.....	All Other Types of Heating.
3 .....	.....	.....	HP	Electric Resistance Heating or No Heating.
4 .....	.....	.....	.....	All Other Types of Heating.
5	Large Commercial Packaged Air-Conditioning and Heating Equipment (Air-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	AC	Electric Resistance Heating or No Heating.
6 .....	.....	.....	.....	All Other Types of Heating.
7 .....	.....	.....	HP	Electric Resistance Heating or No Heating.
8 .....	.....	.....	.....	All Other Types of Heating.
9	Very Large Commercial Packaged Air-Conditioning and Heating Equipment (Air-Cooled).	≥240,000 Btu/h and <760,000 Btu/h.	AC	Electric Resistance Heating or No Heating.
10 .....	.....	.....	.....	All Other Types of Heating.
11 .....	.....	.....	HP	Electric Resistance Heating or No Heating.
12 .....	.....	.....	.....	All Other Types of Heating.

AC = Air conditioner; HP = Heat pump.

In the CUAC/CUHP NOPR, DOE proposed energy conservation standards based on this existing equipment class structure, which is also provided in Table 1 of 10 CFR 431.97. 79 FR 58964.

United CoolAir Corporation (“UCA”) submitted a request that DOE exempt a specific type of air conditioning equipment (“double-duct air-cooled air conditioners”). See UCA, EERE–2013–BT–STD–0007–0020. These units are designed for indoor installation in constrained spaces using ducting to an outside wall for the supply and discharge of condenser air to and from the condensing unit. The sizing of these units is constrained both by the space available in the installation location and the available openings in the building through which the unit’s sections must be moved to reach the final installation location. These size constraints, coupled with the higher power required by the condenser fan to provide sufficient pressure to move the condenser air

through the supply and return ducts, affect the energy efficiency of these types of systems. More conventional designs for which condensers are located outdoors can more easily draw in condenser air through the condenser (or outdoor coil for heat pumps) and can move the air using direct-drive propeller fans. These design differences allow a manufacturer to maximize condenser surface area, reduce the pressure rise requirement of the fan, significantly reduce condenser (outdoor) fan power and improve equipment efficiency.

Currently, double-duct air conditioners are tested and rated under the same test conditions as single-duct air conditioners, without any ducting connected to, or an external static pressure applied on, the condenser side. UCA has asserted that the double-duct design provides customer utility in that it allows interior field installations in existing buildings in circumstances where space constraints make an

outdoor unit impractical to use. *Id.* DOE noted in the CUAC/CUHP NOPR that the design features associated with the described double-duct designs may affect energy use while providing justifiable customer utility. 79 FR at 58964.

In response to the CUAC/CUHP NOPR, a number of heating, ventilating and air conditioning (“HVAC”) equipment distributors—MWSK Equipment Sales Inc. (“MWSK”), H & H Sales Associates, Inc. (“H&H”), Gardiner Trane, Heat Transfer Solutions (“HTS”), HVAC Equipment Sales, Inc., Havtech, and Slade Ross, Inc.—all supported establishing a new equipment class for the indoor horizontal double-duct units. These commenters explained that UCA’s double-duct units are unique in that they are modular and are applied completely inside buildings where rooftop air conditioners and split systems are not practical or possible. (CUAC: MWSK, No. 72 at pp. 1–2; H&H,

No. 73 at p. 1; Gardiner Trane, No. 74 at pp. 1–2; HTS, No. 75 at p. 1; HVAC Equipment Sales, Inc., No. 76 at p. 1; Havtech, No. 77 at p. 1; Slade Ross, Inc., No. 78 at p. 1) MWSK added that the substantial increase in cost (unit and installation) imposed by the proposed standards that will not be able to be recouped with savings in energy expenditures will cause these indoor air conditioners to cease to exist and customers will continue to repair units rather than replace them. Alternative systems are limited and costly for customers to have the application re-engineered. (CUAC: MSWK, No. 72 at pp. 1–2)

Goodman commented that if DOE creates a separate equipment class for double-duct units, the definitions should be very clearly specified to prevent gaming. Goodman stated that the definition should include (a) physical properties of the equipment (fan type and orientation, maximum product height/width/depth, duct connection sizes, or other such parameters), (b) application properties (minimum external static pressure for condenser airflow, refrigerant line set lengths, maximum capacities, etc.), (c) literature requirements (statements within installation and operation manuals and specification sheets), and (d) certification requirements. (CUAC: Goodman, No. 65 at pp. 12–13)

Members of the ASRAC Working Group agreed that a separate equipment class should be established for double-duct CUACs and CUHPs. The ASRAC Term Sheet recommended the following approach with respect to these equipment:

- The existing EER standard levels provided in Table 1 of 10 CFR 431.97 shall continue to apply for double-duct CUACs and CUHPs.

- Double-duct air conditioner or heat pump would be defined as meaning air-cooled commercial package air conditioning and heating equipment that satisfies the following elements:

- It is either a horizontal single package or split-system unit; or a vertical unit that consists of two components that may be shipped or installed either connected or split;
 - It is intended for indoor installation with ducting of outdoor air from the building exterior to and from the unit, where the unit and/or all of its components are non-weatherized and are not marked (or listed) as being in compliance with UL 1995, “Heating and Cooling Equipment,” or equivalent requirements for outdoor use;

- (a) If it is a horizontal unit, the complete unit has a maximum height of 35 inches or the unit has components

that do not exceed a maximum height of 35 inches; (b) If it is a vertical unit, the complete (split, connected, or assembled) unit has components that do not exceed maximum depth of 35 inches; and

- It has a rated cooling capacity greater than or equal to 65,000 Btu/h and up to 300,000 Btu/h. (CUAC: ASRAC Term Sheet, No. 93 at pp. 4–5)

Based on DOE’s review of double-duct CUACs and CUHPs available on the market, DOE agrees with the ASRAC Term Sheet recommendations. First, DOE agrees that these units have features that justify establishing separate equipment classes for them. Double-duct units, as evidenced by several commenters, offer a unique utility that may otherwise become unavailable if these units were subjected to the more rigorous standards required by this direct final rule for other CUAC and CUHP equipment. DOE notes that double-duct units, which are installed within the building envelope and use ductwork to transfer outdoor air to and from the outdoor unit, would have added challenges in meeting more stringent energy conservation standards due to space constraints and added condenser fan power.

Second, DOE agrees that the definition for these units recommended in the ASRAC Term Sheet, with minor modifications, appropriately distinguish them from other classes. Double-duct units must have limited width or height to be able to fit through doorways and to fit in above-ceiling space (for horizontal units) or in closets (for vertical units) for interior installation. DOE’s research showed that vertical and horizontal double-duct units had a width or height of 34 inches or less, respectively. As a result, DOE agrees that specifying a maximum width or height of 35 inches to include only units that can be installed indoors, as presented in the ASRAC Term Sheet recommendations, is appropriate. To this end, DOE is adopting this approach by clarifying the provision. Specifically, since a complete unit cannot be smaller than its largest component, placing the 35-inch restriction on the finished equipment itself addresses the dimensional restrictions intended by the Working Group while simplifying the text of the definition itself. DOE also notes that because these units are designed for indoor installation, as noted by UCA, DOE agrees that these units would require ducting of outdoor air from the building exterior and that units intended for outdoor use should not be considered in the same equipment class. As a result, DOE agrees with the ASRAC Term Sheet

recommendations that double-duct units and/or all of their components should be non-weatherized and not marked as being in compliance with UL Standard 1995 or equivalent requirements for outdoor use. DOE also notes that single package vertical units (“SPVUs”) are already covered under separate standards (10 CFR 431.97(d)). As a result, to ensure that SPVUs are not covered under the definition of double-duct CUACs and CUHPs, DOE agrees with the ASRAC Term Sheet recommendations that for vertical double-duct units, only those with split configurations (that may be installed with the two components attached together) should be included as part of this separate equipment class. For these reasons, DOE is adopting the definition proposed in the ASRAC Term Sheet for double-duct CUACs and CUHPs and is maintaining the existing EER standards contained in Table 1 of 10 CFR 431.97 for this equipment.

b. Commercial Warm Air Furnaces

The energy conservation standards adopted in this direct final rule cover CWAFFs, as defined by EPCA and DOE. EPCA defines a “warm air furnace” as “a self-contained oil- or gas-fired furnace designed to supply heated air through ducts to spaces that require it and includes combination warm air furnace/electric air conditioning units but does not include unit heaters and duct furnaces.” (42 U.S.C. 6311(11)(A)) DOE defines the term “commercial warm air furnace” as meaning “a warm air furnace that is industrial equipment, and that has a capacity (rated maximum input) of 225,000 Btu per hour or more.” 10 CFR 431.72. Accordingly, this rulemaking covers equipment in these categories having a rated capacity of 225,000 Btu/h or higher and that are designed to supply heated air in commercial and industrial buildings via ducts (excluding unit heaters and duct furnaces).³²

As discussed above for CUACs/ CUHPs, DOE divides covered equipment into equipment classes based on the type of energy used, capacity, or other performance-related features that would justify having a higher or lower standard from that which applies to other equipment classes.

The equipment classes for CWAFFs were defined in the EPACT 1992

³² At its most basic level, a CWAFF operates by using a burner to combust fuel (e.g. natural gas or oil) and then pass the products of combustion through a heat exchanger, which is used to warm the indoor air stream by transferring heat from the combustion products. This warm indoor air is delivered via ducts to e.g. the conditioned spaces within the building’s interior.

amendments to EPCA, and are divided into two classes based on fuel type (*i.e.*, one for gas-fired units, and one for oil-

fired units). Table IV–2 shows the equipment class structure for CWAFFs

and the current federal minimum energy efficiency standards.

TABLE IV–2—CWAFFS EQUIPMENT CLASSES

Fuel type	Heating capacity (Btu/h)	Federal minimum thermal efficiency (%)
Gas-fired	≥225,000	80
Oil-fired	≥225,000	81

In response to the CWAFFs NOPR, Nordyne commented that the CWAFF definition should include gas-fired “makeup” air furnaces.³³ Nordyne stated that gas-fired makeup air furnaces follow the same test procedure to determine energy efficiency as do gas-fired CWAFFs, and noted that the heat exchangers, air burners, and other components of gas-fired makeup air furnaces are similar to those in CWAFFs. Further, Nordyne asserted that there is little difference in functionality between these equipment, and there is no sense in performing extra analysis to consider separate equipment classes/standards for gas-fired makeup air furnaces and gas-fired CWAFFs (CWAFF: Nordyne, NOPR Public Meeting Transcript, No. 17 at p. 35–36). DOE reiterates that the definition of a CWAFF requires that (among other criteria) a unit be able to “supply heated air through ducts to spaces that require it” (42 U.S.C. 6311(11)(A)). Therefore, if a makeup air furnace is capable of operating in this manner, and if it meets all other criteria to be classified as a CWAFF, then it would be considered as such under DOE’s regulations.

3. Technology Options

As part of the market and technology assessment, DOE uses information about existing and past technology options and prototype designs to help identify technologies that manufacturers could use to improve CUAC/CHHP and CWAFF energy efficiency. Initially, these technologies encompass all those that DOE believes are technologically feasible. Chapter 3 of the CUAC/CHHP and CWAFF direct final rule TSDs includes the detailed list and descriptions of all technology options identified for this equipment.

a. Commercial Unitary Air Conditioners and Heat Pumps

For the CUAC/CHHP NOPR, DOE considered the technology options presented in Table IV–3. 79 FR at 58969.

TABLE IV–3—TECHNOLOGY OPTIONS CONSIDERED IN THE CUAC/CHHP NOPR

Heat transfer improvements:

- Electro-hydrodynamic enhancement

Alternative refrigerants

Condenser and evaporator fan and fan motor improvements:

- Larger fan diameters
- More efficient fan blades (*e.g.*, air foil centrifugal evaporator fans, backward-curved centrifugal evaporator fans, high efficiency propeller condenser fans)
- High efficiency motors (*e.g.*, copper rotor motor, high efficiency induction, permanent magnet, electronically commutated)
- Variable speed fans/motors

Larger heat exchangers

Microchannel heat exchangers

Compressor Improvements:

- High efficiency compressors
- Multiple compressor staging
- Multiple-tandem or variable-capacity compressors

Thermostatic expansion valves

Electronic expansion valves

Subcoolers

Reduced indoor fan belt loss:

- Synchronous (toothed) belts
- Direct-drive fans

In the CUAC/CHHP NOPR, DOE noted that for the majority of the identified technology options, the analysis considered designs that are generally consistent with existing equipment on the market (*e.g.*, heat exchanger sizes, fan and fan motor types, controls, air flow). 79 FR at 58969.

Goodman commented that all of the technology options listed by DOE are available in the market today and manufacturers can and do use such options whenever they are cost effective. All of the proposed technology options can be used to provide minor

improvements to the HVAC system’s efficiency, specifically IEER, but have minimal, if any, impact on EER. (CUAC: Goodman, No. 65 at p. 13) Goodman stated that the majority of the technology options increase physical size of the components and/or unit. Face area of indoor/outdoor coils can be held constant while improving heat transfer by either additional coil rows or increased fin density. However, Goodman noted that both of those options also increase the fan power required to move air through the coils which at least partially counteracts the gains from more coil surface area. Goodman stated that some of the proposed technology options such as increased condenser fan diameter, while technologically feasible, are not practically feasible. (CUAC: Goodman, No. 65 at p. 13)

Rheem commented that a larger diameter forward-curved indoor fan performs well at the low static test condition but can be unstable when the system is installed with a high static duct system. Rheem also stated that the applicability of the backward-inclined blower wheel requires a complete redesign of a package unit outside envelope, which will add cost to the system. Other options, such as multiple compressors or variable frequency drives, are not as disruptive to the footprint design. Rheem noted that the footprint of the unit intended for the replacement market is restricted to existing roof curbs and duct configurations. Rheem added that additional unit height on very large equipment may be restricted by internal tractor trailer clearances when the equipment is shipped. (CUAC: Rheem, No. 70 at p. 3)

As discussed in section IV.A, DOE selected and analyzed currently available models using their rated efficiency to characterize the energy use and manufacturing production costs at each efficiency level. As a result, DOE analyzed equipment designs, including unit dimensions, expansion devices, and indoor and outdoor coils and fans/

³³ “Makeup” air furnaces may be used to precondition fresh outdoor air for distribution to other air handling units, which then provide further conditioning and distribute the air via ducts to the conditioned space. Alternatively, makeup air furnaces may also condition fresh outdoor air and directly distribute it via ducts to the conditioned space.

motors, consistent with currently available models and the design of the equipment as a whole. As discussed in section IV.A, DOE also considered how changes in the equipment footprint would impact the need for roof curb adapters for replacement installations. For these reasons, DOE believes that the technology options analyzed in this direct final rule accurately reflect the efficiency improvement and incremental manufacturing costs associated with these designs.

Regarding copper rotor motors, DOE noted in the CUAC/CUHP NOPR that manufacturing more efficient copper rotor motors requires using copper instead of aluminum for critical components of an induction motor's rotor (e.g., conductor bars and end rings). DOE noted that in the case of motor rotors for similar horsepower motors, copper rotors can reduce the electric motor total energy losses by between 15 percent and 23 percent as compared to aluminum rotors. As a result, DOE considered copper rotor motors as a technology option. 79 FR at 58966.

Nidec commented that the reduction in electric motor total energy losses estimated by DOE to be achievable with copper rotors when compared to aluminum rotors is not consistent with what has been reported as achievable in previous DOE rulemakings for electric motors nor is it consistent with Nidec's experience. Nidec noted that the TSD for electric motors showed a reduction in total losses of less than 10 percent when changing from an aluminum rotor to a die-cast copper rotor along with additional enhancements to the motor design such as increased stack length, increased slot fill, and/or different lamination steel material. Nidec added that DOE may also be overstating in the electric motors rulemaking the reduction in total losses that can typically be achieved, citing comments made by the National Electrical Manufacturers Association ("NEMA") on that rulemaking indicating that the full-load loss for a prototype 10-hp motor was only 5.9 percent less than that for the motor with the aluminum rotor. (CUAC: Nidec, No. 55 at pp. 2–5)

DOE appreciates the additional information regarding the reduction in total losses associated with copper rotors. As discussed above, DOE considered design options for the engineering analysis consistent with equipment currently available on the market and considered the efficiency of the equipment as a whole rather than quantifying the energy savings associated with individual components. Accordingly, as part of its technology

options analysis, DOE screened in copper rotors as one possible option to improve overall CUAC/CUHP efficiency. However, DOE notes that, based on its review of equipment available on the market, it did not observe any models that incorporated copper rotor motors. Because DOE analyzed the full system design of equipment and specific design options consistent with actual equipment available on the market, DOE did not specifically analyze copper rotor motors as part of the engineering analysis.

Regal-Beloit commented that DOE should consider electronically commutated motors ("ECMs") as an alternate technology for the indoor fan. ECM technology is now a viable alternative to variable frequency drives ("VFDs") for CUACs and CUHPs. Regal-Beloit also commented that DOE should consider ECM technology at efficiency levels other than the max-tech. (CUAC: Regal-Beloit, No. 66 at p. 1) As noted in Table IV–3, DOE considered ECMs as a technology option. As discussed in section IV.C.3.a, DOE revised the engineering analysis to be based on rated models at each efficiency level so that equipment design and specific design options analyzed were consistent with actual equipment at each efficiency level. Based on DOE's review of equipment available on the market, DOE did not observe any models using ECMs for the indoor fan. In addition, Carrier commented as part of the ASRAC Working Group meetings that ECMs are not currently used for indoor fan motor above 1 horsepower. (CUAC: Carrier, ASRAC Public Meeting, No. 94 at p. 186) However, DOE notes that manufacturers would not be precluded from incorporating ECMs for the indoor fan. Details of the design options at each efficiency level are presented in chapter 5 of the CUAC/CUHP direct final rule TSD.

b. Commercial Warm Air Furnaces

In the analyses for this direct final rule, DOE reviewed the market for CWAFs, as well as information gathered from interviews with CWAF manufacturers during the NOPR analyses, to determine the common technologies implemented to improve CWAF efficiency. Based on this information, DOE primarily considered the following technology options to improve CWAF thermal efficiency:

- Increased heat exchanger (HX) surface area³⁴

³⁴ This design option includes a larger combustion inducer (to overcome the pressure drop of the increased HX area). The larger combustion inducer does not directly lead to a higher TE, but

- HX enhancements (e.g., dimples, turbulators)
- Condensing secondary HX (stainless steel)³⁵

DOE notes that a secondary heat exchanger for condensing operation is a possible technology option for CWAFs, but also that this technology has considerable issues to overcome when used in weatherized equipment. These issues relate specifically to the handling of acidic condensate produced by a condensing furnace in the secondary heat exchanger. Condensate must be drained from the furnace to prevent build-up in the secondary heat exchanger, and properly disposed of after exiting into the external environment. Some building codes limit the disposal of condensate into the municipal sewage system, so the condensate must be passed through a neutralizer to reduce its acidity to appropriate levels prior to disposal. In weatherized installations, it is more difficult to access the municipal sewage system than in non-weatherized installations. Condensate produced by a weatherized condensing furnace must flow naturally or be pumped through pipes to the nearest disposal drain, which may not be in close proximity to the furnace. In cold environments, there is a risk of the condensate freezing as it flows through these pipes, which can cause an eventual back-up of condensate into the heat exchanger, resulting in significant damage to the furnace.

Despite these issues, DOE found in its review of the market that multiple manufacturers offer weatherized HVAC equipment with a condensing furnace heating section. DOE believes that this fact indicates that many of the issues related to a condensing secondary heat exchanger can be overcome, and thus, DOE considered a condensing secondary heat exchanger as a technology option. As discussed in section IV.B.1, this technology was ultimately passed through the screening analysis and considered in the engineering analysis. Regarding condensate disposal, DOE included the cost of condensate disposal lines for all condensing installations; for further details on the installation costs of a

would allow the implementation of other technologies (i.e., HX improvements) that would cause the furnace to operate more efficiently.

³⁵ This design option includes a larger combustion inducer fan, upgraded housing for combustion blowers, stainless steel impellers, condensate heater, and condensate drainage system that would be required for condensing operation. Although these design changes do not directly lead to a higher TE, they allow the implementation of condensing operation, which causes the furnace to operate more efficiently.

condensate disposal system, see section IV.F.1 of this direct final rule, and chapter 8 of the CWA direct final rule TSD.

DOE also identified the following additional technology options for improving CWA efficiency. Many of these technologies were either removed from the analysis because they were screened out or because they did not improve the rated TE of CWAs as measured by the DOE test procedure (see section IV.B for further details):

- Pulse combustion
- Low NO_x premix burner
- Low pressure, air-atomized burner (oil-fired CWAs only)
- Burner de-rating
- Two-stage or modulating combustion
- Insulation improvements
- Delayed-action oil pump solenoid valve (oil-fired CWAs only)
- Off-cycle dampers
- Electronic ignition
- Concentric venting
- High-static flame-retention head oil burner (oil-fired CWAs only)

B. Screening Analysis

After DOE identified the technologies that might improve CUAC/CHP and CWA energy efficiency, DOE conducted a screening analysis. The purpose of the screening analysis is to determine which options to consider further and which to screen out. DOE consulted with industry, technical

experts, and other interested parties in developing a list of design options. DOE then applied the following set of screening criteria to determine which design options are unsuitable for further consideration in the rulemaking:

- *Technological Feasibility*: DOE will consider only those technologies incorporated in commercial equipment or in working prototypes to be technologically feasible.

- *Practicability to Manufacture, Install, and Service*: If mass production of a technology in commercial equipment and reliable installation and servicing of the technology could be achieved on the scale necessary to serve the relevant market at the time of the effective date of the standard, then DOE will consider that technology practicable to manufacture, install, and service.

- *Adverse Impacts on Equipment Utility or Equipment Availability*: DOE will not further consider a technology if DOE determines it will have a significant adverse impact on the utility of the equipment to significant subgroups of customers. DOE will also not further consider a technology that will result in the unavailability of any covered equipment type with performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as equipment generally available in the United States at the time.

- *Adverse Impacts on Health or Safety*: DOE will not further consider a technology if DOE determines that the technology will have significant adverse impacts on health or safety.

Additionally, DOE notes that these screening criteria do not directly address the proprietary status of technology options. DOE only considers efficiency levels achieved through the use of proprietary designs in the engineering analysis if they are not part of a unique path to achieve that efficiency level (*i.e.*, if there are other non-proprietary technologies capable of achieving the same efficiency). DOE believes the standards for the equipment covered in this rulemaking would not require the use of any proprietary technologies, and that all manufacturers would be able to achieve the proposed levels through the use of non-proprietary designs.

Technologies that pass through the screening analysis are referred to as “design options” and are subsequently examined in the engineering analysis for consideration in DOE’s downstream cost-benefit analysis.

1. Commercial Unitary Air Conditioners and Heat Pumps

For CUACs and CHPs, DOE screened out the following technology options in the CUAC/CHP NOPR. 79 FR at 58969–58970.

TABLE IV—4—TECHNOLOGY OPTIONS SCREENED OUT FOR THE CUAC/CHP NOPR

Technology option	Reason for screening out
Electro-hydrodynamic enhanced heat transfer	Practicability to manufacture, install, and service; technological feasibility.
Alternative refrigerants	
Sub-coolers	

Regarding the use of potential refrigerants, in the CUAC/CHP NOPR, DOE considered ammonia, carbon dioxide, and various hydrocarbons (such as propane and isobutane) as alternative refrigerants to those that are currently in use, such as R-410A. DOE noted that safety concerns need to be taken into consideration when using ammonia and hydrocarbons in air conditioning systems. The Environmental Protection Agency (“EPA”) created the Significant New Alternatives Policy (“SNAP”) Program to evaluate alternatives to ozone-depleting substances. Substitutes are reviewed on the basis of ozone depletion potential, global warming potential, other environmental impacts, toxicity, flammability, and exposure potential. DOE noted at the time of the CUAC/CHP NOPR that ammonia used

in vapor compression cycles, carbon dioxide, and hydrocarbons were approved or were being considered under SNAP for certain uses, but these or other low global warming potential (“GWP”) alternatives were not listed as acceptable substitutes for this equipment.³⁶ DOE also stated in the CUAC/CHP NOPR that it is not aware of any other more efficient refrigerant options that are SNAP-approved. Because these alternative refrigerants that may be more efficient had not yet been approved for this equipment at the

³⁶ On April 10, 2015, EPA listed certain hydrocarbons and R-32 for residential self-contained A/C appliances as acceptable subject to use conditions to address safety concerns (See 80 FR 19453). EPA is also evaluating new refrigerants for other A/C applications, including commercial A/C. Additional information regarding EPA’s SNAP Program is available online at: <http://www.epa.gov/ozone/snap/>.

time of its analysis, DOE did not consider alternate refrigerants for further consideration. 79 FR at 58970.

Danfoss and the Environmental Investigation Agency (EIA Global) commented that the United States is supporting a phasedown of HFC refrigerants, including HFC-410A, through the Montreal Protocol. (CUAC: Danfoss, No. 53 at p. 2; EIA Global, No. 58 at pp. 3–4) Danfoss added that Europe has already mandated a 40-percent reduction in HFC production by 2020. Danfoss stated that it is likely that EPA will also set limits on the use of HFC-410A in the future, but the timing and impact on the use of R-410A is unknown at this time. Danfoss encouraged DOE to work closely with EPA and to align standards for CUACs and CHPs with EPA SNAP rules, so that major equipment redesigns can be

kept to a minimum. (CUAC: Danfoss, No. 53 at p. 2)

EIA Global expressed its concern that DOE's analysis will be incomplete without the inclusion of alternative hydrocarbon refrigerants and that the high GWP of current HFC refrigerants for this equipment category will further damage the stability of the climate, thus offsetting the efficiency gains associated with standards. EIA Global commented that DOE should consider currently available systems using alternative refrigerants and the effects of the EPA's finalization of its proposed rule, "Protection of Stratospheric Ozone: Listing Substitutes for Refrigeration and Air-Conditioning and Revision of the Venting Prohibition for Certain Refrigerant Substitutes," which lists propane (R-290) and hydrocarbon blend R-441A as acceptable alternatives under the EPA's SNAP program for end uses including light commercial air conditioners and heat pumps. EIA Global commented that DOE should consider the energy efficiency savings and the reduction in GHG emissions from these alternative low-GWP refrigerants. EIA Global also urged DOE to include provisions to enable persons to petition for an interim revisiting of the standard in light of the EPA SNAP rule approving the use of these alternative refrigerants. (CUAC: EIA Global, No. 58 at pp. 1–2, 4–8)

EIA Global stated that, given the President's recent Executive Action, "Invest in New Technologies to Support Safer Alternatives," DOE should be using its authority to not only conduct its own research and commercialization of HFC-free technologies, but also to incentivize U.S. industry to manufacture HFC-free and energy efficient CUACs and CUHPs, so they can lead the world in the development and marketing of the next generation of this equipment. (CUAC: EIA Global, No. 58 at pp. 1–4)

DOE recognizes that EPA published a final rule approving alternative refrigerants, subject to use conditions, in specific end-uses. 80 FR 19454 (Apr. 10, 2015). However, DOE notes that these end-use applications did not include CUACs and CUHPs that are the subject of this rulemaking. DOE notes that hydrocarbon refrigerants have not yet been approved by the EPA SNAP program for these types of equipment and, hence, cannot be considered as a technology option in DOE's analysis. DOE also notes that, while it is possible that HFC refrigerants currently used in CUACs and CUHPs may be restricted by future rules, DOE cannot speculate on the outcome of a rulemaking in progress and can only consider in its

rulemakings rules that are currently in effect. Therefore, DOE has not included possible outcomes of potential EPA SNAP rulemakings. This position is consistent with past DOE rulings, such as in the 2014 final rule for commercial refrigeration equipment (79 FR 17725, 17753–54 (March 28, 2014)) and the 2015 final rule for automatic commercial icemakers (80 FR 4646, 4670–71 (Jan. 28, 2015)) DOE notes that recent rules by the EPA that allow use of hydrocarbon refrigerants or that impose new restrictions on the use of HFC refrigerants do not address air-cooled CUACs and CUHPs applications. 80 FR 19454 (April 10, 2015) and 80 FR 42879 (July 20, 2015). DOE acknowledges that there are government-wide efforts to reduce emissions of HFCs, and such actions are being pursued both through international diplomacy as well as domestic actions. DOE, in concert with other relevant agencies, will continue to work with industry and other stakeholders to identify safer and more sustainable alternatives to HFCs while evaluating energy efficiency standards for this equipment.

DOE also recognizes that while some alternative refrigerants may be under consideration as potential future replacements for CUACs and CUHPs, including low-GWP blends submitted to EPA's SNAP program, the development of safety and other related building code standards that will impact decisions regarding the final selected alternatives are still under way. DOE cannot consider all of the potential alternatives to accurately analyze the efficiency impacts for this equipment. Goodman similarly noted as part of the ASRAC Working Group meetings that the safety standards for alternative refrigerants are in the process of being developed, and the current standards, UL 1995, "Heating and Cooling Equipment" and UL 60335–2–40, "Safety of Household and Similar Electrical Appliances, Part 2–34: Particular Requirements for Motor-Compressors," specifically ban any flammable refrigerant from comfort air conditioning products. (CUAC: Goodman, ASRAC Public Meeting, No. 99 at pp. 43–44)

DOE also notes that performance information regarding all alternative refrigerants, such as CUACs and CUHPs with proven test data and publicly available compressor performance information, are not available at this time to properly evaluate the impacts of alternative refrigerants on energy use.

As mentioned in section VI.B.4, if a manufacturer believes that its design is subjected to undue hardship by regulations, the manufacturer may

petition DOE's Office of Hearing and Appeals (OHA) for exception relief or exemption from the standard pursuant to OHA's authority under section 504 of the DOE Organization Act (42 U.S.C. 7194), as implemented at subpart B of 10 CFR part 1003. OHA has the authority to grant such relief on a case-by-case basis if it determines that a manufacturer has demonstrated that meeting the standard would cause hardship, inequity, or unfair distribution of burdens. DOE also notes that any person may petition DOE for an amended standard applicable to a variety of consumer products and commercial/industrial equipment. See 42 U.S.C. 6295(r) and 42 U.S.C. 6313(a). This provision, however, does not apply to the equipment addressed by this rulemaking. See 42 U.S.C. 6316(b).

In recognition of the issues related to alternative refrigerants, members of the ASRAC Working Group agreed as part of the Term Sheet to delay implementation of the second phase of increased energy conservation standard levels until January 1, 2023, in part to align dates with potential refrigerant phase-outs and to provide sufficient development lead time after safety requirements for acceptable alternatives have been established. (CUAC: ASRAC Term Sheet, No. 93 at pp. 3–4; ASRAC Public Meeting, No. 100 at pp. 82; ASRAC Public Meeting, No. 101 at pp. 48–49) Delaying the implementation of the second phase of standards in the manner recommended and agreed to by the Working Group will provide manufacturers with flexibility and additional time to comply with both energy conservation standards and potential refrigerant changes, allowing manufacturers to better coordinate equipment redesign to reduce the cumulative burden. As discussed in section III.C, DOE is adopting the proposed two-phased approach recommended in the ASRAC Term Sheet.

With respect to copper rotors, Nidec disagreed with DOE's determination not to screen out this option. In its view, copper rotor motors do not satisfy either the screening criteria of (a) practicability to manufacture, install, and service; or (b) adverse impacts on equipment utility or equipment availability. (CUAC: Nidec, No. 55 at p. 2–5) Nidec stated that the very short lifespans for the end ring dies and casting pistons for copper die-casting presses would prevent motor manufacturers from mass producing copper rotors on a sufficient scale due to the constant need to replace this tooling. (CUAC: Nidec, No. 55 at p. 5) Nidec also noted that there is a lack of die-cast copper rotor production

capability in place today, which, given the dramatic increase in production capability that would be required in a very short amount of time to satisfy the demand for air conditioning and heating equipment impacted by the present rulemaking if such equipment required motors with die-cast copper rotors to meet the proposed standards, should counsel against the inclusion of this option from DOE's analysis. (CUAC: Nidec, No. 55 at pp. 5–6)

As noted in the electric motors final rule, DOE noted that two large motor manufacturers currently offer die-cast copper rotor motors up to 30-horsepower. DOE also noted in the electric motors rule that full scale deployment of copper would likely require considerable capital investment and that such investment could increase the production cost of copper rotor motors considerably. 79 FR 30934, 30963–65 (May 29, 2014). However, increased motor cost alone would not be a reason to screen out this technology. For these reasons, DOE did not screen out this technology on the basis of practicability to manufacture, install, and service, or adverse impacts on equipment utility or equipment availability.

Based on the screening analysis, DOE identified the design options listed in Table IV–5 for further consideration in the engineering analysis:

TABLE IV–5—CUAC/CUHP DESIGN OPTIONS RETAINED FOR ENGINEERING ANALYSIS

Condenser and evaporator fan and fan motor improvements:

- Larger fan diameters
- More efficient fan blades (*e.g.*, air foil centrifugal evaporator fans, backward-curved centrifugal evaporator fans, high efficiency propeller condenser fans)
- High efficiency motors (*e.g.*, copper rotor motor, high efficiency induction, permanent magnet, electronically commutated)
- Variable speed fans/motors

Larger heat exchangers

Microchannel heat exchangers

Compressor Improvements:

- High efficiency compressors
- Multiple compressor staging
- Multiple- or variable-capacity compressors

Thermostatic expansion valves

Electronic expansion valves

Reduced indoor fan belt loss:

- Synchronous (toothed) belts
- Direct-drive fans

A full description of each technology option is included in chapter 3 of the CUAC/CUHP direct final rule TSD, and additional discussion of the screening

analysis is included in chapter 4 of the CUAC/CUHP direct final rule TSD.

2. Commercial Warm Air Furnaces

For CWAFFs, DOE screened out the technology options listed in Table IV–6. Each of these technology options failed to meet at least one of the four screening criteria: (1) technological feasibility; (2) practicability to manufacture, install, and service; (3) impacts on equipment utility or equipment availability; and (4) adverse impacts on health or safety. See 10 CFR part 430, subpart C, appendix A, 4(a)(4) and 5(b).

TABLE IV–6—TECHNOLOGY OPTIONS SCREENED OUT FOR COMMERCIAL WARM AIR FURNACES

Technology option	Reason for screening out
Pulse combustion	Adverse impact on utility; potential for adverse impact on safety.
Low NO _x premix burner.	Technological feasibility.
Burner de-rating	Adverse impact on utility.
Low pressure, air-atomized burner (oil-fired CWAFFs only).	Technological Feasibility.

In addition, the following technology options met all four of the screening criteria, but were removed from further consideration in the engineering analysis because they do not impact the CWAFF efficiency as measured by the DOE test procedure:

- Two-stage or modulating combustion
- Insulation improvements
- Off-cycle dampers
- Delayed-action oil pump solenoid valve (oil-fired CWAFFs only)
- Electronic ignition

Based on the screening analysis, DOE identified the following five technology options for further consideration in the engineering analysis:

- Condensing secondary heat exchanger
- Increased heat exchanger surface area
- Heat exchanger enhancements (*e.g.*, dimples, baffles, and turbulators)
- Concentric venting
- High-static flame-retention head oil burner (oil-fired CWAFFs only)

A full description of each technology option is included in chapter 3 of the CWAFF direct final rule TSD, and additional discussion of the screening analysis is included in chapter 4 of the CWAFF direct final rule TSD.

C. Engineering Analysis

The engineering analysis establishes the relationship between an increase in

energy efficiency of equipment and the increase in manufacturer selling price (“MSP”) required to achieve that efficiency increase. This relationship serves as the basis for the cost-benefit calculations for commercial customers, manufacturers, and the Nation. In determining the cost-efficiency relationship, DOE estimates the increase in manufacturer cost associated with increasing the efficiency of equipment to incrementally higher efficiency levels above the baseline efficiency level, up to the maximum technologically feasible (“max-tech”) efficiency level for each equipment class.

1. Methodology

DOE typically structures its engineering analysis using one or more of three identified basic methods for generating manufacturing costs: (1) The design-option approach, which provides the incremental costs of adding individual technology options (as identified in the market and technology assessment and passed through the screening analysis) that can be added alone or in combination with a baseline model in order to improve its efficiency (*i.e.*, lower its energy use); (2) the efficiency-level approach, which provides the incremental costs of moving to higher energy efficiency levels, without regard to the particular design option(s) used to achieve such increases; and (3) the reverse-engineering (or cost-assessment) approach, which provides “bottom-up” manufacturing cost assessments for achieving various levels of increased efficiency, based on teardown analyses (or physical teardowns) providing detailed data on costs for parts and material, labor, shipping/packaging, and investment for models that operate at particular efficiency levels. A supplementary method called a catalog teardown uses published manufacturer catalogs and supplementary component data to estimate the major physical differences between a piece of equipment that has been physically disassembled and another piece of similar equipment for which catalog data are available to determine the cost of the latter equipment.

For CUACs and CUHPs, DOE conducted the engineering analyses using a combination of the efficiency-level approach and the reverse-engineering approach and analyzed three specific capacities, one representing each of the three equipment class capacity ranges (*i.e.*, small, large, and very large). Based on a review of manufacturer equipment offerings, information from the previous standards rulemaking regarding cooling

capacities that represent volume equipment shipment points within the equipment class capacity ranges, and information obtained from manufacturer interviews, DOE selected representative cooling capacities of 90,000 Btu/h (7.5 tons) for the $\geq 65,000$ to $< 135,000$ Btu/h capacity range, 180,000 Btu/h (15 tons) for the $\geq 135,000$ to $< 240,000$ Btu/h capacity range, and 360,000 Btu/h (30 tons) for the $\geq 240,000$ to $< 760,000$ Btu/h capacity range. Where feasible, DOE selected models for reverse engineering with low and high efficiencies from a given manufacturer that are built on the same platform. DOE also supplemented the teardown analysis by conducting catalog teardowns for equipment spanning the full range of capacities and efficiencies from all manufacturers selling equipment in the United States.

For CWAFFs, DOE conducted the engineering analysis using the reverse-engineering approach to estimate the costs of achieving various efficiency levels. DOE selected two gas-fired CWAFF units in the non-condensing efficiency range for physical teardowns, both at a heating input rating of 250,000 Btu/h, which was considered to be the representative heating input rating for the gas-fired equipment class. In addition, DOE purchased a condensing, 92-percent TE gas-fired makeup air furnace for physical examination. Makeup air furnaces are the only type of 92-percent TE gas-fired CWAFFs currently available on the market. DOE also performed a physical teardown of an oil-fired CWAFF at 81-percent TE at an input rating of 400,000 Btu/h, which was subsequently scaled down via cost estimation techniques to represent a unit with a 250,000 Btu/h heating input rating. Similar to gas-fired CWAFFs, 250,000 Btu/h was also considered the representative heating input rating for oil-fired CWAFFs. GTI commented that at around a heating input of 400,000 Btu/h, in gas-fired CWAFFs, it may be common practice for manufacturers to transition from a single furnace to two furnaces in packaged equipment. This would necessitate additional components associated with the second furnace including additional gas valves and inducer fans, which may contribute to a different price regime (CWAFF: GTI, NOPR Public Meeting Transcript, No. 17 at pp. 74–75). DOE agrees that gas-fired CWAFFs are generally not manufactured with individual combustion modules (*i.e.*, a single gas valve, inducer assembly, and heat exchanger assembly)

with heating inputs of greater than 400,000 Btu/h, usually due to insurance and liability reasons. DOE acknowledges that the manufacturing costs for equipment using multiple combustion modules will be higher than for equipment using single modules. However, DOE believes that at efficiency levels higher than baseline for units with multiple combustion modules, the energy savings relative to the baseline efficiency level scales proportionally with the increased incremental cost (relative to baseline) to manufacture equipment with multiple combustion modules. As such, DOE did not estimate manufacturing costs for units above 400,000 Btu/h heating input, because it does not believe that the relationship between incremental equipment cost and incremental energy savings at efficiency levels higher than baseline will be significantly different than at the representative heating input capacity selected for analysis.

DOE used catalog data, information from the physical teardown examinations, and manufacturer feedback to estimate the manufacturing costs for gas-fired CWAFFs at the 80-percent, 81-percent, 82-percent and 92-percent TE levels, as well as the manufacturing costs for oil-fired CWAFFs at the 81-percent, 82-percent and 92-percent TE levels. Additional detail on the teardowns performed is provided in chapter 5 of the CWAFF direct final rule TSD.

2. Efficiency Levels

a. Baseline Efficiency Levels

The baseline model is used as a reference point for each equipment class in the engineering analysis and the life-cycle cost and payback-period analyses, which provides a starting point for analyzing potential technologies that provide energy efficiency improvements. Generally, DOE considers “baseline” equipment to refer to a model or models having features and technologies that just meet, but do not exceed, the minimum energy conservation standard.

Commercial Unitary Air Conditioners and Heat Pumps

As discussed in section III.G, for CUACs and CUHPs, DOE decided to replace the current cooling performance energy efficiency descriptor, EER, with IEER. With this change in metrics (*i.e.*, from EER to IEER), DOE must ensure that a new IEER-based standard would

not result in a backsliding of energy efficiency levels when compared to the current standards (42 U.S.C. 6313(a)(6)(B)(iii)(I)). To this end, DOE must first establish a baseline IEER for each CUAC and CUHP equipment class to compare that level against the various standards that DOE evaluated for this equipment.

In the CUAC/CUHP NOPR, DOE noted that it is typically obligated either to adopt those standards developed by ASHRAE or to adopt levels more stringent than the ASHRAE levels if there is clear and convincing evidence in support of doing so. (42 U.S.C. 6313(a)(6)(A)) DOE noted that ASHRAE Standard 90.1–2010 specifies minimum efficiency requirements using both the EER and IEER metrics. As discussed in the CUAC/CUHP RFI, DOE evaluated the relationship between EER and IEER by considering models that are rated at the current DOE standard levels based on the EER metric for each equipment class. DOE then analyzed the distribution of corresponding rated IEER values for each equipment class, noting that a single EER level can correspond to a range of IEERs. DOE also noted that the lowest IEER values associated with the current DOE standards for EER generally correspond with the ASHRAE Standard 90.1–2010 minimum efficiency requirements. See 78 FR at 7299. Based on this evaluation, because DOE is considering energy conservation standards based on the IEER metric, DOE proposed in the CUAC/CUHP NOPR to use the ASHRAE Standard 90.1–2010 minimum IEER requirements to characterize the baseline cooling efficiency for each equipment class. Because the baseline efficiency level is intended to be representative of the minimum efficiency of equipment, DOE did not consider higher IEER levels for the baseline. (79 FR at 58972.)

For CUHPs, DOE considered heating efficiency standards based on the COP metric. As discussed in section II.B.1, EPAct 2005 established minimum COP levels for small, large, and very large air-cooled CUHPs, which DOE codified in a final rule on October 18, 2005. 70 FR 60407. DOE proposed in the CUAC/CUHP NOPR to use these current COP standard levels to characterize the baseline heating efficiency for each equipment class. (79 FR at 58972.)

Table IV–7 presents the baseline efficiency levels for each equipment class considered in the CUAC/CUHP NOPR.

TABLE IV-7—BASELINE EFFICIENCY LEVELS PROPOSED IN THE CUAC/CUHP NOPR

Equipment type	Heating type	Baseline efficiency level
Small Commercial Packaged AC and HP (Air-Cooled)—≥65,000 Btu/h and <135,000 Btu/h Cooling Capacity:		
AC	Electric Resistance Heating or No Heating.	11.4 IEER
	All Other Types of Heating	11.2 IEER
HP	Electric Resistance Heating or No Heating.	11.2 IEER 3.3 COP
	All Other Types of Heating	11.0 IEER 3.3 COP
Large Commercial Packaged AC and HP (Air-Cooled)—≥135,000 Btu/h and <240,000 Btu/h Cooling Capacity:		
AC	Electric Resistance Heating or No Heating.	11.2 IEER
	All Other Types of Heating	11.0 IEER
HP	Electric Resistance Heating or No Heating.	10.7 IEER 3.2 COP
	All Other Types of Heating	10.5 IEER 3.2 COP
Very Large Commercial Packaged AC and HP (Air-Cooled)—≥240,000 Btu/h and <760,000 Btu/h Cooling Capacity:		
AC	Electric Resistance Heating or No Heating.	10.1 IEER
	All Other Types of Heating	9.9 IEER
HP	Electric Resistance Heating or No Heating.	9.6 IEER 3.2 COP
	All Other Types of Heating	9.4 IEER 3.2 COP

Based on a review of equipment available on the market, DOE notes that an IEER of 10.6 is more representative of the baseline cooling efficiency for major manufacturers of units falling into the very large CUACs with “electric resistance heating or no heating” equipment class. As a result, DOE

revised the baseline cooling efficiency level for this equipment class. DOE also revised the baseline cooling efficiency levels for the very large equipment classes for (1) all other types of heating and (2) heat pumps by using the corresponding differences in IEER specifications for these pairs of

equipment classes prescribed in ASHRAE Standard 90.1–2010. For all other equipment classes, DOE maintained the baseline efficiency levels from the CUAC/CUHP NOPR. The efficiency levels considered in this final rule are presented below in Table IV–8.

TABLE IV-8—DIRECT FINAL RULE BASELINE EFFICIENCY LEVELS

Equipment type	Heating type	Baseline efficiency level
Small Commercial Packaged AC and HP (Air-Cooled)—≥65,000 Btu/h and <135,000 Btu/h Cooling Capacity:		
AC	Electric Resistance Heating or No Heating.	11.4 IEER
	All Other Types of Heating	11.2 IEER
HP	Electric Resistance Heating or No Heating.	11.2 IEER 3.3 COP
	All Other Types of Heating	11.0 IEER 3.3 COP
Large Commercial Packaged AC and HP (Air-Cooled)—≥135,000 Btu/h and <240,000 Btu/h Cooling Capacity:		
AC	Electric Resistance Heating or No Heating.	11.2 IEER
	All Other Types of Heating	11.0 IEER
HP	Electric Resistance Heating or No Heating.	10.7 IEER 3.2 COP
	All Other Types of Heating	10.5 IEER 3.2 COP
Very Large Commercial Packaged AC and HP (Air-Cooled)—≥240,000 Btu/h and <760,000 Btu/h Cooling Capacity:		
AC	Electric Resistance Heating or No Heating.	10.6 IEER
	All Other Types of Heating	10.4 IEER
HP	Electric Resistance Heating or No Heating.	10.1 IEER 3.2 COP
	All Other Types of Heating	9.9 IEER 3.2 COP

Commercial Warm Air Furnaces

In establishing the baseline efficiency level for this analysis, DOE used the existing minimum energy conservation standards for CWAFFs to identify baseline units. The baseline TE levels for each equipment class are presented in Table IV–9.

TABLE IV–9—BASELINE THERMAL EFFICIENCY LEVELS FOR CWAFFS

Equipment class	Baseline efficiency level (%)
Gas-fired Commercial Warm Air Furnace	80
Oil-fired Commercial Warm Air Furnace	81

b. Incremental and Max-Tech Efficiency Levels

For each equipment class, DOE analyzes several efficiency levels and determines the incremental cost at each of these levels.

Commercial Unitary Air Conditioners and Heat Pumps

For the CUAC/CUHP NOPR, DOE developed efficiency levels based on a review of industry standards and available equipment. For Efficiency Level 1, DOE used the IEER levels specified in the draft of addendum CL³⁷ to ASHRAE Standard 90.1–2010 (Draft Addendum CL).³⁸ For the higher efficiency levels, DOE initially determined the levels for CUAC equipment classes with electric resistance heating or no heating based on the range of efficiency levels

associated with equipment listed in the AHRI certification database and the California Energy Commission's ("CEC") database. DOE noted in the CUAC/CUHP NOPR that the max-tech efficiency levels rely on the performance of recently introduced models. DOE conducted its analysis for the small, large, and very large equipment classes using equipment with 7.5-ton, 15-ton, and 30-ton cooling capacities to represent their respective classes. DOE chose efficiency levels for CUACs with all other types of heating equal to the efficiency levels for equipment with electric resistance heating or no heating, minus the differences in the IEER specifications for these pairs of equipment classes prescribed in Draft Addendum CL. DOE stated in the CUAC/CUHP NOPR that these decreases in IEER appropriately reflect the additional power required for gas furnace pressure drop. 79 FR at 58972–73.

For the CUHP equipment classes, DOE proposed cooling mode efficiency levels equal to the CUAC efficiency levels minus the difference in IEER specifications for these two equipment types prescribed in Draft Addendum CL. DOE stated that these decreases in IEER are representative of the efficiency differences that occur due to losses from the reversing valve and the reduced potential for optimization of coil circuitry for cooling, since coils in heat pumps must work for both heating and cooling operation. *Id.*

For the CUHP equipment classes, DOE proposed heating efficiency levels in the CUAC/CUHP NOPR based on a variation of COP with IEER. 79 FR at 58973. In the previous standards

rulemaking from 2004 for these equipment, DOE proposed to address the energy efficiency of air-cooled CUHP by developing functions relating COP to EER. 69 FR at 45468. DOE noted that this method was also used by industry to establish minimum performance requirements for ASHRAE Standard 90.1–1999. *Id.* AHRI supplied the ASHRAE Standard 90.1–1999 committee with curves relating the COP as a function of EER. Using this information, the committee then set the minimum COP levels to the COP corresponding to the selected minimum EER level. *Id.* To determine COP efficiency levels for the CUAC/CUHP NOPR, DOE evaluated AHRI and CEC data for small, large, and very large air-cooled CUHP units with electric resistance heat or no heat to analyze the relationship between COP and both IEER and EER. DOE's review of data showed that for each cooling capacity range, the correlations between COP and IEER using linear regressions are no less strong than the correlations between COP and EER, the latter of which was used in DOE's prior standards rulemaking for this equipment and in developing ASHRAE Standard 90.1–1999's minimum COP levels (69 FR at 45468). Based on this evaluation, DOE proposed in the CUAC/CUHP NOPR to use the functions relating COP to IEER based on AHRI and CEC data to select the COP level associated with each of the IEER-based efficiency levels. 79 FR at 58973.

The efficiency levels for each equipment class proposed in the CUAC/CUHP NOPR are presented in Table IV–10.

TABLE IV–10—INCREMENTAL EFFICIENCY LEVELS PRESENTED IN THE CUAC/CUHP NOPR

Equipment type	Heating type	Efficiency levels;				
		Baseline	EL1	EL2	EL3	EL4 (Max-Tech)
Small Commercial Packaged AC and HP (Air-Cooled)—≥65,000 Btu/h and <135,000 Btu/h Cooling Capacity:						
AC	Electric Resistance Heating or No Heating.	11.4 IEER	12.9 IEER	14 IEER	14.8 IEER	19.9 IEER
	All Other Types of Heating	11.2 IEER	12.7 IEER	13.8 IEER	14.6 IEER	19.7 IEER
HP	Electric Resistance Heating or No Heating.	11.2 IEER, 3.3 COP	12.2 IEER, 3.3 COP	13.3 IEER, 3.4 COP	14.1 IEER, 3.5 COP	19.2 IEER, 3.7 COP
	All Other Types of Heating	11.0 IEER, 3.3 COP	12 IEER, 3.3 COP	13.1 IEER, 3.4 COP	13.9 IEER, 3.4 COP	19.0 IEER, 3.6 COP

³⁷ ASHRAE periodically updates specifications in its Standard 90.1 through a public review process. Draft Addendum CL, which was made available for public review in October 2012, included changes in required efficiency levels for CUAC/CUACs and CUHPs falling into the small, large, and very

large capacity ranges. "CL" refers to the revision number.

³⁸ The Addendum CL to ASHRAE Standard 90.1–2010 included the latest revisions to the ASHRAE 90.1 efficiency levels for the equipment considered in this rulemaking at the time DOE conducted the

analyses for the NOPR. ASHRAE later finalized the Addendum CL changes in ASHRAE 90.1–2013, with minor changes to the IEER levels for large CUAC/CUACs and CUHPs (*i.e.*, cooling capacity of ≥135,000 Btu/h and <240,000 Btu/h).

TABLE IV–10—INCREMENTAL EFFICIENCY LEVELS PRESENTED IN THE CUAC/CUHP NOPR—Continued

Equipment type	Heating type	Efficiency levels;				
		Baseline	EL1	EL2	EL3	EL4 (Max-Tech)
Large Commercial Packaged AC and HP (Air-Cooled)— ≥135,000 Btu/h and <240,000 Btu/h Cooling Capacity:	AC					
	Electric Resistance Heating or No Heating.	11.2 IEER	12.2 IEER	13.2 IEER	14.2 IEER	18.4 IEER
	All Other Types of Heating	11.0 IEER	12.0 IEER	13.0 IEER	14.0 IEER	18.2 IEER
	HP					
Very Large Commercial Packaged AC and HP (Air-Cooled)—≥240,000 Btu/h and <760,000 Btu/h Cooling Capacity:	AC					
	Electric Resistance Heating or No Heating.	10.1 IEER	11.6 IEER	12.5 IEER	13.5 IEER	15.5 IEER
	All Other Types of Heating	9.9 IEER	11.4 IEER	12.3 IEER	13.3 IEER	15.3 IEER
	HP					
	Electric Resistance Heating or No Heating.	9.6 IEER, 3.2 COP	10.6 IEER, 3.2 COP	11.5 IEER, 3.2 COP	12.5 IEER, 3.2 COP	14.5 IEER, 3.2 COP
	All Other Types of Heating	9.4 IEER, 3.2 COP	10.4 IEER, 3.2 COP	11.3 IEER, 3.2 COP	12.3 IEER, 3.2 COP	14.3 IEER, 3.2 COP

Lennox commented that DOE is required to consider ASHRAE 90.1–2013 according to 42 U.S.C. 6313(a)(6)(A). Lennox noted that Efficiency Level 1 mirrors the values in ASHRAE 90.1–2013 except for large CUAC/CUHP equipment class. (CUAC: Lennox, No. 60 at p. 7) As discussed above, DOE based the CUAC/CUHP NOPR Efficiency Level 1 IEERs on ASHRAE 90.1–2010 Addendum CL. After the NOPR, DOE reviewed ASHRAE 90.1–2013 and updated the IEERs for Efficiency Level 1 accordingly for this direct final rule.

The Joint Efficiency Advocates and California IOUs reacted to the CUAC/CUHP NOPR by urging DOE to evaluate intermediate efficiency levels between Efficiency Level 3 and Efficiency Level 4, noting that the presence of gaps between these levels. The Joint Efficiency Advocates and California IOUs noted that there are models at various IEER levels available between Efficiency Level 3 and Efficiency Level 4 across the equipment classes. (CUAC: Joint Efficiency Advocates, No. 69 at p. 2; California IOUs, No. 67 at pp. 3–5; ASAP, ASRAC Public Meeting, No. 102 at pp. 202, 209–210, 211–212, 217–218).

The Joint Efficiency Advocates and the California IOUs urged DOE to reevaluate the max-tech levels and noted that for each equipment class, the highest IEERs of commercially-available equipment listed in the AHRI directory are higher than the max-tech levels. (CUAC: Joint Efficiency Advocates, No. 69 at pp. 2–3; California IOUs, No. 67 at pp. 6–7)

Carrier supported DOE's approach for determining the max-tech efficiency levels based on recently introduced models. These models represent technologies that are both available for all of the capacity sizes within a given equipment class and that are economically justified for their performance improvement. (CUAC: Carrier, No. 48 at p. 3) Goodman commented during the negotiated rulemaking that DOE should also consider an additional efficiency level between the CUAC/CUHP NOPR Efficiency Level 2 and Efficiency Level 3. (CUAC: Goodman, ASRAC Public Meeting No. 102 at pp. 208–209)

Based on DOE's review of equipment listed in the AHRI directory, DOE agreed with interested parties that additional efficiency levels should be considered in its analysis. For all equipment classes, DOE added an efficiency level between Efficiency Level 2 and Efficiency Level 3 from the CUAC/CUHP NOPR, identified in this direct final rule as Efficiency Level 2.5. DOE also added an efficiency level, identified in this direct final rule as efficiency level 5, above CUAC/CUHP NOPR Efficiency Level 4, to represent the max-tech models available on the market. For small and large equipment, DOE added an efficiency level between Efficiency Level 3 and Efficiency Level 4 from the CUAC/CUHP NOPR, identified in this direct final rule as Efficiency Level 3.5. As part of the ASRAC Working Group meeting, interested parties agreed on these additional efficiency levels for the

analysis. (CUAC: ASRAC Public Meeting, No. 94 at pp. 170–171)

For this direct final rule, the IEER values for the baseline efficiency level and Efficiency Level 1 for the “all other types of heating equipment” classes are based on the IEER difference of 0.2 as compared to the electric resistance heating or no heating equipment class specified in ASHRAE 90.1–2010 and ASHRAE 90.1–2013. As discussed further in section IV.E.1, DOE chose cooling efficiency levels for CUACs coupled with all other types of heating above Efficiency Level 1 that provided the same energy savings between incremental efficiency levels as was determined for the electric resistance or no heating equipment classes within each equipment class capacity range (*i.e.*, small, large, and very large). Using this approach, the IEER differential between these equipment classes ranged from 0.2 to 0.4 at the higher efficiency levels and reflect the additional power required for gas furnace pressure drop. Therefore, DOE estimated that the energy savings for any efficiency level relative to the baseline would be identical for both sets of equipment classes.

Based on DOE's review of equipment available on the market, the majority of models with electric resistance heating or no heating equipment are designed on the same basic platform and cabinet size as the equivalent models with all other types of heating equipment. Because these equipment have the same or similar designs, DOE estimates that implementing the same design changes

would result in the same or similar energy savings for both sets of equipment classes. For small and large heating equipment classes at Efficiency Level 3 and the very large heating equipment class at Efficiency Level 2.5, DOE analyzed the cooling efficiency

levels based on the IEER values included in the ASRAC Working Group recommendations, as presented in section III.B.2, which used an IEER differential of 0.2 compared to the electric resistance heating or no heating equipment classes. Table IV–11 shows, as

an example, these differences in IEER for each CUAC “all other types of heating equipment” class relative to the electric resistance heating equipment classes.

TABLE IV–11—CUACS WITH ALL OTHER TYPES OF HEATING IEER DIFFERENTIALS RELATIVE TO CUACS WITH ELECTRIC RESISTANCE HEATING OR NO HEATING

Efficiency level	IEER differentials		
	Small CUACs	Large CUACs	Very Large CUACs
Baseline	0.2	0.2	0.2
EL 1	0.2	0.2	0.2
EL 2	0.2	0.2	0.2
EL 2.5	0.3	0.2	*0.2
EL 3	*0.2	*0.2	0.3
EL 3.5	0.3	0.3	.....
EL 4	0.3	0.3	0.3
EL 5	0.4	0.4	0.3

* IEER differential for these levels were based on the recommended efficiency levels in the ASRAC Term Sheet.

For the CUHP equipment classes, DOE used a similar approach for determining the IEER differentials relative to the CUAC equipment classes. The IEER values for the baseline efficiency level and Efficiency Level 1 for the CUHP equipment classes are based on the IEER differences as compared to the CUAC equipment classes specified in ASHRAE 90.1–2010 and ASHRAE 90.1–2013. As discussed further in section IV.E.1, DOE chose cooling efficiency levels for the CUHP equipment classes above Efficiency Level 1 that provided the same energy savings between incremental efficiency levels as was determined for the CUAC equipment classes within each

equipment class capacity range (*i.e.*, small, large, and very large). Using this approach, the IEER differential between these equipment classes ranged from 0.8 to 1.3 at the higher efficiency levels and reflect the efficiency differences that occur due to losses from the reversing valve and the reduced potential for optimization of coil circuitry for cooling, since coils in heat pumps must work for both heating and cooling operation. Therefore, DOE estimated that the energy savings for any efficiency level relative to the baseline would be identical for both sets of equipment classes. Because DOE considered the same design changes at each efficiency level for both sets of

equipment classes, DOE estimates that this would result in the same or similar energy savings for both sets of equipment classes. For small and large CUHP equipment classes at Efficiency Level 3 and the very large CUHP equipment class at Efficiency Level 2.5, DOE analyzed the cooling efficiency levels based on the IEER values included in the ASRAC Working Group recommendations, as discussed in section III.B.2, which used an IEER differential of 0.7 compared to the CUAC equipment classes. Table IV–12 shows these differences in IEER for the CUHP equipment classes relative to the CUAC equipment classes.

TABLE IV–12—CUHP IEER DIFFERENTIALS RELATIVE TO CUAC LEVELS

Efficiency level	IEER differentials		
	Small CUACs	Large CUACs	Very Large CUACs
Baseline	0.2	0.5	0.5
EL 1	0.7	0.8	1.0
EL 2	0.8	0.9	1.1
EL 2.5	0.8	0.9	*0.7
EL 3	*0.7	*0.7	1.2
EL 3.5	0.9	1.0	.....
EL 4	1.1	1.2	1.3
EL 5	1.2	1.3	1.3

* IEER differential for these levels were based on the recommended efficiency levels in the ASRAC Term Sheet.

Regarding the incremental COP heating efficiency levels for CUHPs, AHRI, Nordyne, Carrier, Goodman and Rheem commented that they did not support DOE’s approach for determining the COP levels based on a correlation with IEER. These commenters stated

that there is no technical or statistical justification to support that a correlation exists between IEER and COP. IEER is a part-load metric while COP is a full-load heating metric similar to EER for cooling. (CUAC: AHRI, No. 68 at p. 32; Nordyne, No. 61 at p. 27; Carrier, No. 48

at pp. 3–4; Goodman, No. 65 at p. 14; Rheem, No. 70 at p. 4)

Members of the ASRAC Working Group were not able to suggest a more appropriate approach for assigning COP values to the efficiency levels analyzed. Because the use of correlations between

COP and EER was generally accepted by industry and interested parties involved in the development of ASHRAE Standard 90.1–1999 and because the correlations between COP and IEER using linear regressions are no less strong than the correlations between COP and EER, DOE maintained the same approach used in the CUAC/CUHP NOPR for determining the CUHP heating mode efficiency levels, using the relationship between COP and IEER

to select the COP levels corresponding to each incremental IEER level. DOE also notes that the COP values analyzed at each incremental efficiency level represent modest increases above the current DOE standard levels. Members of the ASRAC Working Group also agreed as Term Sheet signatories to recommend that DOE adopt standards to increase the stringency of the requirements for COP. At Efficiency Level 3 for the small and large

equipment classes and Efficiency Level 2.5 for the very large equipment class, DOE analyzed the heating efficiency levels based on the COP values included in the ASRAC Working Group recommendations, as discussed in section III.B.2.

Based on the discussion above, DOE considered the efficiency levels presented in Table IV–13 for this direct final rule.

TABLE IV–13—DIRECT FINAL RULE INCREMENTAL EFFICIENCY LEVELS

Equipment type	Heating type	Metric	Efficiency levels							
			Base-line	EL1	EL2	EL2.5	EL3	EL3.5	EL4	EL5 (Max-Tech)
Small Commercial Packaged AC and HP (Air-Cooled)— ≥65,000 Btu/h and <135,000 Btu/h Cooling Capacity:	AC	Electric Resistance	IEER	11.4 ...	12.9	14.0	14.5	14.8	15.8	19.9
		Heating or No Heating.	IEER	11.2 ...	12.7	13.8	14.2	14.6	15.5	19.6
	All Other Types of Heating.	IEER	11.2 ...	12.2	13.2	13.7	14.1	14.9	18.8	20.3
		COP	3.3	3.3	3.4	3.4	3.4	3.5	3.7	3.7
	HP	Electric Resistance	IEER	11.0 ...	12.0	13.0	13.5	13.9	14.6	18.5
		Heating or No Heating.	COP	3.3	3.3	3.4	3.4	3.5	3.6	3.7
	All Other Types of Heating	IEER	11.2 ...	12.4	13.2	13.7	14.2	15.0	18.5	20.1
		Heating or No Heating.	IEER	11.0 ...	12.2	13	13.5	14	14.7	18.2
	All Other Types of Heating.	IEER	10.7 ...	11.6	12.3	12.8	13.5	14.0	17.3	18.8
		COP	3.2	3.2	3.3	3.3	3.3	3.3	3.3	3.3
Large Commercial Packaged AC and HP (Air-Cooled)— ≥135,000 Btu/h and <240,000 Btu/h Cooling Capacity:	AC	Electric Resistance	IEER	10.6	11.6	12.5	13.2	13.5	14.9	15.6
		Heating or No Heating.	IEER	10.4	11.4	12.3	13.0	13.2	14.6	15.3
	All Other Types of Heating.	IEER	10.5 ...	11.4	12.1	12.6	13.3	13.7	17.0	18.4
		COP	3.2	3.2	3.3	3.3	3.3	3.3	3.3	3.3
	HP	Electric Resistance	IEER	10.1	10.6	11.4	12.5	12.3	13.6	14.3
		Heating or No Heating.	COP ..	3.2	3.2	3.2	3.2	3.2	3.2	3.2
	All Other Types of Heating	IEER	9.9	10.4	11.2	12.3	12.1	13.3	14.0	
		COP	3.2	3.2	3.2	3.2	3.2	3.2	3.2	
	All Other Types of Heating	IEER	9.9	10.4	11.2	12.3	12.1	13.3	14.0	
		COP	3.2	3.2	3.2	3.2	3.2	3.2	3.2	
Very Large Commercial Packaged AC and HP (Air-Cooled)— ≥240,000 Btu/h and <760,000 Btu/h Cooling Capacity.	AC	Electric Resistance	IEER	10.6	11.6	12.5	13.2	13.5	14.9	15.6
		Heating or No Heating.	IEER	10.4	11.4	12.3	13.0	13.2	14.6	15.3
	All Other Types of Heating.	IEER	10.5 ...	11.4	12.1	12.6	13.3	13.7	17.0	18.4
		COP	3.2	3.2	3.3	3.3	3.3	3.3	3.3	3.3
	HP	Electric Resistance	IEER	10.1	10.6	11.4	12.5	12.3	13.6	14.3
		Heating or No Heating.	COP ..	3.2	3.2	3.2	3.2	3.2	3.2	3.2
	All Other Types of Heating	IEER	9.9	10.4	11.2	12.3	12.1	13.3	14.0	
		COP	3.2	3.2	3.2	3.2	3.2	3.2	3.2	
	All Other Types of Heating	IEER	9.9	10.4	11.2	12.3	12.1	13.3	14.0	
		COP	3.2	3.2	3.2	3.2	3.2	3.2	3.2	

Commercial Warm Air Furnaces

For CWAFs, DOE developed efficiency levels for analysis higher than the baseline efficiency level (*i.e.*, the Federal minimum standard level) based on a review of equipment available on the market. DOE compiled a database of the CWAF market to determine what types of equipment are currently available to commercial customers. At the representative capacity for each

equipment class, DOE surveyed manufacturers' equipment offerings to identify commonly-available efficiency levels. By identifying the most prevalent energy efficiencies in the range of available equipment, DOE was then able to establish a technology path that manufacturers typically use to increase the TE of a CWAF to incrementally higher efficiency levels above baseline, up to the max-tech efficiency level.

In its analysis, DOE focused on specific incremental TE levels above the baseline for each equipment class. The incremental TE levels are representative of efficiency levels along the technology paths that CWAF manufacturers commonly use to maintain cost-effective designs while increasing the TE of equipment. DOE reviewed its Compliance Certification Management

System (“CCMS”) database,³⁹ as well as AHRI’s Directory of Certified Product Performance,⁴⁰ manufacturer catalogs, and other publicly-available literature to determine which TE levels are the most prevalent for each equipment class. For gas-fired CWAFFs, DOE chose two efficiency levels between the baseline and max-tech for analysis (see Table IV–14). For oil-fired CWAFFs, DOE chose one TE level between the baseline and max-tech for analysis (see Table IV–15).

DOE found several manufacturers that offer gas-fired equipment at 81-percent TE. In the analysis for the direct final rule, DOE found only one manufacturer of gas-fired equipment rated at 82-percent TE, which is available across a limited range of input capacities. In addition, all of the 82-percent TE units offered by this manufacturer are non-weatherized, and are thus not representative of the large majority of gas-fired CWAFF model offerings, which are weatherized. Therefore, in its analyses for the direct final rule, DOE did not identify any weatherized gas-fired CWAFFs at 82-percent TE. However, in the analyses for the CWAFF NOPR, DOE identified a different manufacturer of gas-fired 82-percent TE CWAFFs. These particular units were weatherized. This manufacturer offered equipment at this efficiency level across a wide range of input capacities, indicating that meeting the 82-percent TE level is technologically feasible for weatherized gas-fired CWAFFs at most input capacities. Thus, DOE considered 81-percent and 82-percent as incrementally higher TE levels for the gas-fired CWAFF analysis.

DOE also considered the max-tech efficiency level. As discussed in section IV.C.1, DOE purchased a 92-percent thermally efficient gas-fired makeup air furnace for teardown, as makeup air units are currently the only type of gas-fired CWAFF at a condensing efficiency level. There are substantially more non-makeup air CWAFFs product offerings than makeup air furnace product offerings. However, based on manufacturer feedback, physical teardowns and examination of equipment, and product literature, DOE observed that gas-fired makeup air furnaces are technologically very similar to non-makeup air CWAFFs.

Further, DOE identified a residential-sized (*i.e.*, input rating below 225,000 Btu/h) weatherized furnace design that utilizes condensing technology. As

such, DOE identified the max-tech efficiency level for gas-fired CWAFFs as 92-percent TE, which is based on the use of condensing heat exchanger technology. For oil-fired furnaces, which are typically installed indoors, DOE surveyed the market and identified the baseline efficiency level as 81-percent TE (which is the current federal energy conservation standard for this equipment class). DOE also found that the majority of non-condensing equipment had a TE of 82-percent. One unit with a TE of 92-percent, which is the max-tech efficiency level, was identified. As such, DOE selected 81-percent, 82-percent, and 92-percent TE as the efficiency levels for analysis. The efficiency levels DOE analyzed for each equipment class (including the baseline levels) are presented in Table IV–14 and Table IV–15.

TABLE IV–14—EFFICIENCY LEVELS ANALYZED FOR GAS-FIRED CWAFFS

Efficiency level	Thermal efficiency (%)
EL0 (Baseline)	80
EL1	81
EL2	82
Max-Tech	92

TABLE IV–15—EFFICIENCY LEVELS ANALYZED FOR OIL-FIRED CWAFFS

Efficiency level	Thermal efficiency (%)
EL0 (Baseline)	81
EL1	82
Max-Tech	92

3. Equipment Testing, Reverse Engineering and Energy Modeling

a. Commercial Unitary Air Conditioners and Heat Pumps

As discussed above, for the engineering analysis, DOE specifically analyzed representative capacities of 7.5 tons, 15 tons, and 30 tons to develop incremental cost-efficiency relationships.

For the CUAC/CUHP NOPR, DOE selected four 7.5-ton, two 15-ton, and one 30-ton CUAC models, and one 7.5-ton CUHP model. The models were selected to develop a representative sample of the market at different efficiency levels. DOE based the selection of units for testing and reverse engineering on the efficiency data available in the AHRI certification database and the CEC equipment database. 79 FR at 58974. DOE conducted testing on each unit

according to the IEER test method specified in AHRI Standard 340/360–2007. DOE then conducted physical teardowns on each test unit to develop a manufacturing cost estimation process and to evaluate key design features (*e.g.*, heat exchangers, compressors, fan/fan motors, control strategies, etc.). DOE supplemented these data by conducting catalog teardowns on 346 models spanning the full range of capacities from all manufacturers selling equipment in the United States. DOE based the catalog teardowns on information provided in equipment literature and experience from the physical teardowns. *Id.*

For CUACs, DOE conducted energy modeling using the modeling tools developed by the Center for Environmental Energy Engineering from the University of Maryland at College Park. The tools include a detailed heat exchanger modeling program and a refrigeration cycle modeling program. The refrigeration cycle modeling program can integrate the heat exchanger and compressor models to perform a refrigeration cycle model. Details regarding the energy modeling tools are discussed in section 5.5.5 and 5.6.4 of chapter 5 of the CUAC/CUHP direct final rule TSD.

As explained in the CUAC/CUHP NOPR, DOE applied the key design features identified during physical equipment teardowns and used the energy modeling tool to generate detailed performance data (*e.g.*, capacity and EER), validating them against the results obtained from laboratory testing at each IEER capacity level (25, 50, 75, and 100 percent), or with the published performance data. See 79 FR at 58974. With the validated energy models, DOE expanded the modeling tasks with various system design options and identified the key design features (consistent with equipment available on the market) required for 7.5-ton, 15-ton, and 30-ton CUAC units with electric resistance heating or no heating to achieve each efficiency level. Based on these equipment designs, DOE also generated energy use profiles for CUACs. These profiles included wattage inputs for key components (*i.e.*, compressor, indoor and outdoor fan motors, and controls) at each operating load level measured using the IEER test method for each efficiency level to serve as inputs for the energy use analysis. For the CUAC/CUHP NOPR, DOE also used the design details, some for the reverse-engineered models and some from DOE’s energy modeling work, to determine the incremental manufacturing costs for each efficiency

³⁹ For more information see: <http://www.regulations.doe.gov/certification-data/CCMS-81578122497.html>.

⁴⁰ For more information see: <https://www.ahridirectory.org/ahridirectory/pages/cfr/defaultSearch.aspx>.

level for 7.5-ton, 15-ton and 30-ton CUACs units. *Id.*

Lennox expressed concern regarding the differences between using tested and rated IEER values to validate the energy modeling simulations. Lennox noted that Efficiency Level 1 for 7.5 tons (12.9 IEER) was based on a unit with a rated IEER of 11.4, but which DOE tested at 12.9 IEER. Lennox's modeling of this unit predicted an IEER of 12.2. Lennox commented that using a single test point to extrapolate well above manufacturer ratings to justify the proposed standard levels is arbitrary and not a valid approach. (CUAC: Lennox, No. 60 p. 13)

AHRI, Nordyne and Lennox commented that the design features that DOE used to characterize the energy use and costs for the baseline and incremental efficiency levels for 7.5 tons are not representative of realistic models. (CUAC: AHRI, No. 68 at p. 35; Nordyne, No. 61 at p. 29; Lennox, No. 60 at p. 13) They added that DOE's approach for the 7.5 ton analysis of developing a design for the baseline efficiency level by decreasing the size of the heat exchangers of the Efficiency Level 1 design results in a loss of EER performance below the current DOE minimum standard levels. (CUAC: AHRI, No. 68 at p. 35; Nordyne, No. 61 at p. 29; Lennox, No. 60 at p. 13) Goodman commented that manufacturers' published performance documents includes data for a specific model with specific physical parameters. Goodman stated that using these data and attempting to perform energy model modifications to these physical parameters could lead to inaccurate predictions of the effects of these design changes on performance and energy consumption. Goodman also expressed concern that there was no confirmation testing of the simulation results for the higher efficiency equipment and, based on their assessment, the performance of equipment at higher efficiency levels is overstated. (CUAC: Goodman, No. 65 at pp. 15, 17)

To address these concerns with DOE's engineering analysis (*i.e.*, limited number of tests and relying on energy-model-based extrapolation of design details to represent efficiency levels for which DOE had no test data), DOE revised its analysis to use rated IEER data from actual models. Using this approach, DOE selected actual models available on the market to represent each target efficiency level to conduct the energy modeling and to generate component wattage profiles and performance correlations. As discussed in section IV.E.1, these component wattage profiles and performance

correlations developed for this direct final rule were then used in the energy use analysis along with hourly building cooling loads and generalized building samples to estimate the energy savings associated with each efficiency level. As discussed in section IV.C.5, instead of developing manufacturing production costs based on the specific design parameters used in the energy modeling as was done in the CUAC/CUHP NOPR, DOE decoupled the energy modeling and cost estimation analyses for this direct final rule. In this manner, DOE was able to develop the cost-efficiency relationship using models based on a full range of manufacturers and equipment offerings. DOE's methodology and analysis for developing and conducting the energy modeling and cost-efficiency analysis are discussed in detail in section 5.5 and 5.6 of chapter 5 of the CUAC/CUHP direct final rule TSD.

The IEER ratings for the units selected for energy modeling match the corresponding efficiency level's target IEER within ± 0.2 . In the case where selected unit's IEER rating differs from the target IEER, the model was first calibrated to match the unit's ratings. The dimensions of the heat exchangers were then slightly adjusted such that the adjusted model would produce the target IEER. With regards to the comments concerning the modeled full-load EER values, because the revised analysis is based on actual models available on the market that comply with the current standards for these equipment, none of the representative units have EER values that would not comply with the currently required EER-based standards. Details of the design features, corresponding component wattage profiles and performance correlations for each efficiency level and equipment class are presented in chapter 5 of the CUAC/CUHP direct final rule TSD.

AHRI and Nordyne commented that the modeling used in the NOPR-phase energy analysis of the equipment was extremely complex and very dependent upon the precision and accuracy of the parameters entered. AHRI, Nordyne, and Goodman commented that DOE did not provide sufficient details and data (*e.g.*, refrigerant charge, type of expansion device⁴¹, sensible to latent capacity ratios⁴², condenser fan power

⁴¹ Expansion devices (*e.g.*, capillary tubes, thermostatic expansion valves, electronic expansion valves) control the amount of refrigerant flow into indoor coil.

⁴² The "sensible to latent capacity" ratio provides the conditions at the indoor coil that determine how much of the system's total cooling capacity is available for handling sensible loads (*i.e.*, the dry

consumption, evaporator blower motor power, etc.) to thoroughly analyze the accuracy of the energy modeling results. (CUAC: AHRI, No. 68 at p. 34; Nordyne, No. 61 at pp. 28–29; Goodman, No. 65 at pp. 1–16) Goodman stated that, based on their estimates using the physical parameters provided by DOE, the performance of the designs chosen for Efficiency Level 2, 3, and 4 are overstated, and thus the costs of the equipment are incorrect. (CUAC: Goodman, No. 65 at p. 15) Trane commented that DOE did not test and analyze a significant sample size to develop significant data and validate the energy model given the broad range of equipment considered in this rulemaking and the variability in design, testing and manufacturing of these components. (CUAC: Trane, No. 63 at p. 7)

For each representative model analyzed at each efficiency level for the direct final rule analysis, DOE reviewed details of the assumptions for the equipment design parameters and the energy modeling results (*i.e.*, component wattage profiles and performance correlations) with the manufacturers of models used in the analysis. DOE revised inputs to the energy modeling (*e.g.*, component power consumption estimates, design feature specifications and operation sequences) based on manufacturer feedback. Based on the confirmation provided by the specific manufacturers of each unit analyzed regarding the inputs to the energy modeling, DOE believes the energy modeling results are representative of the operation and energy consumption of models at each efficiency level for each equipment class.

AHRI, Nordyne, Carrier and Goodman also commented that the geometry input for the CoilDesigner energy modeling tool that DOE used in preparing its NOPR analysis did not accurately model heat exchanger performance because it did not include inputs required for modeling the internally enhanced (*i.e.*, rifled⁴³) tubing that are used in CUAC and CUHP heat exchangers. Carrier added that without including these internal enhancements, the overall coil performance prediction can be impacted as much as 5 to 10 percent. (CUAC: AHRI, No. 68 at p. 34; Nordyne, No. 61 at pp. 28–29; Carrier, No. 48 at p. 4; Goodman, No. 65 at p. 15) DOE notes that the CoilDesigner energy modeling

bulb temperature of the building load) versus latent loads (*i.e.*, the thermal load associated with water vapor in the air).

⁴³ Rifled tubes have grooves on the internal wall of the tube to increase the heat transfer surface area.

tool was updated after the analysis for the CUAC/CUHP NOPR had been conducted. These updates included inputs for modeling the internal enhancement for tubes for the condenser coils. As a result, DOE updated its analysis for this direct final rule using the latest version of CoilDesigner to account for the effects of rifled tubes.

As noted in chapter 5 of the CUAC/CUHP NOPR TSD, DOE's analysis for 7.5-ton units assumed that the baseline and Efficiency Level 1 both used a single refrigerant circuit design. AHRI and Nordyne disagreed with this approach and commented that use of a single-stage compressor and a single refrigerant circuit rather than multiple circuits and compressor stages is not broadly consistent with the current market trends for 7.5-ton units. AHRI and Nordyne added that nearly 90 percent of all units sold in this size have multiple compressors, which is required by ASHRAE 90.1 standards. (CUAC: AHRI, No. 68 at p. 35; Nordyne, No. 61 at p. 29) Lennox also commented that using a single compressor design to represent Efficiency Level 1 for the small equipment class is not consistent with current industry equipment designs. Lennox noted that nearly 90 percent of their current sales of 7.5 ton units use multiple compressors and that over 95 percent of 7.5 to 10 ton units use multiple compressors. (CUAC: Lennox, No. 60 at pp. 12–13) Carrier commented that the split for single- and dual-compressor units may be even at 7.5 tons, but that for 10-ton units and up to the high end of the capacity range for small equipment, everything uses dual-

compressor designs. (CUAC: Carrier, ASRAC Public Meeting, No. 102 at pp. 129, 132–133) ASAP, the California IOUs, NEEA, and ACEEE commented that DOE should consider both single- and dual-compressor designs for the small equipment classes. (CUAC: ASAP, California IOUs, NEEA, ACEEE, ASRAC Public Meeting, No. 102 at pp. 129–140)

Based on DOE's review of models in the small CUAC and CUHP equipment classes, DOE noted that the majority of models at Efficiency Level 1 used a dual-compressor design. Based on this review, a dual-compressor design is more representative of models at Efficiency Level 1. As a result, DOE revised its analysis to use a dual-compressor design to characterize the energy use and manufacturing production cost for Efficiency Level 1. DOE noted that single- and dual-compressor designs are both available at the baseline efficiency level for the small equipment class. As a result, DOE conducted energy modeling to develop component wattage profiles and performance for both single- and dual-compressor designs for the 7.5-ton baseline efficiency level. As discussed in section IV.A, DOE also developed separate manufacturing production cost estimates for both single- and dual-compressor designs for the 7.5-ton baseline efficiency level.

AHRI, Nordyne, Carrier and Lennox commented in response to the CUAC/CUHP NOPR that a significant number of units at Efficiency Level 1 and Efficiency Level 2 for all equipment classes already incorporate multiple-speed indoor fans based on the requirements in ASHRAE 90.1 and

California Title 24, and that the percentage of equipment with this feature will increase over the next several years. As a result, these commenters stated that DOE is overestimating the fan energy savings in ventilation mode at higher efficiency levels by considering only constant speed indoor fans at the lower efficiency levels. (CUAC: AHRI, No. 68 at pp. 33–34; Nordyne, No. 61 at p. 27–28; Carrier, No. 48 at pp. 2–3, 11; Lennox, No. 60 at pp. 9–11)

As discussed in section III.G.1, SAV and VAV CUACs/CUHPs incorporate multiple-speed or variable-speed indoor fan motors, as commented by interested parties, to stage indoor air flow rates. In contrast, constant-air volume ("CAV") CUACs/CUHPs, which typically use a single- or constant-speed indoor fan motor, operate at a fixed indoor air flow rate. Based on DOE's review of equipment available on the market, CAV, SAV and VAV units are available at different efficiency levels for each of the equipment class cooling capacity ranges. Based on DOE's review of the indoor fan staging for models on the market, DOE notes that CAV units are available at Efficiency Level 2 and lower for the small and large equipment classes, and at Efficiency Level 2.5 and lower for the very large class. DOE notes that SAV or VAV units are available at Efficiency Level 1 and higher for all equipment classes. As a result, DOE revised the engineering analysis for this direct final rule to be based on two design paths for the different indoor fan staging options. Table IV–16 shows the design paths for each equipment class.

TABLE IV–16—CUAC/CUHP EQUIPMENT AIR FLOW DESIGN PATH

Efficiency level	Equipment air flow design		
	Small CUACs/ CUHPs	Large CUACs/ CUHPs	Very large CUACs/ CUHPs
Baseline	CAV	CAV	CAV.
EL1	Path-1: CAV	Path-1: CAV	Path-1: CAV.
	Path-2: SAV	Path-2: SAV	Path-2: VAV.
EL2	Path-1: CAV	Path-1: CAV	Path-1: CAV.
	Path-2: SAV	Path-2: SAV	Path-2: VAV.
EL2.5	SAV	SAV	Path-1: CAV.
			Path-2: VAV.
EL3	SAV	SAV	VAV.
EL3.5	SAV	SAV	VAV.
EL4	SAV	SAV	VAV.
EL5/Max-Tech	SAV	VAV	VAV.

AHRI, Nordyne, and Lennox stated that the power input that DOE used for the condenser fans and indoor fan in the CUAC/CUHP NOPR modeling analysis does not appear realistic across the efficiency levels. These commenters

noted that the high-speed indoor fan power on the 7.5-ton model at Efficiency Level 3 and Efficiency Level 4, and 15 ton model at all efficiency levels is unrealistically low. (CUAC: AHRI, No. 68 at p. 44; Nordyne, No. 61

at p. 37; Lennox, No. 60 at p. 15) AHRI and Nordyne commented with regards to variable-speed fans that the negative impact on mechanical efficiency from high load and low fan speed is not considered. (CUAC: AHRI, No. 68 at p.

33; Nordyne, No. 61 at p. 27) Carrier also commented that the fan power reductions moving from Efficiency Level 2 to Efficiency Level 3 for the 7.5- and 15-ton analysis (31 percent and 36 percent, respectively) imply the use of very efficient motors at or approaching max-tech levels. (CUAC: Carrier, No. 48 at p. 3)

For this direct final rule, as discussed above, DOE analyzed actual models using their rated IEER values to represent each target efficiency level. DOE calculated indoor fan power using fan performance tables provided in manufacturer equipment literature for these models, including for variable-speed fans as noted by AHRI and Nordyne, and motor efficiency based on compliance with DOE electric motor standards established by EPCA (10 CFR 431.25). The indoor fan motors used in equipment are selected to overcome a wide range of external static pressures ("ESPs"). The actual horsepower delivered by the motors at the rated air flow and minimum ESP required by the test procedure are typically less than the nameplate horsepower. For CAV units, the calculation for horsepower loss is based on the approach adopted in DOE's rulemaking for commercial and industrial fans and blowers.⁴⁴ For SAV and VAV units, the calculation for horsepower loss is based on equation developed in DOE's rulemaking for commercial and industrial pumps test procedure.⁴⁵ The equation accounts for the combined motor and variable frequency drive loss during full-load and part-load operation. For the outdoor fans, DOE calculated the outdoor fan power input based on equipment literature, pressure estimates, typical fan efficiency and motor efficiency based on compliance with DOE small electric motor standards (10 CFR 431.25). Details of these analyses are presented in chapter 5 of the CUAC/CUHP direct final rule TSD.

ASRAC Working Group participants commented that DOE should further investigate the pressure drop associated with conversion curbs and the percentage of shipments that will require conversion curbs for each efficiency level, including the base case. Carrier and Trane both suggested discussing this issue with conversion

curb suppliers. (CUAC: NEEA, ASAP, SMACNA, Carrier, Trane, ASRAC Public Meeting, No. 94 at pp. 147–167) Trane and Carrier commented that DOE should look across the range of capacities within each equipment class to determine the efficiency levels at which curb size changes. (CUAC: Trane, Carrier, ASRAC Public Meeting, No. 94 at pp. 193–199)

DOE collected information from major conversion curb vendors, including MicroMetl and Thybar (who were both identified during the Working Group's public discussions), regarding pressure drops, costs, and the size of the existing market for these products. (CUAC: ASRAC Public Meeting, No. 96 at pp. 75–77) DOE developed a distribution of efficiency levels at which conversion curbs are required by reviewing equipment size trends for key capacities of the equipment classes for four major manufacturers with equipment spanning the range of efficiencies considered for the analysis. DOE selected the efficiency levels that would require cabinet size increases for each manufacturer/capacity combination. DOE then developed a distribution of the percentage of shipments at each efficiency level that would require a conversion curb based on equal manufacturer market share. Regarding the pressure drop associated with conversion curbs, conversion curb vendors provided information regarding typical pressure drops for units installed with conversion curbs. Based on DOE's review of these data and discussions with conversion curb vendors, DOE determined that a pressure drop of 0.2 inch water column (in. wc.) represents the average pressure drop associated with CUAC/CUHP installations that include a conversion curb. Based on this evaluation, DOE applied a pressure drop of 0.2 in. wc. for full air flow across all equipment classes as a result of applying a conversion curb. ASRAC Working Group participants agreed to using a 0.2 in. wc. pressure drop for conversion curbs. (ASRAC Public Meeting, No. 97 at pp. 132–136) Using the 0.2 in. wc. conversion curb pressure drop at full air flow, DOE revised the cooling capacity and indoor fan power correlations used for the energy use analysis.

In the CUAC/CUHP NOPR, DOE did not conduct similar energy modeling for CUHP units since CUHP shipments represent a very small portion of industry shipments compared to CUACs shipments (9 percent versus 91 percent). With these small numbers, in DOE's view, modeling for CUHPs was unnecessary because DOE accounted for the difference in efficiency as compared

to that which occurs with the CUAC equipment classes due to losses from the reversing valve and the reduced potential for optimization of coil circuitry for cooling, as discussed in section IV.C.2.b. In addition, because CUHPs represent a small portion of shipments, DOE noted, based on equipment teardowns and an extensive review of equipment literature⁴⁶, that manufacturers generally use the same basic design/platform for equivalent CUAC and CUHP models. DOE also considered the same design changes for the CUHP equipment classes that were considered for the CUAC equipment classes within a given capacity range. For these reasons, in the CUAC/CUHP NOPR, DOE focused energy modeling on CUAC equipment. 79 FR at 58974–58975. DOE maintained this approach for this direct final rule. Although not considered in the engineering and LCC and PBP analyses, DOE did analyze CUHP equipment in the NIA. From this analysis, DOE believes the energy modeling conducted for CUAC equipment provides a good estimate of CUHP cooling performance and provides the necessary information to estimate the magnitude of the national energy savings from increases in CUHP equipment efficiency.

b. Commercial Warm Air Furnaces

As discussed above, for the engineering analysis, DOE analyzed a representative input capacity of 250,000 Btu/h for both the gas-fired and oil-fired CWAFF equipment classes to develop incremental cost-efficiency relationships. CWAFF models selected for reverse engineering (physical teardown/examination) were used to estimate the costs to manufacture CWAFFs at each efficiency level available on the market, ranging from the baseline 80-percent TE for gas-fired units, and baseline 81-percent TE for oil-fired units, up to the max-tech 92-percent TE for both gas-fired and oil-fired units. Because this reverse engineering was first conducted to inform the engineering analyses for the CWAFF NOPR, the selection of units for testing and reverse engineering was based on the efficiency data available in the AHRI certification database,⁴⁷ the CEC equipment database, and manufacturers' catalogs⁴⁸ at the time of the CWAFF

⁴⁴ DOE Energy Conservation Standards for Commercial and Industrial Fans and Blowers, NODA Life-Cycle Cost (LCC) Spreadsheet. Available at: <http://www.regulations.gov/documentDetail;D=EERE-2013-BT-STD-0006-0034>.

⁴⁵ DOE Test Procedure NOPR for Pumps. 80 FR at 17586, 17622 (Apr. 1, 2015). Available at: <http://www.regulations.gov/documentDetail;D=EERE-2013-BT-TP-0055-0001>.

⁴⁶ For examples of manufacturer literature used in the analysis, see EERE–2013–BT–STD–0007–0110.

⁴⁷ Available at: <https://www.ahridirectory.org/ahridirectory/pages/home.aspx>.

⁴⁸ Available at: <http://www.energy.ca.gov/appliances/>.

NOPR.⁴⁹ Details of the key features of the tested and reverse engineered units are presented in chapter 5 of the direct final rule TSD.

DOE conducted physical teardowns on each unit tested to inform manufacturing cost estimations and to evaluate key design features (e.g., heat exchangers, blower and inducer fans/fan motors, controls).

For gas-fired CWAFFs, DOE performed two teardowns on weatherized CWAFFs units at non-condensing efficiency levels. Each CWAFFs unit was part of a packaged CUAC/CWAFF rooftop unit. One unit was rated at 80-percent TE and the other unit was rated at 82-percent TE. Prior to teardown, the units were tested by a third-party test lab and both tested at approximately 82-percent TE. The units were from the same manufacturer and had similarly designed furnace sections with different air conditioner sections. DOE determined that the similarity of the test results on both units indicated that the furnace designs that were torn down are representative of equipment with 82-percent TE. Using the cost-assessment methodology, DOE determined the manufacturing cost of each CWAFFs torn down via reverse engineering.

Based on the CWAFF teardowns, manufacturer feedback, product literature, and experience from the residential furnaces rulemaking, DOE determined that the primary method manufacturers use to achieve efficiency levels above baseline is to increase heat exchanger size. In the analyses for the February 2015 CWAFF NOPR (80 FR 6181), DOE used feedback from manufacturer interviews to estimate that manufacturers will typically increase the surface area of the heat exchanger by 10 percent in order to increase TE by 1 percent.⁵⁰ DOE sought comment from stakeholders on the technologies that

were identified for improving thermal efficiency. 80 FR at 6232. In addition, during the March 2, 2015 public meeting to discuss the CWAFF NOPR, DOE again made clear the technology options that were considered for improving CWAFF TE (including a 10 percent increase in heat exchanger size to achieve a 1 percent increase in TE), and sought comment regarding its engineering analysis. (CWAFF: DOE, NOPR Public Meeting Transcript, No. 17 at pp. 57, 70–71) During the CWAFF NOPR comment period and ASRAC public meetings, DOE did not receive any comments objecting to DOE's estimates of the heat exchanger size changes with increased efficiency, nor did DOE receive any data that would allow for the refinement of this approximation. Thus, DOE continued to use this estimate for this direct final rule analysis. However, feedback from manufacturers during the ASRAC public meetings did allow DOE to determine the specific variations in the design of the heat exchanger assembly components between units at the 80-percent (baseline), 81-percent, and 82-percent TE levels. Specifically, this feedback indicated that heat exchanger size is increased by adding tubes to the heat exchanger, rather than lengthening heat exchanger tubes, which DOE accounted for in its direct final rule analysis. (CWAFF: Carrier, ASRAC Public Meeting, No. 94 at pp. 62–63; Trane, ASRAC Public Meeting, No. 94 at pp. 63; Rheem, ASRAC Public Meeting, No. 94 at pp. 63–64) At the 80-percent and 81-percent TE levels, DOE used this information to scale down the size of the heat exchanger examined in the units torn down at 82-percent TE as the initial step in estimating the costs to manufacture equipment at the 80-percent and 81-percent TE efficiency levels.

In response to the costs presented in the NOPR, multiple stakeholders commented that the methodology for estimating the manufacturing cost of an 82-percent TE gas-fired CWAFF did not account for significant technological modifications required to maintain equipment reliability at that efficiency level. Specifically, DOE's cost estimates in the NOPR for the 80-percent through 82-percent TE levels incorporated the use of aluminized steel to construct key heat exchanger and inducer assembly components. Multiple stakeholders commented that the estimated manufacturing cost of an 82-percent TE unit was not accurate, and that heat exchanger and inducer assembly components would need to be constructed out of more resilient

materials at 82-percent TE. AHRI commented that to meet an 82-percent TE standard without sacrificing safety, reliability, and durability, manufacturers would need to significantly modify their CWAFFs offerings to account for the risk of corrosion in the heat exchanger and venting system as a result of condensation formation under certain ambient conditions. In its view, accounting for this factor would require that the incremental manufacturer production cost ("MPC") over baseline be higher than that presented in the NOPR engineering analysis. (CWAFF: AHRI, No. 26 at p. 2) The Advocates commented that if it is determined that some portion of CWAFF sales will necessitate stainless steel heat exchangers to accommodate condensate formation during operation, then the engineering analysis should be modified to account for the additional costs associated with this engineering modification. (CWAFF: The Advocates, No. 24 at p. 1–2) Lennox commented that at 82-percent TE, the combination of higher TE and reduced dilution air decreases the safety factor between flue gas temperature and condensation point temperature by 40 percent, which greatly increases the risk for condensation formation. To overcome this, more expensive corrosion-resistant heat exchanger materials are needed. As a result, for smaller heating input capacity products, Lennox estimates the incremental MPC to achieve 82-percent TE over baseline efficiency is 12 times higher than the DOE estimate of \$10. For larger capacity products, Lennox estimates the incremental MPC will be over 20 times higher than the \$10 estimate. Additionally, Lennox noted that at 82-percent TE, the inducer motor would need to be constructed out of more corrosion-resistant materials. (CWAFF: Lennox, No. 22 at p. 7) Rheem commented that at 82-percent TE, excessive condensation will occur to the point of causing heat exchanger or vent system corrosion. As a result, it would need to redesign the combustion system, evaluate alternative materials, conduct reliability testing, and other field tests—none of which were captured in the manufacturer costs presented in the TSD. (CWAFF: Rheem, No. 25 at p. 2) Rheem added that to increase TE to 82-percent above baseline, the estimated \$10 incremental MPC is not accurate with regard to Rheem's product offerings. In its view, the \$10 incremental cost included in DOE's analysis would not allow them to add turbulators to their designs to enhance furnace efficiency. (CWAFF: Rheem, No.

⁴⁹ At the time of the analyses for the CWAFF NOPR, the DOE CCMS database did not contain efficiency data for CWAFFs. Upon review of current efficiency data from the CCMS database and manufacturers' catalogs in the analyses for the direct final rule, DOE found the current efficiency distribution of CWAFF models to still include a majority of units at the same efficiency levels that were analyzed in the NOPR based on the AHRI database, CEC database, and manufacturers' catalogs. An exception to this was at the 82-percent TE level for gas-fired CWAFFs, where the number of models offered significantly decreased between the NOPR and direct final rule analyses. As discussed previously in section IV.C.2.b, this was because a specific manufacturer of weatherized gas-fired CWAFFs units listed as 82-percent TE at the time of the NOPR analyses no longer listed this equipment at the 82-percent TE level at the time of the direct final rule analyses.

⁵⁰ See chapter 5 of the February 2015 CWAFF NOPR TSD for further information, located at: <http://www.regulations.gov/#/documentDetail;D=EERE-2013-BT-STD-0021-0012>.

25 at p. 4) Trane commented that the MPCs presented in the NOPR for the 81-percent and 82-percent TE levels are understated by about 3-fold, in part because they do not account for the needed use of stainless steel heat exchangers. CWAfFs are designed to operate at the midpoint of possible air temperature rise across the heat exchanger (which will be at least a 30 degree Fahrenheit range), which means that 82-percent TE units will end up operating frequently at 83-percent TE or higher, and thus experience condensation. (CWAfF: Trane, No. 27 p. 4–6)

In the engineering analyses for the direct final rule, DOE modified its cost estimates for the 82-percent TE level in response to the above comments. To account for the use of corrosion-resistant materials in both the heat exchanger and inducer assemblies at 82-percent TE, DOE estimated the costs of implementing both 409-grade stainless steel (SS409) and 316-grade stainless steel (SS316) into these assemblies, rather than aluminized steel. In addition, DOE has observed that a certain portion of units at 80-percent and 81-percent TE also utilize heat exchanger and inducer assemblies that incorporate corrosion-resistant materials into their designs in order to improve durability. As such, for the 80-percent, 81-percent, and 82-percent TE levels, DOE estimated individual MPCs for each of the specific material options that may be incorporated into the heat exchanger/inducer assembly at that efficiency level. For more information on the methodology used to estimate the MPCs for the 80-percent, 81-percent, and 82-percent TE levels, see chapter 5 of the CWAfF direct final rule TSD. In the life-cycle cost and payback period analysis, DOE assigned a percentage of models at each efficiency level that would incorporate each of the various material types analyzed. (See chapter 8 of the CWAfF direct final rule TSD for further details.)

As discussed in section IV.C.1, to estimate the manufacturing cost of a 92-percent TE (max-tech) CWAfF, DOE obtained a condensing, 92-percent TE gas-fired makeup air furnace for physical examination. In addition, DOE used information gathered from a teardown of a condensing weatherized residential furnace to further inform the cost estimation. DOE examined the heat exchanger, inducer fan, condensate management system, and other aspects of the gas-fired makeup air furnace to develop an estimate of the cost to manufacture these specific sub-assemblies in a condensing CWAfF. DOE then used information from the

residential condensing weatherized furnace teardown to refine estimates of the specific costs of a condensate management system for a condensing efficiency level CWAfF. Using these sub-assembly cost estimates, and additional information provided by the two teardowns of 82-percent TE gas-fired CWAfFs, DOE estimated the MPC for a 92-percent TE gas-fired CWAfF. For further information on the estimation of the manufacturing cost of a 92-percent TE gas-fired CWAfF, see chapter 5 of the direct final rule TSD.

For oil-fired CWAfFs, DOE performed a teardown of a non-weatherized unit at 81-percent TE. DOE used this teardown, along with product literature, prior industry experience, manufacturer feedback, and analysis previously performed on oil-fired residential furnaces to develop estimates of the manufacturing costs of both 82-percent and 92-percent TE oil-fired CWAfFs.

In a previous analysis of residential non-weatherized oil-fired furnaces, DOE developed an estimate of the cost-efficiency relationship across a range of efficiency levels. In examining product literature for oil-fired CWAfFs, DOE found that commercial units are very similar to residential units, except with higher input ratings and overall larger size. Based on information obtained from the physical teardown of the 81-percent TE oil-fired CWAfF, in addition to the information gained from the residential furnace analysis and product literature, DOE was able to conduct a virtual teardown to estimate the manufacturing costs for an 82-percent TE unit. Key to this cost estimate was the growth in heat exchanger size necessary for a 1-percent increase in TE, which necessitates a larger cabinet to accommodate it. Sheet metal and other components sensitive to size changes were scaled in order to match the larger size of the unit, while components that are not sensitive to heat exchanger size changes remained unchanged.

Similarly, DOE relied on the physical teardown at the 81-percent TE level, as well as prior comparisons of residential oil-fired furnaces at condensing and non-condensing efficiency levels, to conduct a virtual teardown at the 92-percent TE level. At 92-percent TE, a secondary condensing heat exchanger made from a high-grade stainless steel was added in order to withstand the formation of condensate from the flue gases coupled with increased heat extraction into the building airstream (and, thus, higher TE). This additional heat exchanger was appropriately-sized based on information gathered from teardowns of oil-fired residential furnaces. According to product

specification sheets, 92-percent TE oil-fired CWAfFs use similar heat exchanger technology as condensing residential oil-fired furnaces. To accommodate the secondary heat exchanger, the cabinet was increased in size, and all associated sheet metal, wiring, and other components sensitive to cabinet size changes were also scaled as a result. In addition, the size of the blower fan blade was increased appropriately to account for the additional airflow needed over the secondary heat exchanger (however, based on observations in product literature, the rated fan power was unchanged). The manufacturing costs obtained from these physical and virtual teardowns served as the basis for the cost-efficiency relationship for this equipment class. The teardown analyses for oil-fired CWAfFs are described in further detail in chapter 5 of the direct final rule TSD.

4. Cost Estimation Process

DOE developed a systematic process to estimate the MPCs of CUACs/CUHPs and CWAfFs. The process utilizes a spreadsheet that calculates costs based on information about the materials and components in the bills of materials (“BOMs”), based on the price of materials, average labor rates associated with fabrication and assembly, and the costs of overhead and depreciation, as determined based on manufacturer interviews and DOE expertise. To support cost calculations using the information in the BOMs, DOE collected information on labor rates, tooling costs, raw material prices, and other factors. For purchased parts, DOE estimates the purchase price based on volume-variable price quotations and detailed discussions with manufacturers and component suppliers. For fabricated parts, the prices of raw metal materials (e.g., tube, sheet metal) are estimated based on five-year averages. The cost of transforming both raw materials and purchased parts into finished assemblies and sub-assemblies is estimated based on current industry costs for labor, manufacturing equipment/tooling, space, etc. Additional details on the cost estimation process are contained in chapter 5 of the CUACs/CUHPs and CWAfF direct final rule TSDs.

5. Manufacturing Production Costs

As discussed previously, for both CUACs/CUHPs and CWAfFs, DOE calculated manufacturing costs at each efficiency level by totaling the costs of materials, labor, depreciation and direct overhead incurred in the manufacturing process. The total manufacturing cost of equipment at each efficiency level is

broken down into two main costs: (1) The full MPC; and (2) the non-production cost, which includes selling, general, and administration (“SG&A”) costs; the cost of research and development; and interest from borrowing for operations or capital expenditures. DOE estimated the MPC at each efficiency level considered for each equipment class, from the baseline through the max-tech efficiency levels. DOE calculated the percentage of MPC attributable to each individual element of total production costs (*i.e.*, materials, labor, depreciation, and overhead). These percentages are used to validate

the inputs to the cost estimation process by comparing them to manufacturers’ actual financial data published in annual reports, along with feedback obtained from manufacturers during interviews. DOE uses these production cost percentages in the MIA.

a. Commercial Unitary Air Conditioners and Heat Pumps

For the CUAC/CUHP NOPR, DOE developed the cost-efficiency results using the design information of tested units and design changes identified as part of the energy modeling analysis. DOE developed cost-efficiency relationships for each cooling capacity

range. DOE also noted in the CUAC/CUHP NOPR that the incremental manufacturing production and shipping costs for each efficiency level developed for the CUACs with electric resistance heating or no heat equipment class would apply to all of the other equipment classes (*i.e.*, CUACs units with all other types of heating, CUHPs units with electric resistance heating or no heat, CUHPs units with all other types of heating) within a given cooling capacity range. 79 FR at 58975. The cost-efficiency relationships developed for the CUAC/CUHP NOPR are presented in Table IV–17.

TABLE IV–17—CUAC/CUHP NOPR COST-EFFICIENCY RELATIONSHIPS

Efficiency level	Incremental manufacturing production cost		
	Small air-cooled CUACs and CUHPs	Large air-cooled CUACs and CUHPs	Very large air-cooled CUACs and CUHPs
Baseline	-	-	-
EL1	\$115.93	\$419.16	\$542.65
EL2	583.47	792.76	1,296.41
EL3	788.88	1,236.98	1,834.67
EL4 (Max-Tech)	1,277.04	1,554.26	2,753.32

AHRI, Nordyne, Rheem, Trane, Lennox and Goodman commented that DOE has underestimated the costs of complying with the proposed standards. (CUAC: AHRI, No. 68 at pp. 29, 37–38, 44; Nordyne, No. 61 at pp. 24, 33, 37; Rheem, No. 70 at p. 4; Trane, No. 63 at p. 8; Lennox, No. 60 at p. 15; Goodman, No. 65 at pp. 13, 16)

DOE updated the raw materials and purchased parts costs used in the manufacturing cost estimation analysis based on U.S. Bureau of Labor Statistics and American Metals Market data. To address manufacturers concerns regarding DOE’s estimated incremental MPCs, DOE provided detailed cost data, broken out by production factors (materials, labor, depreciation, and overhead) and also by major subassemblies (*e.g.*, indoor/outdoor heat exchangers and fan assemblies, controls, sealed system, etc.) and components (*e.g.*, compressors, fan motors, etc.), for each model analyzed in its physical and catalog teardowns to the manufacturers of the models. DOE refined its analysis based on all data and feedback provided by manufacturers.

For this direct final rule, DOE revised its analysis to be based on the physical and catalog teardown models using their IEER ratings at each efficiency level. For

each equipment class, DOE estimated the incremental MPCs using the physical and catalog teardown models individually for each manufacturer that included sufficient information in their equipment literature to conduct the cost estimation analysis, then averaged the results across the manufacturers considered. As discussed above, DOE specifically focused its analysis on 7.5-ton, 15-ton, and 30-ton CUAC units with electric resistance heating or no heating. This approach for determining costs, which is different from the approach used for the energy modeling analysis discussed above, considers the full range of manufacturers and equipment offerings for which sufficient data were available to conduct the manufacturing estimation analysis using their rated IEER values. As discussed in section IV.C.3.a, DOE evaluated air flow design paths separately for CUAC and CUHP units with CAV and SAV/VAV air flow designs and also developed two separate costs for the baseline efficiency level for 7.5 tons for single- and dual-compressor designs.

Where the rated IEER values did not match exactly with the efficiency levels being considered, DOE’s primary method to determine the MPCs for each efficiency level was to interpolate or

extrapolate results. For example, to determine the costs at 7.5-ton Efficiency Level 1 (12.9 IEER), DOE determined the MPC for one manufacturer by interpolating the results for models rated at 12.2 IEER and 13.0 IEER. For efficiency levels with limited numbers of models, DOE developed incremental costs to be representative of the industry average cost to achieve those levels. For example, for Efficiency Level 4 for 7.5- and 15-ton units, DOE applied the relative percentage increase in cost for the one manufacturer with commercially-available equipment at that level across the other manufacturers to better represent average labor and production factors.

Based on this revised approach of considering the full range of manufacturers and equipment offerings using their rated IEER values and the consideration of additional feedback from manufacturers, DOE believes its revised cost estimates for this direct final rule provide a more accurate representation of the incremental manufacturing production costs required to achieve each efficiency level. Table IV–18 through Table IV–20 presents the cost-efficiency results developed for this direct final rule.

TABLE IV–18—DIRECT FINAL RULE SMALL AIR-COOLED CUACS AND CUHPs COST-EFFICIENCY RELATIONSHIPS

Efficiency Level	Total MPC	Incremental MPC (single compressor base-line)	Incremental MPC (dual compressor base-line)
Baseline Single Compressor	\$1,947.33	.....	.....
Baseline Dual Compressor	2,110.04	.....	.....
EL 1 CAV	2,394.77	\$447.44	\$284.74
EL 1 SAV	2,365.85	418.52	255.82
EL 2 CAV	2,672.21	724.88	562.18
EL 2 SAV	2,737.46	790.13	627.43
EL 2.5	2,836.11	888.78	726.07
EL 3	2,924.49	977.16	814.46
EL 3.5	3,072.46	1,125.13	962.42
EL 4	3,452.52	1,505.19	1,342.49
EL 5 (Max-Tech)	4,105.51	2,158.18	1,995.48

TABLE IV–19—DIRECT FINAL RULE LARGE AIR-COOLED CUACS AND CUHPs COST-EFFICIENCY RELATIONSHIPS

EL	Total MPC	Incremental MPC
Baseline	\$4,115.95	.....
EL 1 CAV	4,412.72	296.77
EL 1 SAV	4,462.10	346.15
EL 2 CAV	4,610.56	494.61
EL 2 SAV	4,797.55	681.60
EL 2.5	4,974.17	858.22
EL 3	5,169.16	1,053.21
EL 3.5	5,289.84	1,173.89
EL 4	5,545.71	1,429.76
EL 5 Max-Tech (VAV)	7,700.47	3,584.52

TABLE IV–20—DIRECT FINAL RULE VERY LARGE AIR-COOLED CUACS AND CUHPs COST-EFFICIENCY RELATIONSHIPS

EL	Total MPC	Incremental MPC
Baseline	\$7,535.78	.....
EL1 CAV	8,766.75	\$1,230.97
EL1 VAV	9,878.35	2,342.56
EL2 CAV	10,250.48	2,714.69
EL2 VAV	10,756.20	3,220.42
EL2.5 CAV	10,403.62	2,867.84
EL2.5 VAV	11,533.72	3,997.93
EL3	11,866.94	4,331.15
EL4	11,922.94	4,387.16
EL5 Max-Tech	12,743.07	5,207.29

b. Commercial Warm Air Furnaces

Based on the analytical methodology discussed in the sections above, DOE developed the cost-efficiency results for both gas-fired and oil-fired CWAfs shown in Table IV–21 and Table IV–22 for each TE level analyzed. As discussed in section IV.A, for each of the 80-percent, 81-percent, and 82-percent TE

levels for gas-fired CWAfs, DOE developed multiple MPCs accounting for the use of either aluminized steel, SS409, or SS316 as a material type in the heat exchanger and inducer motor assemblies. The results shown in Table IV–21 represent the MPCs developed for each equipment class and efficiency level. Table IV–22 shows the incremental MPC increases, relative to

the baseline MPC, needed to produce equipment at each specific efficiency level above baseline. Details of the cost-efficiency analysis, including descriptions of the technologies DOE analyzed at each efficiency level to develop the incremental manufacturing costs, are presented in chapter 5 of the CWAf direct final rule TSD.

TABLE IV–21—MANUFACTURING PRODUCTION COSTS *

Equipment type	EL0 (baseline)	EL1	EL2 (oil-fired Max-Tech)	EL3 (gas-fired Max-Tech)
Gas-fired CWAfs with aluminized steel HX/inducer assemblies at EL0 through EL2	\$337	\$350	\$357	\$1,074

TABLE IV–21—MANUFACTURING PRODUCTION COSTS *—Continued

Equipment type	EL0 (baseline)	EL1	EL2 (oil-fired Max- Tech)	EL3 (gas-fired Max-Tech)
Gas-fired CWAFFs with SS409 HX/inducer assemblies at EL0 through EL2 ..	447	469	486	1,074
Gas-fired CWAFFs with SS316 HX/inducer assemblies at EL0 through EL2 ..	599	635	664	1,074
Oil-fired CWAFFs	1,613	1,638	2,304	.....

* DOE structures potential standards in terms of TSLs and examined five TSLs in the analysis for this direct final rule. TSL 1 includes EL1 for gas-fired CWAFFs and EL0 for oil-fired CWAFFs, TSL 2 includes EL1 for both equipment classes, TSL 3 includes EL2 for gas-fired CWAFFs and EL0 for oil-fired CWAFFs, TSL 4 includes EL2 for gas-fired CWAFFs and EL1 for oil-fired CWAFFs, and TSL 5 includes EL3 for gas-fired CWAFFs and EL2 for oil-fired CWAFFs. For more information on the TSL structure for CWAFFs, see section V.A of this direct final rule.

TABLE IV–22—INCREMENTAL MANUFACTURING PRODUCTION COST INCREASES

Equipment type	EL0 (baseline)	EL1	EL2 (oil-fired Max- Tech)	EL3 (gas-fired Max-Tech)
Gas-fired CWAFFs with aluminized steel HX/inducer assemblies at EL0 through EL2	\$13	\$20	\$737
Gas-fired CWAFFs with SS409 HX/inducer assemblies at EL0 through EL2	22	39	627
Gas-fired CWAFFs with SS316 HX/inducer assemblies at EL0 through EL2	35	65	474
Oil-fired CWAFFs	25	691	.....

6. Manufacturer Markup

To account for manufacturers' non-production costs and profit margin, DOE applies a non-production cost multiplier (the manufacturer markup) to the MPC. The resulting manufacturer selling price ("MSP") is the price at which the manufacturer can recover all production and non-production costs and earn a profit. To meet new or amended energy conservation standards, manufacturers often introduce design changes to their equipment lines that result in increased MPCs. Depending on competitive pressures, some or all of the increased production costs may be passed from manufacturers to retailers and eventually to customers in the form of higher purchase prices. As production costs increase, manufacturers typically incur additional overhead. The MSP should be high enough to recover the full cost of the equipment (*i.e.*, full production and non-production costs) and yield a profit. The manufacturer markup has an important bearing on profitability. A high markup under a standards scenario suggests manufacturers can readily pass along the increased variable costs and some of the capital and product conversion costs (the one-time expenditure) to customers. A low markup suggests that manufacturers will not be able to recover as much of the necessary investment in plant and equipment. DOE developed the manufacturer markup through an examination of corporate annual reports and Securities and Exchange Commission ("SEC") 10-

K reports,⁵¹ as well as comments from manufacturer interviews. Additional information is contained in chapter 6 of the CUACs/CUHPs and CWAFF direct final rule TSDs.

7. Shipping Costs

HVAC equipment manufacturers typically pay for shipping during the first step in the distribution chain. Freight is not a manufacturing cost, but because it is a substantial cost incurred by the manufacturer, DOE is accounting for the shipping costs of CUACs/CUHPs and CWAFFs separately from other non-production costs that comprise the manufacturer markup. To calculate the MSP at each efficiency level for CUACs/CUHPs and CWAFFs, DOE multiplied the MPC at each efficiency level by the manufacturer markup and added shipping costs for equipment at the given efficiency level.

DOE calculated shipping costs at each efficiency level based on the average outer dimensions of equipment at the given efficiency and the use of a typical flat-bed, step-deck, or double-drop trailer to ship the equipment.

For CUACs and CUHPs, DOE's estimated shipping costs for each efficiency level are presented in Table IV–23 through Table IV–25. DOE notes that the shipping costs differ between CAV CUACs/CUHPs and SAV/VAV CUACs/CUHPs because of the design changes used in each type of unit to reach the higher efficiency levels. CAV

CUACs/CUHPs generally rely on increasing the size of the heat exchangers to achieve higher efficiencies. As a result, CAV CUACs/CUHPs may require a larger overall cabinet size and thus a higher shipping cost compared to SAV or VAV CUACs/CUHPs at the same efficiency level, which generally rely on implementing airflow and compressor staging to achieve higher efficiencies that may not require an increase in cabinet size. DOE also notes that for the very large equipment class, the cabinet size increases associated with the higher efficiency levels did not change the number of units that fit on the trailer.

TABLE IV–23—DIRECT FINAL RULE SMALL AIR-COOLED CUACs AND CUHPs SHIPPING COST

Efficiency level	Shipping cost
Baseline Single Compressor	\$278.57
Baseline Dual Compressor ...	\$278.57
EL 1 CAV	278.57
EL 1 SAV	278.57
EL 2 CAV	278.57
EL 2 SAV	278.57
EL 2.5	278.57
EL 3	278.57
EL 3.5	278.57
EL 4	360.00
EL 5 (Max-Tech)	360.00

TABLE IV–24—DIRECT FINAL RULE LARGE AIR-COOLED CUACs AND CUHPs SHIPPING COST

Efficiency level	Shipping cost
Baseline	\$360.00
EL 1 CAV	360.00

⁵¹ U.S. Securities and Exchange Commission, Annual 10-K Reports (Various Years) (Available at: <http://www.sec.gov/edgar/searchedgar/companysearch.html>) (Last Accessed Dec. 13, 2013).

TABLE IV–24—DIRECT FINAL RULE
LARGE AIR-COOLED CUACS AND
CUHPS SHIPPING COST—Continued

Efficiency level	Shipping cost
EL 1 SAV	360.00
EL 2 CAV	405.00
EL 2 SAV	360.00
EL 2.5	405.00
EL 3	405.00
EL 3.5	405.00
EL 4	450.00
EL 5 Max-Tech (VAV)	450.00

TABLE IV–25—DIRECT FINAL RULE
VERY LARGE AIR-COOLED CUACS
AND CUHPS SHIPPING COST

Efficiency level	Shipping cost
Baseline	\$900.00

TABLE IV–25—DIRECT FINAL RULE
VERY LARGE AIR-COOLED CUACS
AND CUHPS SHIPPING COST—Continued

Efficiency level	Shipping cost
EL1 CAV	900.00
EL1 VAV	900.00
EL2 CAV	900.00
EL2 VAV	900.00
EL2.5 CAV	900.00
EL2.5 VAV	900.00
EL3	900.00
EL4	900.00
EL5 Max-Tech	900.00

Gas-fired CWF equipment is typically enclosed within a cabinet that also contains a CUAC.⁵² Thus, the CUAC components are a significant factor in driving the overall cabinet dimensions. DOE found that the changes in CWF component sizes

necessary to achieve the 81-percent and 82-percent TE levels are not large enough to add any size to the cabinet, which is driven primarily by the size of the CUAC components. The shipping costs calculated for each CWF efficiency level are shown in Table IV–26. Due to the noted impact of CUAC components on the overall shipping cost for gas-fired CWFs, DOE presents only the incremental increase in shipping cost relative to the baseline efficiency level at each efficiency level analyzed for gas-fired CWFs. For oil-fired CWFs, DOE presents the cost of shipping the entire unit, since this equipment is not packaged with CUAC components, and thus, the shipping cost represents the cost to ship only the oil-fired CWFs. Chapter 5 of the CWF direct final rule TSD contains additional information pertaining to DOE's shipping cost estimates.

TABLE IV–26—CWFs SHIPPING COST ESTIMATES

CWFs equipment class	Thermal efficiency (%)	Shipping costs* (2014\$)
Gas-Fired CWFs	80	0
	81	0
	82	0
	92	43.15
Oil-Fired CWFs	81	69.43
	82	75.76
	92	83.31

* Because gas-fired CWFs are typically included in a cabinet with CUACs, which influence the shipping cost, the shipping costs for gas-fired CWFs at each efficiency level are shown as the incremental increase in shipping cost above the baseline efficiency level. Since oil-fired CWFs are normally self-contained units, the shipping costs for oil-fired CWFs are representative of the entire cost to ship the unit.

D. Markups Analysis

At each step in the distribution channel, companies mark up the price of their equipment to cover business costs and profit margin. The markups analysis develops appropriate markups (e.g., manufacturer markups, retailer markups, distributor markups, contractor markups) in the distribution chain and sales taxes to convert the MPC estimates derived in the engineering analysis to consumer prices, which are then used in the LCC and PBP analysis and other analyses.

1. Distribution Channels

In both the CUAC/CUHP and CWF NOPRs, DOE characterized three distribution channels to describe how the equipment passes from the manufacturer to the commercial consumer. The first of these channels, the replacement distribution channel, was characterized as follows:

Manufacturer → Wholesaler → Small or Large Mechanical Contractor → Consumer

The second distribution channel—new construction—was characterized as follows:

Manufacturer → Wholesaler → Small or Large Mechanical Contractor → General Contractor → Consumer

In the third distribution channel, which applies to both the replacement and new construction markets, the manufacturer sells the equipment directly to the customer through a national account:

Manufacturer → Consumer (National Account)

In response to the CWF NOPR, Lennox and Trane stated that the national account channel still requires a contractor to perform the installation, who has a markup on labor and materials as well. (CWF: Lennox, Public Meeting Transcript, No. 17 at pp.

80–81; Trane, Public Meeting Transcript, No. 17 at pp. 82–83) In contrast, ACEEE stated that the markup refers to the value added by someone who takes ownership of the equipment. ACEEE questioned whether the installing contractor marks up the equipment itself. (CWF: ACEEE, Public Meeting Transcript, No. 17 at pp. 83–84)

DOE notes that the markups analysis develops markups that are applied to the cost of purchasing only the equipment. Therefore, if the installing contractor only performs the installation, but does not purchase the equipment, the contractor is not part of the distribution channel. The installation, maintenance, and repair costs, including labor and material costs, are marked up separately using markups from RS Means data (see section IV.F).

⁵² Based on shipments data provided by AHRI (see section 3.9.2 of chapter 3 of the CUAC/CUHP

direct final rule TSD), DOE has determined that

there are little to no shipments of combined CUHP/CWF units.

DOE used the same distribution channels for the direct final rule analysis.

2. Markups and Sales Tax

The manufacturer markup converts MPC to MSP. DOE developed an average manufacturer markup by examining the annual SEC 10-K reports filed by publicly-traded manufacturers primarily engaged in appliance manufacturing and whose combined product range includes CUACs/CUHPs and CWAFFs.

For all parties except for the manufacturer, DOE developed separate markups for baseline products (baseline markups) and for the incremental cost of more-efficient products (incremental markups). Incremental markups are coefficients that relate the change in the MSP of higher-efficiency models to the change in the retailer sales price.

AHRI stated in its response to the CUAC/CUHP NOPR that DOE unreasonably utilized incremental, rather than average markups, which significantly understates the cost of equipment meeting the proposed standards. (CUAC: AHRI, No. 68 at p. 3) It stated that DOE's analysis does not comport with empirical observations of markups in the air conditioning or heating equipment industries. (CUAC: AHRI, No. 68 at p. 29) According to AHRI, in using this technique, DOE is stating what should be happening in the market, which does not accurately reflect what is actually occurring. AHRI attached a report from Shorey Consulting to its comment to help explain what it perceives as fundamental flaws in using incremental markups as opposed to average markups. AHRI stated that average markups should be used in the DOE analysis, as these markups are, in its view, representative of the real-world HVAC marketplace. (CUAC: AHRI, No. 68 at p. 35)

DOE is not aware of any representative empirical observations of markups in the air conditioning or heating equipment industries, except at an aggregate level. The Shorey Consulting Report describes a survey of HVAC distributor/wholesalers and HVAC contractors that Shorey Consulting conducted in November 2014 to determine the actual pricing practices of both groups. The report states that (1) both distributor/wholesalers and HVAC contractors manage to target constant margin percentages across their whole businesses and do not vary margins for individual products; and (2) these entities respond to manufacturer price increases (or rare decreases) by passing these price changes through with their

traditional markups. (CUAC: AHRI, No. 68, markups attachment at pp. 17–20)

To investigate the claims in the Shorey Consulting Report, DOE held discussions with Construction Programs & Results, Inc. ("CPR"), a company with long experience in the HVAC contracting field. Laying out a scenario that resembles what it expects to occur after amended standards take effect, DOE asked CPR whether HVAC contractors would be able to retain the same markup that they currently use if equipment prices increase while other relevant costs (e.g., labor, material, and operation) remain constant. CPR stated that the contractors would likely attempt to use the same markup over time, but, assuming no increase in other costs, they will eventually either have to lower their markup based on market pressures, or choose to lower their markup after it has been reviewed and recalculated. The company further stated that the real-world situation is more complex than DOE's scenario, noting that the markup change will happen when the company's finances are reviewed, and the equipment cost increase will be only one factor in the adjustment. (DOE's questions and CPR's responses are provided in an appendix to chapter 6 in the CUAC/CUHP direct final rule TSD.)

The above characterization of contractor behavior is consistent with DOE's markup approach, which assumes that the markup changes for standards-compliant equipment that have a higher cost than non-compliant equipment. DOE also believes its approach is not entirely inconsistent with the information provided by the survey described in the Shorey Consulting Report. DOE does not mean to suggest that HVAC distributor/wholesalers and contractors will directly adjust their markups on equipment if the price they pay goes up as a result of appliance standards. Rather, the approach assumes that such adjustment will occur over a (relatively short) period of time as part of a business management process. This approach embodies the same perspective as the "preservation of per-unit operating profit markup scenario" used in the MIA (see section IV.J of this document).⁵³ DOE asked CPR if an

⁵³ In the preservation of per unit operating profit scenario, manufacturer markups are set so that operating profit one year after the compliance date of the amended energy conservation standards is the same as in the base case on a per-unit basis. Under this scenario, as the production costs and sales price increase with more stringent efficiency standards, manufacturers are generally required to reduce their markups to a level that maintains base-case operating profit per unit. The implicit assumption behind this markup scenario is that the

increase in profitability, which is implied by keeping a fixed markup when the equipment price goes up, would be viable over time. The company indicated that, given the many pressures on contractors to lower their prices for various reasons, such an increase was unlikely to occur. DOE further notes that if increases in the cost of goods sold consistently lead to a sustainable increase in profitability, one would expect distributor/wholesalers and contractors to welcome such increases. DOE does not expect that such behavior is common in the HVAC market, or in any markets characterized by a reasonable degree of competition.

In summary, DOE acknowledges that its approach to estimating distributor and contractor markup practices after amended standards become required is necessarily an approximation of real-world practices that are both complex and varying with business conditions. However, given the supportive remarks from CPR, and the lack of any evidence that standards facilitate a sustainable increase in profitability for distributors and contractors (as would be implied by AHRI's recommendation), DOE continues to maintain that its use of incremental markups is reasonable. DOE welcomes information that could support improvement in its methodology.

To develop markups for the parties involved in the distribution of CUAC/CUHP and CWAFF equipment, DOE utilized several sources, including: (1) The Heating, Air-Conditioning & Refrigeration Distributors International ("HARDI") 2012 Profit Report⁵⁴ to develop wholesaler markups; (2) the 2005 Air Conditioning Contractors of America's ("ACCA") financial analysis for the heating, ventilation, air conditioning, and refrigeration ("HVACR") contracting industry⁵⁵ to develop mechanical contractor markups, and (3) the U.S. Census Bureau's 2007 Economic Census data⁵⁶ for the commercial and institutional building construction industry to develop general contractor markups. For mechanical contractors, DOE derived

industry can only maintain its operating profit in absolute dollars per unit after compliance with the new standard.

⁵⁴ *Heating, Air Conditioning & Refrigeration Distributors International 2012 Profit Report* (Available at: <http://www.hardinet.org>) (Last accessed April 10, 2015).

⁵⁵ *Air Conditioning Contractors of America (ACCA), Financial Analysis for the HVACR Contracting Industry: 2005* (Available at: <https://www.acca.org>) (Last accessed April 10, 2013).

⁵⁶ U.S. Census Bureau, *2007 Economic Census Data* (2007) (Available at: <http://www.census.gov/econ/>) (Last accessed April 10, 2013).

separate markups for small and large contractors.

Trane questioned how the overall markup of CWAfs compared to that of CUACs/CHUPs. (CWAf: Trane, No. 17 p. 89–90) DOE notes that the overall markups for gas-fired CWAfs and CUACs/CHUPs are almost identical to each other.⁵⁷ DOE used the same general methodology and data sources for CWAfs as for CUACs/CHUPs.

In addition to the markups, DOE derived State and local taxes from data provided by the Sales Tax Clearinghouse.⁵⁸ These data represent weighted average taxes that include county and city rates. DOE derived shipment-weighted average tax values for each of the regions from the Energy Information Administration's 2003 Commercial Building Energy Consumption Survey (CBECS 2003)⁵⁹ considered in the analysis.⁶⁰

Chapter 6 of the direct final rule TSDs for CUACs/CHUPs and CWAfs provides details on DOE's development of markups.

E. Energy Use Analysis

The purpose of the energy use analysis is to determine the annual energy consumption of CUACs and CWAfs at different efficiencies in representative U.S. commercial buildings and (in the case of CWAfs) multi-family buildings, and to assess the energy savings potential of increased equipment efficiency. DOE did not analyze CHUP energy use because, for the reasons explained in section IV.C.4, the energy modeling in the engineering analysis was performed only for CUAC equipment.

The energy use analysis estimates the range of energy use of the equipment in the field (*i.e.*, as they are actually used by commercial consumers). The energy use analysis provides the basis for other analyses DOE performed, particularly assessments of the energy savings and the savings in consumer operating costs that could result from adoption of amended standards.

Chapter 7 of the direct final rule TSDs provides details on DOE's energy use analysis for CUACs and CWAfs.

1. Small, Large, and Very Large Commercial Package Air Conditioning and Heating Equipment

DOE developed energy consumption estimates only for the CUAC equipment classes that have electric resistance heating or no heating. As described in section IV.C.2.b, for equipment classes with all other types of heating, the incremental change in IEER for each efficiency level increases to maintain the same energy savings as was determined for the equipment classes with electric resistance heating or no heating within each equipment class capacity range (*i.e.*, small, large, and very large). Using this approach, the IEER differential between these equipment classes ranged from 0.2 to 0.4 at the higher efficiency levels. Therefore, DOE estimated that the energy savings for any efficiency level relative to the baseline would be identical for both sets of equipment classes. In turn, the energy savings estimates for the efficiency levels associated with the equipment classes that have electric resistance heating or no heating were used by DOE in the LCC and PBP analysis and the NIA to represent both sets of equipment classes.

In its analysis of the recommended TSL, DOE applied Efficiency Level 3 to the small and large "all other types of heating equipment" classes and Efficiency Level 2.5 to the very large "all other types of heating equipment" class. These were the IEER values recommended by the ASHRAE Working Group, using an IEER differential of 0.2 compared to the "electric resistance heating or no heating equipment" classes. See *supra*, section IV.C.2.b. At Efficiency Level 3, based on an approach of maintaining a constant energy savings differential with the electric resistance heating or no heating equipment classes, the IEER differential should be 0.3 for both the small and large "all other types of heating equipment" classes. Since reducing the differential increases the efficiency of the equipment, additional energy savings are realized from reducing the IEER differential to 0.2 for the small and large "all other types of heating equipment" classes. The method for determining the additional energy savings benefit is described in section IV.H.2.

The energy use analysis consists of two related parts. In the first part, DOE calculated energy savings for small, large, and very large CUACs at the considered efficiency levels based on modifications to the energy use simulations conducted for the 2004

ANOPR. These building simulation data are based on the 1995 CBECS. Because the simulation data reflect the building stock in 1995 that uses CUAC equipment, in the second part of the analysis, DOE developed a "generalized building sample" to represent the current installation conditions for CUACs. This part of DOE's analysis involved making adjustments to update the building simulation data to reflect the current building stock that uses CUAC equipment.

a. Energy Use Simulations

DOE's simulation database includes hourly profiles for more than 1,000 commercial buildings, which were based on building characteristics from the 1995 CBECS for the subset of buildings that uses CUAC equipment. Each building was assigned to a specific location along with a typical meteorological year ("TMY") hourly weather file (referred to as "TMY2") to represent local weather. The simulations capture variability in cooling loads due to factors such as building activity, schedule, occupancy, local weather, and shell characteristics.

For the NOPR, DOE modified the energy use simulations conducted for the 2004 ANOPR to improve the modeling of equipment performance. The modifications that DOE performed included changes to the ventilation rates and economizer usage assumptions, the default part-load performance curve, and the minimum saturated condensing temperature limit. A more detailed description of the simulation model modifications can be found in appendix 7A of the direct final rule TSD.

Neither fan operation during ventilation nor economizer usage are accounted for in the DOE test procedure and, therefore, do not impact the rated efficiency of a CUAC. Although ventilation rates and economizer usage do not directly affect the rated equipment performance, they do impact how often the equipment needs to operate, whether at full or part-load. The building simulations for the 2004 ANOPR used ventilation rates based on ASHRAE Standard 62–1999.⁶¹ Because a report prepared by the National Institute for Standards and Testing ("NIST") on field measurements indicated that these ventilation rates were too high,⁶² DOE reduced the rates

⁵⁷ There are slight differences in the overall markups due to small differences in manufacturer markups and in the distribution channel shares.

⁵⁸ Sales Tax Clearinghouse Inc., State Sales Tax Rates Along with Combined Average City and County Rates, 2013 (Available at: <http://thetstc.com/STrates.stm>) (Last accessed Sept. 11, 2013).

⁵⁹ Energy Information Administration (EIA), 2003 Commercial Building Energy Consumption Survey (Available at: <http://www.eia.gov/consumption/commercial/>) (Last accessed April 10, 2013). Note: CBECS 2012 is currently in development but was not available in time for this rulemaking.

⁶⁰ CBECS 2012 is currently in development but will not be available in time for this rulemaking.

⁶¹ American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. *ANSI/ASHRAE Standard 62–1999 Ventilation for Acceptable Indoor Air Quality*, 1999. Atlanta, Georgia.

⁶² Persily, A. and J. Gorfain. 2004. "Analysis of Ventilation Data from the U.S. Environmental

as part of the modified energy use simulations. In the case of economizer usage, the building simulations for the 2004 ANOPR assumed all economizers operated without fault. Various field studies have demonstrated that economizer usage is far from perfect, so in the modified simulations DOE assigned a 30-percent probability to each building modeled that the economizer would be non-operational.⁶³ With regard to changes made to how the equipment was modeled, DOE developed a modified part-load performance curve for the direct-expansion condenser unit model so that the overall performance would be more representative of a multi-compressor system. In addition, DOE lowered a user-input parameter representing the minimum saturated condensing temperature ("MSCT") allowed for the refrigerant used in a CUAC—specifically, DOE dropped the MSCT from 100 °F to 80 °F.⁶⁴ Both of these parameters would affect system performance under part-load and off-design conditions.

The issue of economizer usage was first discussed in the Working Group meeting on May 11, 2015. (ASRAC Public Meeting, No. 94 at pp. 82–135) One concern was whether the model used in the simulations properly modelled the performance of economizers. Another was the market share of units that use economizers. The third concern was the fraction of economizers that are operating properly. DOE presented a sensitivity analysis that showed that even if it assumed that all economizers are operating properly below an outdoor ambient temperature of 60 °F,⁶⁵ the reduction in cooling load—and the accompanying potential for energy savings—would be very small. (ASRAC Public Meeting, No. 96 at pp. 164–174). The Working Group recommended that DOE maintain the assumptions regarding economizer usage applied in the NOPR for the direct final rule analysis. (ASRAC Public Meeting, No. 96 at pp. 177–182), and DOE did so. A description of the

sensitivity analysis for economizers can be found in appendix 7B of the direct final rule TSD.

DOE used a two-step process to represent the performance of equipment at baseline and higher efficiency levels. For the NOPR, DOE first calculated the hourly cooling loads and hourly fan operation for each building from the compressor and fan energy consumption results that were generated from the modified building simulations based on equipment with an efficiency level of 11 EER. It was estimated that these simulated cooling loads had to be met by the CUACs equipment for every hour of the year that the equipment operates. Refer to chapter 7 of the CUAC/CUHP direct final rule TSD for more details.

The number of units serving a given building was based on the cooling load of the building and the cooling capacity of the representative CUAC unit at an outdoor ambient temperature of 95 °F—the specific ambient temperature at which manufacturers report a given unit's cooling capacity. In its informal meetings, the Working Group determined that the cooling capacity of the representative CUAC unit should instead be based on the 1-percent design temperature corresponding to the climate where the building is located. The 1-percent design temperature would generally be less than 95 °F, which means that the cooling capacity increases and the number of units needed to serve the building decreases. (ASRAC Public Meeting, No. 94 at pp. 80–82) As part of implementing the suggested approach, DOE allowed a fractional number of units, equivalent to system size increments of 2.5 tons, to be installed in a building as part of DOE's model. (ASRAC Public Meeting, No. 96 at p. 143)

In the second step, DOE coupled the hourly cooling loads and fan operation with equipment performance data, developed from laboratory and modeled IEER testing conducted according to AHRI Standard 340/360–2007, to generate the hourly energy consumption of baseline and more efficient CUAC equipment. DOE's use of the laboratory and modeled IEER test data allowed it to specifically address how capacity and control strategies vary with outdoor temperature and building load. The laboratory and modeled IEER test data were used to calculate the compressor efficiency (COP) and capacity at varying outdoor temperatures. The IEER rating test consists of measuring the net capacity, compressor power, condenser fan power, indoor fan power, and control power at three to five different rating conditions. The number of rated conditions the equipment is tested at is

determined by the equipment's capabilities and control strategies. For the NOPR, the net capacity and compressor(s) power were determined as a linear function of outdoor temperature from the test results. If the indoor or outdoor fan was staged, its power consumption was also calculated as a linear function of outdoor temperature. The power for controls is a constant, but may vary by staging.

As described in section IV.C.3.a, DOE updated its approach by replacing the linear function described above with new correlations between outdoor temperature and the net capacity and compressor(s) power based on the design of the equipment. The considered designs included CAV, SAV, and VAV designs. Indoor and outdoor fan(s) power as well as control power were determined based on equipment staging. Based on informal Working Group meetings, the indoor fan power in heating mode assumes that the fan operates at its highest (*i.e.*, most energy consumptive) stage. (ASRAC Public Meeting, No. 94 at pp. 80–82)

For the NOPR, the determination of fan power was based on ESP values found in AHRI Standard 340/360–2007, which are also used in the DOE test procedure. The Working Group discussed the appropriate ESP to use in the analysis and agreed that DOE should use higher ESPs than those found in the DOE test procedure to help better simulate actual field conditions. For the direct final rule, the values used (0.75 and 1.25 in.w.c.) correspond to the ESPs used in the modified building simulations of the cooling load. (ASRAC Public Meeting, No. 94 at pp. 80–82; ASRAC Public Meeting, No. 95 at pp. 28–31; ASRAC Public Meeting, No. 96 at pp. 145–164) In addition, as described earlier in section IV.C.3.a, DOE accounted for the fraction of the market at each efficiency level that would require the installation of a conversion curb. The determination of fan power accounted for an increase in the ESP (0.2 in.w.c.) associated with a conversion curb. (ASRAC Public Meeting, No. 95 at pp. 28–52; ASRAC Public Meeting, No. 98 at pp. 10–15) The new correlations between outdoor temperature and the net capacity and compressor(s) power were based on the new ESPs as well as the impact of a conversion curb.

The compressor(s) power and capacity of the equipment for each hour of the year was calculated based on the outdoor temperature for the simulated buildings. The cooling capacity was calculated such that it met the simulated building cooling load for each hour. For multi-stage equipment, the

Protection Agency Building Assessment Survey and Evaluation (BASE) Study". NISTIR 7145.

⁶³ As described in appendix 7–A of the TSD, field studies indicate that at least a third of installed economizers do not function properly and that economizer controls often are disconnected from the HVAC system.

⁶⁴ The default value in the simulation model for the minimum saturated condensing temperature ("MSCT") allowed the refrigerant in a CUAC to reach 100 °F. DOE lowered the user-input parameter representing the allowed MSCT to the minimum condensing temperature of 80 °F to reflect compressor performance literature.

⁶⁵ The Working Group considered 60 °F as a reasonable estimate as to when economizer use would be allowed to cool the building.

staging for each hour was selected to ensure the equipment could meet the simulated building cooling load. When the cooling capacity exceeded the simulated building cooling load, the efficiency was adjusted for cyclic performance using the degradation coefficient and load factor as calculated according to section 6.2, Part-Load Rating, of AHRI 340/360, using the new correlations between outdoor temperature and the net capacity and compressor(s) power described above. The analysis accounted for the fact that the building cooling load includes the heat generated by the fan. The total amount of cooling the compressor must provide varies as the fan efficiency improves with different efficiency levels.

Members of the ASRAC Working Group discussed the load factor in informal meetings and, after closely examining DOE's calculation methods, the group shared its finding that DOE misinterpreted the determination of the load factor and degradation coefficient. The equation that DOE was using to determine the compressor load factor did not properly account for the way loads are distributed on multi-stage equipment when more than one stage is operating. As a result, DOE corrected the calculation for compressor power to ensure that the load factor and degradation coefficient were based only on the highest stage of operation. In addition, the same load factor and degradation coefficient were used to determine the indoor fan power at its upper stage. (ASRAC Public Meeting, No. 94 at pp. 80–82)

The NOPR analysis assumed that when there are multiple units in a building, all units serve the same share of the total cooling load. The validity of this assumption was discussed with the Working Group, and DOE conducted a sensitivity analysis with alternative assumptions. Assuming that the units serve different shares of the load, the total annual energy use of the units changes by approximately 1 percent. (ASRAC Public Meeting, No. 96 at pp. 174–176) Given this outcome, the Working Group recommended that DOE maintain the assumption applied in the NOPR for the direct final rule analysis (ASRAC Public Meeting, No. 96 at pp. 177–182). DOE followed this recommendation and a description of the sensitivity analysis of equipment

loading can be found in appendix 7B of the direct final rule TSD.

Each building simulation determines the indoor fan run-time for each hour of the year. Energy use was calculated separately for the compressor, condenser fan, indoor fan, and controls for each hour of the year for the simulated building. Compressor and condenser fan energy were summed to reflect cooling energy use. Indoor fan and control energy were combined into a single category to represent indoor fan energy use during all modes of operation.

A number of stakeholders stated that it is inappropriate to incorporate energy savings attributed to fan operation (for ventilation) during modes of operation other than cooling. (AHRI, No. 68 at p. 33; Carrier, No. 48 at p. 5; Lennox, No. 60 at p. 14) ASAP agreed with the inclusion of supply fan power in the energy use analysis. (ASAP, No. 69 at p. 5)

This issue was discussed in informal meetings by a number of members of the Working Group. The outcome of these discussions was presented at the May 11, 2015 meeting of the Working Group. (ASRAC Public Meeting, No. 94 at p. 82) The Working Group agreed to include fan operation energy during all modes of operation in the energy use calculations, so DOE maintained the approach used in the NOPR for the direct final rule.⁶⁶

The calculations provided the annual hourly cooling and fan energy use profiles for each building. The incremental energy savings between the baseline equipment and the equipment at higher efficiency levels was calculated for every hour for each of the 1,033 simulated buildings.

The building simulations were initially performed to analyze the energy use of small and large CUAC equipment, but the building cooling loads that were modeled are

representative of CUACs irrespective of equipment cooling capacity. Therefore, DOE believes that its method of using these simulations provides a good representation of very large equipment performance as well as small and large equipment performance.

b. Generalized Building Sample

The NOPR analysis used a “generalized building sample” (GBS) to represent the installation conditions for the equipment covered in this rulemaking. The GBS was developed using data from the 2003 CBECS and from the Commercial Demand Module of the National Energy Modeling System version distributed with *AEO 2013*.

Only floor space cooled by the covered equipment was included in the sample. Conceptually, the main difference between the GBS and the sample of specific commercial buildings compiled in CBECS is that the GBS aggregates all building floor space associated with a particular set of building characteristics into a single category. The set of characteristics that is used to define a category includes all building features that are expected to influence either (1) the cooling load and energy use or (2) the energy costs. As an outcome of the Working Group meetings, it was decided that the building ventilation system type should be included as a feature because it affects energy use. Thus, for the direct final rule, a category was added, defining whether the building ventilation system is CAV or VAV. The primary motivation for specifying the building ventilation system was twofold: (1) To only assign CAV designs to CAV buildings and (2) to prevent CAV designs from being assigned to VAV buildings. The first issue addressed current equipment selection practices, *i.e.*, purchasers will continue to specify CAV designs if the building type allows for it. The second issue acknowledges that CAV designs are never applied to VAV buildings. As a result, CAV buildings received CAV, SAV or VAV designs, depending on the efficiency level analyzed. (ASRAC Public Meeting, No. 95, at pp. 33–52) And since CAV designs would not be appropriate for VAV buildings, these buildings received either SAV or VAV designs. The set of building characteristics, and the specific values these characteristics can take, are listed in Table IV–27.

⁶⁶ The Working Group recommended that DOE initiate a rulemaking to amend the test procedure for this equipment to better represent the total fan energy use, including considering: (a) Alternative external static pressures and (b) operation for other than mechanical cooling and heating. It also recommended that the energy consumption from the supply air fan during hours of operation when it is used to provide ventilation air, and the energy use with the supply fan operation when the unit is in heating mode, should be included in an energy efficiency metric as a result of this test procedure modification. Appliance Standards and Rulemaking Federal Advisory Committee, Commercial Package Air Conditioners and Commercial Warm Air Furnaces Working Group. Term Sheet. June 15, 2015. Recommendation #2.

TABLE IV–27—LIST OF CHARACTERISTICS AND THE ASSOCIATED VALUES USED TO DEFINE THE GENERALIZED BUILDING SAMPLE

Characteristic	Number of values	Range of values
Region	10	9 census divisions with Pacific subdivided into north and south.
Building Activity	7	assembly, education, food service, small office, large office, mercantile, warehouse.
Size (based on annual energy consumption)	3	small: < 100,000 kWh; medium: 100,000 to 1,000,000 kWh; large: > 1,000,000 kWh.
Vintage	3	category 1: before 1950; category 2: 1950–1979; category 3: 1980 and later.
Ventilation System Type	2	Constant Air Volume (CAV); Variable Air Volume (VAV).

The region in which the building is located affects both the cooling loads (through the weather) and the cost of electricity. The building activity affects building schedules and occupancy, which in turn influence the demand for cooling. The building size influences the cost of electricity, because larger facilities tend to have lower marginal prices. The building vintage may influence shell characteristics that can affect the cooling loads. The building ventilation system type dictates the type of equipment design assigned to a building.

As discussed with the Working Group, for the direct final rule, the amount of floor space allocated to each category for buildings built in or before 2012 was updated using the 2012 CBECS. The GBS was projected to 2019 (the year of the LCC analysis) using the *AEO 2015* projections of commercial building floor space by region and building type. (ASRAC Public Meeting, No. 95 at pp. 10–28)

Load profiles for each category in the GBS were developed from the simulation data just described. For each equipment class, a subset of the 1,033 buildings was used to develop the cooling energy use profiles. The subset included all buildings with a capacity requirement equal to or greater than 90 percent of the capacity of the particular representative unit. For each GBS type, a weighted average energy use profile, along with energy savings from the considered efficiency levels, was compiled from the simulated building subset. The average was taken over all buildings in the subset that have the same region, building type, size, and vintage category as the GBS category (load profiles were assumed to be independent of the building ventilation system type). This average was weighted by the number of units required to meet each building's cooling load. For some of the GBS categories, no simulation

data were available. In these cases, the weighted-average energy use profile for the same building type and a nearby region or vintage were used.

Updating the sample to 2019 required some additional adjustments to the energy use data. The 1,033 building simulations used TMY2 weather data that were based on 1961–1990 data. The TMY2 weather data files were updated to TMY3, which also incorporates 1991–2005 data, in 2008. A comparison of the two datasets showed that total annual cooling degree-days (“CDD”) increased by 5 percent at all locations used in this analysis. This is accounted for by increasing the energy use (for all efficiency levels) by 5 percent at all locations. The TMY3 dataset is representative of calendar year 2005. To account for changes in CDD (and energy use) between 2005 and 2019, DOE used the projected *AEO 2015* CDD trend, which shows an increase of approximately 0.6% per year.

Changes to building shell characteristics and internal loads can lead to a change in the energy required to meet a given cooling load. The National Energy Modeling System (“NEMS”) commercial demand module accounts for these trends by adjusting the cooling energy use with a factor that is a function of region and building activity. These factors assume 100 percent compliance with existing building codes. In the GBS, these same factors were used to adjust the cooling energy use for floor space constructed after 1999. To account for more realistic levels of code compliance, the factors were multiplied by 0.35.

For the Working Group's analysis, DOE removed buildings with a cooling load of under five tons from the original sample because these buildings would be more likely to be served by smaller equipment than the CUACs covered in this rulemaking. DOE also screened out buildings with more than four stories for

the 7.5-ton equipment class, since such equipment would likely be too small to meet the cooling load. (ASRAC Public Meeting, No. 95 at pp. 27–28) For the 15-ton and 30-ton equipment classes, DOE removed buildings from consideration that have cooling loads low enough that multiple smaller units would likely be used instead of a single 15-ton or 30-ton unit. The Working Group did not object to these changes, and DOE incorporated them in the direct final rule analysis.

Commenting on the NOPR, Rheem stated that the 1,033 simulated samples have limited applicability when predicting energy consumption in commercial buildings. Rheem questioned whether unoccupied or underutilized buildings were included. (Rheem, No. 70 at p. 5) AHRI and Nordyne commented that a generalized building sample may not accurately represent the energy consumption of equipment in the commercial building stock. They stated that benchmarked buildings are more effective in estimating actual energy use. (AHRI, No. 68 at p. 44; Nordyne, No. 61 at p. 37) Goodman commented that the ASHRAE 90.1 committee utilized a broad spectrum of buildings from the existing building stock, not a generalized building sample, which Goodman contends is less accurate. (Goodman, No. 65 at pp. 17–18)

The GBS includes only buildings that use covered equipment and are occupied with the equipment in use. Benchmarking may provide better estimates of energy use in individual buildings, but DOE requires a representation of the entire building stock, for which the only available data source is CBECS combined with information from building simulations. The ASHRAE 90.1 committee evaluated the cost-effectiveness of ASHRAE 90.1–2010 for new construction based on simulations of six building types in five

climate locations, a more restricted sample than what is incorporated in the GBS.

2. Commercial Warm Air Furnaces

For CWFAs, DOE calculated the energy use associated with providing space heating in a representative sample of U.S commercial buildings and multi-family residential buildings. The CWFAs annual energy consumption includes the gas and oil fuel used for space heating and the auxiliary electrical use associated with the furnace electrical components.

DOE estimated the heating load of CWFAs in commercial buildings and multi-family buildings by developing building samples for each of the two equipment classes covered by the standards based on CBECS 2003 and 2009 Residential Energy Consumption Survey (RECS 2009).⁶⁷ DOE used the heating energy consumption reported in CBECS 2003 or RECS 2009, which is based on the existing heating system, to calculate the space heating load of each building. The heating load represents the amount of heating required to keep a building comfortable throughout an average year. This approach captures the variability in heating loads due to factors such as building activity, schedule, occupancy, local weather, and shell characteristics. The heating load estimates from CBECS 2003 and RECS 2009 were adjusted for average weather conditions, existing CWFAs equipment efficiency, and for projected improvements to the building shell efficiency.

Commenting on the NOPR, Goodman, Rheem, and AHRI stated that CBECS 2003 is outdated. (CWFAs: Goodman, No. 23 at p. 4; Rheem, No. 23 at p. 6; AHRI, No. 26 at pp. 5–6) Goodman and AHRI further stated that DOE should use CBECS 2012 data when it is released in May 2015. (CWFAs: Goodman, No. 23 at p. 4; AHRI, No. 26 at pp. 5–6) For the direct final rule, DOE used CBECS 2012 building sample characteristics to determine the CWFAs sample;⁶⁸ however, DOE continued to use CBECS 2003 data for all other portions of its analysis because the energy use data for

CBECS 2012 was not available at the time of the analysis.⁶⁹

In addition, Goodman and AHRI stated that DOE should not consider RECS data as part of the CWFAs rulemaking. (CWFAs: Goodman, No. 23 at p. 4; AHRI, No. 26 at pp. 5–6) Goodman stated that CWFAs installed in residential homes comprise a negligible percentage of CWFAs installations. (CWFAs: Goodman, No. 23 at p. 4) DOE believes that including CWFAs used in residential buildings provides a more complete picture of CWFAs energy use, and that RECS provides data that reasonably represent multi-family buildings that use CWFAs. Based on RECS 2009 data, DOE estimates that about two percent of commercial furnaces are used in multi-family residential applications.⁷⁰

To calculate CWFAs energy consumption at each considered efficiency level, DOE determined the burner operating hours and equipment input capacity for each building. DOE used the equipment output capacity (determined using the TE rating) and the heating load in each building to determine the burner operating hours. DOE assigned the representative 250 kBtu/h input capacity for all CWFAs efficiency levels.

Commenting on the CWFAs NOPR, Rheem stated that it is unreasonable to assume that the burner and blower run-time will vary to the extent that DOE estimated (nearly 0-percent on-time to 100-percent on-time in any range of applications). Rheem stated that the unreasonable burner and blower on-time assumption inflates the energy consumption at the baseline efficiency level and proportionately inflates the savings from higher efficiency. (CWFAs: Rheem, No. 26 at p. 6) On the other hand, GTI stated that on any given building there is significant diversity in unit run-times. (GTI, Public Meeting Transcript, No. 17 at p. 105) In response, DOE did not arbitrarily assume burner operating hours would apply to each CWFAs sample. Rather, the burner operating hours are based on the annual heating energy use reported for sample buildings in CBECS 2003 and RECS 2009, as well as the assumed representative equipment input capacity. A wide range of burner operating hours is reflective of actual CWFAs operation because some CWFAs in buildings with multiple furnaces may have limited use, while other CWFAs

may serve very large building heating loads.

Trane stated that many local building codes require major building renovations to meet new building standards, affecting the energy efficiency of the building stock and in turn, the calculation of energy use. (CWFAs: Trane, No. 27 at p. 8) Goodman made a similar comment. (CWFAs: Goodman, No. 23 at p. 4)

DOE accounted for changes in building shell efficiency using the building shell efficiency index derived from the NEMS simulation performed for EIA's *Annual Energy Outlook 2015* (AEO 2015),⁷¹ which projects changes in average building shell performance in the future. On average, this decreases the projected heating load for 2019 by 13 percent compared with the CBECS or RECS-derived values.

For the NOPR, DOE assumed that all CWFAs use single-stage permanent split capacitor motors. Lennox suggested that the analysis should take into account the impact of variable frequency drives that are called for under ASHRAE 90.1. Lennox stated that variable frequency drives will adjust the speed of the fans and reduce the energy use in certain applications. (CWFAs: Lennox, Public Meeting Transcript, No. 17 at p. 101)

For the direct final rule, DOE used the average fan power values from the CUAC analysis. These fan power values include variable frequency drives for the very large CUAC equipment class.

For condensing CWFAs, DOE's NOPR analysis accounted for the increased blower fan electricity use in the field in both heating and cooling mode due to the presence of the secondary heat exchanger. DOE also accounted for condensate line freeze protection or a condensate pump electricity use for a fraction of installations. Condensing CWFAs installed outdoors that are located in regions with an outdoor design temperature of ≤ 32 °F, which constitute roughly 90 percent of gas-fired CWFAs based on location data from CBECS 2003 and RECS 2009, were assumed to require condensate freeze protection. All oil-fired CWFAs are assumed to be installed indoors so condensate line freeze protection was assumed to not be needed.

Lennox stated that condensing CWFAs designs require secondary heat exchangers, which increase static pressure in the airstream and pressure drop within the heat exchanger. This additional resistance must be overcome

⁶⁷ EIA, 2009 Residential Energy Consumption Survey (Available at: <http://www.eia.gov/consumption/residential/>) (Last accessed April 10, 2013).

⁶⁸ Energy Information Administration (EIA), 2003 Commercial Building Energy Consumption Survey (Available at: <http://www.eia.gov/consumption/commercial/>) (Last accessed April 10, 2013). Note: CBECS 2012 is currently in development but not all of the necessary data was available in time for this rulemaking.

⁶⁹ The full CBECS 2012 dataset is expected to be available in February 2016.

⁷⁰ EIA, 2009 Residential Energy Consumption Survey (Available at: <http://www.eia.gov/consumption/residential/>) (Last accessed April 10, 2013).

⁷¹ Energy Information Administration (EIA), *Annual Energy Outlook 2015* (AEO 2015) Full Version (Available at: <http://www.eia.gov/forecasts/aeo/>) (Last accessed May 15, 2015).

with increased electrical power at all operating conditions, including in cooling and ventilation mode. (CWAF: Lennox, No. 22 at p. 6) Additionally, Lennox stated that enhancements that increase internal heat exchanger pressure drop will be needed to improve heat transfer, resulting in an increase in combustion air blower energy use. Further improvements to air-side heat transfer are needed through the use of baffles or increased airflow levels, which increase blower pressure drop and increase fan power. (CWAF: Lennox, No. 22 at p. 6) For the direct final rule analysis, DOE refined its approach to include the impact of condensing design on ventilation fan power. DOE's updated methodology resulted in 25 percent greater electricity use for condensing gas-fired CWAFs compared to non-condensing designs.

GTI, Goodman, AHRI, and Rheem stated that an 82-percent TE minimum standard will require a larger heat exchanger or other design changes that will restrict the airflow through the unit, which will increase the electricity use of the blower motor. (CWAF: GTI, Public Meeting Transcript, No. 17 at p. 104; Goodman, No. 23 at p. 2; Rheem, No. 25 at pp. 4–5; AHRI, No. 26 at p. 6) DOE concluded that the static pressure difference for 82-percent TE compared to baseline equipment is very small in terms of increased electricity use, because the increase in heat exchanger size in going from baseline equipment to 82-percent TE is not large enough to cause an increase in static pressure that would be relevant in terms of DOE's analysis. Therefore, DOE did not include higher electricity use for this efficiency level.

F. Life-Cycle Cost and Payback Period Analysis

DOE conducted LCC and PBP analyses to evaluate the economic impacts on representative commercial consumers of potential energy conservation standards for CUACs⁷² and CWAFs. The effect of new or amended energy conservation standards

on commercial consumers usually involves a reduction in operating cost and an increase in purchase cost. DOE uses the following two metrics to measure commercial consumer impacts:

- The LCC (life-cycle cost) is the total commercial consumer expense of an equipment over the life of that equipment, consisting of total installed cost (manufacturer selling price, distribution chain markups, sales tax, and installation costs) plus operating costs (expenses for energy use, maintenance, and repair). To compute the operating costs, DOE discounts future operating costs to the time of purchase and sums them over the lifetime of the equipment.
- The PBP (payback period) is the estimated amount of time (in years) it takes commercial consumers to recover the increased purchase cost (including installation) of more-efficient equipment through lower operating costs. DOE calculates the PBP by dividing the change in purchase cost at higher efficiency levels by the change in annual operating cost for the year that amended or new standards are assumed to take effect.

For any given efficiency level, DOE measures the change in LCC relative to the LCC in the no-new-standards case, which reflects the estimated efficiency distribution of CUACs or CWAFs in the absence of new or amended energy conservation standards. In contrast, the PBP for a given efficiency level is measured relative to the baseline equipment.

For each considered efficiency level in each equipment class, DOE calculated the LCC and PBP for the nationally representative sets of commercial consumers described in the preceding section. For each sample building, DOE determined the energy consumption for the covered equipment and the appropriate energy prices, thereby capturing variability in energy consumption and energy prices.

Inputs to the calculation of total installed cost include the cost of the equipment—which includes MPCs, manufacturer, wholesaler, and contractor markups, and sales taxes—and installation costs. Inputs to the calculation of operating expenses

include annual energy consumption, energy prices and price projections, repair and maintenance costs, equipment lifetimes, and discount rates. DOE created distributions of values for equipment lifetime, discount rates, and sales taxes to account for their uncertainty and variability.

The computer model DOE uses to calculate the LCC and PBP, which incorporates Crystal Ball™ (a commercially-available software program), relies on a Monte Carlo simulation to incorporate uncertainty and variability into the analysis. The Monte Carlo simulations randomly sample input values from the probability distributions and the consumer samples. The model calculated the LCC and PBP for products at each efficiency level for 10,000 buildings per simulation run.

DOE calculates the LCC and PBP for commercial consumers as if each were to purchase new equipment in the expected year of compliance with amended standards. As discussed in section III.C, for the TSLs that represent the recommended standards, the compliance dates for CUACs are January 1, 2018, for the first tier of standards, and January 1, 2023 for the second tier of standards. For CWAFs, the compliance date for the new standards is January 1, 2023. For all other TSLs examined by DOE, the compliance January 1, 2019 compliance date would apply. For purposes of the LCC and PBP analysis, DOE used 2019 as the first full year of compliance for all TSLs.

For CUACs, the energy savings estimates for the efficiency levels associated with the equipment classes that have electric resistance heating or no heating were used in the LCC and PBP analysis to represent the equipment classes with all other types of heating.

Table IV–28 and Table IV–29 summarize the approach and data DOE used to derive inputs to the LCC and PBP calculations. The subsections that follow provide further discussion. Details of the spreadsheet models, and of all the inputs to the LCC and PBP analyses, are contained in chapter 8 of the direct final rule TSDs and their appendices.

⁷² As indicated previously, DOE did not conduct LCC and PBP analyses for CUHPs because an energy use analysis was not performed for this equipment.

TABLE IV.28—SUMMARY OF INPUTS AND METHODS FOR THE LCC AND PBP ANALYSIS: SMALL, LARGE, AND VERY LARGE COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT *

Inputs	Method/source
Equipment Cost	Derived by multiplying MPCs by manufacturer, wholesaler, and contractor markups and sales tax, as appropriate. No change over time.
Installation Costs	Baseline installation cost determined with data from RS Means. Estimated increase in cost with increased efficiency as a function of equipment weight.
Annual Energy Use	See section IV.E.1.
Energy Prices	Marginal and average electricity prices for each member of the GBS based on utility electricity tariff data.
Energy Price Trends	Based on <i>AEO 2015</i> price forecasts.
Repair and Maintenance Costs	Based on RS Means data. Cost varies by efficiency level.
Product Lifetime	Derived from shipments model.
Discount Rates	Calculated as the weighted average cost of capital for businesses purchasing CUACs. Primary data source was Damodaran Online.
Compliance Date	2019 (for purpose of analysis).

* References for the data sources mentioned in this table are provided in the sections following the table or in chapter 8 of the direct final rule TSD.

TABLE IV.29—SUMMARY OF INPUTS AND METHODS FOR THE LCC AND PBP ANALYSIS: COMMERCIAL WARM AIR FURNACES *

Inputs	Method/Source
Equipment Cost	Derived by multiplying MPCs by manufacturer, wholesaler, and contractor markups and sales tax, as appropriate. Used historical data to derive a price scaling index to forecast product costs.
Installation Costs	Cost determined with data from RS Means. Cost increases with efficiency.
Annual Energy Use	The total fuel use plus electricity use per year. Number of operating hours and energy use based on the 2003 CBECS and 2009 RECS.
Energy Prices	Natural Gas: Based on EIA's Natural Gas Navigator data for 2012. Fuel Oil and LPG: Based on EIA's State Energy Consumption, Price, and Expenditures Estimates (SEDS) for 2012.
Energy Price Trends	Electricity: Based on EIA's Form 826 data for 2012.
Repair and Maintenance Costs	Based on <i>AEO 2015</i> price forecasts.
Product Lifetime	Based on RS Means data. Assumed variation in cost by efficiency.
Discount Rates	Gas-fired CWF: Based on the 2014 NOPR for CUAC equipment.
Compliance Date	Oil-fired CWF: Based on the residential oil-fired furnace lifetime distribution in the 2009 residential furnaces direct final rule.
	Calculated as the weighted average cost of capital for businesses purchasing CWFs. Primary data source was Damodaran Online.
	2019 (2023 for TSL 2).

* References for the data sources mentioned in this table are provided in the sections following the table or in chapter 8 of the direct final rule TSD.

1. Equipment Cost

To calculate commercial consumer equipment costs, DOE multiplied the MPCs developed in the engineering analysis by the markups described in section IV.D (along with sales taxes). DOE used different markups for baseline equipment and higher-efficiency equipment, because DOE applies an incremental markup to the increase in MSP associated with higher-efficiency equipment.

The equipment costs estimated in the engineering analysis refer to costs when the analysis was conducted. To project the costs in the compliance years, DOE developed cost trends based on historical trends.

For CUACs, DOE derived an inflation-adjusted index of the producer price index (PPI) for “unitary air-conditioners, except air source heat

pumps” from 1978 to 2014.⁷³ Although the inflation-adjusted PPI index shows a long-term declining trend, data for the last decade have shown a flat-to-slightly rising trend. Given the uncertainty as to which of the trends will prevail in coming years, DOE chose to apply a constant price trend (2013 levels) for the LCC and PBP analysis.

Commenting on the CUAC/CUHP NOPR, ASAP encouraged DOE to attempt to capture price trends of technologies that can improve efficiency of air conditioners and heat pumps. In its view, the prices of technologies used in high-efficiency equipment are likely to decline much faster than the total price of the equipment. With respect to CUACs and CUHPs, ASAP expects the prices of brushless permanent magnet

fan motors and variable-speed supply fans to decline faster than the total price of the equipment. ASAP recommended that DOE use a component-based price trend. (ASAP, No. 69 at p. 8)

DOE acknowledges that the price of more recently introduced components may decline faster than the total price of the equipment. However, it is not aware of data that would allow estimation of a trend for such components and ASAP provided none. Accordingly, DOE did not use a separate price trend for technologies used in high-efficiency equipment.

For CWFs, DOE used the historic trend in the PPI for “Warm air furnaces”⁷⁴ to estimate the change in price between the present and the compliance years. The inflation-

⁷³ Product series ID: PCU333&415333415E: Unitary air-conditioners, except air source heat pumps. (Available at: www.bls.gov/ppi/).

⁷⁴ Product series ID: PCU333415333415C: Warm air furnaces including duct furnaces, humidifiers and electric comfort heating. (Available at: <http://www.bls.gov/ppi/>).

adjusted PPI for “Warm air furnaces” shows a small rate of annual price decline.

2. Installation Cost

Installation cost includes labor, overhead, and any miscellaneous materials and parts needed to install the equipment.

a. Small, Large, and Very Large Commercial Package Air Conditioning and Heating Equipment

For the CUAC/CUHP NOPR, DOE derived installation costs for CUACs equipment from current RS Means data.⁷⁵ Based on these data, DOE concluded that data for 7.5-ton, 15-ton, and 30-ton rooftop air conditioners would be sufficiently representative of the installation costs for the $\geq 65,000$ Btu/h to $< 135,000$ Btu/h, $\geq 135,000$ Btu/h to $< 240,000$ Btu/h, and $\geq 240,000$ Btu/h to $< 760,000$ Btu/h air conditioning equipment classes, respectively. Within a given capacity (equipment class), DOE chose to vary installation costs in direct proportion to the physical weight of the equipment. The weight of the equipment in each class and efficiency level was determined through the engineering analysis. Because labor rates vary significantly in each region of the country, DOE used RS Means data to identify how installation costs vary among regions and incorporated these costs into the analysis.

Commenting on the CUAC/CUHP NOPR, Carrier stated that RS Means should be used for installation cost based on unit tonnage, not weight or physical characteristics. (Carrier, No. 48 at p. 6) Trane and Goodman commented that RS Means underestimates installation costs. (Trane, No. 63 at p. 9; Goodman, No. 65 at p. 19) Rheem stated that the costs should include regional adjustments and demolition costs for removal of existing equipment. (Rheem, No. 70 at p. 5)

The Working Group debated the validity of DOE’s method to vary installation costs in direct proportion to the physical weight of the equipment, and also discussed the cost of using a crane and whether the cost varies with efficiency. (ASRAC Public Meeting, No. 95 at pp. 103–126) DOE found that crane costs do not vary except past a threshold that is not relevant for this equipment. Because the Working Group did not find a compelling basis to recommend changes to DOE’s method, DOE retained the approach used in the NOPR for the direct final rule (ASRAC Public Meeting, No. 96 at pp. 202–235).

However, for a certain fraction of the market, DOE included additional costs for installing a conversion curb to accommodate equipment designs with large footprints. The cost was based on several factors, including equipment class, weight, and brand. As discussed by the Working Group, the fraction of the market that would require a conversion curb increases with efficiency. (ASRAC Public Meeting, No. 98 at pp. 17–20) The conversion curb costs for the small, large and very large CUAC equipment classes are \$1,000, \$1,750, and \$4,000, respectively. (ASRAC Public Meeting, No. 96 at pp. 235–237) The installation costs used for the direct final rule include removal of existing equipment.

Carrier expressed concern that the variable-speed fan technology applied to supply fans at higher efficiency levels may have an additional cost increase to customers who are replacing equipment. It noted that many of these older building designs may need either the ductwork and/or the diffusers to be modified or replaced, as their designs may not be capable of managing the lower velocities that will occur with variable-speed supply fans. It added that if the ductwork/diffuser designs are not capable of these reduced velocities, then significant thermal discomfort can result and may actually cause increased equipment run-time due to poor air distribution within the occupied space. (Carrier, No. 48 at p. 2)

Based on the Working Group discussions, DOE included additional installed costs for adding controls (*e.g.*, thermostats) in CAV buildings to accommodate SAV and VAV equipment designs. (ASRAC Public Meeting, No. 95 at pp. 126–134) However, DOE did not include additional costs for replacing diffusers based on research commissioned by ASHRAE.⁷⁶ The research found that diffusers used in CAV buildings can also be used to accommodate single-zone SAV and VAV equipment. Specifically, CAV diffusers can provide proper air distribution for air volumes as low as 10-percent of full volume. (ASRAC Public Meeting, No. 96 at pp. 238–247)

b. Commercial Warm Air Furnaces

For the CWFAP NOPR, DOE used data from the 2013 RS Means Mechanical Cost Data⁷⁷ to estimate the baseline

⁷⁶ Arens, et al. Thermal and air quality acceptability in buildings that reduce energy by reducing minimum airflow from overhead diffusers. ASHRAE RP-1515: Final Report, Center for the Built Environment—University of California, Berkeley (2012).

⁷⁷ RS Means, 2013 Mechanical Cost Data (Available at: <http://rsmeans.reedconstructiondata.com/60023.aspx>)

installation cost. For CWFAPs with condensing designs, DOE accounted for additional installation costs for condensate removal, which includes condensate drainage, freeze protection, and treatment. DOE also accounted for meeting the venting requirements for oil-fired commercial warm air furnaces, as well as for the small fraction of gas commercial warm air furnaces installed indoors.

Commenting on the CWFAP NOPR, AGA stated that if the revised standard mandates condensing technology, installing condensing furnaces in many existing buildings would require additional installation requirements and costs to properly address condensate disposal issues, including the freezing of the condensate for commercial furnaces in outdoor installations that are typical for commercial buildings. AGA stated that DOE has not fully considered these added installation costs in its analysis. (CWFAP: AGA, No. 20 at p. 2)

In the NOPR (as well as for the direct final rule), DOE included the cost of condensate disposal in the installation cost for condensing CWFAPs in indoor and outdoor installations. It included the cost of a condensate pipe, condensate pump, use of heat tape for outdoor installations, additional electrical outlet for heat tape and condensate pump, and condensate neutralizer, when applicable, based on the installation location of the CWFAPs and building characteristics reported in CBECS 2003 and RECS 2009. The use of heat tape was determined based on weather data from NOAA. DOE notes that the adopted standards do not require condensing technology. The details of the condensate removal costs are provided in appendix 8D of the direct final rule TSD.

AHRI stated that the standards may increase the size of the unit, which would potentially require rework of the installation platform. (CWFAP: AHRI, No. 17 at pp. 185–186) Similarly, Lennox stated that DOE should consider the cost involved in converting existing building stock to accept larger footprint products and the renovation needed to accept a larger roof curb or an adapter curb. (CWFAP: Lennox, No. 22 at p. 10)

DOE assumed in the engineering analysis that the increase in condensing CWFAP unit size from the use of larger heat exchangers would only impact the height, and no change in the cabinet size of higher efficiency non-condensing CWFAPs would be needed. Furthermore, the CUAC analysis already accounted for additional costs for installing a

⁷⁵ <http://www.rsmeansonline.com/>; Accessed March 27, 2013.

rsmeans.reedconstructiondata.com/60023.aspx (Last accessed April 10, 2013).

conversion curb to accommodate equipment designs with larger footprints, making it unnecessary to consider such costs for CWAFs, most of which are packaged with CUACs.

AHRI stated that although 82-percent TE CWAFs are not designed for condensing, there will be conditions that make condensate production a much greater concern than for indoor furnaces. (CWAF: AHRI, No. 26 at p. 2) Goodman stated that in field installations, the likelihood of condensate production in 82-percent TE weatherized CWAFs is much higher than in the lab, particularly in cold climates and at higher altitudes. Goodman stated that prolonged exposure to condensate in 82-percent TE CWAFs will corrode major components within the CWAFs and will lead to reliability issues. (CWAF: Goodman, No. 23 at pp. 2–3) Similarly, Trane stated that there are condensate issues for both 82-percent TE and condensing CWAFs that will need to be addressed by the installer. Trane stated that to have a redundant protection against roof membrane failure, builders or installers may need to upgrade the roof around the CWAFs, which was not taken into account in DOE's analysis. Trane added that 82-percent TE CWAFs still need heat tape to be energized continuously in the winter months for the condensate not to freeze, which DOE's analysis did not take into account. (CWAF: Trane, No. 27 at p. 7) Lennox stated that due to the introduction of condensate at 82-percent TE and above, many components will be susceptible to corrosion. (CWAF: Lennox, No. 22 at p. 10)

As discussed with the Working Group, for the direct final rule analysis, DOE did not apply a cost of a condensate withdrawal system or heat tape for non-condensing CWAFs (*i.e.*, 82-percent TE) because these models do not produce enough condensate to require withdrawal from the unit, as is shown by the lack of equipment at this efficiency that require the use a condensate withdrawal system in the installation and operation manual. DOE did not apply redundant protection against roof membrane failure for condensing CWAFs, because it assumed that roof changes would already be done to accommodate the condensate from the CUAC unit (see section IV.F.2.a). See appendix 8D of the CWAF direct final rule TSD for more details.

Trane stated that calculating the total installed cost for the furnace separately from the entire rooftop unit ("RTU") is not realistic, as replacing a failed CWAF would incur the full cost of the RTU even if the cooling side was still

operating. (CWAF: Trane, Public Meeting Transcript, No. 17 at p. 128) Lennox agreed with this view. (CWAF: Lennox, Public Meeting Transcript, No. 17 at p. 130)

DOE's analyses for CWAFs and CUACs accounted for the likelihood that failure of either the CWAF or the CUAC would lead to replacement of the entire RTU. In calculating installation costs for CWAFs, DOE took into account only the additional costs that would be required for the furnace component, since all other installation components are already accounted for in the CUAC analysis.

3. Annual Energy Consumption

The calculation of annual per-unit energy consumption at each considered efficiency level is described above in section IV.E.

DOE typically considers the potential for a rebound effect, which occurs when a piece of equipment that is made more efficient is used more intensively, such that the expected energy savings from the efficiency improvement may not fully materialize.

Commenting on the CUAC/CUHP NOPR, Rheem agreed that it is appropriate to not include a rebound effect. (CUAC: Rheem, No. 70 at p. 7) Commenting on the CWAF NOPR, Rheem stated generally that no rebound effect exists for a commercial furnace because the person who pays the energy bill is usually not the building occupant, but such an effect could exist where the person who pays the energy bill is also the building occupant. (CWAF: Rheem, No. 25 at p. 7) AHRI agreed that there is minimum rebound effect associated with a higher efficiency standard for commercial furnaces. (CWAF: AHRI, No. 26 at p. 6) In contrast, Trane commented that DOE had previously included a rebound effect for residential air conditioners and furnaces, and it noted that EIA includes a rebound effect for CWAFs in the AEO. It recommended that this effect be included in DOE's analyses until data are developed proving it is not warranted or until EIA drops it from the AEO. (CWAF: Trane, No. 27 at p. 7)

DOE conducted a literature review on the direct rebound effect in commercial buildings, and found very few studies, especially with regard to space heating and cooling. In a paper from 1993, Nadel describes several studies on takeback in the wake of utility lighting efficiency programs in the commercial and industrial sectors.⁷⁸ The findings

⁷⁸ S. Nadel (1993). The Takeback Effect: Fact or Fiction? Conference paper: American Council for an Energy-Efficient Economy.

suggest that in general the rebound associated with lighting efficiency programs in the commercial and industrial sectors is very small. In a 1995 paper, Eto et al.⁷⁹ state that changes in energy service levels after efficiency programs have not been studied systematically for the commercial sector. They state that while pre-/post-billing analyses can implicitly pick up the energy use impacts of amenity changes resulting from program participation, the effect is usually impossible to isolate. A number of programs attempted to identify changes in energy service levels through customer surveys. Five concluded that there was no evidence of takeback, while two estimated small amounts of takeback for specific end uses, usually less than 10-percent. A recent paper by Qiu,⁸⁰ which describes a model of technology adoption and subsequent energy demand in the commercial building sector, does not present specific rebound percentages, but the author notes that compared with the residential sector, rebound effects are smaller in the commercial building sector. An important reason for this is that in contrast to residential heating and cooling, HVAC operation adjustment in commercial buildings is driven primarily by building managers or owners. The comfort conditions are already established in order to satisfy the occupants, and they are unlikely to change due to installation of higher-efficiency equipment. While it is possible that a small degree of rebound could occur for higher-efficiency CUACs/CUHPs and CWAFs, there is no basis to select a specific value. Because the available information suggests that any rebound would be small to negligible, DOE did not include a rebound effect for the direct final rule.

Regarding Trane's comment, DOE has confirmed that EIA includes a rebound effect for several end-uses in the commercial sector, including heating and cooling, as well as improvements in building shell efficiency in its AEO reports.⁸¹ The DOE analysis presented

⁷⁹ Eto et al. (1995). Where Did the Money Go? The Cost and Performance of the Largest Commercial Sector DSM Programs. LBL-3820. Lawrence Berkeley National Laboratory, Berkeley, CA.

⁸⁰ Qiu, Y. (2014). Energy Efficiency and Rebound Effects: An Econometric Analysis of Energy Demand in the Commercial Building Sector. *Environmental and Resource Economics*, 59(2): 295–335.

⁸¹ Energy Information Administration, Commercial Demand Module of the National Energy Modeling System: Model Documentation 2013, Washington, DC, November 2013, page 57. The building shell efficiency improvement index in the AEO accounts for reductions in heating and cooling load due to building code enhancements

here does not include either the rebound effect for building shell efficiency or the rebound effect for equipment efficiency as is included in the AEO, and therefore cannot definitively assess what the impact of including the rebound effect would have on this analysis. For example, if the building shell efficiency improvements included in the AEO reduced heating and cooling load by 10 percent and the rebound effect on building shell efficiency was assumed to be 10 percent, the total impact would be to reduce heating and cooling loads by 9 percent. The DOE analysis presented here includes only the building shell improvements from the AEO but not the rebound effect on the building shell efficiency improvements. DOE estimates that a rebound effect of 10 percent on CUAC/CUHP/CWAF efficiency for heating and cooling improvements could reduce the energy savings by 1.5 quads (10 percent) over the analysis period. However, this ignores that the rule would have saved more than 15 quads had the building shell efficiency rebound effect included in the AEO was also included in DOE's analysis.

4. Energy Prices

For the CUAC/CUHP NOPR, DOE used the electricity tariff data developed for the 2004 ANOPR, which were based on tariffs from a representative sample of electric utilities, to derive marginal and average electricity prices for each member of the GBS. The approach uses tariff data that have been processed into commercial building marginal and average electricity prices.⁸²

The CBECS 1992 and CBECS 1995 surveys provide monthly electricity consumption and demand for a large sample of buildings. DOE used these values to help develop usage patterns associated with various building types. Using these monthly values in conjunction with the tariff data, DOE calculated monthly electricity bills for each building. The average price of electricity is defined as the total electricity bill divided by total electricity consumption. Two marginal prices are defined, one for electricity demand (in \$/kW) and one for electricity consumption (in \$/kWh). These marginal prices are calculated by applying a five-percent decrement to the CBECS demand or consumption data and recalculating the electricity bill.

and other improvements that could reduce the buildings need for heating and cooling.

⁸² Coughlin, K., C. Bolduc, R. Van Buskirk, G. Rosenquist and J.E. McMahon. Tariff-based Analysis of Commercial Building Electricity Prices. 2008. Lawrence Berkeley National Laboratory: Berkeley, CA. Report No. LBNL-55551.

Using the prices derived from the above method, an average price and a marginal price were assigned to each building in the GBS. For each member of the GBS, these prices were calculated as the average, weighted by floor space and survey sample weight, of all buildings in the CBECS 1992 and 1995 data meeting the set of characteristics defining the generalized building (*i.e.*, region, vintage, building activity, and building energy consumption). As most tariffs are seasonal, average and marginal prices are calculated separately for summer (May-September) and winter.

The average summer or winter electricity price multiplied by the baseline summer or winter electricity consumption for equipment of a given capacity defines the baseline LCC. For each efficiency level, the operating cost savings are calculated by multiplying the electricity consumption savings (relative to the baseline) by the marginal consumption price and the electricity demand reduction by the marginal demand price. The consumer's electricity bill is only affected by the electricity demand reduction that is coincident with the building's monthly peak load. Air-conditioning loads are strongly, but not perfectly, peak-coincident. Divergences between the building peak and the air conditioning peak were accounted for by multiplying the electricity demand reduction by a random factor drawn from a triangular distribution centered at 0.9 +/- 0.1.

The tariff-based prices were updated to 2013 using the commercial electricity price index published in the *AEO* (editions 2009 through 2012). An examination of data published by the Edison Electric Institute⁸³ indicates that the rate of increase of marginal and average prices is not significantly different, so the same factor was used for both pricing estimates.

There were no comments on the NOPR methodology, and DOE retained the approach used for NOPR for the direct final rule.

For CWAFs, DOE derived average and marginal monthly energy prices for a number of geographic areas in the United States using the latest data from EIA (Form 861 data⁸⁴ to calculate commercial electricity prices, Natural Gas Navigator⁸⁵ to calculate commercial

natural gas prices, and State Energy Data System (SEDS)⁸⁶ to calculate LPG and fuel oil prices) and monthly energy price factors that it developed. Average energy prices are applied to the no-new-standards case energy use, while marginal prices are applied to the differential energy use from the higher efficiency options. This process assigns an appropriate energy price to each commercial building and household in the sample, depending on its sector (commercial or residential) and location.

AGA stated that DOE's methodology for calculating marginal natural gas prices results in higher prices than using individual natural gas utility tariffs, thus overstating the energy cost savings. (CWAF: AGA, No. 20 at p. 2) However, AGA did not provide data on natural gas utility tariffs that would enable DOE to modify its method. As a result, DOE could not evaluate whether AGA's claim is based on a sample that is representative of CWAFs users. Thus, DOE retained the approach used in the NOPR for the direct final rule.

For CUACs and CWAFs, to estimate energy prices in future years, DOE multiplied the recent energy prices by the forecast of annual change in national-average commercial energy prices in the Reference case from *AEO 2015*, which has an end year of 2040. To estimate price trends after 2040, DOE used the average annual rate of change in prices from 2030 to 2040.

For further discussion of energy prices, see chapter 8 of the direct final rule TSDs.

5. Maintenance and Repair Costs

Maintenance costs are expenses associated with ensuring continued operation of the covered equipment over time. DOE developed maintenance costs for its analysis using 2013 RS Means Facilities Maintenance & Repair Cost Data.⁸⁷ These data provide estimates of person-hours, labor rates, and materials required to maintain commercial air conditioning equipment and furnaces.

In response to the CUAC/CUHP NOPR, AHRI and Nordyne commented that RS Means maintenance costs do not reflect the normal amounts incurred by customers, which is double RS Means. (AHRI, No. 68 at p. 44; Nordyne, No. 61

⁸³ Edison Electric Institute. EEI Typical Bills and Average Rates Report (bi-annual, 2007–2012). Washington, DC.

⁸⁴ Energy Information Administration (EIA), Survey form EIA-861—Annual Electric Power Industry Report (Available at: <http://www.eia.gov/electricity/data/eia861/index.html>) (Last accessed July 15, 2015).

⁸⁵ Energy Information Administration (EIA), Natural Gas Navigator (Available at: <http://>

tonto.eia.doe.gov/dnav/ng/ng_pri_sum_dcu_nus_m.htm) (Last accessed July 15, 2015).

⁸⁶ Energy Information Administration (EIA), State Energy Data System (SEDS) (Available at: <http://www.eia.gov/state/seds/>) (Last accessed July 15, 2015).

⁸⁷ RS Means, 2013 Facilities Maintenance & Repair Cost Data (Available at: <http://rsmeans.reedconstructiondata.com/60303.aspx>) (Last accessed April 10, 2013).

at p. 38) Lennox, Goodman and Trane commented that RS Means significantly underestimates preventative maintenance costs. (Lennox, No. 60 at p. 15; Goodman, No. 65 at pp. 19–20; Trane, No. 63 at p. 9) Carrier and Goodman stated that maintenance costs are likely to increase with efficiency. (Carrier, No. 48 at pp. 5–6; Goodman, No. 65 at p. 20)

The Working Group discussed maintenance costs and generally agreed with DOE's approach. (ASRAC Public Meeting, No. 95 at pp. 139–143). Accordingly, DOE retained this approach for the direct final rule.

For the CWAFF NOPR, DOE included increased maintenance costs for condensing equipment. For condensing gas-fired commercial warm air furnaces, DOE added labor and material costs to account for checking the condensate withdrawal system, including: inspecting, cleaning, and flushing the condensate trap and drain tubes; inspecting the grounding and power connection of heat tape; checking condensate neutralizer; and checking condensate pump for corrosion and proper operation. For condensing oil-fired commercial warm air furnaces, DOE added additional maintenance for installations in non-low-sulfur regions to account for extra cleaning of the heat exchanger for condensing designs, as well as checking of the condensate withdrawal system. DOE did not receive any comments on this issue, and retained the same approach for the direct final rule.

Repair costs are expenses associated with repairing or replacing components of the covered equipment that have failed.

For the CUAC/CUHP NOPR, DOE assumed that any routine or minor repairs are included in the maintenance costs. As a result, repair costs were not explicitly modeled in the LCC and PBP analysis. Instead, DOE incorporated a one-time cost for major repair (compressor replacement) as a primary input to the repair/replace consumer choice model in the shipments analysis, which models the decision between repairing a broken unit and replacing it.

DOE proposed to the Working Group to include compressor repairs in the LCC and PBP analysis because such repair work would occur regardless of whether new standards are set (ASRAC Public Meeting, No. 96 at pp. 247–248) The Working Group agreed with this proposal, and, because the Working Group estimated that compressor repairs occur later in a CUAC's life, suggested that this type of repair be assumed to take place in the 13th year. For the direct final rule, compressor repair costs

are based on material costs from Grainger (a provider of commercial and industrial supplies) and labor costs from RS Means, and are assumed to scale with equipment price. The cost is applied to 20 percent of consumers, representing the portion of the population that chooses to repair rather than replace in the no-standards case. DOE also included non-compressor repairs, conducted in the 7th year, for all consumers (ASRAC Public Meeting, No. 96 at pp. 247–248).

For CWAFFs, DOE developed repair costs for its analysis using 2013 RS Means Facilities Maintenance & Repair Cost Data.⁸⁸ DOE included additional repair costs for higher efficiency levels (*i.e.*, condensing furnaces).

Lennox stated that due to the introduction of condensate at a TE level of 82-percent and above, many components will be susceptible to corrosion, thus requiring components to be replaced more frequently. (CWAFF: Lennox, No. 22 at p. 10) For the direct final rule, DOE assumed that all 82-percent TE CWAFFs use stainless steel heat exchangers to resist corrosion; therefore, DOE did not assume any difference in repair frequency for 82-percent TE CWAFFs.

See chapter 8 of the direct final rule TSDs for more details on maintenance and repair costs.

6. Equipment Lifetime

Equipment lifetime is the age at which a unit of covered equipment is retired from service. For the LCC and PBP analysis, DOE develops a distribution of lifetimes to reflect variability in equipment lifetimes in the field.

a. Small, Large, and Very Large Commercial Package Air Conditioning and Heating Equipment

For the CUAC/CUHP NOPR, DOE used lifetime distributions based on calibration of the shipments model (see section IV.G.1). The mean lifetimes were 18.4 years for CUACs and 15.2 years for CUHPs. AHRI and Nordyne commented that the equipment lifetime assumptions are incorrect and that a lifetime range of 12–15 years is more appropriate for equipment in this rulemaking. (AHRI, No. 68 at p. 45; Nordyne, No. 61 at p. 35) Goodman commented that the lifetimes should be different for each equipment class. (Goodman, No. 65 at pp. 20–21)

The Working Group accepted DOE's approach of using the shipments model

to determine equipment lifetime, along with extension of the equipment lifetime due to inclusion of compressor repairs. The group asked DOE to use more recent shipments data. AHRI provided recent data, but it was not representative of entire industry shipments, so DOE continued to use the shipments data from the NOPR analysis (ASRAC Public Meeting, No. 98 at pp. 125–133). Also, as discussed later in section IV.F.8.a, DOE also incorporated AHRI's more recent data into its analysis. For the direct final rule, the LCC analysis used lifetime distributions based on the revised shipments model (see section IV.G.1), which makes distinct estimates for each of the CUAC equipment classes.

b. Commercial Warm Air Furnaces

In addressing gas-fired CWAFFs, DOE's CWAFF NOPR used the same lifetime probability distribution that was developed in the NOPR analysis for small, large, and very large air-cooled commercial package air conditioning and heating equipment.⁸⁹ For oil-fired CWAFFs, DOE used a lifetime Weibull probability distribution based on a method that utilizes national survey data,⁹⁰ which resulted in a 26-year average lifetime. DOE expects the lifetime of the equipment to not change due to any new energy efficiency standards.

Commenting on the CWAFF NOPR, AHRI stated that the analysis overestimates the average lifetime of a commercial furnace, and that the proposed standard of 82-percent TE will reduce the life of the equipment. (CWAFF: AHRI, No. 26 at pp. 2, 6)

As discussed with the Working Group, for the direct final rule analysis, DOE based the lifetime estimate for both gas-fired and oil-fired CWAFFs on the revised CUAC lifetime. (ASRAC Public Meeting, No. 43 at p. 8) DOE does not believe a standard at 82-percent TE would reduce the life of equipment that use stainless steel heat exchangers for installations where such material would prevent corrosion issues. Therefore, as described in section IV.C.3.b, DOE assumed in its analysis that all 82-percent TE CWAFFs would use stainless steel heat exchangers. In any case, DOE

⁸⁹ Technical Support Document for Small, Large, and Very Large Commercial Package Air Conditioners and Heat Pumps Notice of Proposed Rulemaking (Available at: <http://www.regulations.gov/#/documentDetail;D=EERE-2013-BT-STD-0007-0027>).

⁹⁰ Lutz, J., A. Hopkins, V. Letschert, V. Franco, and A. Sturges. Using national survey data to estimate lifetimes of residential appliances. *HVAC&R Research* (2011) 17(5): pp. 28 (Available at: <http://www.tandfonline.com/doi/abs/10.1080/10789669.2011.558166>).

⁸⁸ RS Means, 2013 Mechanical Cost Data (Available at: <http://rsmeans.reedconstructiondata.com/60023.aspx>) (Last accessed April 10, 2013).

notes that the standard adopted for gas-fired CWAFFs does not require 82-percent TE.

7. Discount Rates

The discount rate is the rate at which future expenditures or savings are discounted to estimate their present value. The weighted average cost of capital is commonly used to estimate the present value of cash flows to be derived from a typical company project or investment. Most companies use both debt and equity capital to fund investments, so their cost of capital is the weighted average of the cost to the firm of equity and debt financing. DOE estimated the cost of equity using the capital asset pricing model, which assumes that the cost of equity for a particular company is proportional to the systematic risk faced by that company.

The primary source of data for this analysis was Damodaran Online, a widely used source of information about company debt and equity financing for most types of firms.⁹¹ In analyzing these data, DOE estimated a separate weighted average cost of capital for each business sector that purchases CUACs and CWAFFs. More details regarding DOE's estimates of consumer discount rates are provided in chapter 8 of the direct final rule TSDs.

8. Efficiency Distribution in the No-New-Standards Case

To accurately estimate the share of commercial consumers that would be affected by a potential energy conservation standard at a particular efficiency level, DOE's LCC analysis considered the distribution (market shares) of equipment efficiencies projected for the compliance years in the no-new-standards case (*i.e.*, the case without amended or new energy conservation standards).

a. Small, Large, and Very Large Commercial Package Air Conditioning and Heating Equipment

For the CUAC/CHHP NOPR, DOE used a consumer choice model to estimate efficiency market shares in the expected compliance year. The consumer choice model considers customer sensitivity to total installation cost and annual operating cost. DOE used efficiency market share data for 1999–2001, based on model availability data from the AHRI-certified directory, to develop the parameters of the consumer choice model in the

shipments analysis. Using these parameters, the model estimated the shipments at each IEER level based on the installed cost and operating cost at each efficiency level.

During the Working Group meetings, DOE requested data that might improve the efficiency distribution in the no-new-standards case. AHRI provided recent market share data by efficiency based on shipments. Using these data in preparing the analysis for the direct final rule, DOE extended the AHRI data to 2019 to estimate efficiency market shares for each equipment class in the no-new-standards case.⁹² These shares are presented in chapter 8 of the direct final rule TSD.

As discussed in section IV.E.1, DOE assigned CAV designs to CAV buildings and SAV and VAV designs to VAV buildings. Therefore, DOE needed to develop separate efficiency distributions for CAV, SAV, and VAV designs for each equipment class. AHRI provided market share data based on shipments of each design, which DOE used for the direct final rule analysis. (ASRAC Public Meeting, No. 98 at pp. 22–37). These data were incorporated into the NIA spreadsheet model that DOE developed. The distributions used are presented in chapter 8 of the direct final rule TSD.

b. Commercial Warm Air Furnaces

For the CWAFF NOPR, DOE developed the current distribution of equipment shipments by efficiency level for the CWAFF equipment classes for 2013 based on the number of models at different efficiency levels from AHRI's Certification Directory for Commercial Furnaces.⁹³ These data show no market share for condensing CWAFFs. For condensing gas-fired CWAFFs, however, DOE found that models from non-AHRI member manufacturers are just now becoming available, so DOE estimated a market share of one percent by 2018 based on the fraction of condensing models available in 2013.

Commenting on the NOPR, Lennox stated that its CWAFFs are expected to remain at 80-percent TE for the foreseeable future, as there is little market demand for higher-efficiency furnaces in the commercial sector. (CWAFF: Lennox, No. 22 at pp. 10–11) As discussed with the Working Group, to estimate the efficiency distribution of CWAFFs for the direct final rule, DOE

updated its analysis using the most recent AHRI Certification Directory for Commercial Furnaces.⁹⁴ (ASRAC Public Meeting, No. 43 at pp. 7–8) These data include most manufacturers of CWAFFs. DOE agrees with Lennox that the majority of gas-fired CWAFFs are expected to remain at 80-percent TE for the foreseeable future because the fraction of non-condensing models sold has remained fairly constant over the last 20 years. In addition, there is a limited number of condensing CWAFF models and lack of incentives (*e.g.* rebates, tax credits or similar consumer-focused approaches) to increase the condensing CWAFF market share. Therefore, DOE did not include any increase in the efficiency of non-condensing CWAFFs between 2014 and 2019. Similar to the NOPR analysis, based on the limited availability condensing gas-fired CWAFF models, DOE estimated a market share of one percent by 2019. The estimated efficiency market shares for CWAFFs in the no-new-standards case in 2019 are presented in chapter 8 of the CWAFF direct final rule TSD.

See chapter 8 of the direct final rule TSDs for further information on the derivation of the efficiency distributions.

9. Payback Period Analysis

The payback period is the amount of time it takes the consumer to recover the additional installed cost of more-efficient equipment, compared to baseline equipment, through energy cost savings. Payback periods are expressed in years. Payback periods that exceed the life of the equipment mean that the increased total installed cost is not recovered in reduced operating expenses.

The inputs to the PBP calculation for each efficiency level are the change in total installed cost of the equipment and the change in the first-year annual operating expenditures relative to the baseline efficiency level. The PBP calculation uses the same inputs as the LCC analysis, except that discount rates are not needed.

As noted above, EPCA establishes a rebuttable presumption that a standard is economically justified if the Secretary finds that the additional cost to the consumer of purchasing equipment complying with an energy conservation standard level will be less than three times the value of the first year's energy savings resulting from the standard, as

⁹¹ Damodaran Online, The Data Page: Cost of Capital by Industry Sector, 2001–2013. (Last accessed March, 2014.) See: <http://pages.stern.nyu.edu/~adamodar/>.

⁹² DOE used the 2019 efficiency distribution for all of the TSLs analyzed, including the Recommended TSL.

⁹³ AHRI, 2013 AHRI Certification Directory for Commercial Furnaces (Available at: <http://www.ahridirectory.org/ahridirectory/pages/home.aspx>) Last accessed Oct. 15, 2013).

⁹⁴ AHRI, 2015 AHRI Certification Directory for Commercial Furnaces (Available at: <http://www.ahridirectory.org/ahridirectory/pages/home.aspx>) Last accessed July 1, 2015).

calculated under the applicable test procedure. (42 U.S.C. 6295(o)(2)(B)(iii)) For CUACs/CHHPs, the DOE test procedure prescribes how to calculate equipment efficiency, but not annual energy use. For the rebuttable presumption PBP, DOE used the same energy use calculated for the regular PBP calculation at each efficiency level. For CWAFFs, DOE calculated energy consumption using the DOE test procedure.

G. Shipments Analysis

DOE uses projections of annual equipment shipments to calculate the national impacts of potential amended energy conservation standards on energy use, NPV, and future manufacturer cash flows.⁹⁵

1. Small, Large, and Very Large Commercial Package Air Conditioning and Heating Equipment

The shipments model for CUACs and CHHPs uses a stock accounting approach, tracking the number of units and vintage for each equipment class. The vintage (or age) distribution of in-service equipment is a key input to calculations of both the NES and NPV, because equipment efficiency varies with vintage, and this in turn affects the energy use and operating costs.

The primary inputs to the shipments model are time series of total commercial floor space, market share by equipment class, new construction market saturations, and equipment lifetimes. Floor space estimates are based on historic CBECS surveys and projections from *AEO 2015*. The fraction of cooled floor space assigned to each equipment class is based on the percentage of total capacity in each class for historic shipments. The market saturation (*i.e.*, percentage of new floor space that is cooled by the covered equipment) is a function of time. Using CBECS estimates of stock saturations and historic shipments data for each equipment class, DOE calibrated the shipments model by jointly varying both equipment lifetime and fits to the CBECS stock saturation. The resulting lifetime representations were Weibull distributions with mean lifetimes of 21.1 years, 22.6 years, and 33.7 years for small, large and very large equipment classes, respectively.

a. Shipments by Market Segment

The shipments model includes three market segments: (1) New commercial buildings acquiring new equipment, (2)

existing buildings acquiring new equipment for the first time, and (3) existing buildings replacing broken equipment.

DOE estimated new equipment shipments to new buildings by multiplying the market saturation values by the total new floor space in each year. DOE estimated new shipments to existing buildings as the total floor space multiplied by the change in saturation with time. This market segment is approximately zero for the analysis period, as saturations are no longer changing significantly.

Replacement shipments are those that go into existing buildings to replace broken equipment. The number of units that break each year is equal to the total equipment stock minus the number of units that survive. The number of units that survive is calculated by multiplying the equipment stock as a function of age by the survival function. The survival function is the integral of the lifetime function used in the LCC. If all units that break are replaced, then the number of replacement shipments in each year is equal to the total number of broken units. However, in general, some fraction of broken units will be replaced, which reduces the number of replacement shipments.

For CUACs and CHHPs, the end of lifetime is generally associated with compressor failure. Installing a new compressor is costly, so customers typically replace the entire unit rather than simply replace the compressor. If standards significantly increase the cost of new equipment, however, one would expect that the repair option would become more attractive.

For the CUAC/CHHP NOPR, DOE modeled the repair rates for the small and large CUACs and CHHP equipment classes using a consumer choice model.⁹⁶ This model was based on an estimated sensitivity to cost and a comparison of total installation costs for new equipment compared to repair costs. The price sensitivity was estimated by calibrating the model to historic data on total shipments, and market share by efficiency for 1999–2001. Actual repair costs were not known, so DOE estimated repair costs based on labor costs and the cost of a new compressor. DOE assumed that repair costs increase in direct proportion to the price of the equipment. Given the price sensitivity, and an estimate of the cost of repairing

vs. replacing a new unit, a drop in shipments was estimated for each standard level.

ASAP commented that DOE's model overestimated the impact of higher efficiency levels on shipments. It stated that there are only 3 years of data on market share and cost (which are 15 years old), and a customer's repair/replace decision is more complex than the decision to purchase a baseline or higher efficiency unit. ASAP commented that the DOE model fails to capture a number of complex factors affecting purchase and repair decisions, such as the fact that some manufacturers offer leases that include no upfront costs. It noted that many units use R-22 as a refrigerant and since it is being phased out those units will be more expensive to service and repair. (CUAC: ASAP, No. 69 at pp. 6–7) The California IOUs, through PG&E, stated that the decision model should include factors such as the need for immediate resumption of operation to avoid placing too much weight on the first cost of more efficient equipment. (CUAC: California IOUs, No. 67 at p. 6) Rheem commented that the repair/replace decision depends on the commercial use of the building, how extensive the repair is, whether a warranty covers the repair, the cost of removal, purchase cost and installation cost. (CUAC: Rheem, No. 70 at p. 7)

For the direct final rule, DOE examined a variety of potential modifications to the modeling approach used for the NOPR. The primary difficulty is that there are multiple parameters that need to be simultaneously estimated, including the actual repair costs, consumer price sensitivity, the fraction of consumers whose repair/replace decision is not driven solely by price, and the mean lifetime of a repaired unit. As very little additional data were available for the direct final rule, DOE adopted a simpler and more transparent modeling approach.

The simplified approach still uses logistic regression to estimate the rate of purchase of new equipment by owners of broken equipment, but does not attempt to explicitly model repair costs.⁹⁷ Instead the model assumes that the change in purchases of new equipment is equal to the price elasticity multiplied by a change in the utility function. The utility function for

⁹⁵ DOE uses data on manufacturer shipments as a proxy for national sales, as aggregate data on sales are lacking. In general, one would expect a close correspondence between shipments and sales.

⁹⁶ For the very large CUACs and CHHP equipment classes, in the NOPR DOE did not use the consumer choice model and simply assumed that, in the standards cases, 100% of broken units would be repaired at the first failure, and replaced at the second failure.

⁹⁷ In statistics, logistic regression, or logit regression, or logit model is a regression model where the dependent variable is categorical. Logistic regression measures the relationship between the categorical dependent variable and one or more independent variables by estimating probabilities using a logistic function.

this logit model is defined as the total installed cost of the equipment plus the average discounted lifetime operating costs. DOE based the discount rate on commercial sector time preference premium parameters used in the NEMS Commercial Demand Module. For the price elasticity parameter, DOE presented an estimate of -0.68 to the Working Group. (ASRAC Public Meeting, No. 97 at p. 56; see also *id* at pp. 23–26 (background discussion)) This value is twice the value DOE has used for the residential sector, based on the assumption that commercial sector purchasers are more price sensitive. The Working Group did not object to this value, and DOE used it for the direct final rule analysis. For the standards cases, this approach predicts a drop in shipments relative to the base case due to the price increases associated with the higher IEER levels. DOE assumed that this drop in shipments represents the number of units that are repaired, so that the total number of units in the stock remains constant at all IEER levels. DOE applied this approach to all equipment capacities.

For the CUAC/CUHP NOPR, DOE assumed that if the unit is repaired (*i.e.*, with a new compressor), its life is extended by another lifetime using the same retirement function as for new equipment. If a unit encounters a second failure within the analysis period, it is replaced.

Carrier commented that while replacing a failed part with a new part returns a unit to service, it does not believe that the lifetime is reset after a repair, and therefore does not expect repaired units to last as long as new equipment. (Carrier, No. 48 at p. 7) The California IOUs, through PG&E, made a similar comment. (California IOUs, No. 67 at p. 6) Trane commented that assuming a compressor repair results in a new lifetime for the equipment is flawed—in its view, the lifetime is more likely cut in half. (Trane, No. 63 at p. 10) ASAP does not believe that a compressor repair will extend the life of the equipment by one whole lifetime, as there are also other components that could fail before the new compressor fails. (ASAP, No. 69 at p. 6)

Based on stakeholder comments, for the direct final rule, DOE assumed that the mean lifetime for repaired equipment is equal to one half the mean lifetime of new equipment.

b. Shipment Market Shares by Efficiency Level

The approach described in the preceding section provides total shipments in each equipment class for each year. To estimate the market shares

of the considered efficiency levels in future shipments, DOE developed a customer choice model. The model was calibrated by estimating values for two parameters, representing customer sensitivity to total installation cost and annual operating cost.

To estimate values for the parameters, for the direct final rule the calibration method was changed to better fit the historic market shares. DOE used a maximum log likelihood approach that optimized the customer choice model fit to historical market shares at each efficiency level for the small and large CUAC equipment classes. To calibrate the model, DOE used IEER market share data for each CUAC equipment class provided by AHRI for the Working Group. These market shares are for 2011 and 2014. Starting in 2015, application of the parameters, along with data on the installed cost and operating cost at each efficiency level for each year in the analysis period, determines the market shares of each efficiency level in each year. Different sets of parameters were used to estimate market shares for CUACs and CUHP equipment classes. The details of the data and the method used can be found in chapter 9 of the CUAC/CUHP direct final rule TSD.

2. Commercial Warm Air Furnaces

For the CWFAP NOPR, DOE developed shipment projections based on historical data and an analysis of key market drivers for each product. Historical shipments data were used to build up an equipment stock and also to calibrate the shipments model. Historical shipments data for CWFAP equipment are very limited. DOE used 1994 shipments data from AHRI (previously the Gas Appliance Manufacturers Association, or “GAMA”) that were presented in a report from PNNL,⁹⁸ and the historical shipments of non-heat pump commercial unitary air conditioners (CUACs and CUHPs),⁹⁹ which are usually packaged together with CWFAPs. The ratio of the shipments of non-heat pump CUACs and CUHPs and the shipments of gas-fired CWFAPs in 1994 was calculated.¹⁰⁰ DOE believes that this ratio should be reasonably

stable over time, so DOE determined the historical shipments of gas-fired CWFAPs by multiplying this ratio with the historical shipments of non-heat pump CUACs.

For the NOPR, since shipments data for oil-fired CWFAPs were not publicly available, DOE used the ratio of oil-fired versus gas-fired residential furnace shipments from AHRI¹⁰¹ and the historical shipments of gas-fired commercial furnaces to calculate the historical shipment of oil-fired commercial furnaces. DOE estimated from these data that oil-fired CWFAPs account for about 1 percent of total CWFAPs shipments.

Commenting on the CWFAP NOPR, Lennox stated that most weatherized CWFAPs are integrated into rooftop equipment that also provide cooling, so it is not logical that the CWFAP NOPR has much different shipment projections than the projections for CUACs and CUHPs. (CWFAP: Lennox, No. 22 at p. 11) As discussed with the Working Group, for the direct final rule, DOE modified the projection for CWFAP shipments, with the results indicating that the magnitude is similar to the projected shipments for CUACs and CUHPs. (ASRAC Public Meeting, No. 41 at p. 28) Chapter 9 of the direct final rule TSD described the modifications.

a. Impact of Standards on Shipments

For the CWFAP NOPR, for cases with potential CWFAPs standards, DOE considered whether the increase in price would cause some commercial consumers to choose to repair rather than replace their CWFAP equipment. The shipments model used a relative price elasticity to account for the combined effects of changes in purchase price and annual operating cost on the purchase versus repair decision. Because data for commercial consumers were lacking, DOE used a relative price elasticity that has been derived for residential consumers.

Commenting on the CWFAP NOPR, AHRI stated that DOE's reliance on residential purchases to establish commercial product price elasticity and on car purchases to extend the elasticity over time is not appropriate. (CWFAP: AHRI, No. 26 at p. 5) Lennox stated that the CUAC/CUHP NOPR projects a severe decline in shipments with amended standards, so CWFAP shipment impacts should reflect a similar decline, since the two product categories are usually combined in one piece of

⁹⁸ Pacific Northwest National Laboratory (PNNL), Screening Analysis for EPACT-Covered Commercial HVAC and Water-Heating Equipment, April 2000. (Available at: http://www.pnnl.gov/main/publications/external/technical_reports/PNNL-13232.pdf) (Last accessed April 10, 2013).

⁹⁹ Air-Conditioning and Refrigeration Institute, Commercial Unitary Air Conditioner and Heat Pump Unit Shipments for 1980–2001 (Jan. 2005) (Prepared for Lawrence Berkeley National Laboratory).

¹⁰⁰ The fraction of non-heat pump CUACs equipment that is packaged with commercial furnaces is 80 percent.

¹⁰¹ Air-Conditioning Heating and Refrigeration Institute, *Furnaces Historical Data (1994–2013)*. 2015. (Available at: <http://www.ahrinet.org/site/497/Resources/Statistics/Historical-Data/Furnaces-Historical-Data>). (Last accessed January 7, 2015).

equipment. (CWAFF: Lennox, No. 22 at p. 11) DOE notes that decreasing price elasticity over time is a common effect observed across numerous products and industries, including appliances. The automobile study used to develop the price elasticity for the NOPR contains greater detail on this effect than other studies. For the direct final rule, DOE used the same product price elasticity for CWAFFs as it developed for CUACs and CUHPs. This value is twice the value DOE has used for the residential sector, based on the assumption that commercial sector purchasers are more price sensitive.

AHRI stated that the proposed standard of 82 percent TE for gas-fired CWAFFs may cause some equipment switching because of installation complications resulting from larger units and modifications to handle condensate disposal. (CWAFF: AHRI, No. 26 at p. 6) Trane argued that some businesses will elect to switch to less expensive electric heating options in response to a standard, and it is concerned that DOE has not modeled the possibility of fuel switching. While the effects of fuel switching would be greatest at the condensing level, Trane stated that there could be fuel switching at the lower levels as well. (CWAFF: Trane, No. 27 at pp. 7–8) AGA stated that DOE did not account for fuel/product switching that will occur as a result of the proposed standard if manufacturers eliminate the manufacturing of non-condensing commercial furnaces because the 82 percent TE minimum level is no longer

practical from a safety and durability point of view. (CWAFF: AGA, No. 20 at p. 2)

DOE believes that a standard at 82 percent TE would cause minimal switching to electricity because of the very high operating costs of an electric furnace and significant additional electrical installation costs. DOE did not analyze such switching for the direct final rule because it is adopting a standard at 81 percent TE, a level where consumers would have no incentive to switch away from gas.

The details of the shipments analysis can be found in chapter 9 of the direct final rule TSDs.

H. National Impact Analysis

The NIA assesses the national energy savings (“NES”) and the national net present value (“NPV”) from a national perspective of total consumer costs and savings that would be expected to result from new or amended standards at specific efficiency levels.¹⁰² (“Consumer” in this context refers to commercial consumers of the equipment being regulated.) DOE calculates the NES and NPV based on projections of annual product shipments, along with the annual energy consumption and total installed cost data from the energy use and LCC analyses.¹⁰³ For most of the TSLs considered in this direct final rule, DOE forecasted the energy savings, operating cost savings, and equipment costs over the lifetime of CUACs/CUHPs and CWAFFs sold from 2019 through 2048. For the TSLs that represent the Working Group recommendations, DOE

accounted for the lifetime impacts of CUACs and CUHPs sold from 2018 through 2048 and CWAFFs sold from 2023 through 2048.

DOE evaluates the impacts of new and amended standards by comparing a case without such standards with standards-case projections. The no-new-standards case characterizes energy use and consumer costs for each equipment class in the absence of new or amended energy conservation standards. For this projection, DOE considers historical trends in efficiency and various forces that are likely to affect the mix of efficiencies over time. DOE compares the no-new-standards case with projections characterizing the market for each equipment class if DOE adopted new or amended standards at specific energy efficiency levels (*i.e.*, the TSLs or standards cases) for that class. For the standards cases, DOE considers how a given standard would likely affect the market shares of equipment with efficiencies greater than the standard.

DOE uses a spreadsheet model to calculate the energy savings and the national consumer costs and savings from each TSL. Interested parties can review DOE’s analyses by changing various input quantities within the spreadsheet. The NIA spreadsheet model uses typical values (as opposed to probability distributions) as inputs.

Table IV–30 summarizes the inputs and methods DOE used for the NIA analyses for the direct final rule. Discussion of these inputs and methods follows the table. See chapter 10 of the direct final rule TSDs for further details.

TABLE IV.30—SUMMARY OF INPUTS AND METHODS FOR THE NATIONAL IMPACT ANALYSIS: SMALL, LARGE, AND VERY LARGE COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT AND COMMERCIAL WARM AIR FURNACES

Inputs	Method
Shipments	See section IV.G.
Compliance Date of Standard	CUACs and CUHPs: Recommended TSL, 2018 for initial standards and 2023 for second-phase standards; Other TSLs: 2019. CWAFF: Recommended TSL, 2023; Other TSLs, 2019.
Efficiency Trends	CUAC: Based on consumer choice model. CWAFF: — No-New-Standards case: Based on likely trend. — Standard cases: “roll-up” scenario is used.
Annual Energy Consumption per Unit	Annual weighted-average values are a function of energy use at each efficiency level.
Total Installed Cost per Unit	Annual weighted-average values are a function of cost at each efficiency level. Incorporates projection of future product prices based on historical data.
Annual Energy Cost per Unit	Annual weighted-average values are a function of the annual energy consumption per unit and energy prices.
Repair and Maintenance Cost per Unit	Annual values are a function of efficiency level.

¹⁰² The NIA accounts for impacts in the 50 States and the U.S. territories.

¹⁰³ For the NIA, DOE adjusts the installed cost data from the LCC analysis to exclude sales tax, which is a transfer.

TABLE IV.30—SUMMARY OF INPUTS AND METHODS FOR THE NATIONAL IMPACT ANALYSIS: SMALL, LARGE, AND VERY LARGE COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT AND COMMERCIAL WARM AIR FURNACES—Continued

Inputs	Method
Energy Prices	<i>AEO 2015</i> forecasts (to 2040) and extrapolation thereafter.
Energy Site-to-Primary Conversion	A time-series conversion factor based on <i>AEO 2015</i> .
Discount Rate	Three and seven percent.
Present Year	2015.

1. Equipment Efficiency Trends

A key component of the NIA is the trend in energy efficiency projected for the no-new-standards case. Section IV.F.8 describes how DOE developed an energy efficiency distribution for the no-new-standards case for each of the considered equipment classes for the first year of the forecast period.

For CUACs and CUHPs, DOE used the consumer choice model described in section IV.G to estimate efficiency market shares in each year of the shipments projection period. For each standards case, the efficiency levels that are below the standard are removed from the possible choices available to customers. The no-new-standards case shows a slight increasing trend in efficiency for small CUACs and CUHPs, but the shares were fairly constant for large and very large CUACs and CUHPs.

For the CWFAs NOPR, DOE assumed no change in efficiency for non-condensing CWFAs over the shipments projection period in the no-new-standards case. For condensing gas-fired CWFAs, however, it estimated that market interest in efficiency would lead to a modest growth in market share.

Trane stated that the equipment minimum energy efficiency requirements (including CWFAs) in ASHRAE 90.1 have been updated a number of times and there is every reason to believe they will continue to be updated without further DOE equipment standards (*i.e.*, no-new-standards case). (Trane, No. 27 at p. 8) DOE agrees that ASHRAE 90.1 will continue to be updated; however, for CWFAs, the ASHRAE 90.1 requirements have not changed since 1992, so any future changes to CFAF requirements, within DOE's analysis period, are uncertain. Thus, DOE believes that its projected efficiency trend for the no-new-standards case is reasonable.

For the CWFAs standards cases, DOE used a "roll-up" scenario to establish the shipment-weighted efficiency for the compliance year. In this scenario, the market of products in the no-new-standards case that do not meet the standard under consideration would "roll up" to meet the new standard

level, and the market share of products above the standard would remain unchanged. After the compliance year, DOE assumed no change in efficiency over time.

The projections of efficiency trends for CUACs/CUHPs and CWFAs are further described in chapter 10 of the direct final rule TSDs.

2. National Energy Savings

The NES analysis involves a comparison of national energy consumption of the considered products in each potential standards case (TSL) with consumption in the case without amended energy conservation standards. DOE calculated the national energy consumption by multiplying the number of units (stock) of each product (by vintage or age) by the unit energy consumption (also by vintage). Annual NES is based on the difference in national energy consumption for the no-new-standards case and for each standard case. Part of the reduction in energy consumption in a standards case may be due to decreasing shipments resulting from customers choosing to repair than replace broken equipment. Therefore, the NES calculation includes the estimated energy use of units that are repaired rather than replaced.

For CUACs, the per-unit annual site energy savings for each considered efficiency level come from the energy use analysis, which estimated energy consumption for the compliance year. For later years, DOE adjusted the per-unit annual site energy savings to account for changes in climate (cooling degree-days) and building shell efficiency based on projections in *AEO 2015*.

For CUHPs, DOE did not conduct an energy use analysis. Because the cooling-side performance of CUHPs is nearly identical to that of CUACs, DOE used the energy consumption estimates developed for CUACs to characterize the cooling-side performance of CUHPs of the same size. To characterize the heating-side performance, DOE analyzed CBECS 2003 data to develop a national-average annual energy use per square foot for buildings that use CUHPs. DOE assumed that the average

COP of the CUHPs was 2.9.¹⁰⁴ DOE converted the energy use per square foot value to annual energy use per ton using a ton per square foot relationship derived from the energy use analysis for CUACs. This value is different for each equipment class. Because equipment energy use is a function of efficiency, DOE assumed that the annual heating energy consumption of a unit scales proportionally with its heating COP efficiency level. Finally, to determine the COPs of units with given IEERs, DOE correlated COP to IEER based on the AHRI Certified Equipment Database.¹⁰⁵ Thus, for any given cooling efficiency of a CUHP unit, DOE was able to establish the corresponding heating efficiency, and, in turn, the associated annual heating energy consumption.

DOE converted site electricity consumption and savings to primary energy (*i.e.*, the energy consumed by power plants to generate site electricity) using annual marginal conversion factors derived from *AEO 2015*. Cumulative energy savings are the sum of the NES for each year over the timeframe of the analysis. As explained in section IV.E, DOE did not incorporate a rebound effect for CUACs and CUHPs or CWFAs.

As noted in section IV.C.2.b and section IV.E.1, for Efficiency Level 3 for the small and large "all other types of heating equipment" classes and Efficiency Level 2.5 for the very large "all other types of heating equipment" class, the IEER values included in the ASRAC Working Group recommendations (discussed in section III.B.2) were based on an IEER differential of 0.2 compared to the "electric resistance heating or no heating" equipment classes. At Efficiency Level 3, based on an approach of maintaining a constant energy savings differential with the "electric resistance heating or no heating" equipment classes, the IEER

¹⁰⁴ A heating efficiency of 2.9 COP corresponds to the existing minimum heating efficiency standard for CUHPs, a value which the Department believes is representative of the heat pump stock characterized by CBECS.

¹⁰⁵ <http://www.ahridirectory.org/ahridirectory/pages/homeM.aspx>.

differential would be 0.3 for both the small and large “all other types of heating equipment” classes. Additional energy savings are realized from reducing the IEER differential to 0.2 for the small and large “all other types of heating equipment” classes. To calculate the additional energy savings realized from reducing the IEER differential to 0.2, DOE utilized a “top-down” approach by determining the national energy savings per IEER for the small and large equipment classes. DOE then multiplied the national energy savings per IEER by the IEER reduction of 0.1 to determine the additional energy savings associated with reducing the IEER differential.

For the CUHP equipment classes, DOE used the same “top-down” method for determining the additional energy savings realized from reducing the IEER differentials to the IEER values included in the ASRAC Working Group recommendations, as discussed in section III.B.2. As described in Section IV.C.2.b, the ASRAC Working Group recommendation included IEER values for the CUHP equipment classes based on IEER differentials of 0.7 for all three CUHP equipment classes with electric resistance or no heating. At Efficiency Level 3, based on an approach of maintaining a constant energy savings differential with the CUAC equipment classes including electric resistance heating or no heating, the IEER differential would be 0.8, 0.9, and 1.1 for the small, large, and very large CUHP equipment classes with electric resistance or no heating, respectively. As a result, additional energy savings are realized from reducing the IEER differential to 0.7 for the CUHP equipment classes.

A more detailed description of the method and results for determining the additional energy associated with reducing the IEER differentials for both the CUAC equipment classes with all other types of heating and the CUHP equipment classes with electric resistance or no heating is given in appendix 10D of the direct final rule TSD.

In 2011, in response to the recommendations of a committee on “Point-of-Use and Full-Fuel-Cycle Measurement Approaches to Energy Efficiency Standards” appointed by the National Academy of Sciences, DOE announced its intention to use full-fuel-cycle (“FFC”) measures of energy use and GHGs and other emissions in the national impact analyses and emissions analyses included in future energy conservation standards rulemakings. 76 FR 51281 (August 18, 2011). After evaluating the approaches discussed in

the August 18, 2011 notice, DOE published a statement of amended policy in which DOE explained its determination that EIA’s NEMS is the most appropriate tool for its FFC analysis and its intention to use NEMS for that purpose. 77 FR 49701 (August 17, 2012). NEMS is a public domain, multi-sector, partial equilibrium model of the U.S. energy sector¹⁰⁶ that EIA uses to prepare its *Annual Energy Outlook*. The approach used for deriving FFC measures of energy use and emissions is described in appendix 10B of the direct final rule TSDs.

3. Net Present Value

The inputs for determining the NPV of the total costs and benefits experienced by consumers are: (1) Total annual installed cost; (2) total annual savings in operating costs; and (3) a discount factor to calculate the present value of costs and savings. DOE calculates net savings in each year as the difference between the no-new-standards case and each standards case in terms of total savings in operating costs versus total increases in installed costs. DOE calculates operating cost savings over the lifetime of the equipment shipped during the forecast period.

a. Total Annual Installed Cost

The total installed cost includes both the equipment price and the installation cost. DOE calculated equipment prices by efficiency level using manufacturer selling prices and weighted-average overall markup values (weights based on shares of the distribution channels used). Installation costs come from the LCC and PBP analysis.

For CUHPs, to estimate the cost at higher efficiency levels, DOE applied the same incremental equipment costs that were developed for the comparable CUAC efficiency levels for each equipment class).

As noted in section IV.F.1, DOE assumed no change in CUACs and CUHPs prices over the analysis period. For CWAFFs, DOE derived a trend based on the PPI for “Warm air furnaces,” which shows a small rate of annual price decline. DOE applied the same trends to project prices for each CWAFF equipment class at each considered efficiency level. DOE’s projection of product prices is described in appendix 10C of the direct final rule TSDs.

To evaluate the effect of uncertainty regarding the price trend estimates, DOE investigated the impact of different

equipment price trends on the consumer NPV for the considered TSLs. For CUACs and CUHPs, DOE conducted sensitivity analyses using one trend in which prices decline, and one in which prices rise. For CWAFFs, DOE considered a high price decline case and a low price decline. The derivation of these price trends and the results of the sensitivity cases are described in appendix 10C of the direct final rule TSDs.

The NPV calculation includes the repair cost for units that are repaired rather than replaced.

b. Total Annual Operating Cost Savings

Operating cost savings are estimated by comparing total energy expenditures and repair and maintenance costs for the base case and the standards cases. DOE calculates annual energy expenditures from annual energy consumption by incorporating forecasted energy prices. To calculate future energy prices, DOE applied the projected trend in national-average commercial energy prices from the *AEO 2015* Reference case (which extends to 2040) to the recent prices derived in the LCC and PBP analysis. DOE used the trend from 2030 to 2040 to extrapolate beyond 2040. As part of the NIA, DOE also analyzed scenarios that used inputs from the *AEO 2015* Low Economic Growth and High Economic Growth cases. Those cases have higher and lower energy price trends compared to the Reference case.

c. Net Benefit

The aggregate difference each year between operating cost savings and increased equipment expenditures is the net savings or net costs. In calculating the NPV, DOE multiplies the net savings in future years by a discount factor to determine their present value. DOE estimates the NPV using both a 3-percent and a 7-percent real discount rate, in accordance with guidance provided by the Office of Management and Budget (“OMB”) to Federal agencies on the development of regulatory analysis.¹⁰⁷ The discount rates for the determination of NPV are in contrast to the discount rates used in the LCC analysis, which are designed to reflect a consumer’s perspective. The 7-percent real value is an estimate of the average before-tax rate of return to private capital in the U.S. economy. The 3-percent real value represents the “social rate of time preference,” which is the rate at which society discounts

¹⁰⁶ For more information on NEMS, refer to *The National Energy Modeling System: An Overview*, DOE/EIA-0581 (2009) (Oct. 2009) (Available at: <http://www.eia.gov/oiaf/aeo/overview/>).

¹⁰⁷ OMB Circular A-4, section E (Sept. 17, 2003) (Available at: http://www.whitehouse.gov/omb/circulars_a004_a-4).

future consumption flows to their present value.

I. Consumer Subgroup Analysis

In analyzing the potential impact of new or amended standards on commercial consumers, DOE evaluates the impact on identifiable subgroups of consumers that may be disproportionately affected by a new or amended national standard. DOE evaluates impacts on particular subgroups of consumers by analyzing the LCC impacts and PBP for those particular consumers from alternative standard levels. For CUACs/CUHPs and CWAfs, DOE evaluated impacts on a small business subgroup using the LCC spreadsheet model. Chapter 11 in the direct final rule TSDs describes the consumer subgroup analysis.

J. Manufacturer Impact Analysis

1. Overview

DOE analyzed manufacturer impacts (*i.e.*, MIAs) to calculate the potential financial impact of amended energy conservation standards on CUAC/CUHP and CWAf manufacturers to estimate the potential impact of such standards on employment and manufacturing capacity. The MIA has both quantitative and qualitative aspects. The quantitative part of the MIA primarily relies on the GRIM, an industry cash-flow model with inputs specific to this rulemaking. The key GRIM inputs are data on the industry cost structure, equipment costs, shipments, and assumptions about markups and conversion expenditures. The key output is the INPV. Different sets of assumptions (markup scenarios) will produce different results. The qualitative part of the MIA addresses factors such as equipment characteristics, impacts on particular subgroups of firms, and important industry, market, and equipment trends. The complete MIA is outlined in chapter 12 of the CUACs/ CUHPs and CWAfs direct final rule TSDs.

DOE conducted the MIA for this rulemaking in three phases. In Phase 1 of the MIA, DOE prepared profiles of the CUAC/CUHP and CWAf manufacturers that included top-down analyses that DOE used to derive preliminary financial inputs for the GRIM (*e.g.*, sales, general, and administration (*i.e.*, SG&A) expenses; research and development (“R&D”) expenses; and tax rates). DOE used public sources of information, including company SEC 10-K filings, corporate annual reports,

the U.S. Census Bureau’s Economic Census,¹⁰⁸ and Hoover’s reports.¹⁰⁹

In Phase 2 of the MIA, DOE prepared industry cash-flow analyses to quantify the potential impacts of an amended energy conservation standard. In general, new or more-stringent energy conservation standards can affect manufacturer cash flows in three distinct ways: (1) Create a need for increased investment; (2) raise production costs per unit; and (3) alter revenue due to higher per-unit prices and possible changes in sales volumes.

In Phase 3 of the MIA, DOE conducted structured, detailed interviews with a representative cross-section of manufacturers. During these interviews, DOE discussed engineering, manufacturing, procurement, and financial topics to validate assumptions used in the GRIM and to identify key issues or concerns. See sections IV.J.2.c in 79 FR 58948 (CUAC/CUHP NOPR) and 80 FR 6181 (CWAf NOPR) for a description of the key issues manufacturers raised during their respective interviews.

Additionally, in Phase 3, DOE evaluated subgroups of manufacturers that may be disproportionately impacted by new standards or that may not be accurately represented by the average cost assumptions used to develop the industry cash-flow analysis. For example, small manufacturers, niche players, or manufacturers exhibiting a cost structure that largely differs from the industry average could be more negatively affected. DOE identified one subgroup (*i.e.*, small manufacturers) for a separate impact analysis.

DOE applied the small business size standards published by the Small Business Administration (“SBA”) to determine whether a company is considered a small business. 65 FR 30836, 30848 (May 15, 2000), as amended by 65 FR 53533, 53544 (September 5, 2000) and codified at 13 CFR part 121. To be categorized as a small business under North American Industry Classification System (“NAICS”) code 333415, “Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing,” a CUAC/CUHP or CWAf manufacturer and its affiliates may employ a maximum of 750

employees. The 750-employee threshold includes all employees in a business’s parent company and subsidiaries. Based on this classification, DOE identified three CUAC/CUHP manufacturers that qualify as small businesses under the SBA definition, and two CWAf manufacturers that qualify as small businesses. CUAC/CUHP and CWAf small manufacturer subgroups are discussed in sections V.B.2.d and VI.B of this document.

2. Government Regulatory Impact Model

DOE uses the GRIM to quantify the changes in cash flow due to new standards that result in a higher or lower industry value. The GRIM analysis uses a standard annual, discounted cash-flow methodology that incorporates manufacturer costs, markups, shipments, and industry financial information as inputs. The GRIM models changes in costs, distribution of shipments, investments, and manufacturer margins that could result from an amended energy conservation standard. The GRIM spreadsheet uses the inputs to arrive at a series of annual cash flows, beginning in 2015 (the base year of the analysis) and continuing to 2048. DOE calculated INPVs by summing the stream of annual discounted cash flows during this period. For CUAC/CUHP manufacturers, DOE used a real discount rate of 6.2 percent, which was derived from industry financials and then modified according to feedback received during manufacturer interviews. Similarly, using this approach, DOE estimated a real discount rate of 8.9 percent for CWAf manufacturers. The variance in discount rate is due to a different mix of manufacturers, as not all CUAC/ CUHP manufacturers also produce CWAfs (and vice-versa), and resulting variances in manufacturer feedback.

The GRIM calculates cash flows using standard accounting principles and compares changes in INPV between a no-new-standards case and each standards case. The difference in INPV between the no-new-standards case and a standards case represents the financial impact of the amended energy conservation standard on manufacturers. As discussed previously, DOE collected this information on the critical GRIM inputs from a number of sources, including publicly-available data and interviews with a number of manufacturers. The GRIM results are shown in section V.B.2. Additional details about the GRIM, the discount rate, and other financial parameters can be found in chapter 12 of the CUACs/ CUHPs and CWAfs direct final rule TSDs.

¹⁰⁸ U.S. Census Bureau, Annual Survey of Manufacturers: General Statistics: Statistics for Industry Groups and Industries (Available at: <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>).

¹⁰⁹ Hoovers Inc., Company Profiles, Various Companies (Available at: <http://www.hoovers.com>). Last Accessed December 13, 2013.

a. Government Regulatory Impact Model Key Inputs

Manufacturer Production Costs

Manufacturing higher-efficiency equipment is typically more expensive than manufacturing baseline equipment due to the use of more complex components, which are typically more costly than baseline components. The changes in the MPC of the analyzed equipment can affect the revenues, gross margins, and cash flow of the industry, making these equipment cost data key GRIM inputs for DOE's analysis.

In the MIA, DOE used the MPCs for each considered efficiency level calculated in the engineering analysis, as described in section IV.C and further detailed in chapter 5 of the direct final rule TSD. In addition, DOE used information from its teardown analysis, described in chapter 5 of the TSD, to disaggregate the MPCs into material, labor, and overhead costs. To calculate the MPCs for equipment above the baseline, DOE added the incremental material, labor, and overhead costs from the engineering cost-efficiency curves to the baseline MPCs. These cost breakdowns and equipment markups were validated and revised based on manufacturer comments received during MIA interviews.

Shipments Forecasts

The GRIM estimates manufacturer revenues based on total unit shipment forecasts and the distribution of these values by equipment class and efficiency level. Changes in sales volumes and efficiency mix over time can significantly affect manufacturer finances. For the CUAC/CUHP and CWAf analyses, the GRIM used the Shipments Analysis to estimate shipments from 2015 to 2048. See chapter 9 of the CUACs/CUHPs and CWAf's direct final rule TSDs for additional details.

Conversion Costs

An amended energy conservation standard would cause manufacturers to incur one-time conversion costs to bring their production facilities and equipment designs into compliance. DOE evaluated the level of conversion-related expenditures that would be needed to comply with each considered efficiency level in each equipment class. For the MIA, DOE classified these conversion costs into two major groups: (1) Product conversion costs; and (2) capital conversion costs. Product conversion costs are one-time investments in research, development, testing, marketing, and other non-capitalized costs necessary to make

product designs comply with the amended energy conservation standard. Capital conversion costs are one-time investments in property, plant, and equipment necessary to adapt or change existing production facilities such that equipment with new, compliant designs can be fabricated and assembled.

i. Commercial Unitary Air Conditioners and Heat Pumps

To evaluate the level of capital conversion expenditures manufacturers would likely incur to comply with amended energy conservation standards for CUACs/CUHPs, DOE used manufacturer interviews to gather data on the anticipated level of capital investment that would be required at each efficiency level. DOE supplemented manufacturer comments with estimates of capital expenditure requirements derived from the product teardown analysis and engineering analysis.

DOE assessed the product conversion costs at each considered efficiency level by integrating data from quantitative and qualitative sources. DOE considered market-share-weighted feedback regarding the potential cost of each efficiency level from multiple manufacturers to estimate product conversion costs and validated those numbers against engineering estimates of redesign efforts. In general, DOE assumes that all conversion-related investments occur between the year of publication of the final rule and the year by which manufacturers must comply with the new standard. The conversion cost figures used in the GRIM can be found in section V.B.2.a of this document. For additional information on the estimated product and capital conversion costs, see chapter 12 of the CUACs/CUHPs direct final rule TSD.

ii. Commercial Warm Air Furnaces

To evaluate the level of capital conversion expenditures manufacturers would likely incur to comply with amended energy conservation standards for CWAf's, two methodologies were used to develop conversion cost estimates: (1) A Top-Down approach using feedback from manufacturer interviews to gather data on the level of costs expected at each efficiency level, and (2) a Bottom-Up approach using engineering analysis inputs derived from the equipment teardown analysis and engineering model described in chapter 5 of the CWAf direct final rule TSD to evaluate the investment required to design, manufacture, and sell equipment that meets a higher energy conservation standard.

For estimating capital conversion costs, the Top-Down approach took available feedback from manufacturers and marketshare-weighted the responses to arrive at an approximation representative of the industry as a whole. Responses from manufacturers with the greatest market share were given the greatest weight, while responses from manufacturers with the lowest market share were given the lowest weight. The Bottom-Up approach took capital conversion costs from the engineering analysis on a per-manufacturer basis to develop an industry-wide cost estimate. This analysis included the expected equipment, tooling, conveyor, and plant costs associated with CWAf production, as estimated by DOE based on product tear-downs and on manufacturer interviews. The results of the two methodologies were integrated to create high and low capital conversion cost scenarios.

Product conversion costs for CWAf's are primarily driven by re-development and testing expenses. As the standard increases, increasing levels of re-development effort would be required to meet the efficiency requirements, as more equipment models would require redesign. Additionally, expected product conversion costs would ramp up significantly where DOE expects condensing technology to be necessary to meet a revised energy conservation standard.

To estimate product R&D costs, the Top-Down approach developed average costs per product platform based on manufacturer feedback. This feedback focused on the human capital investments, such as engineering and lab technician time necessary to update designs. In the Bottom-Up approach, DOE used vendor quotes, industry product information, and engineering cost estimation analysis data to estimate the expenses associated with TE testing, heat limit testing, product safety testing, reliability testing, and engineering effort.

In general, because manufacturer expenses related to meeting the new standards must occur prior to the production of compliant equipment, DOE assumes that all conversion-related investments occur between the year of publication of the direct final rule and the year by which manufacturers must comply with the amended standard. The conversion cost figures used in the GRIM can be found in section V.B.2 of this document. For additional information on the estimated product and capital conversion costs, see chapter 12 of the CWAf's direct final rule TSD.

b. Government Regulatory Impact Model Scenarios

Manufacturer Markup Scenarios

To calculate the MSPs in the GRIM, DOE applied manufacturer markups to the MPCs estimated in the engineering analysis for each equipment class and efficiency level. Modifying these manufacturer markups in the standards case yields different sets of manufacturer impacts. For the MIA, DOE modeled two standards-case manufacturer markup scenarios to represent the uncertainty regarding the potential impacts on prices and profitability for manufacturers following

the implementation of amended energy conservation standards: (1) A preservation of gross margin percentage markup scenario; and (2) a preservation of per-unit operating profit markup scenario. These scenarios lead to different manufacturer markup values that, when applied to the inputted MPCs, result in varying revenue and cash flow impacts.

Under the preservation of gross margin percentage scenario, DOE applied a single uniform “gross margin percentage” markup across all efficiency levels, which assumes that manufacturers would be able to maintain the same amount of profit as

a percentage of revenues at all efficiency levels within an equipment class. As production costs increase with efficiency, this scenario implies that the absolute dollar markup will increase as well. Based on publicly-available financial information for manufacturers of CUAC/CUHP and CWAF equipment, as well as comments from manufacturer interviews, DOE assumed the average non-production cost markup—which includes SG&A expenses, R&D expenses, interest, and profit—to be the following for each equipment class. The results are presented in Table IV–31 and Table IV–32.

TABLE IV.31—PRESERVATION OF GROSS MARGIN PERCENTAGE MARKUP FOR CUAC/CUHP EQUIPMENT IN THE NO-NEW-STANDARDS CASE

Equipment	Markup
Small Commercial Packaged Air-Conditioners ≥65,000 Btu/h and <135,000 Btu/h	1.3
Small Commercial Packaged Heat Pumps ≥65,000 Btu/h and <135,000 Btu/h	1.3
Large Commercial Packaged Air-Conditioners ≥135,000 Btu/h and <240,000 Btu/h	1.34
Large Commercial Packaged Heat Pumps ≥135,000 Btu/h and <240,000 Btu/h	1.34
Very Large Commercial Packaged Air-Conditioners ≥240,000 Btu/h and <760,000 Btu/h	1.41
Very Large Commercial Packaged Heat Pumps ≥240,000 Btu/h and <760,000 Btu/h	1.41

TABLE IV.32—PRESERVATION OF GROSS MARGIN PERCENTAGE MARKUP FOR CWAF EQUIPMENT IN THE NO-NEW-STANDARDS CASE

Equipment	Markup
Gas-fired Commercial Warm Air Furnaces ≥225,000 Btu/h	1.31
Oil-fired Commercial Warm Air Furnaces ≥225,000 Btu/h	1.28

This markup scenario assumes that manufacturers would be able to maintain their gross margin percentage markups as production costs increase in response to an amended energy conservation standard. Manufacturers stated that this scenario is optimistic and represents a high bound to industry profitability.

In the preservation of operating profit scenario, manufacturer markups are set so that operating profit one year after the compliance date of the amended energy conservation standard is the same as in the no-new-standards case.

Under this scenario, as the costs of production increase under a standards case, manufacturers are generally required to reduce their markups to a level that maintains the no-new-standards case’s operating profit. The implicit assumption behind this markup scenario is that the industry can only maintain its operating profit in absolute dollars after compliance with the new or amended standard is required. Therefore, operating margin in percentage terms is reduced between the no-new-standards case and standards case. DOE adjusted (*i.e.*, lowered) the

manufacturer markups in the GRIM at each TSL to yield approximately the same earnings before interest and taxes in the standards case as in the no-new-standards case. This markup scenario represents a low bound to industry profitability under an amended energy conservation standard, as shown in Table IV–33 and Table IV–34 for CUAC/CUHP and CWAF equipment classes respectively. Table IV–33 includes markups for both the 2019 standard level and the 2023 standard level for CUAC/CUHP equipment adopted in this document.

TABLE IV.33—PRESERVATION OF OPERATING PROFIT MARKUPS FOR CUAC/CUHP EQUIPMENT AT THE ADOPTED STANDARD LEVELS

Equipment	Markups (2019/2023)
Small Commercial Packaged Air-Conditioners ≥65,000 Btu/h and <135,000 Btu/h	1.29/1.26
Small Commercial Packaged Heat Pumps ≥65,000 Btu/h and <135,000 Btu/h	1.29/1.27
Large Commercial Packaged Air-Conditioners ≥135,000 Btu/h and <240,000 Btu/h	1.33/1.31
Large Commercial Packaged Heat Pumps ≥135,000 Btu/h and <240,000 Btu/h	1.33/1.31
Very Large Commercial Packaged Air-Conditioners ≥240,000 Btu/h and <760,000 Btu/h	1.37/1.33
Very Large Commercial Packaged Heat Pumps ≥240,000 Btu/h and <760,000 Btu/h	1.39/1.35

TABLE IV.34—PRESERVATION OF OPERATING PROFIT MARKUPS FOR CWAFFS EQUIPMENT AT THE ADOPTED STANDARD LEVELS

Equipment	Markup
Gas-fired Commercial Warm Air Furnaces $\geq 225,000$ Btu/h	1.31
Oil-fired Commercial Warm Air Furnaces $\geq 225,000$ Btu/h	1.28

3. Discussion of Comments

During the NOPR public meeting, interested parties commented on the assumptions and results of the NOPR analysis TSD. Oral and written comments addressed several topics, including employment impacts, conversion costs, and impacts on small businesses.

a. Employment Impacts on CUAC/CUHP Manufacturers

Nordyne expressed concern that DOE's NOPR CUAC/CUHP analysis indicates an increase in employment as a result of the rulemaking. (CUAC: Nordyne, No. 61 at p. 25) In response, DOE notes that the NOPR and Final Rule analyses present a range of potential employment impacts. These impacts are a function of the shipment forecasts and changes in production labor required to produce compliant products. At the NOPR stage, DOE presented direct employment impacts that ranged from a net loss of 94 production jobs to no change in production jobs at the proposed level.

For the final rule, DOE updated its employment analysis and continued to follow the same approach in light of the fact that, when presented with the details of DOE's analysis, manufacturers could not identify specific errors for DOE to correct. While manufacturers were unable to provide specific data regarding production employment numbers, either individually or for the industry as a whole, DOE accounted for the concerns that were raised regarding the initial projected employment impacts by incorporating the most recent data from the U.S. Census Bureau's 2013 Annual Survey of Manufacturers (ASM) and industry feedback from both written comments and the ASRAC Working Group meetings. The direct final rule analysis presents an updated set of direct employment impacts that range from a net loss of 829 jobs to no change in jobs at the adopted level.

In written comments, Lennox noted that DOE's direct employment estimates are too low. (CUAC: Lennox, No. 60 at pp. 5–6) Additionally, AHRI asked DOE to recalculate its employment forecast and methods to include all jobs associated within the equipment

channel and not only the manufacturing portion. (CUAC: AHRI, No. 68 at p.41)

At the NOPR stage, DOE estimated production employment to be 1,085 workers in the no-new-standards case in 2019. For the final rule, DOE updated its analysis based on 2013 U.S. Census data, the updated engineering analysis, and the updated shipments analysis. DOE also revisited its assumption given the general feedback from industry that the initial employment figures were too low. DOE's revised direct final rule analysis forecasts that the industry will employ 2,643 production workers in the no-new-standards case in 2019.

DOE's employment analysis is based on three primary inputs: CUACs shipments in 2019, average labor content of the covered products, and an average production worker wage level. In the final rule analysis, DOE estimates there are 290,600 unit shipments in 2019. The engineering analysis shows that labor content can range from 8.2 percent to 17.5 percent of the MPC, depending on product class and model. The shipment-weighted average labor content of a unit is \$342 per unit. Combining unit shipments and labor content, DOE estimates industry expenditures of \$99.3 million on production labor. Using data from the ASM for NAICS code 333415, the average production worker's fully-burdened wage is \$37,700 per year in the "Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing" industry. This value translates to 2,643 production workers supporting the industry in 2019.

When this figure was presented in ASRAC Working Group discussions, manufacturers stated that this figure was still too low. However, DOE did not receive any specific comments or suggestions on how it might modify this methodology to account for this issue. Furthermore, no manufacturer offered alternative estimates of company or industry employment data despite repeated requests in the NOPR and at the ASRAC Working Group meetings. The estimated number of production workers in DOE's analysis (*i.e.* 2,643) only accounts for the labor required to manufacture the most basic product that meets the applicable standard—it does

not take into account additional features that manufacturers use to differentiate premium products, add-ons, or component in the cabinet that do not contribute to the cooling function. It also does not account for variations in worker salary for production performed in lower wage countries. These items could account for greater actual employment in the industry. Additional detail on the direct employment analysis can be found in Chapter 12 of the direct final rule TSD.

DOE notes that there were discrepancies between the NOPR Notice and NOPR TSD for CUAC/CUHP equipment with regard to the percentage of production labor that is domestically-based. For the final rule, DOE does not attempt to estimate the portion of foreign production of CUACs/CUHPs and CWAFFs. Rather, the direct employment number captures the maximum number of domestic production workers based on the available data and DOE's methodology.

In response to AHRI's comments, DOE's manufacturer impact analysis focuses on the impacts to the regulated entities—the CUAC/CUHP manufacturers. The employment of component suppliers who manufacture components that may be used in a completed CUAC/CUHP system falls beyond the scope of the analysis. However, DOE does present the total employment impacts on the economy at large in the Indirect Employment Analysis in section IV.N of this document.

b. Conversion Costs Related to CUACs/CUHPs

Responding to the CUAC/CUHP NOPR, stakeholders pointed out that high capital costs and intensive redesign efforts would be required by the proposed standards. Manufacturers noted that they are currently redesigning equipment to meet ASHRAE 90.1–2013 minimum efficiency levels. Adopting a standard above ASHRAE 90.1–2013 would require the redesign of most product offerings in a short time frame. (CUAC: Nordyne, No. 61 at p. 32; Trane, No. 95 at p. 11; AHRI, No. 107 at p. 46)

DOE acknowledges manufacturers' concerns regarding the product redesign process. To lessen the product redesign

burden on manufacturers to comply with ASHRAE 90.1–2013 and an amended CUACs energy conservation standard, the direct final rule adopts a two-tiered approach that applies the ASHRAE 90.1–2013 levels for compliance in 2018 (though this occurs at the end of the year and is modeled as a 2019 effective date for the purposes of the MIA) and then applies a higher standard starting in 2023, as recommended by the ASRAC Working Group.

Additionally, manufacturers stated that conversion costs of \$12.7 million would not adequately cover all product conversion costs. (CUAC: Nordyne, No. 61 at p. 32; Trane, No. 95 at p. 11; AHRI, No. 107 at p. 45)

To clarify, in the CUAC/CUHP NOPR, DOE included an estimate of \$12.7 million as a testing cost attributable to compliance, certification, and enforcement efforts that manufacturers would likely incur to re-rate all basic models using the IEER metric. However, this cost is only a small portion of the total conversion costs that DOE estimates that manufacturers are likely to incur. In the CUAC/CUHP NOPR, DOE expected the industry to incur \$226.4 million in conversion costs at the proposed TSL. After evaluating further information gathered during additional interviews, as well as applying data from DOE's revised engineering analysis and shipments forecast, DOE estimates the industry would likely incur \$520.8 million in conversion costs to comply with the CUAC/CUHP standard adopted in this direct final rule. This figure does not account for any cost savings that may result from aligning the CUACs/CUHPs and CWFAs standards' effective years. Conversion costs are discussed in detail in section V.B.2 of this document and in chapter 12 of the CUACs/CUHPs direct final rule TSD.

c. Small Business Impacts on CWFAs Manufacturers

The SBA expressed concern about the impacts of the rulemaking on the one small manufacturer of CWFAs equipment. Based on conversations with that small manufacturer, the SBA stated that the proposed standards are not economically feasible within the three-year period prescribed by DOE. (CWFAs: SBA, No. 7 at p. 2)

For the direct final rule, DOE has adopted a later compliance date from the 2018 date proposed in the CWFAs NOPR. For the direct final rule, DOE has extended the compliance year to 2023. This change will provide the small manufacturer with additional lead-time to comply with the amended standard level. In DOE's view, this additional

lead-time, coupled with the more accommodating revised standards that are being adopted, will help this small manufacturer comply with the new efficiency levels in a timely manner.

K. Emissions Analysis

The emissions analysis consists of two components. The first component estimates the effect of potential energy conservation standards on power sector and site (where applicable) combustion emissions of carbon dioxide (CO₂), nitrogen oxides (NO_x), sulfur dioxide (SO₂), and mercury (Hg). The second component estimates the impacts of potential standards on emissions of two additional greenhouse gases, methane (CH₄) and nitrous oxide (N₂O), as well as the reductions to emissions of all species due to "upstream" activities in the fuel production chain. These upstream activities comprise extraction, processing, and transporting fuels to the site of combustion. The associated emissions are referred to as upstream emissions.

For CWFAs, the adopted standards would reduce use of fuel at the site and slightly reduce electricity use, thereby reducing power sector emissions. However, the highest efficiency levels (*i.e.*, the max-tech levels) considered for CWFAs would increase the use of electricity by the furnace and increase emissions accordingly.

For the CUACs/CUHPs and CWFAs NOPRs, DOE used marginal emissions factors for CO₂ and most of the other gases that were derived from data in *AEO 2013*.

Commenting on the CUAC/CUHP NOPR and the CWFAs NOPR, AHRI stated that DOE should use the most recent AEO data available, which would significantly reduce the environmental benefits resulting from reductions of CO₂, SO₂, and Hg, among other emissions. (CUAC: AHRI, No. 68 at p. 18; CWFAs: AHRI, No. 26 at pp. 7–8) Nordyne and Lennox made a similar comment. (CUAC: Nordyne, No. 61 at p. 16; Lennox, No. 60 at p. 17)

For the direct final rule analysis, DOE used marginal emissions factors that were derived from data in *AEO 2015*, as described in section IV.K. The methodology is described in the appendices to chapter 13 and chapter 15 of the direct final rule TSDs.

Combustion emissions of CH₄ and N₂O are estimated using emissions intensity factors published by the EPA, GHG Emissions Factors Hub.¹¹⁰ The FFC upstream emissions are estimated based on the methodology described in

chapter 15 of the direct final rule TSDs. The upstream emissions include both emissions from fuel combustion during extraction, processing, and transportation of fuel, and "fugitive" emissions (direct leakage to the atmosphere) of CH₄ and CO₂.

The emissions intensity factors are expressed in terms of physical units per MWh or MMBtu of site energy savings. Total emissions reductions are estimated using the energy savings calculated in the national impact analysis.

For CH₄ and N₂O, DOE calculated emissions reduction in tons and also in terms of units of carbon dioxide equivalent (CO₂eq). Gases are converted to CO₂eq by multiplying each ton of gas by the gas' global warming potential (GWP) over a 100-year time horizon. Based on the Fifth Assessment Report of the Intergovernmental Panel on Climate Change,¹¹¹ DOE used GWP values of 28 for CH₄ and 265 for N₂O.

Because the on-site operation of CWFAs requires use of fossil fuels and results in emissions of CO₂, NO_x, and SO₂ at the sites where these appliances are used, DOE also accounted for the reduction in these site emissions and the associated upstream emissions due to potential standards. Site emissions were estimated using emissions intensity factors from an EPA publication.¹¹²

The AEO incorporates the projected impacts of existing air quality regulations on emissions. *AEO 2015* generally represents current legislation and environmental regulations, including recent government actions, for which implementing regulations were available as of October 31, 2014. DOE's estimation of impacts accounts for the presence of the emissions control programs discussed in the following paragraphs.

SO₂ emissions from affected electric generating units (EGUs) are subject to nationwide and regional emissions cap-and-trade programs. Title IV of the Clean Air Act sets an annual emissions cap on SO₂ for affected EGUs in the 48 contiguous States and the District of Columbia (DC). (42 U.S.C. 7651 *et seq.*)

¹¹¹ IPCC, 2013: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Chapter 8.

¹¹² U.S. Environmental Protection Agency, *Compilation of Air Pollutant Emission Factors*, AP-42, Fifth Edition, Volume I: Stationary Point and Area Sources (1998) (Available at: <http://www.epa.gov/ttn/chieff/ap42/index.html>).

¹¹⁰ Available at: <http://www.epa.gov/climateleadership/inventory/ghg-emissions.html>.

SO₂ emissions from 28 eastern States and DC were also limited under the Clean Air Interstate Rule (CAIR). 70 FR 25162 (May 12, 2005). CAIR created an allowance-based trading program that operates along with the Title IV program. In 2008, CAIR was remanded to EPA by the U.S. Court of Appeals for the District of Columbia Circuit, but it remained in effect.¹¹³ In 2011, EPA issued a replacement for CAIR, the Cross-State Air Pollution Rule (CSAPR). 76 FR 48208 (August 8, 2011). On August 21, 2012, the DC Circuit issued a decision to vacate CSAPR,¹¹⁴ and the court ordered EPA to continue administering CAIR. On April 29, 2014, the U.S. Supreme Court reversed the judgment of the DC Circuit and remanded the case for further proceedings consistent with the Supreme Court's opinion.¹¹⁵ On October 23, 2014, the DC Circuit lifted the stay of CSAPR.¹¹⁶ Pursuant to this action, CSAPR went into effect (and CAIR ceased to be in effect) as of January 1, 2015.

EIA was not able to incorporate CSAPR into *AEO 2015*, so it assumes implementation of CAIR. Although DOE's analysis used emissions factors that assume that CAIR, not CSAPR, is the regulation in force, the difference between CAIR and CSAPR is not relevant for the purpose of DOE's analysis of emissions impacts from energy conservation standards.

The attainment of emissions caps is typically flexible among EGUs and is enforced through the use of emissions allowances and tradable permits. Under existing EPA regulations, any excess SO₂ emissions allowances resulting from the lower electricity demand caused by the adoption of an efficiency standard could be used to permit offsetting increases in SO₂ emissions by any regulated EGU. In past rulemakings, DOE recognized that there was uncertainty about the effects of efficiency standards on SO₂ emissions covered by the existing cap-and-trade system, but it concluded that negligible reductions in power sector SO₂ emissions would occur as a result of standards.

Beginning in 2016, however, SO₂ emissions will fall as a result of the

Mercury and Air Toxics Standards (MATS) for power plants. 77 FR 9304 (Feb. 16, 2012). In the MATS rule, EPA established a standard for hydrogen chloride as a surrogate for acid gas hazardous air pollutants (HAP), and also established a standard for SO₂ (a non-HAP acid gas) as an alternative equivalent surrogate standard for acid gas HAP. The same controls are used to reduce HAP and non-HAP acid gas; thus, SO₂ emissions will be reduced as a result of the control technologies installed on coal-fired power plants to comply with the MATS requirements for acid gas. *AEO 2015* assumes that, in order to continue operating, coal plants must have either flue gas desulfurization or dry sorbent injection systems installed by 2016. Both technologies, which are used to reduce acid gas emissions, also reduce SO₂ emissions. Under the MATS, emissions will be far below the cap established by CAIR, so it is unlikely that excess SO₂ emissions allowances resulting from the lower electricity demand would be needed or used to permit offsetting increases in SO₂ emissions by any regulated EGU.¹¹⁷ Therefore, DOE believes that energy conservation standards will generally reduce SO₂ emissions in 2016 and beyond.

CAIR established a cap on NO_x emissions in 28 eastern States and the District of Columbia.¹¹⁸ Energy conservation standards are expected to have little effect on NO_x emissions in those States covered by CAIR because excess NO_x emissions allowances resulting from the lower electricity demand could be used to permit offsetting increases in NO_x emissions from other facilities. However, standards would be expected to reduce NO_x emissions in the States not affected by the caps, so DOE estimated NO_x emissions reductions from the standards considered in this final rule for these States.

¹¹⁷ DOE notes that the Supreme Court recently remanded EPA's 2012 rule regarding national emission standards for hazardous air pollutants from certain electric utility steam generating units. See *Michigan v. EPA* (Case No. 14–46, 2015). DOE has tentatively determined that the remand of the MATS rule does not change the assumptions regarding the impact of energy efficiency standards on SO₂ emissions. Further, while the remand of the MATS rule may have an impact on the overall amount of mercury emitted by power plants, it does not change the impact of the energy efficiency standards on mercury emissions. DOE will continue to monitor developments related to this case and respond to them as appropriate.

¹¹⁸ CSAPR also applies to NO_x and it would supersede the regulation of NO_x under CAIR. As stated previously, the current analysis assumes that CAIR, not CSAPR, is the regulation in force. The difference between CAIR and CSAPR with regard to DOE's analysis of NO_x emissions is slight.

The MATS limit mercury emissions from power plants, but they do not include emissions caps and, as such, DOE's energy conservation standards would likely reduce Hg emissions. DOE estimated mercury emissions reduction using emissions factors based on *AEO 2015*, which incorporates the MATS.

L. Monetizing Carbon Dioxide and Other Emissions Impacts

As part of the development of this rule, DOE considered the estimated monetary benefits from the reduced emissions of CO₂ and NO_x that are expected to result from each of the TSLs considered. To make this calculation analogous to the calculation of the NPV of consumer benefit, DOE considered the reduced emissions expected to result over the lifetime of products shipped in the forecast period for each TSL. This section summarizes the basis for the monetary values used for each of these emissions and presents the values considered in this direct final rule.

For this final rule, DOE relied on a set of values for the social cost of carbon (SCC) that was developed by a Federal interagency process. The basis for these values is summarized in the next section, and a more detailed description of the methodologies used is provided as an appendix to chapter 14 of the direct final rule TSDs.

1. Social Cost of Carbon

The SCC is an estimate of the monetized damages associated with an incremental increase in carbon emissions in a given year. It is intended to include (but is not limited to) climate-change-related changes in net agricultural productivity, human health, property damages from increased flood risk, and the value of ecosystem services. Estimates of the SCC are provided in dollars per metric ton of CO₂. A domestic SCC value is meant to reflect the value of damages in the United States resulting from a unit change in CO₂ emissions, while a global SCC value is meant to reflect the value of damages worldwide.

Under section 1(b) of Executive Order 12866, "Regulatory Planning and Review," 58 FR 51735 (Oct. 4, 1993), agencies must, to the extent permitted by law, "assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs." The purpose of the SCC estimates presented here is to allow agencies to incorporate the monetized social benefits of reducing CO₂ emissions into

¹¹³ See *North Carolina v. EPA*, 550 F.3d 1176 (D.C. Cir. 2008); *North Carolina v. EPA*, 531 F.3d 896 (D.C. Cir. 2008).

¹¹⁴ See *EME Homer City Generation, LP v. EPA*, 696 F.3d 7, 38 (D.C. Cir. 2012), cert. granted, 81 U.S.L.W. 3567, 81 U.S.L.W. 3696, 81 U.S.L.W. 3702 (U.S. June 24, 2013) (No. 12–1182).

¹¹⁵ See *EPA v. EME Homer City Generation*, 134 S.Ct. 1584, 1610 (U.S. 2014).

¹¹⁶ See *Georgia v. EPA*, Order (D.C. Cir. filed October 23, 2014) (No. 11–1302).

cost-benefit analyses of regulatory actions. The estimates are presented with an acknowledgement of the many uncertainties involved and with a clear understanding that they should be updated over time to reflect increasing knowledge of the science and economics of climate impacts.

As part of the interagency process that developed these SCC estimates, technical experts from numerous agencies met on a regular basis to consider public comments, explore the technical literature in relevant fields, and discuss key model inputs and assumptions. The main objective of this process was to develop a range of SCC values using a defensible set of input assumptions grounded in the existing scientific and economic literatures. In this way, key uncertainties and model differences transparently and consistently inform the range of SCC estimates used in the rulemaking process.

a. Monetizing Carbon Dioxide Emissions

When attempting to assess the incremental economic impacts of CO₂ emissions, the analyst faces a number of challenges. A report from the National Research Council¹¹⁹ points out that any assessment will suffer from uncertainty, speculation, and lack of information about: (1) Future emissions of GHGs; (2) the effects of past and future emissions on the climate system; (3) the impact of changes in climate on the physical and biological environment; and (4) the translation of these environmental impacts into economic damages. As a result, any effort to quantify and monetize the harms associated with climate change will raise questions of science, economics, and ethics and should be viewed as provisional.

Despite the limits of both quantification and monetization, SCC estimates can be useful in estimating the social benefits of reducing CO₂ emissions. The agency can estimate the benefits from reduced (or costs from increased) emissions in any future year by multiplying the change in emissions in that year by the SCC values appropriate for that year. The NPV of the benefits can then be calculated by multiplying each of these future benefits

by an appropriate discount factor and summing across all affected years.

It is important to emphasize that the interagency process is committed to updating these estimates as the science and economic understanding of climate change and its impacts on society improves over time. In the meantime, the interagency group will continue to explore the issues raised by this analysis and consider public comments as part of the ongoing interagency process.

b. Development of Social Cost of Carbon Values

In 2009, an interagency process was initiated to offer a preliminary assessment of how best to quantify the benefits from reducing carbon dioxide emissions. To ensure consistency in how benefits are evaluated across Federal agencies, the Administration sought to develop a transparent and defensible method, specifically designed for the rulemaking process, to quantify avoided climate change damages from reduced CO₂ emissions. The interagency group did not undertake any original analysis. Instead, it combined SCC estimates from the existing literature to use as interim values until a more comprehensive analysis could be conducted. The outcome of the preliminary assessment by the interagency group was a set of five interim values: Global SCC estimates for 2007 (in 2006\$) of \$55, \$33, \$19, \$10, and \$5 per metric ton of CO₂. These interim values represented the first sustained interagency effort within the U.S. government to develop an SCC for use in regulatory analysis. The results of this preliminary effort were presented in several proposed and final rules.

c. Current Approach and Key Assumptions

After the release of the interim values, the interagency group reconvened on a regular basis to generate improved SCC estimates. Specially, the group considered public comments and further explored the technical literature in relevant fields. The interagency group relied on three integrated assessment models commonly used to estimate the SCC: The FUND, DICE, and PAGE models. These models are frequently cited in the peer-reviewed literature and were used in the last assessment of the Intergovernmental Panel on Climate Change (IPCC). Each model was given

equal weight in the SCC values that were developed.

Each model takes a slightly different approach to model how changes in emissions result in changes in economic damages. A key objective of the interagency process was to enable a consistent exploration of the three models, while respecting the different approaches to quantifying damages taken by the key modelers in the field. An extensive review of the literature was conducted to select three sets of input parameters for these models: Climate sensitivity, socio-economic and emissions trajectories, and discount rates. A probability distribution for climate sensitivity was specified as an input into all three models. In addition, the interagency group used a range of scenarios for the socio-economic parameters and a range of values for the discount rate. All other model features were left unchanged, relying on the model developers' best estimates and judgments.

In 2010, the interagency group selected four sets of SCC values for use in regulatory analyses. Three sets of values are based on the average SCC from the three integrated assessment models, at discount rates of 2.5, 3, and 5 percent. The fourth set, which represents the 95th percentile SCC estimate across all three models at a 3-percent discount rate, was included to represent higher-than-expected impacts from climate change further out in the tails of the SCC distribution. The values grow in real terms over time. Additionally, the interagency group determined that a range of values from 7 percent to 23 percent should be used to adjust the global SCC to calculate domestic effects,¹²⁰ although preference is given to consideration of the global benefits of reducing CO₂ emissions. Table IV–35 presents the values in the 2010 interagency group report,¹²¹ which is reproduced in appendix 14A of the direct final rule TSD.

¹²⁰ It is recognized that this calculation for domestic values is approximate, provisional, and highly speculative. There is no *a priori* reason why domestic benefits should be a constant fraction of net global damages over time.

¹²¹ *Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866*. Interagency Working Group on Social Cost of Carbon, United States Government (February 2010) (Available at: www.whitehouse.gov/sites/default/files/omb/inforeg/for-agencies/Social-Cost-of-Carbon-for-RIA.pdf).

¹¹⁹ National Research Council, *Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use*, National Academies Press: Washington, DC (2009).

TABLE IV-35—ANNUAL SCC VALUES FROM 2010 INTERAGENCY REPORT, 2010–2050
[2007\$ per metric ton CO₂]

Year	Discount rate			
	5%	3%	2.5%	3%
	Average	Average	Average	95th percentile
2010	4.7	21.4	35.1	64.9
2015	5.7	23.8	38.4	72.8
2020	6.8	26.3	41.7	80.7
2025	8.2	29.6	45.9	90.4
2030	9.7	32.8	50.0	100.0
2035	11.2	36.0	54.2	109.7
2040	12.7	39.2	58.4	119.3
2045	14.2	42.1	61.7	127.8
2050	15.7	44.9	65.0	136.2

The SCC values used for this document were generated using the most recent versions of the three integrated assessment models that have been published in the peer-reviewed literature, as described in the 2013 update from the interagency Working Group (revised July 2015).¹²² Table IV–

36 shows the updated sets of SCC estimates from the latest interagency update in 5-year increments from 2010 to 2050. The full set of annual SCC values between 2010 and 2050 is reported in appendix 14B of the direct final rule TSD. The central value that emerges is the average SCC across

models at the 3-percent discount rate. However, for purposes of capturing the uncertainties involved in regulatory impact analysis, the interagency group emphasizes the importance of including all four sets of SCC values.

TABLE IV-36—ANNUAL SCC VALUES FROM 2013 INTERAGENCY UPDATE (REVISED JULY 2015), 2010–2050
[2007\$ per metric ton CO₂]

Year	Discount rate			
	5%	3%	2.5%	3%
	Average	Average	Average	95th percentile
2010	10	31	50	86
2015	11	36	56	105
2020	12	42	62	123
2025	14	46	68	138
2030	16	50	73	152
2035	18	55	78	168
2040	21	60	84	183
2045	23	64	89	197
2050	26	69	95	212

It is important to recognize that a number of key uncertainties remain, and that current SCC estimates should be treated as provisional and revisable because they will evolve with improved scientific and economic understanding. The interagency group also recognizes that the existing models are imperfect and incomplete. The National Research Council report mentioned previously points out that there is tension between the goal of producing quantified estimates of the economic damages from an incremental ton of carbon and the limits of existing efforts to model these effects. There are a number of analytical challenges that are being addressed by the research community, including

research programs housed in many of the Federal agencies participating in the interagency process to estimate the SCC. The interagency group intends to periodically review and reconsider those estimates to reflect increasing knowledge of the science and economics of climate impacts, as well as improvements in modeling.

In summary, in considering the potential global benefits resulting from reduced CO₂ emissions, DOE used the values from the 2013 interagency report (revised July 2015), adjusted to 2014\$ using the implicit price deflator for gross domestic product (GDP) from the Bureau of Economic Analysis. For each of the four sets of SCC cases specified, the values for emissions in 2015 were

\$12.2, \$40.0, \$62.3, and \$117 per metric ton avoided (values expressed in 2014\$). DOE derived SCC values after 2050 using the relevant growth rates for the 2040–2050 period in the interagency update.

DOE multiplied the CO₂ emissions reduction estimated for each year by the SCC value for that year in each of the four cases. To calculate a present value of the stream of monetary values, DOE discounted the values in each of the four cases using the specific discount rate that had been used to obtain the SCC values in each case.

In response to the CUAC/CUHP NOPR and the CWAFF NOPR, DOE received a number of comments that were critical

¹²² Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866, Interagency Working Group on Social

Cost of Carbon, United States Government (May 2013; revised July 2015) (Available at: [http://](http://www.whitehouse.gov/sites/default/files/omb/inforeg/scc-tsd-final-july-2015.pdf)

www.whitehouse.gov/sites/default/files/omb/inforeg/scc-tsd-final-july-2015.pdf).

of DOE's use of the SCC values developed by the interagency group.

A group of trade associations led by the U.S. Chamber of Commerce objected to DOE's continued use of the SCC in the cost-benefit analysis and stated that the SCC calculation should not be used in any rulemaking until it undergoes a more rigorous notice, review and comment process. (CUAC: U.S. Chamber of Commerce, No. 40 at pp. 3–4; CWF: U.S. Chamber of Commerce, No. 21 at pp. 3–4) AHRI, Lennox and Nordyne criticized DOE's use of SCC estimates that are subject to considerable uncertainty. (CUAC: AHRI, No. 68 at p. 21; Lennox, No. 60 at p. 17; Nordyne, No. 61 at p. 18; CWF: AHRI, No. 26 at p. 9) AHRI stated that the emissions reductions and global social cost of carbon do not meet the requirement of clear and convincing evidence that a standard more stringent than ASHRAE is justified. (CWF: AHRI, No. 26 at p. 7) AHRI stated that the interagency process was not transparent and the estimates were not subjected to peer review. (CWF: AHRI, No. 26 at p. 12)

In response, in conducting the interagency process that developed the SCC values, technical experts from numerous agencies met on a regular basis to consider public comments, explore the technical literature in relevant fields, and discuss key model inputs and assumptions. Key uncertainties and model differences transparently and consistently inform the range of SCC estimates. These uncertainties and model differences are discussed in the interagency Working Group's reports, which are reproduced in appendix 14A and 14B of the direct final rule TSD, as are the major assumptions. Specifically, uncertainties in the assumptions regarding climate sensitivity, as well as other model inputs such as economic growth and emissions trajectories, are discussed and the reasons for the specific input assumptions chosen are explained. However, the three integrated assessment models used to estimate the SCC are frequently cited in the peer-reviewed literature and were used in the last assessment of the IPCC. In addition, new versions of the models that were used in 2013 to estimate revised SCC values were published in the peer-reviewed literature (see appendix 14B of the direct final rule TSD for discussion). Although uncertainties remain, the revised estimates that were issued in November 2013 are based on the best available scientific information on the impacts of climate change. The current estimates of the SCC have been developed over many years, using the best science available, and with input

from the public. In November 2013, OMB announced a new opportunity for public comment on the interagency technical support document underlying the revised SCC estimates. 78 FR 70586. In July 2015, OMB published a detailed summary and formal response to the many comments that were received.¹²³ DOE stands ready to work with OMB and the other members of the interagency Working Group on further review and revision of the SCC estimates as appropriate.

AHRI stated that the use of SCC as determined on a global basis for the world population is outside of DOE's regulatory authority under EPCA. AHRI stated that EPCA authorizes DOE to conduct a national analysis of energy savings, but there are no references to global environmental impacts in the statute. (CUAC: AHRI, No. 68 at p. 21; CWF: AHRI, No. 26 at pp. 9–11) Nordyne made similar comments. (CUAC: Nordyne, No. 61 at p. 18)

In response, DOE's analysis estimates both global and domestic benefits of CO₂ emissions reductions. Following the recommendation of the interagency Working Group, DOE places more focus on a global measure of SCC. As discussed in appendix 14A of the direct final rule TSD, the climate change problem is highly unusual in at least two respects. First, it involves a global externality: Emissions of most greenhouse gases contribute to damages around the world even when they are emitted in the United States. Consequently, to address the global nature of the problem, the SCC must incorporate the full (global) damages caused by GHG emissions. Second, climate change presents a problem that the United States alone cannot solve. Even if the United States were to reduce its greenhouse gas emissions to zero, that step would be far from enough to avoid substantial climate change. Other countries would also need to take action to reduce emissions if significant changes in the global climate are to be avoided. Emphasizing the need for a global solution to a global problem, the United States has been actively involved in seeking international agreements to reduce emissions and in encouraging other nations, including emerging major economies, to take significant steps to reduce emissions. When these considerations are taken as a whole, the interagency group concluded that a global measure of the benefits from

reducing U.S. emissions is preferable. DOE's approach is not in contradiction of the requirement to weigh the need for national energy conservation, as one of the main reasons for national energy conservation is to contribute to efforts to mitigate the effects of global climate change.

AHRI and Nordyne criticized DOE's inclusion of CO₂ emissions impacts over a time period greatly exceeding that used to measure the economic costs. (CUAC: AHRI, No. 68 at p. 22; Nordyne, No. 61 at p. 18) For the analysis of national impacts of standards, DOE considers the lifetime impacts of equipment shipped in the analysis period. With respect to energy cost savings, impacts continue until all of the equipment shipped in the analysis period is retired. Emissions impacts occur over the same period. With respect to the valuation of CO₂ emissions reductions, the SCC estimates developed by the interagency Working Group are meant to represent the full discounted value (using an appropriate range of discount rates) of emissions reductions occurring in a given year. For example, CO₂ emissions in 2050 have a long residence time in the atmosphere, and thus contribute to radiative forcing, which affects global climate, for a long time. In the case of both consumer economic costs and benefits and the value of CO₂ emissions reductions, DOE is accounting for the lifetime impacts of equipment shipped in the same analysis period.

AHRI and Nordyne stated that DOE wrongly assumes that SCC values will increase over time, contrary to historical experience and to economic development science. (CUACs and CUHPs: AHRI, No. 68 at p. 22; Nordyne, No. 61 at p. 19; CWF: AHRI, No. 26 at p. 11) In response, the SCC increases over time because future emissions are expected to produce larger incremental damages as physical and economic systems become more stressed in response to greater climatic change (see appendix 14A of the direct final rule TSDs). The approach used by the interagency Working Group allowed estimation of the growth rate of the SCC directly using the three IAMs, which helps to ensure that the estimates are internally consistent with other modeling assumptions.

2. Social Cost of Other Air Pollutants

As noted previously, DOE has estimated how the considered energy conservation standards would reduce site NO_x emissions nationwide and decrease power sector NO_x emissions in those 22 States not affected by the CAIR.

¹²³ <https://www.whitehouse.gov/blog/2015/07/02/estimating-benefits-carbon-dioxide-emissions-reductions>. OMB also stated its intention to seek independent expert advice on opportunities to improve the estimates, including many of the approaches suggested by commenters.

DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from Regulatory Impact Analysis titled, *Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants*, published in June 2014 by EPA's Office of Air Quality Planning and Standards.¹²⁴ The report includes high and low values for NO_x (as PM_{2.5}) for 2020, 2025, and 2030 discounted at 3 percent and 7 percent,¹²⁵ which are presented in chapter 14 of the direct final rule TSD. DOE assigned values for 2021–2024 and 2026–2029 using, respectively, the values for 2020 and 2025. DOE assigned values after 2030 using the value for 2030.

DOE multiplied the emissions reduction (tons) in each year by the associated \$/ton values, and then discounted each series using discount rates of 3 percent and 7 percent as appropriate. DOE will continue to evaluate the monetization of avoided NO_x emissions and will make any appropriate updates in energy conservation standards rulemakings.

DOE is evaluating appropriate monetization of avoided SO₂ and Hg emissions in energy conservation standards rulemakings. DOE has not included monetization of those emissions in the current analysis.

M. Utility Impact Analysis

The utility impact analysis estimates several effects on the electric power industry that would result from the adoption of new or amended energy conservation standards. The utility impact analysis estimates the changes in installed electrical capacity and generation that would result for each TSL. The analysis for the direct final rule is based on published output from the NEMS associated with *AEO 2015*. NEMS produces the *AEO Reference Case*, as well as a number of side cases to estimate the marginal impacts of reduced energy demand on the utility sector. These marginal factors are

estimated based on the changes to electricity sector generation, installed capacity, fuel consumption and emissions in the *AEO Reference Case* and various side cases. Details of the methodology are provided in the appendices to Chapters 13 and 15 of the direct final rule TSDs.

The output of this analysis is a set of time-dependent coefficients capturing the change in electricity generation, primary fuel consumption, installed capacity and power sector emissions due to a unit reduction in demand for a given end use. These coefficients are multiplied by the stream of electricity use calculated in the NIA to provide estimates of selected utility impacts of new or amended energy conservation standards.

N. Employment Impact Analysis

DOE considers employment impacts in the domestic economy as one factor in selecting a standard. Employment impacts from new or amended energy conservation standards include both direct and indirect impacts. Direct employment impacts are any changes in the number of employees of manufacturers of the products subject to standards, their suppliers, and related service firms. The MIA addresses those impacts. Indirect employment impacts are changes in national employment that occur due to the shift in expenditures and capital investment caused by the purchase and operation of more-efficient appliances. Indirect employment impacts from standards consist of the net jobs created or eliminated in the national economy, other than in the manufacturing sector being regulated, caused by: (1) Reduced spending by end users on energy; (2) reduced spending on new energy supply by the utility industry; (3) increased consumer spending on new products to which the new standards apply; and (4) the effects of those three factors throughout the economy.

One method for assessing the possible effects on the demand for labor of such shifts in economic activity is to compare sector employment statistics developed by the Labor Department's Bureau of Labor Statistics ("BLS").¹²⁶ BLS regularly publishes its estimates of the number of jobs per million dollars of economic activity in different sectors of the economy, as well as the jobs created elsewhere in the economy by this same economic activity. Data from BLS

indicate that expenditures in the utility sector generally create fewer jobs (both directly and indirectly) than expenditures in other sectors of the economy.¹²⁷ There are many reasons for these differences, including wage differences and the fact that the utility sector is more capital-intensive and less labor-intensive than other sectors. Energy conservation standards have the effect of reducing consumer utility bills. Because reduced consumer expenditures for energy likely lead to increased expenditures in other sectors of the economy, the general effect of efficiency standards is to shift economic activity from a less labor-intensive sector (*i.e.*, the utility sector) to more labor-intensive sectors (*e.g.*, the retail and service sectors). Thus, the BLS data shows that the net national employment may increase due to shifts in economic activity resulting from energy conservation standards.

DOE estimated indirect national employment impacts for the standard levels considered in this direct final rule using an input/output model of the U.S. economy called Impact of Sector Energy Technologies version 3.1.1 ("ImSET").¹²⁸ ImSET is a special-purpose version of the "U.S. Benchmark National Input-Output" ("I-O") model, which was designed to estimate the national employment and income effects of energy-saving technologies. The ImSET software includes a computer-based I-O model having structural coefficients that characterize economic flows among 187 sectors most relevant to industrial, commercial, and residential building energy use.

DOE notes that ImSET is not a general equilibrium forecasting model, and understands the uncertainties involved in projecting employment impacts, especially changes in the later years of the analysis. Because ImSET does not incorporate price changes, the employment effects predicted by ImSET may over-estimate actual job impacts over the long run for this rule. Therefore, DOE generated results for near-term timeframes, where these uncertainties are reduced. For more details on the employment impact analysis, see chapter 16 of the direct final rule TSDs.

¹²⁷ See Bureau of Economic Analysis, *Regional Multipliers: A User Handbook for the Regional Input-Output Modeling System (RIMS II)*, U.S. Department of Commerce (1992).

¹²⁸ J. M. Roop, M. J. Scott, and R. W. Schultz, *ImSET 3.1: Impact of Sector Energy Technologies*, PNNL-18412, Pacific Northwest National Laboratory (2009) (Available at: www.pnl.gov/main/publications/external/technical_reports/PNNL-18412.pdf).

¹²⁴ <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposalRIAFinal0602.pdf>. See Tables 4–7, 4–8, and 4–9 in the report.

¹²⁵ For the monetized NO_x benefits associated with PM_{2.5}, the related benefits (derived from benefit-per-ton values) are based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009), which is the lower of the two EPA central tendencies. Using the lower value is more conservative when making the policy decision concerning whether a particular standard level is economically justified so using the higher value would also be justified. If the benefit-per-ton estimates were based on the Six Cities study (Lepule et al., 2012), the values would be nearly two-and-a-half times larger. (See chapter 14 of the direct final rule TSD for further description of the studies mentioned above.)

¹²⁶ Data on industry employment, hours, labor compensation, value of production, and the implicit price deflator for output for these industries are available upon request by calling the Division of Industry Productivity Studies (202–691–5618) or by sending a request by email to dipsweb@bls.gov.

V. Analytical Results and Conclusions

The following section addresses the results from DOE's analyses with respect to the considered energy conservation standards for CUACs/ CUHPs and CWAFFs. It addresses the TSLs examined by DOE, the projected impacts of each of these levels if adopted as energy conservation

standards for CUACs/ CUHPs and CWAFFs, and the standard levels that DOE is adopting in the direct final rule. Additional details regarding DOE's analyses are contained in the direct final rule TSDs supporting this document.

A. Trial Standard Levels

DOE analyzed the benefits and burdens of eight TSLs for CUACs and

CUHPs that consisted of combinations of efficiency levels for each equipment class. Table V-1 presents the TSLs and the corresponding efficiency levels for CUACs and CUHPs. TSL 5 represents the maximum technologically feasible ("max-tech") efficiency. The Recommended TSL corresponds to the standard levels recommended by the Working Group.

TABLE V-1—TRIAL STANDARD LEVELS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT

TSL	Commercial packaged air conditioners *			Commercial packaged heat pumps *		
	Small	Large	Very large	Small	Large	Very large
Efficiency Level **						
1	1	1	1	1	1	1
2	2	2	2	2	2	2
2.5	2.5	2.5	2.5	2.5	2.5	2.5
Recommended	3	3	2.5	3	3	2.5
3	3	3	3	3	3	3
3.5	3.5	3.5	3	3.5	3.5	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5

* Small = $\geq 65,000$ Btu/h and $< 135,000$ Btu/h Cooling Capacity; Large = $\geq 135,000$ Btu/h and $< 240,000$ Btu/h Cooling Capacity; Very Large = $\geq 240,000$ Btu/h and $< 760,000$ Btu/h Cooling Capacity.

** For the IEERs that correspond to the efficiency levels, see Table IV-6.

DOE also analyzed the benefits and burdens of five TSLs for CWAFFs, which were developed by combining specific efficiency levels for each of the equipment classes analyzed. Table V-2

presents the TSLs and the corresponding efficiency levels for CWAFFs. The results for all efficiency levels that DOE analyzed are in the direct final rule TSD. TSL 5 represents

the max-tech efficiency levels, which rely on condensing technology. TSL 2 corresponds to the standard levels recommended by the Working Group.

TABLE V-2—TRIAL STANDARD LEVELS FOR COMMERCIAL WARM AIR FURNACES

Equipment class	Thermal efficiency (TE)				
	TSL 1 (%)	TSL 2 (%)	TSL 3 (%)	TSL 4 (%)	TSL 5 (%)
Gas-fired Furnaces	81	81	82	82	92
Oil-fired Furnaces	81	82	81	82	92

B. Economic Justification and Energy Savings

1. Economic Impacts on Individual Commercial Consumers

DOE analyzed the economic impacts on CUAC and CWAFF consumers by looking at the effects potential amended standards at each TSL would have on the LCC and PBP. DOE also examined the impacts of potential standards on commercial consumer subgroups. These analyses are discussed below.

a. Life-Cycle Cost and Payback Period

In general, higher-efficiency products affect consumers in two ways: (1) Purchase prices increase, and (2) annual operating costs decrease. Inputs used for calculating the LCC and PBP include total installed costs (*i.e.*, product price

plus installation costs), and operating costs (*i.e.*, annual energy use, energy prices, energy price trends, repair costs, and maintenance costs). The LCC calculation also uses product lifetime and a discount rate. Chapter 8 of the direct final rule TSD provides detailed information on the LCC and PBP analyses.

Small, Large, and Very Large Air-Cooled Commercial Package Air Conditioning and Heating Equipment

Table V-3 through Table V-12 show the key LCC and PBP results for the TSL efficiency levels considered for each CUAC equipment class. DOE did not conduct LCC and PBP analyses for the CUHP equipment classes because energy modeling was performed only for CUAC equipment. However, the LCC

and PBP results for CUACs are a close proxy for the likely consumer impacts for CUHPs because: (1) Over 98 percent of the energy savings for CUHP comes from the cooling side; (2) the per-unit savings for CUAC equipment and the cooling side of CUHP equipment are about the same; and (3) the cost of increasing efficiency for CUHPs is approximately the same as for CUACs.

In the first of each pair of tables, the simple payback is measured relative to the baseline product. In the second table, the impacts are measured relative to the efficiency distribution in the no-new-standards case in the compliance year (see section IV.F.8 of this document). The average savings reflect the fact that some consumers purchase products with higher efficiency in the no-new-standards case, and the savings

refer only to the other consumers who are affected by a standard at a given TSL. Consumers for whom the LCC increases at a given TSL experience a net cost.

TABLE V.3—AVERAGE LCC AND PBP RESULTS BY EFFICIENCY LEVEL FOR SMALL AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONERS (≥65,000 BTU/H AND <135,000 BTU/H COOLING CAPACITY) *

TSL	EL	Average costs (2014\$)				Simple payback (years)	Average lifetime (years)
		Installed cost	First year operating cost	Lifetime operating cost	LCC		
1 **	1	10,024	2,142	31,342	41,366	14.9	20.9
2	2	10,865	1,992	29,354	40,219	8.5	20.9
2.5	2.5	11,263	1,748	25,983	37,246	4.9	20.9
Recommended †	3	11,564	1,691	25,216	36,780	4.9	20.9
3	3	11,564	1,691	25,216	36,780	4.9	20.9
3.5	3.5	12,002	1,706	25,499	37,501	5.9	20.9
4	4	13,384	1,626	24,599	37,984	7.5	20.9
5	5	14,848	1,342	20,845	35,692	6.7	20.9

*The analysis is for equipment purchased in 2019 for all TSLs. The results for each TSL are calculated assuming that all commercial consumers use equipment at that efficiency level. The PBP is measured relative to the baseline equipment.

**TSL 1 also corresponds to the recommended standards for compliance in 2018.

† For compliance in 2023.

TABLE V.4—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR SMALL AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONERS (≥65,000 BTU/H AND <135,000 BTU/H COOLING CAPACITY) *

TSL	EL	Average LCC savings (2014\$)	Percent of consumers that experience net cost (%)
1 **	1	−210	48
2	2	870	25
2.5	2.5	3,777	5
Recommended †	3	4,233	5
3	3	4,233	5
3.5	3.5	3,517	13
4	4	3,035	25
5	5	5,326	16

*The analysis is for equipment purchased in 2019 for all TSLs. The savings represent the average LCC for affected consumers.

**TSL 1 also corresponds to the recommended standards for compliance in 2018.

† For compliance in 2023.

TABLE V.5—AVERAGE LCC AND PBP RESULTS BY EFFICIENCY LEVEL FOR LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONERS (≥135,000 BTU/H AND <240,000 BTU/H COOLING CAPACITY) *

TSL	EL	Average costs (2014\$)				Simple payback (years)	Average lifetime (years)
		Installed cost	First year operating cost	Lifetime operating cost	LCC		
1 **	1	17,011	3,932	60,455	77,466	1.3	22.6
2	2	17,892	3,864	59,597	77,488	2.4	22.6
2.5	2.5	18,667	3,528	54,655	73,322	2.4	22.6
Recommended †	3	19,410	3,320	51,633	71,044	2.6	22.6
3	3	19,410	3,320	51,633	71,044	2.6	22.6
3.5	3.5	19,809	3,144	49,047	68,856	2.6	22.6
4	4	20,707	2,768	43,581	64,288	2.5	22.6
5	5	24,741	2,700	43,449	68,190	4.6	22.6

*The analysis is for equipment purchased in 2019 for all TSLs. The results for each TSL are calculated assuming that all commercial consumers use equipment at that efficiency level. The PBP is measured relative to the baseline equipment.

**TSL 1 also corresponds to the recommended standards for compliance in 2018.

† For compliance in 2023.

TABLE V.6—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONERS ($\geq 135,000$ BTU/H AND $< 240,000$ BTU/H COOLING CAPACITY) *

TSL	EL	Average LCC savings (2014\$)	Percent of consumers that experience net cost (%)
1 **	1	3,997	0
2	2	3,728	10
2.5	2.5	7,991	5
Recommended †	3	10,135	2
3	3	10,135	2
3.5	3.5	12,266	1
4	4	16,803	1
5	5	12,900	11

* The analysis is for equipment purchased in 2019 for all TSLs. The savings represent the average LCC for affected consumers.

** TSL 1 also corresponds to the recommended standards for compliance in 2018.

† For compliance in 2023.

TABLE V.7—AVERAGE LCC AND PBP RESULTS BY EFFICIENCY LEVEL FOR VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONERS ($\geq 240,000$ BTU/H AND $< 760,000$ BTU/H COOLING CAPACITY) *

TSL	EL	Average costs (2014\$)				Simple payback (years)	Average lifetime (years)
		Installed cost	First year operating cost	Lifetime operating cost	LCC		
1 **	1	34,582	6,661	130,022	164,605	5.8	33.9
2	2	38,075	6,262	122,919	160,993	7.0	33.9
2.5	2.5	39,107	5,974	117,513	156,620	6.2	33.9
Recommended †	2.5	39,107	5,974	117,513	156,620	6.2	33.9
3	3	41,510	5,809	114,885	156,396	7.2	33.9
3.5	3	41,510	5,809	114,885	156,396	7.2	33.9
4	4	42,406	5,256	104,351	146,758	5.6	33.9
5	5	44,556	5,131	102,237	146,793	6.3	33.9

The analysis is for equipment purchased in 2019 for all TSLs. The results for each TSL are calculated assuming that all commercial consumers use equipment at that efficiency level. The PBP is measured relative to the baseline equipment.

** TSL 1 also corresponds to the recommended standards for compliance in 2018.

† For compliance in 2023.

TABLE V.8—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONERS ($\geq 240,000$ BTU/H AND $< 760,000$ BTU/H COOLING CAPACITY) *

TSL	EL	Average LCC savings (2014\$)	Percent of consumers that experience net cost (%)
1 **	1	1,547	7
2	2	4,777	13
2.5	2.5	8,610	7
Recommended †	2.5	8,610	7
3	3	8,881	23
3.5	3	8,881	23
4	4	18,386	3
5	5	18,338	6

* The analysis is for equipment purchased in 2019 for all TSLs. The savings represent the average LCC for affected consumers.

TSL 1 also corresponds to the recommended standards for compliance in 2018.

† For compliance in 2023.

Commercial Warm Air Furnaces

Table V-9 through Table V-12 show the key LCC and PBP results for the TSL efficiency levels considered for each

CWAF equipment class. In Table V-9, the simple payback is measured relative to the baseline product. In Table V-10, the LCC savings are measured relative to

the efficiency distribution in the no-new-standards case in the compliance year (see section IV.F.8 of this document).

TABLE V-9—AVERAGE LCC AND PBP RESULTS BY EFFICIENCY LEVEL FOR GAS-FIRED COMMERCIAL WARM AIR FURNACES

TSL	EL	Average costs (2014\$)				Simple pay-back (years)	Average life-time (years)
		Installed cost	First year's operating cost	Lifetime operating cost	LCC		
1	1	2,114	1,770	28,610	30,725	1.4	23
2	1	2,114	1,770	28,610	30,725	1.4	23
3	2	2,543	1,752	28,311	30,854	12.3	23
4	2	2,543	1,752	28,311	30,854	12.3	23
5	3	3,840	1,634	26,319	30,159	11.3	23

Note: The analysis is for equipment purchased in 2019 for all TSLs. The results for each TSL are calculated assuming that all commercial consumers use equipment at that efficiency level. The PBP is measured relative to the baseline equipment.

TABLE V-10—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR GAS-FIRED COMMERCIAL WARM AIR FURNACES

TSL	EL	Average LCC savings* (2014\$)	Percent of consumers that experience net cost
1	1	284	6
2	1	284	6
3	2	75	58
4	2	75	58
5	3	766	58

Note: The analysis is for equipment purchased in 2019 for all TSLs.

* The savings represent the average LCC for affected consumers.

TABLE V-11—AVERAGE LCC AND PBP RESULTS BY EFFICIENCY LEVEL FOR OIL-FIRED COMMERCIAL WARM AIR FURNACES

TSL	EL	Average costs (2014\$)				Simple pay-back (years)	Average life-time (years)
		Installed cost	First year's operating cost	Lifetime operating cost	LCC		
1	0	6,357	3,031	49,243	55,601	NA	23
2	1	6,410	3,004	48,782	55,192	1.9	23
3	0	6,357	3,031	49,243	55,601	NA	23
4	1	6,410	3,004	48,782	55,192	1.9	23
5	2	7,861	2,829	45,673	53,534	7.5	23

Note: The analysis is for equipment purchased in 2019 for all TSLs. The results for each TSL are calculated assuming that all commercial consumers use equipment at that efficiency level. The PBP is measured relative to the baseline equipment.

TABLE V-12—AVERAGE LCC SAVINGS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR OIL-FIRED COMMERCIAL WARM AIR FURNACES

TSL	EL	Average LCC savings* (2014\$)	Percent of consumers that experience net cost
1	0	NA	0
2	1	400	11
3	0	NA	0
4	1	400	11
5	2	1,817	54

Note: The analysis is for equipment purchased in 2019 for all TSLs.

* The savings represent the average LCC for affected consumers.

b. Consumer Subgroup Analysis

In the consumer subgroup analysis, DOE estimated the impact of the considered TSLs on small businesses. Table V-13 and Table V-14 compare the average LCC savings and PBP at each

efficiency level for the commercial consumer subgroup, along with the average LCC savings for the entire sample, for small and large CUACs, while Table V-15 shows similar results for gas-fired CWFAs. DOE did not conduct a consumer subgroup analysis

for very large CUACs or for oil-fired CWFAs because the sample sizes available to DOE were very small.

In most cases, the average LCC savings and PBP for small businesses at the considered efficiency levels are not substantially different from the average

for all commercial consumers. However, for TSLs 3 and 4 for CWAFs, the average LCC savings for small businesses are

slightly negative while the average LCC savings for all commercial consumers is slightly positive. Chapter 11 of the

direct final rule TSDs presents the complete LCC and PBP results for the subgroups.

TABLE V-13—COMPARISON OF LCC SAVINGS AND PBP FOR SMALL BUSINESS CONSUMERS AND ALL CONSUMERS: SMALL AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING EQUIPMENT

TSL	Average life-cycle cost savings (2014\$)		Payback period (years)	
	Small businesses	All buildings	Small businesses	All buildings
1 *	-262	-210	15.4	14.9
2	522	870	8.6	8.5
2.5	2,675	3,777	5.3	4.9
Recommended **	3,003	4,233	5.3	4.9
3	3,003	4,233	5.3	4.9
3.5	2,325	3,517	6.4	5.9
4	1,756	3,035	7.7	7.5
5	3,386	5,326	7.0	6.7

*TSL 1 also corresponds to the recommended standards for compliance in 2018.

** For compliance in 2023.

TABLE V-14—COMPARISON OF LCC SAVINGS AND PBP FOR SMALL BUSINESS CONSUMERS AND ALL CONSUMERS: LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING EQUIPMENT

TSL	Average life-cycle cost savings (2014\$)		Payback period (years)	
	Small businesses	All buildings	Small businesses	All buildings
1 *	3,298	3,997	1.4	1.3
2	3,008	3,728	2.7	2.4
2.5	6,082	7,991	2.7	2.4
Recommended **	7,759	10,135	2.9	2.6
3	7,759	10,135	2.9	2.6
3.5	9,449	12,266	2.8	2.6
4	12,919	16,803	2.7	2.5
5	8,990	12,900	5.0	4.6

*TSL 1 also corresponds to the recommended standards for compliance in 2018.

** For compliance in 2023.

TABLE V-15—COMPARISON OF LCC SAVINGS AND PBP FOR SMALL BUSINESS CONSUMERS AND ALL CONSUMERS: GAS-FIRED COMMERCIAL WARM AIR FURNACES

TSL	Average life-cycle cost savings (2014\$)		Payback period (years)	
	Small businesses	All buildings	Small businesses	All buildings
1	223	284	1.6	1.4
2	223	284	1.6	1.4
3	-28	75	13.8	12.3
4	-28	75	13.8	12.3
5	377	766	12.1	11.3

c. Rebuttable Presumption Payback

As discussed in section III.F.2, EPCA establishes a rebuttable presumption that an energy conservation standard is economically justified if the increased purchase cost for equipment that meets the standard is less than three times the value of the first-year energy savings resulting from the standard. Section

IV.F describes the approach used to calculate the PBP for the rebuttable presumption. Table V-16 and Table V-17 shows the rebuttable presumption PBPs for the considered TSLs for CUACs/CUHPs and CWAFs, respectively. While DOE examined the rebuttable-presumption criterion, it also considered whether the standard levels considered for this rule are

economically justified through a more detailed analysis of the economic impacts of those levels, pursuant to 42 U.S.C. 6313(a)(6)(B)(ii). The results of that analysis serve as the basis for DOE to definitively evaluate the economic justification of a potential standard level, thereby supporting or rebutting the results of any preliminary determination of economic justification.

TABLE V-16—REBUTTABLE-PRESUMPTION PAYBACK PERIOD (YEARS) FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT

Trial Standard Level	Small air-cooled commercial package air conditioning equipment	Large air-cooled commercial package air conditioning equipment	Very large air-cooled commercial package air conditioning equipment
1 *	30.0	1.5	10.1
2	10.0	3.2	12.7
2.5	5.4	3.5	9.3
Recommended **	5.4	3.4	9.3
3	5.4	3.4	11.9
3.5	6.6	3.2	11.9
4	8.9	3.0	6.5
5	7.3	5.6	7.6

* TSL 1 also corresponds to the recommended standards for compliance in 2018.

** For compliance in 2023.

TABLE V-17—REBUTTABLE-PRESUMPTION PAYBACK PERIOD (YEARS) FOR COMMERCIAL WARM AIR FURNACE

Trial Standard Level	Gas-fired CWAFFs	Oil-fired CWAFFs
1	1.0	1.3
2	1.0	1.3
3	8.1	1.3
4	8.1	1.3
5	5.9	3.8

2. Economic Impacts on Manufacturers

As noted above, DOE performed an MIA to estimate the impact of new energy conservation standards on CUAC/CUHP and CWAFF manufacturers. The following section describes the expected impacts on manufacturers at each considered TSL. Chapter 12 of the CUACs/CUHPs direct final rule TSD and chapter 12 of the CWAFFs direct final rule TSD explains the analysis in further detail.

a. Industry Cash-Flow Analysis Results

Table V-18 through Table V-21 depict the financial impacts (represented by changes in INPV) of new energy standards on CUAC/CUHP and CWAFF manufacturers, as well as the conversion costs that DOE expects manufacturers would incur for all product classes at each TSL. To evaluate the range of cash flow impacts on the

CUAC/CUHP and CWAFF industries, DOE modeled two different markup scenarios using different assumptions that correspond to the range of anticipated market responses to potential new energy conservation standards: (1) The preservation of gross margin percentage; and (2) the preservation of per-unit operating profit. Each of these scenarios is discussed immediately below.

To assess the lower (less severe) end of the range of potential impacts, DOE modeled a preservation of gross margin percentage markup scenario, in which a uniform “gross margin percentage” markup is applied across all potential efficiency levels. In this scenario, DOE assumed that a manufacturer’s absolute dollar markup would increase as production costs increase in the standards case.

To assess the higher (more severe) end of the range of potential impacts, DOE modeled the preservation of per-unit operating profit markup scenario, which assumes that manufacturers would be able to earn the same operating margin in absolute dollars per-unit in the standards case as in the no-new-standards case. In this scenario, while manufacturers make the necessary investments required to convert their facilities to produce new standards-compliant products, operating profit does not change in absolute dollars per

unit and decreases as a percentage of revenue.

The results below show potential INPV impacts for CUAC/CUHP and CWAFF manufacturers; Table V-18 and Table V-20 reflect the lower bound of impacts, and Table V-19 and Table V-21 represents the upper bound, respectively.

Each of the modeled scenarios results in a unique set of cash flows and corresponding industry values at each TSL. In the following discussion, the INPV results refer to the difference in industry value between the no-new-standards case and each standards case that results from the sum of discounted cash flows from the base year 2015 through 2048, the end of the analysis period for CUACs/CUHPs and CWAFFs. To provide perspective on the short-run cash flow impact, DOE includes in the discussion of the results below a comparison of free cash flow between the no-new-standards case and the standards case at each TSL in the year before new standards would take effect. This figure provides an understanding of the magnitude of the required conversion costs relative to the cash flow generated by the industry in the no-new-standards case.

Commercial Unitary Air Conditioners and Heat Pumps

TABLE V-18—MANUFACTURER IMPACT ANALYSIS FOR CUACs/CUHPs—PRESERVATION OF GROSS MARGIN PERCENTAGE MARKUP SCENARIO

	Units	No new standards case	Trial Standard Level							
			1	2	2.5	Recommended	3	3.5	4	5
INPV	2014\$M	1,645	1,706	1,759	1,721	1,606.1	1,697	1,670	1,660	1,738
Change in INPV	2014\$M		61	114	77	(38.5)	53	26	16	91
	%		3.7	6.9	4.7	(2.3)	3.2	1.6	1.0	5.7
Product Conversion Costs	2014\$M		64.8	112.1	173.1	294.0	234.0	296.6	342.0	390.0
Capital Conversion Costs	2014\$M		42.7	74.7	129.4	226.8	184.1	192.6	196.8	201.0
Total Conversion Costs	2014\$M		107.5	186.8	302.5	520.8	418.1	489.2	538.8	591.0
Free Cash Flow (2019)	2014\$M	81.8	41.5	11.7	(32.8)	(76.5)	(77.2)	(105.3)	(127.2)	(150.3)
Change in Free Cash Flow	%		49.3	85.7	140.1	188.8	194.4	228.8	255.5	283.8

* Values in parentheses are negative values. All values have been rounded to the nearest tenth.

M = millions.

TABLE V-19—MANUFACTURER IMPACT ANALYSIS FOR CUACs/CUHPs—PRESERVATION OF OPERATING PROFIT MARKUP SCENARIO

	Units	No new standards case	Trial Standard Level							
			1	2	2.5	Recommended	3	3.5	4	5
INPV	2014\$M	1,645	1,538	1,422	1,301	1,204.1	1,197	1,138	1,025	763
Change in INPV	2014\$M	.....	(107)	(223)	(344)	(440.4)	(447)	(506)	(620)	(882)
	%	.....	(6.5)	(13.5)	(20.9)	(26.5)	(27.2)	(30.8)	(37.7)	(53.6)
Product Conversion Costs	2014\$M	.....	64.8	112.1	173.1	294.0	234.0	296.6	342.0	390.0
Capital Conversion Costs	2014\$M	.....	42.7	74.7	129.4	226.8	184.1	192.6	196.8	201.0
Total Conversion Costs	2014\$M	.....	107.5	186.8	302.5	520.8	418.1	489.2	538.8	591.0
Free Cash Flow (2019)	2014\$M	81.8	41.5	11.7	(32.8)	(76.5)	(77.2)	(105.3)	(127.2)	(150.3)
Change in Free Cash Flow .....	%	.....	49.3	85.7	140.1	188.8	194.4	228.8	255.5	283.8

* Values in parentheses are negative values. All values have been rounded to the nearest tenth.

M = millions.

TSL 1 represents the most common efficiency levels in the current market for all product classes. At TSL 1, DOE estimates impacts on INPV for CUAC/ CUHP manufacturers to range from –\$107.0 million to \$60.9 million, or a change in INPV of –6.5 percent to 3.7 percent. At this potential standard level, industry free cash flow is estimated to decrease by as much as 49.3 percent to \$41.5 million, compared to the no-new-standards case value of \$81.8 million in 2018, the year before the modeled compliance year. DOE anticipates that 31.5 percent of industry platforms would require redesign at a total industry conversion cost of \$107.5 million at TSL 1.

TSL 2 represents EL 2 for all product classes. At TSL 2, DOE estimates impacts on INPV for CUAC/ CUHP manufacturers to range from –\$222.7 million to \$114.0 million, or a change in INPV of –13.5 percent to 6.9 percent. At this potential standard level, industry free cash flow is estimated to decrease by as much as 85.7 percent to \$11.7 million, compared to the no-new-standards case value of \$81.8 million in 2018. DOE anticipates that 59.2 percent of industry platforms would require redesign at a total industry conversion cost of \$186.8 million at TSL 2.

TSL 2.5 represents EL 2.5 for all product classes. At TSL 2.5, DOE estimates impacts on INPV for CUAC/ CUHP manufacturers to range from –\$344.0 million to \$76.6 million, or a change in INPV of –20.9 percent to 4.7 percent. At this potential standard level, industry free cash flow is estimated to decrease by as much as 140.1 percent to –\$32.8 million, compared to the no-new-standards case value of \$81.8 million in 2018. DOE anticipates that 73.8 percent of industry platforms would require redesign at a total industry conversion cost of \$302.5 million at TSL 2.5.

The recommended TSL represents adopting EL 1 for small, large and very

large CUAC/ CUHP equipment in 2018; and adopting EL 3 for small and large CUAC/ CUHP equipment and EL 2.5 for very large CUAC/ CUHP equipment in 2023. At the recommended TSL, DOE estimates impacts on INPV for CUAC/ CUHP manufacturers to range from –\$440.4 million to –\$38.5 million, or a change in INPV of –26.8 percent to –2.3 percent. At this potential standard level, industry free cash flow is estimated to decrease by as much as 193.5 percent to –\$76.5 million by 2022, compared to the no-new-standards case value of \$81.8 million in 2018; and decrease by as much as 188.8 percent to –\$76.5 million compared to the no-new-standards case value of \$86.2 million in 2022. DOE anticipates that 79.6 percent of industry platforms would require redesign at a total industry conversion cost of \$520.8 million at the recommended TSL.

TSL 3 represents EL 3 for all product classes. At TSL 3, DOE estimates impacts on INPV for CUAC/ CUHP manufacturers to range from –\$447.2 million to \$52.4 million, or a change in INPV of –27.2 percent to 3.2 percent. At this potential standard level, industry free cash flow is estimated to decrease by as much as 194.4 percent to –\$77.2 million, compared to the no-new-standards case value of \$81.8 million in the year before the compliance date (2019). DOE anticipates that 81.6 percent of industry platforms would require redesign at a total industry conversion cost of \$418.1 million at TSL 3.

TSL 3.5 represents EL 3.5 for all product classes. At TSL 3, DOE estimates impacts on INPV for CUAC/ CUHP manufacturers to range from –\$506.4 million to \$25.7 million, or a change in INPV of –30.8 percent to 1.6 percent. At this potential standard level, industry free cash flow is estimated to decrease by as much as 228.8 percent to –\$105.3 million, compared to the no-new-standards case value of \$81.8

million in 2018. DOE anticipates that 93.5 percent of industry platforms would require redesign at a total industry conversion cost of \$489.2 million at TSL 3.5.

TSL 4 represents EL 4 for all product classes. At TSL 4, DOE estimates impacts on INPV for CUAC/ CUHP manufacturers to range from –\$619.6 million to \$16.3 million, or a change in INPV of –37.7 percent to 1.0 percent. At this potential standard level, industry free cash flow is estimated to decrease by as much as 255.5 percent to –\$127.2 million, compared to the no-new-standards case value of \$81.8 million in 2018. DOE anticipates 96.0 percent of industry platforms would require redesign at a total industry conversion cost of \$538.8 million at TSL 4.

TSL 5 represents max-tech across all equipment classes. At TSL 5, DOE estimates impacts on INPV CUAC/ CUHP manufacturers to range from –\$881.9 million to \$93.1 million, or a change in INPV of –53.6 percent to 5.7 percent. At this potential standard level, industry free cash flow is estimated to decrease by as much as 283.8 percent to –\$150.3 million, compared to the no-new-standards case value of \$81.8 million in 2018. DOE anticipates that 98.7 percent of industry platforms would require redesign at a total industry conversion cost of \$591.0 million at TSL 5.

Commercial Warm Air Furnaces

Table V-20 and Table V-21 depict the estimated financial impacts (represented by changes in INPV) of amended energy standards on CWFAs, as well as conversion costs that DOE expects manufacturers would incur for all equipment classes at each TSL. To evaluate the range of cash flow impacts on the CWFAs industry associated with potential amended energy conservation standards, DOE modeled two different markup scenarios and two different

conversion cost scenarios, as described in section IV.J.2.b (Government Regulatory Impact Model Scenarios). The combination of markup scenarios and conversion cost scenarios created four sets of results: (1) Preservation of Gross Margin Percentage and Low Conversion Cost scenario; (2) Preservation of Gross Margin Percentage and High Conversion Cost scenario; (3) Preservation of Operating Profit and Low Conversion Costs scenario; (4) Preservation of Operating Profit and High Conversion Costs scenario. Each of the modeled scenarios results in a unique set of cash flows and corresponding industry values at each

TSL. DOE presents the highest and lowest INPV results from the combined scenarios to portray the range of potential impacts on industry. The low end of the range of impacts in the Preservation of Gross Margin Percentage and Low Conversion Costs scenario. The high end of the range of impacts is the Preservation of Operating Profit and High Conversion Costs scenario.

In the following discussion, the INPV results refer to the difference in industry value between the no-new-standards case and each standards case that results from the sum of discounted cash flows from the base year 2015 through 2048, the end of the analysis period. To

provide perspective on the short-run cash flow impact, DOE includes in the discussion of the results below a comparison of free cash flow between the no-new-standards case and the standards case at each TSL in the year before the standard takes effect. This figure provides an understanding of the magnitude of the required conversion costs relative to the cash flow generated by the industry in the no-new-standards case. The set of results below shows potential INPV impacts for CWAFF manufacturers; Table V–20 represents the lower bound of impacts, and Table V–21 represents the upper bound.

TABLE V–20—MANUFACTURER IMPACT ANALYSIS FOR CWAFFS—PRESERVATION OF GROSS MARGIN PERCENTAGE/LOW CONVERSION COST SCENARIO *

	Units	No new standards case	Trial Standard Level				
			1	2	3	4	5
INPV	2014\$M	96.3	92.6	90.5	125.2	124.8	143.5
Change in INPV	2014\$M		(3.8)	(5.9)	28.8	28.4	47.2
	%		(3.9)	(6.1)	29.9	29.5	49.0
Product Conversion Costs	2014\$M		6.3	6.6	12.6	12.9	18.3
Capital Conversion Costs	2014\$M		0.6	0.9	1.2	1.5	64.0
Total Conversion Costs	2014\$M		6.9	7.5	13.8	14.4	82.3
Free Cash Flow (2018)	2014\$M	7.8	5.5	3.8	3.2	3.0	(26.9)
Free Cash Flow (change from No-new-standards case) (2018)	%		29.7	51.2	59.3	62.1	444.5

* Values in parentheses are negative values. All values have been rounded to the nearest tenth.
M = millions.

TABLE V–21—MANUFACTURER IMPACT ANALYSIS FOR CWAFFS—PRESERVATION OF OPERATING PROFIT/HIGH CONVERSION COST SCENARIO *

	Units	No new standards case	Trial Standard Level				
			1	2	3	4	5
INPV	2014\$M	96.3	86.5	83.5	106.2	101.2	85.5
Change in INPV	2014\$M		(10.6)	(13.4)	10.3	5.0	(11.3)
	%		(11.0)	(13.9)	(32.0)	(37.3)	(120.1)
Product Conversion Costs	2014\$M		11.3	17.1	36.6	42.4	83.6
Capital Conversion Costs	2014\$M		4.4	5.1	4.5	5.2	73.8
Total Conversion Costs	2014\$M		15.7	22.2	41.0	47.6	157.4
Free Cash Flow (2018)	2014\$M	7.8	2.2	(1.5)	(7.5)	(10.4)	(59.5)
Free Cash Flow (change from No-new-standards case) (2018)	%		72.3	119.3	196.5	233.4	861.3

* Values in parentheses are negative values. All values have been rounded to the nearest tenth.
M = millions.

In its analysis, DOE ran four scenarios based on combinations from two markup scenarios and two conversion cost scenarios. The results presented below represent the upper-bound and lower-bound of results from those scenarios only. Chapter 12 of the CWAFF direct final rule TSD presents results for each markup and conversion cost scenario in further detail.

TSL 1 represents EL 1 (81 percent) for gas-fired CWAFFs and baseline (81 percent) for oil-fired CWAFFs. At this level, DOE estimates 55 percent of the

industry platforms would require redesign at a total industry conversion cost of \$6.9 million to \$15.7 million. DOE estimates impacts on INPV for CWAFF manufacturers to range from a change in INPV of –11.0 percent to –3.9 percent, or –\$10.6 million to –\$3.8 million. At this potential standard level, industry free cash flow is estimated to decrease by as much as 72.3 percent to \$2.2 million, compared to the no-new-standards case value of \$7.3 million in 2018, the year before the 2019 compliance year.

The recommended TSL represents an EL (81 percent for gas-fired and 82 percent for oil-fired) applicable across all equipment classes. At this level, DOE estimates 57.0 percent of the industry platforms would require redesign at total industry conversion cost of \$7.5 to \$22.2 million. DOE estimates impacts on INPV for CWAFF manufacturers to range from a change in INPV of –13.9 percent to –6.1 percent, or a change of –\$13.4 million to –\$5.9 million. At this potential standard level, industry free cash flow is estimated to decrease

by much as 119.3 percent to $-\$1.5$ million, compared to the no-new-standards case value of $\$7.3$ million in 2022, the year before the 2023 compliance year. Much of this drop in free cash flow is due to conversion cost expenses manufacturers must make before the compliance year. However, industry noted that the alignment of the compliance dates for the CUAC/CUHP and CWF standards would allow for coordination of redesign and testing expenses. If this occurs, there would be a reduction in the total conversion costs associated with this direct final rule. These synergies resulting from the alignment of the compliance dates for these standards would result in INPV impacts and free cash flow impacts that are less severe than forecasted by the GRIM model.

TSL 3 represents EL 2 (82 percent) for gas-fired equipment and baseline (81 percent) for oil-fired equipment. At this level, DOE estimates 91 percent of the industry platforms would require redesign at a total industry conversion cost of $\$13.8$ million to $\$41.0$ million. DOE estimates impacts on INPV for CWF manufacturers to range from a change in INPV of -32.0 percent to 29.9 percent, or $-\$30.9$ million to $\$28.8$ million. At this potential standard level, industry free cash flow is estimated to decrease by as much as 196.5 percent to $-\$7.5$ million, compared to the no-new-standards case value of $\$7.3$ million in 2018.

TSL 4 represents EL 2 (82 percent) for gas-fired equipment and EL 1 (82 percent) for oil-fired equipment. At this level, DOE estimates 94 percent of the industry platforms would require redesign at a total industry conversion cost of $\$14.4$ million to $\$47.6$ million. DOE estimates impacts on INPV for CWF manufacturers to range from a change in INPV of -37.3 percent to 29.5 percent, or $-\$35.9$ million to $\$28.4$ million. At this potential standard level, industry free cash flow is estimated to decrease by as much as 233.4 percent to $-\$10.4$ million, compared to the no-new-standards case value of $\$7.3$ million in 2018.

TSL 5 represents max-tech across all equipment classes (*i.e.*, EL 3 (92 percent) for gas-fired equipment and EL 2 (92 percent) for oil-fired equipment). At this level, DOE estimates 99 percent of the industry platforms would require redesign at a total industry conversion cost of $\$82.3$ million to $\$157.4$ million. Conversion costs more than triple from TSL 4 to TSL 5. The vast majority of the

industry does not offer condensing commercial furnaces today and would need to develop condensing technology for commercial applications.

Implementing a condensing commercial furnace would likely have design implications for the cooling side of the HVAC product and for the chassis that houses both the cooling and heating components. DOE estimates impacts on INPV for CWF manufacturers to range from a change in INPV of -120.1 percent to 49.0 percent, or $-\$115.7$ million to $\$47.2$ million. At this potential standard level, industry free cash flow is estimated to decrease by as much as 861.3 percent to $-\$59.5$ million relative to the no-new-standards case value of $\$7.3$ million in 2018.

b. Impacts on Employment

To quantitatively assess the impacts of energy conservation standards on direct employment in the collective CUAC/CUHP and CWF industry, DOE used the GRIM to estimate the domestic labor expenditures and number of employees in the no-new-standards case and at each TSL from 2015 through 2048, the end of the analysis period. DOE used statistical data from the U.S. Census Bureau's 2013 Annual Survey of Manufacturers (ASM),¹ the results of the engineering analysis, and interviews with manufacturers to determine the inputs necessary to calculate industry-wide labor expenditures and domestic employment levels. Labor expenditures related to manufacturing of the product are a function of the labor intensity of the product, the sales volume, and an assumption that wages remain fixed in real terms over time. The total labor expenditures in each year are calculated by multiplying the MPCs by the labor percentage of MPCs.

The total labor expenditures in the GRIM were then converted to domestic production employment levels by dividing production labor expenditures by the annual payment per production worker (production worker hours multiplied by the labor rate found in the U.S. Census Bureau's 2013 ASM). The estimates of production workers in this section cover workers, including line-supervisors who are directly involved in fabricating and assembling a product within the manufacturing facility. Workers performing services that are closely associated with production operations, such as materials handling tasks using forklifts, are also included as production labor. DOE's estimates only account for production workers who

manufacture the specific products covered by this rulemaking.

The employment impacts shown in Table V-22 and Table V-23 represent the potential production employment changes that could result in 2019 for the collective CUAC/CUHP and CWF industry, respectively. The upper end of the results in the table estimates the maximum increase in the number of production workers after the implementation of new energy conservation standards, and it assumes that manufacturers would continue to produce the same scope of covered products within the United States. The total direct employment impacts calculated in the GRIM are the changes in the number of production workers resulting from the amended energy conservation standards. In general, more efficient equipment is larger, more complex, and more labor intensive to build. Per unit labor requirements and production time requirements increase with a higher energy conservation standard. As a result, if shipments remain relatively steady, the model forecasts job growth at the upper bound on impact.

The lower bound assumes that, as the standard increases, manufacturers choose to retire sub-standard product lines rather than invest in manufacturing facility conversions and product redesigns. In this scenario, there is a loss of employment because manufacturers consolidate and operate fewer production lines. Since this is intended to be a worst-case scenario for employment, there is no consideration given to the fact that there may be employment growth in higher-efficiency lines. Additional detail can be found in chapter 12 of the TSDs.

DOE estimates that in the absence of amended energy conservation standards, there would be 2,643 domestic production workers for CUAC/CUHP equipment and 232 domestic production workers for CWF equipment. For the final rule, DOE does not attempt to estimate the portion of production that occurs in other countries. Rather, as noted in section IV.J.3, the direct employment figure captures the maximum number of domestic production workers based on the available data and DOE's methodology. One noted constraint is that the production worker calculation methodology only takes into account the labor required for the most basic product that meets the appliance standard—it does not account for

¹ "Annual Survey of Manufactures (ASM)," U.S. Census Bureau (2013) (Available at: <http://www.census.gov/manufacturing/asm/>).

additional features that manufacturers use to differentiate premium products,

optional features and add-ons, or components in the cabinet that do not

contribute to the cooling and heating functions.

TABLE V-22—POTENTIAL CHANGES IN THE NUMBER OF CUACS/CUHPs INDUSTRY PRODUCTION WORKER EMPLOYMENT IN 2019

	Trial Standard Level *								
	No-new-standards case	1	2	2.5	Recommended TSL	3	3.5	4	5
Total Number of Domestic Production Workers in 2019.	2,643	2,954 to 1,810.	3,341 to 1,078.	3,577 to 692.	3,410 to 1,810.	4,005 to 486.	4,051 to 172.	3,825 to 106.	5,352 to 34.
Potential Changes in Domestic Production Workers in 2019.	.....	311 to (833)	698 to (1,565).	934 to (1,951).	777 to (833)	1,362 to (2,157).	1,408 to (2,471).	1,182 to (2,537).	2,709 to (2,609).

* Numbers in parentheses represent negative values.

TABLE V-23—POTENTIAL CHANGES IN THE NUMBER OF CWAFs INDUSTRY PRODUCTION WORKER EMPLOYMENT IN 2019

	Trial Standard Level *					
	No-new-standards case	1	2	3	4	5
Total Number of Domestic Production Workers in 2019.	232	231 to 104	232 to 100	320 to 21	320 to 14	228 to 2.
Potential Changes in Domestic Production Workers in 2019.	.....	(1) to (128)	0 to (132)	88 to (211)	88 to (218)	(4) to (230).

* Numbers in parentheses represent negative values.

DOE notes that the employment impacts discussed here are independent of the indirect employment impacts to the broader U.S. economy, which are documented in chapter 15 of the CUACs/CUHPs and CWAFs direct final rule TSDs.

c. Impacts on Manufacturing Capacity Commercial Unitary Air Conditioners and Heat Pumps

CUAC/CUHP manufacturers noted during interviews that amended energy conservation standards could lead to higher fabrication labor hours. However, they also noted that industry shipments were down 40 percent from their peak in the 2007–2008 timeframe. Excess capacity in the industry today and any drop in shipments that result from higher prices could offset the additional production times. In the long-term, no manufacturers interviewed expected to have capacity constraints.

Manufacturers did, however, note concerns that engineering and testing capacity during the time period between the final rule's anticipated publication date and the 2019 compliance date initially proposed by DOE. Manufacturers were worried about the level of technical resources required to redesign and test all products at higher TSLs. The engineering analysis released with the NOPR showed that increasingly complex components and control strategies would be required as standards levels increase. Manufacturers noted in interviews that the industry would need to add electrical engineering and control systems, as well as engineering talent beyond current staffing, to meet the redesign requirements of higher TSLs. They also noted that additional training might be needed for manufacturing engineers, laboratory technicians, and service personnel if variable-speed components are broadly adopted. Furthermore, manufacturers indicated that as the

stringency of standards increase, units tend to grow in size, requiring more lab resources and time to test. Some manufacturers were concerned that an amended standard would trigger the need for new test lab facilities, which would require significantly more lead time than what DOE had proposed to provide in its NOPR.

Commercial Warm Air Furnaces

According to the CWAF manufacturers interviewed, amended energy conservation standards could lead to decreased production capacity. Most manufacturers indicated there would be little to no production capacity decrease at 81 percent and 82 percent efficiency levels, but at 91 percent and 92 percent, there would be significant capacity shortfalls. This feedback is consistent with the engineering analysis, which found there would be sufficient capacity at current levels to meet slightly higher efficiency standards, but that significant

investment would be required to support production of higher efficiency, condensing furnace standards. For additional information on the engineering analysis, see chapter 5 of the CWF direct final rule TSD.

d. Impacts on Subgroups of Manufacturers

Small manufacturers, niche equipment manufacturers, and manufacturers exhibiting a cost structure substantially different from the industry average could be affected disproportionately. As discussed in section IV.J, using average cost assumptions developed for an industry cash-flow estimate is inadequate to assess differential impacts among manufacturer subgroups.

For the collective CUAC/CUHP and CWF industry, DOE identified and evaluated the impact of new energy conservation standards on one subgroup—small manufacturers. The SBA defines a “small business” as having 750 employees or less for NAICS 333415, “Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing.” Based on this definition, DOE identified three CUAC/CUHP manufacturers and two CWF manufacturers that qualify as small businesses. For a discussion of the impacts on the small manufacturer subgroup, see the regulatory flexibility

analysis in section VI.B of this document.

e. Cumulative Regulatory Burden

While any one regulation may not impose a significant burden on manufacturers, the combined effects of recent or impending regulations may have serious consequences for some manufacturers, groups of manufacturers, or an entire industry. Assessing the impact of a single regulation may overlook this cumulative regulatory burden. In addition to energy conservation standards, other regulations can significantly affect manufacturers’ financial operations. Multiple regulations affecting the same manufacturer can strain profits and lead companies to abandon product lines or markets with lower expected future returns than competing products. For these reasons, DOE conducts an analysis of cumulative regulatory burden as part of its rulemakings pertaining to appliance efficiency.

During previous stages of this rulemaking, DOE identified a number of requirements in addition to new energy conservation standards for CUAC/CUHP and CWF equipment. The following section briefly summarizes those identified regulatory requirements and addresses comments DOE received with respect to cumulative regulatory burden, as well as other key related concerns

that manufacturers raised during interviews.

DOE Energy Conservation Standards

Companies that produce a wide range of regulated products and equipment may face more capital and product development expenditures than competitors with a narrower scope of products and equipment. Many CUAC/CUHP and CWF manufacturers also produce other residential and commercial equipment. In addition to the amended energy conservation standard for CUAC/CUHP and CWF equipment, these manufacturers contend with several other Federal regulations and pending regulations that apply to other products and equipment. DOE recognizes that each regulation can significantly affect a manufacturer’s financial operations. Multiple regulations affecting the same manufacturer can quickly strain manufacturer profits and possibly cause an exit from the market. Table V–24 lists the other DOE energy conservation standards that could also affect CUAC/CUHP and CWF manufacturers in the three years leading up to and after the compliance date of the new energy conservation standards for this equipment. Additionally, at the request of stakeholders, DOE has listed several pending DOE rulemakings in the table below.

TABLE V–24—OTHER DOE REGULATIONS IMPACTING CUAC/CUHP AND CWF MANUFACTURERS

Federal energy conservation standards	Approximate compliance date	Estimated total industry conversion expense
2007 Residential Furnaces & Boilers,* 72 FR 65136 (Nov. 19, 2007)	2015	\$88M (2006\$)
2010 Gas Fired and Electric Storage Water Heaters, 75 FR 20112 (April 16, 2010)	2015	95.4M (2009\$)
2011 Residential Furnaces** 76 FR 37408 (June 27, 2011); 76 FR 67037 (Oct. 31, 2011)	2015	2.5M (2009\$)
2011 Residential Central Air Conditioners and Heat Pumps,** 76 FR 37408 (June 27, 2011); 76 FR 67037 (Oct. 31, 2011)	2015	26.0M (2009\$)
Walk-in Coolers and Freezers, 79 FR 32049 (June 3, 2014)	2017	35.2M (2012\$)
Commercial and Industrial Fans and Blowers†	2018	TBD
Furnace Fans, 79 FR 38129 (July 3, 2014)	2019	40.6M (2012\$)
Packaged Terminal Air Conditioners and Heat Pumps, 80 FR 43162 (July 21, 2015); 80 FR 56894 (Sept. 21, 2015)	2019	7.6M (2013\$)
Residential Boilers†	2019	TBD
Commercial Packaged Boilers†	2019	TBD
Single Package Vertical Units, 80 FR 57438 (Sept. 23, 2015)	2019	9.2M (2014\$)
Residential Non-Weatherized Gas Furnaces†	2019	TBD
Residential Central Air Conditioners and Heat Pumps†	2021	TBD
Residential Water Heaters†	2021	TBD

* Conversion expenses for manufacturers of oil-fired furnaces and for manufacturers of gas-fired and oil-fired boilers associated with the November 2007 final rule for residential furnaces and boilers are excluded from this figure. With regard to oil-fired furnaces, the 2011 direct final rule for residential furnaces sets a higher standard and earlier compliance date for oil-fired furnaces than the 2007 final rule. As a result, manufacturers will be required design to the 2011 direct final rule standard. The conversion costs associated with the 2011 direct final rule are listed separately in this table. With regard to gas-fired and oil-fired boilers, EISA 2007 legislated higher standards and earlier compliance dates for residential boilers than were in the November 2007 final rule. As a result, gas-fired and oil-fired boiler manufacturers were required to design to the EISA 2007 standard beginning in 2012.

** Estimated industry conversion expense and approximate compliance date reflect a court-ordered May 1, 2013 stay of the residential non-weatherized and mobile home gas furnaces standards set in the 2011 Energy Conservation Standards for Residential Furnaces and Residential Central Air Conditioners and Heat Pumps.

† The final rule for this energy conservation standard has not been published. For energy conservation standards with a published NOPR, DOE lists the compliance date and conversion costs for the proposed standard level. However, standard level and analytical results are not finalized until the publication of the final rule. For energy conservation standards that have not yet reached the NOPR publication phase of the rule-making, information is not yet available.

In addition to Federal energy conservation standards, DOE identified other Federal regulatory burdens that would affect CUAC/CUHP and CWAFF manufacturers:

EPA Phase-Out of
Hydrochlorofluorocarbons (HCFCs)

The U.S. is obligated under the Montreal Protocol to limit the production and consumption of HCFCs through incremental reductions, culminating in a complete phase-out of HCFCs by 2030. On October 28, 2015, EPA published the “2015 HCFC Allocation Rule,” which allocates production and consumption allowances for HCFC-22, HCFC-123, and HCFC-124 for each year between 2015 and 2019. 79 FR 64253. Production and import of virgin HCFC-22 for servicing appliances will cease at the end of 2019, however reclaimed material and stocks of refrigerant produced prior to 2020 will be available to service existing appliances.

HCFC-22, which is also known as R-22, is a popular refrigerant that is commonly used in air-conditioning products. As of January 1, 2010, EPA effectively prohibited the installation in the field of new appliances containing virgin R-22. 74 FR 66412. Additionally, there is a prohibition on the manufacture of new appliances and appliance components pre-charged with R-22 as of the same date. However, manufacturers can still manufacture components for servicing existing appliances. 74 FR 66450. Under the Clean Air Act and EPA’s implementing regulations at 40 CFR part 82, subpart A, starting January 1, 2020, it will be illegal to manufacture any appliance containing virgin HCFCs. Manufacturers of CUAC/CUHP and CWAFF equipment must comply with the these prohibitions and the allowances established by the allocation rule, thereby facing a cumulative regulatory burden. As such, no covered manufacturers offer R-22 products today. The MPCs used for the baseline and higher efficiency design options account for the move away from R-22 and the changes in production costs that

resulted from the shift to HFC refrigerants.

DOE Certification, Compliance, and Enforcement (CC&E) Rule

Any amended standard that DOE adopts would also require manufacturers to follow accompanying CC&E requirements. DOE conducted a rulemaking to expand the coverage of DOE’s alternative efficiency determination method (“AEDM”) regulations to commercial HVAC, including the equipment covered by this rulemaking. See 78 FR 79579 (December 31, 2013). An AEDM is a computer modeling or mathematical tool that predicts the performance of non-tested basic models of a type of covered equipment or product. In that final rule, DOE permits manufacturers of small, large, and very large air-cooled commercial package air conditioning equipment to rate basic models using AEDMs for compliance certification purposes, reducing the need for sample units and the overall burden on manufacturers. The AEDM final rule established revised verification tolerances for small, large, and very large air-cooled commercial package air conditioning equipment manufacturers. More information can be found at http://www1.eere.energy.gov/buildings/appliance_standards/implement_cert_and_enforce.html.

EPA ENERGY STAR

During interviews, some manufacturers stated that ENERGY STAR specifications for CUACs/CUHPs and CWAFFs would be a source of cumulative regulatory burden.

DOE realizes that the cumulative effect of several regulations on an industry may significantly increase the burden faced by manufacturers that need to comply with multiple regulations and certification programs from different organizations and levels of government.

However, DOE notes that certain programs, such as ENERGY STAR, are optional for manufacturers. As these programs are voluntary in nature, they are not considered by DOE to be part of

the manufacturers’ cumulative regulatory burden since manufacturers are not legally required to meet the specifications prescribed by these voluntary programs.

DOE discusses these and other requirements (*e.g.*, Canadian Energy Efficiency Regulations, California Title 24, Low NO_x requirements), and includes the full details of the cumulative regulatory burden analysis, in chapter 12 of the direct final rule TSDs. DOE also discusses the impacts on the small manufacturer subgroup in the regulatory flexibility analysis in section VI.B of this direct final rule.

3. National Impact Analysis

DOE’s analysis of the various national impacts flowing from amending the energy conservation standards for CUACs/CUHPs and CWAFFs are summarized below and include a discussion of the energy savings and the related economic impacts that are projected to occur.

a. Significance of Energy Savings

To estimate the energy savings attributable to potential standards for CUACs/CUHPs and CWAFFs, DOE compared their energy consumption under the no-new-standards case to their anticipated energy consumption under each TSL. For most of the TSLs considered in this direct final rule, DOE forecasted the energy savings, operating cost savings, and equipment costs over the lifetime of CUACs/CUHPs and CWAFFs sold from 2019 through 2048. For the TSLs that represent the consensus recommendations, DOE accounted for the lifetime impacts of CUACs and CUHPs sold from 2018 through 2047 and CWAFFs sold from 2023 through 2048. Table V-25 and Table V-26 present DOE’s projections of the national energy savings for each TSL considered for CUACs/CUHPs and CWAFFs, respectively. The savings were calculated using the approach described in section IV.H of this document. Separate savings for each equipment class are presented in chapter 10 of the direct final rule TSDs.

TABLE V-25—CUMULATIVE NATIONAL ENERGY SAVINGS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT

Energy savings	Trial Standard Level* (projected quad savings)							
	1	2	2.5	Rec- ommend- ed	3	3.5	4	5
Primary energy	5.1	9.3	13.3	14.1	15.2	15.7	18.9	22.4
FFC energy	5.3	9.8	13.9	14.8	15.9	16.4	19.7	23.4

* For the Recommended TSL, the NES is forecasted over the lifetime of equipment sold from 2018–2048. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2048.

TABLE V-26—CUMULATIVE NATIONAL ENERGY SAVINGS FOR COMMERCIAL WARM AIR FURNACES

Energy savings	Trial Standard Level* (projected quad savings)				
	1	2	3	4	5
Primary energy	0.2	0.2	0.4	0.4	2.1
FFC energy	0.2	0.2	0.4	0.4	2.4

* For TSL 2, the NES is forecasted over the lifetime of equipment sold from 2023–2048. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2048.

OMB Circular A-4² requires agencies to present analytical results, including separate schedules of the monetized benefits and costs that show the type and timing of benefits and costs. Circular A-4 also directs agencies to consider the variability of key elements underlying the estimates of benefits and costs. For this rulemaking, DOE undertook a sensitivity analysis using nine, rather than 30, years of equipment

shipments. The choice of a nine-year period is a proxy for the timeline in EPCA for the review of certain energy conservation standards and potential revision of, and compliance with, such revised standards.³ The review timeframe established in EPCA is generally not synchronized with the equipment lifetime, equipment manufacturing cycles, or other factors specific to CUACs/CUHPs and CWAFFs.

Thus, such results are presented for informational purposes only and are not indicative of any change in DOE's analytical methodology. The NES sensitivity analysis results based on a nine-year analytical period are presented in Table V-27 and Table V-28 for CUACs/CUHPs and CWAFFs, respectively.

TABLE V-27—CUMULATIVE NATIONAL ENERGY SAVINGS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT; NINE YEARS OF SHIPMENTS

Energy savings	Trial Standard Level* (projected quad savings)							
	1	2	2.5	Rec- ommend- ed	3	3.5	4	5
Primary energy	1.2	2.1	3.1	2.0	3.5	3.5	4.2	4.7
FFC energy	1.2	2.2	3.2	2.1	3.6	3.7	4.4	4.9

* For the Recommended TSL, the NES is forecasted over the lifetime of equipment sold from 2018–2026. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2027.

TABLE V-28—CUMULATIVE NATIONAL ENERGY SAVINGS FOR COMMERCIAL WARM AIR FURNACE; NINE YEARS OF SHIPMENTS

Energy savings	Trial Standard Level* (projected quad savings)				
	1	2	3	4	5
Primary energy	0.1	0.1	0.3	0.3	1.3

² U.S. Office of Management and Budget, "Circular A-4: Regulatory Analysis" (Sept. 17, 2003) (Available at: http://www.whitehouse.gov/omb/circulars_a004_a-4/).

³ Section 342(a)(6)(C) of EPCA—like its consumer product-related counterpart in Section 325(m)—requires DOE to review its standards at least once

every 6 years, and requires, for certain products, a 3-year period after any new standard is promulgated before compliance is required, except that in no case may any new standards be required within 6 years of the compliance date of the previous standards. While adding a 6-year review to the 3-year compliance period adds up to 9 years, DOE notes that it may undertake reviews at any

time within the 6 year period and that the 3-year compliance date may yield to the 6-year backstop. A 9-year analysis period may not be appropriate given the variability that occurs in the timing of standards reviews and the fact that for some consumer products, the compliance period is 5 years rather than 3 years.

TABLE V-28—CUMULATIVE NATIONAL ENERGY SAVINGS FOR COMMERCIAL WARM AIR FURNACE; NINE YEARS OF SHIPMENTS—Continued

Energy savings	Trial Standard Level * (projected quad savings)				
	1	2	3	4	5
FFC energy	0.1	0.1	0.3	0.3	1.3

*For TSL 2, the NES is forecasted over the lifetime of equipment sold from 2023–2031. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2027.

b. Net Present Value of Commercial Consumer Costs and Benefits

DOE estimated the cumulative NPV of the total costs and savings for commercial consumers that would

result from the TSLs considered for CUACs/CUHPs and CWAFs. In accordance with OMB's guidelines on regulatory analysis,⁴ DOE calculated NPV using both a 7-percent and a 3-percent real discount rate.

Table V-29 and Table V-30 show the commercial consumer NPV results with impacts counted over the lifetime of equipment purchased in the relevant analysis period for each TSL.

TABLE V-29—CUMULATIVE NET PRESENT VALUE OF CONSUMER BENEFITS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT

Discount rate (%)	Trial Standard Level * (Billion 2014\$)							
	1	2	2.5	Recommended	3	3.5	4	5
3	18.0	32.8	47.5	50.0	53.7	55.3	64.1	68.2
7	5.4	10.1	15.1	15.2	16.8	17.1	19.2	18.8

*For the Recommended TSL, the NES is forecasted over the lifetime of equipment sold from 2018–2048. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2048.

TABLE V-30—CUMULATIVE NET PRESENT VALUE OF CONSUMER BENEFITS FOR COMMERCIAL WARM AIR FURNACES

Discount rate (%)	Trial Standard Level * (Billion 2014\$)				
	1	2	3	4	5
3	1.1	1.0	–0.1	–0.1	2.6
7	0.4	0.3	–0.4	–0.4	–0.4

*For TSL 2, the NES is forecasted over the lifetime of equipment sold from 2023–2048. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2048.

The results in Table V-29 reflect the use of a constant price trend for CUACs and CUHPs over the analysis period (see section IV.F.1). DOE also conducted a sensitivity analysis that considered one scenario with a lower rate of price decline than the reference case and one scenario with a higher rate of price decline than the reference case. The results of these alternative cases are presented in appendix 10C of the CUAC/CUHP direct final rule TSD.

The results in Table V-30 reflect the use of the historic trend in the inflation-adjusted PPI for “Warm air furnaces” to estimate the change in price for CWAFs over the analysis period (see section IV.F.1). The trend shows a small rate of annual price decline. DOE also conducted a sensitivity analysis that considered one scenario with a lower rate of price decline than the reference case and one scenario with a higher rate of price decline than the reference case. The results of these alternative cases are

presented in appendix 10C of the CWAF direct final rule TSD.

The NPV results based on the aforementioned 9-year analytical period are presented in Table V-31 and Table V-32 for CUACs/CUHPs and CWAFs, respectively. As mentioned previously, such results are presented for informational purposes only and are not indicative of any change in DOE's analytical methodology or decision criteria.

TABLE V-31—CUMULATIVE NET PRESENT VALUE OF CONSUMER BENEFITS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT; NINE YEARS OF SHIPMENTS

Discount rate (%)	Trial Standard Level * (billion 2014\$)							
	1	2	2.5	Recommended	3	3.5	4	5
3	4.6	8.0	12.4	7.2	13.6	13.6	15.1	13.4

⁴U.S. Office of Management and Budget, “Circular A-4: Regulatory Analysis,” section E

(Sept. 17, 2003) (Available at: http://www.whitehouse.gov/omb/circulars_a004_a-4).

TABLE V-31—CUMULATIVE NET PRESENT VALUE OF CONSUMER BENEFITS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT; NINE YEARS OF SHIPMENTS—Continued

Discount rate (%)	Trial Standard Level* (billion 2014\$)							
	1	2	2.5	Recommended	3	3.5	4	5
7	2.0	3.7	5.8	3.6	6.4	6.3	6.8	5.6

*For the Recommended TSL, the NES is forecasted over the lifetime of equipment sold from 2018–2026. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2027.

TABLE V-32—CUMULATIVE NET PRESENT VALUE OF CONSUMER BENEFITS FOR COMMERCIAL WARM AIR FURNACES; NINE YEARS OF SHIPMENTS

Discount rate (%)	Trial Standard Level* (billion 2014\$)				
	1	2	3	4	5
3	0.4	0.4	0.9	0.9	4.4
7	0.2	0.2	0.2	0.2	1.2

*For TSL 2, the NES is forecasted over the lifetime of equipment sold from 2023–2031. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2027.

c. Indirect Impacts on Employment

DOE expects energy conservation standards for CUACs/CUHPs and CWAFs to reduce energy bills for consumers of those equipment, with the resulting net savings being redirected to other forms of economic activity. These expected shifts in spending and economic activity could affect the demand for labor. DOE used an input/output model of the U.S. economy to estimate indirect employment impacts of the TSLs that DOE considered in this rulemaking. DOE understands that there are uncertainties involved in projecting employment impacts, especially changes in the later years of the analysis. Therefore, DOE generated results for timeframes within five years of the compliance date, where these uncertainties are reduced.

The results suggest that the adopted standards are likely to have a negligible impact on the net demand for labor in the economy. The net change in jobs is so small that it would be imperceptible in national labor statistics and might be offset by other, unanticipated effects on employment. Chapter 16 of the direct final rule TSDs presents detailed results regarding anticipated indirect employment impacts.

4. Impact on Utility or Performance of Equipment

DOE has concluded that the standards adopted in this final rule would not

reduce the utility or performance of the CUACs/CUHPs and CWAFs under consideration in this rulemaking. Manufacturers of these equipment types currently offer units that meet or exceed the adopted standards.

5. Impact of Any Lessening of Competition

EPCA directs DOE to consider any lessening of competition that is likely to result from standards. It also directs the Attorney General of the United States (Attorney General) to determine the impact, if any, of any lessening of competition likely to result from a proposed standard and to transmit such determination in writing to the Secretary within 60 days of the publication of a proposed rule, together with an analysis of the nature and extent of the impact.

To assist the Attorney General in making this determination, DOE provided the Department of Justice (DOJ) with copies of the NOPR and the TSD for review. In its assessment letter responding to DOE, DOJ concluded that the proposed energy conservation standards for CUACs/CUHPs and CWAFs are unlikely to have a significant adverse impact on competition. DOE is publishing the Attorney General's assessments for both proposals at the end of this direct final rule.

6. Need of the Nation To Conserve Energy

Enhanced energy efficiency, where economically justified, improves the Nation's energy security, strengthens the economy, and reduces the environmental impacts (costs) of energy production. Reduced electricity demand due to energy conservation standards is also likely to reduce the cost of maintaining the reliability of the electricity system, particularly during peak-load periods. As a measure of this reduced demand, chapter 15 in the direct final rule TSDs presents the estimated reduction in generating capacity, relative to the no-new-standards case, for the TSLs that DOE considered in this rulemaking.

Energy conservation resulting from amended standards for CUACs/CUHPs and CWAFs are expected to yield environmental benefits in the form of reduced emissions of air pollutants and GHGs. Table V-33 and Table V-34 provide DOE's estimate of cumulative emissions reductions expected to result from the TSLs considered for CUACs/CUHPs and CWAFs, respectively. The emissions were calculated using the multipliers discussed in section IV.K. DOE reports annual emissions reductions for each TSL in chapter 13 of the direct final rule TSDs.

TABLE V-33—CUMULATIVE EMISSIONS REDUCTION FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT

	Trial Standard Level *							
	1	2	2.5	Rec- ommended	3	3.5	4	5
Power Sector Emissions								
CO ₂ (million metric tons) ..	297	546	778	824	890	919	1,103	1,307
SO ₂ (thousand tons)	161	297	423	445	483	498	598	708
NO _x (thousand tons)	336	620	883	937	1,010	1,042	1,252	1,483
Hg (tons)	0.60	1.10	1.57	1.66	1.80	1.85	2.22	2.63
CH ₄ (thousand tons)	23.3	43.0	61.3	64.7	70.1	72.3	86.7	102.7
N ₂ O (thousand tons)	3.29	6.06	8.63	9.10	9.87	10.18	12.21	14.46
Upstream Emissions								
CO ₂ (million metric tons) ..	17	32	46	49	52	54	65	77
SO ₂ (thousand tons)	3.2	5.9	8.4	9.0	9.6	9.9	11.9	14.2
NO _x (thousand tons)	249	459	654	697	749	773	928	1,101
Hg (tons)	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.03
CH ₄ (thousand tons)	1,378	2,539	3,616	3,852	4,137	4,270	5,128	6,083
N ₂ O (thousand tons)	0.16	0.29	0.42	0.44	0.48	0.49	0.59	0.70
Total Emissions								
CO ₂ (million metric tons) ..	314	578	824	873	943	973	1,167	1,383
SO ₂ (thousand tons)	164	303	431	454	493	508	610	722
NO _x (thousand tons)	586	1,080	1,538	1,634	1,759	1,815	2,180	2,584
Hg (tons)	0.61	1.12	1.59	1.68	1.82	1.88	2.25	2.66
CH ₄ (thousand tons)	1,401	2,582	3,677	3,917	4,208	4,342	5,215	6,185
N ₂ O (thousand tons)	3.45	6.35	9.05	9.54	10.34	10.67	12.80	15.16
CH ₄ (million tons CO ₂ eq) **	39.2	72.3	103.0	109.7	117.8	121.6	146.0	173.2
N ₂ O (thousand tons CO ₂ eq) **	913	1,682	2,397	2,528	2,741	2,828	3,392	4,017

* For the Recommended TSL, the NES is forecasted over the lifetime of equipment sold from 2018–2048. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2048.

TABLE V-34—CUMULATIVE EMISSIONS REDUCTION FOR COMMERCIAL WARM AIR FURNACES

	Trial Standard Level *				
	1	2	3	4	5
Site and Power Sector Emissions **					
CO ₂ (million metric tons)	11.8	10.9	19.3	19.3	109
SO ₂ (thousand tons)	0.4	0.4	0.6	0.6	– 10.1
NO _x (thousand tons)	16.5	16.8	27.1	28.8	194
Hg (tons)	0.00	0.00	0.00	0.00	– 0.04
CH ₄ (thousand tons)	0.3	0.3	0.5	0.5	1.0
N ₂ O (thousand tons)	0.03	0.03	0.05	0.05	0.06
Upstream Emissions					
CO ₂ (million metric tons)	1.7	1.5	2.7	2.7	17.4
SO ₂ (thousand tons)	0.0	0.0	0.0	0.0	– 0.1
NO _x (thousand tons)	26.4	24.4	43.3	43.5	279
Hg (tons)	0.00	0.00	0.00	0.00	0.00
CH ₄ (thousand tons)	158	146	260	260	1,672
N ₂ O (thousand tons)	0.00	0.00	0.01	0.01	0.02
Total FFC Emissions					
CO ₂ (million metric tons)	13.4	12.4	22.	22.	126
SO ₂ (thousand tons)	0.4	0.4	0.6	0.7	– 10.2
NO _x (thousand tons)	43.	41.2	70.5	72.2	473
Hg (tons)	0.00	0.00	0.00	0.00	– 0.04
CH ₄ (thousand tons)	159	146	260	260	1,673
CH ₄ (thousand tons CO ₂ eq) †	4,440	4,096	7,289	7,292	46,831
N ₂ O (thousand tons)	0.03	0.03	0.05	0.06	0.08

TABLE V-34—CUMULATIVE EMISSIONS REDUCTION FOR COMMERCIAL WARM AIR FURNACES—Continued

	Trial Standard Level *				
	1	2	3	4	5
N ₂ O (thousand tons CO ₂ eq) †	8.8	8.4	14.3	14.6	21.2

* For TSL 2, the NES is forecasted over the lifetime of equipment sold from 2023–2048. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2048.

** Primarily site emissions.

† CO₂eq is the quantity of CO₂ that would have the same global warming potential (GWP).

As part of the analysis for this rule, DOE estimated monetary benefits likely to result from the reduced emissions of CO₂ and NO_x that DOE estimated for each of the considered TSLs for CUACs/ CUHPs and CWAFs. As discussed in section IV.L of this document, for CO₂, DOE used the most recent values for the SCC developed by an interagency process. The four sets of SCC values for CO₂ emissions reductions in 2015 resulting from that process (expressed in 2014\$) are represented by \$12.2/metric ton (the average value from a

distribution that uses a 5-percent discount rate), \$40.0/metric ton (the average value from a distribution that uses a 3-percent discount rate), \$62.3/metric ton (the average value from a distribution that uses a 2.5-percent discount rate), and \$117/metric ton (the 95th-percentile value from a distribution that uses a 3-percent discount rate). The values for later years are higher due to increasing damages (public health, economic and environmental) as the projected magnitude of climate change increases.

Table V-35 and Table V-36 present the global value of CO₂ emissions reductions at each TSL for CUACs/ CUHPs and CWAFs, respectively. For each of the four cases, DOE calculated a present value of the stream of annual values using the same discount rate as was used in the studies upon which the dollar-per-ton values are based. DOE calculated domestic values as a range from 7 percent to 23 percent of the global values; these results are presented in chapter 14 of the direct final rule TSD.

TABLE V-35—ESTIMATES OF GLOBAL PRESENT VALUE OF CO₂ EMISSIONS REDUCTION FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT

TSL **	SCC Case * (million 2014\$)			
	5% discount rate, average	3% discount rate, average	2.5% discount rate, average	3% discount rate, 95th percentile
Site and Power Sector Emissions				
1	1,745	8,531	13,755	26,019
2	3,223	15,745	25,382	48,025
2.5	4,604	22,470	36,214	68,538
Recommended	4,769	23,508	37,966	71,745
3	5,253	25,663	41,369	78,279
3.5	5,417	26,470	42,672	80,744
4	6,485	31,728	51,160	96,788
5	7,682	37,602	60,633	114,725
Upstream Emissions				
1	101	496	800	1,512
2	186	915	1,477	2,791
2.5	265	1,305	2,106	3,982
Recommended	277	1,374	2,223	4,196
3	303	1,491	2,407	4,550
3.5	312	1,538	2,484	4,695
4	374	1,845	2,980	5,632
5	444	2,189	3,535	6,683
Total Emissions				
1	1,845	9,026	14,555	27,531
2	3,409	16,660	26,859	50,816
2.5	4,870	23,775	38,320	72,520
Recommended	5,046	24,883	40,189	75,941
3	5,556	27,154	43,777	82,830
3.5	5,729	28,009	45,156	85,439
4	6,860	33,573	54,140	102,420
5	8,127	39,791	64,169	121,407

* For each of the four cases, the corresponding SCC value for emissions in 2015 is \$12.2, \$40.0, \$62.3, and \$117 per metric ton (2014\$). The values are for CO₂ only (*i.e.*, not CO₂eq of other greenhouse gases).

** For the Recommended TSL, the NES is forecasted over the lifetime of equipment sold from 2018–2048. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2048.

TABLE V-36—ESTIMATES OF GLOBAL PRESENT VALUE OF CO₂ EMISSIONS REDUCTION FOR COMMERCIAL WARM AIR FURNACES

TSL **	SCC Case * (million 2014\$)			
	5% discount rate, average	3% discount rate, average	2.5% discount rate, average	3% discount rate, 95th percentile
Site and Power Sector Energy Emissions †				
1	70.0	341	549	1,039
2	62.6	310	500	946
3	110	544	879	1,658
4	110	546	882	1,663
5	614	3,053	4,940	9,314
Upstream Emissions				
1	9.8	47.9	77.1	146
2	8.8	43.5	70.3	133
3	15.5	76.5	124	233
4	15.5	76.8	124	234
5	99.0	490	793	1,495
Total Emissions				
1	79.8	388	626	1,185
2	71.4	353	571	1,078
3	126	620	1,003	1,891
4	126	622	1,006	1,897
5	713	3,543	5,733	10,809

* For each of the four cases, the corresponding SCC value for emissions in 2015 is \$12.2, \$40.0, \$62.3, and \$117 per metric ton (2014\$). The values are for CO₂ only (*i.e.*, not CO_{2eq} of other greenhouse gases).

** For TSL 2, the NES is forecasted over the lifetime of equipment sold from 2023–2048. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2048.

DOE is well aware that scientific and economic knowledge about the contribution of CO₂ and other GHG emissions to changes in the future global climate and the potential resulting damages to the world economy continues to evolve rapidly. Thus, any value placed on reduced CO₂ emissions in this rulemaking is subject to change. DOE, together with other Federal agencies, will continue to review various methodologies for estimating the monetary value of reductions in CO₂ and other GHG emissions. This ongoing review will consider the comments on this subject that are part of the public record for this and other rulemakings, as well as other methodological assumptions and issues. However, consistent with DOE's legal obligations, and taking into account the uncertainty involved with this particular issue, DOE has included in this rule the most recent values and analyses resulting from the interagency review process.

DOE also estimated the cumulative monetary value of the economic benefits associated with NO_x emissions reductions anticipated to result from the considered TSLs for CUACs/CUHPs and CWAFFs. The dollar-per-ton values that DOE used are discussed in section IV.L of this document. Table V-37 and Table V-38 present the cumulative present

values for NO_x emissions for each TSL calculated using 7-percent and 3-percent discount rates, respectively, for the equipment addressed in this direct final rule. This table presents values that use the low dollar-per-ton values, which reflect DOE's primary estimate. Results that reflect the range of NO_x dollar-per-ton values are presented in Table V-41 and Table V-45.

TABLE V-37—ESTIMATES OF PRESENT VALUE OF NO_x EMISSIONS REDUCTION FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT *

TSL **	Million 2014\$	
	3% Discount rate	7% Discount rate
Site and Power Sector Emissions		
1	1,055	353
2	1,947	653
2.5	2,780	935
Recommended	2,899	937
3	3,174	1,064
3.5	3,274	1,095
4	3,923	1,307
5	4,649	1,543

TABLE V-37—ESTIMATES OF PRESENT VALUE OF NO_x EMISSIONS REDUCTION FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT *—Continued

TSL **	Million 2014\$	
	3% Discount rate	7% Discount rate
Upstream Emissions		
1	774	253
2	1,429	468
2.5	2,040	670
Recommended	2,139	677
3	2,329	763
3.5	2,403	786
4	2,881	938
5	3,418	1,109
Total Emissions		
1	1,828	606
2	3,376	1,121
2.5	4,820	1,604
Recommended	5,038	1,614
3	5,503	1,826
3.5	5,677	1,881
4	6,804	2,245
5	8,067	2,652

* The results reflect use of the low benefits per ton values.

** For the Recommended TSL, the impacts are over the lifetime of equipment sold from 2018–2048. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2048.

TABLE V–38—ESTIMATES OF PRESENT VALUE OF NO_x EMISSIONS REDUCTION FOR COMMERCIAL WARM AIR FURNACES *

TSL **	Million 2014\$	
	3% discount rate	7% discount rate
Site and Power Sector Emissions **		
1	46.1	16.3
2	44.9	14.7
3	72.2	24.7
4	76.8	26.3
5	516	174
Upstream Emissions		
1	73.6	26.0
2	65.4	21.4
3	115	39.5
4	116	39.6

TABLE V–38—ESTIMATES OF PRESENT VALUE OF NO_x EMISSIONS REDUCTION FOR COMMERCIAL WARM AIR FURNACES *—Continued

TSL **	Million 2014\$	
	3% discount rate	7% discount rate
5	741	249
Total Emissions		
1	120	42.3
2	110	36.1
3	188	64.2
4	192	65.9
5	1,258	423

* The results reflect use of the low benefits per ton values.

** For TSL 2, the NES is forecasted over the lifetime of equipment sold from 2023–2048. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2048.

7. Other Factors

The Secretary of Energy, in determining whether a standard is

economically justified, may consider any other factors that the Secretary deems to be relevant. (42 U.S.C. 6313(a)(6)(B)(ii)(VII)) No other factors were considered in this analysis.

8. Summary of National Economic Impacts

The NPV of the monetized benefits associated with emissions reductions can be viewed as a complement to the NPV of the commercial consumer savings calculated for each TSL considered in this rulemaking. Table V–39 and Table V–40 present the NPV values that result from adding the estimates of the potential economic benefits resulting from reduced CO₂ and NO_x emissions in each of four valuation scenarios to the NPV of commercial consumer savings calculated for each TSL considered in this rulemaking, at both a 7-percent and 3-percent discount rate for CUACs/CUHPs and CWAFFs, respectively. The CO₂ values used in the columns of each table correspond to the four sets of SCC values discussed above.

TABLE V–39—NET PRESENT VALUE OF CONSUMER SAVINGS COMBINED WITH PRESENT VALUE OF MONETIZED BENEFITS FROM CO₂ AND NO_x EMISSIONS REDUCTIONS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT

TSL *	Consumer NPV at 3% discount rate added with: (billion 2014\$)			
	SCC case \$12.2/ metric ton CO ₂ and 3% low NO _x value	SCC case \$40.0/ metric ton CO ₂ and 3% low NO _x value	SCC case \$62.3/ metric ton CO ₂ and 3% low NO _x value	SCC case \$117/ metric ton CO ₂ and 3% low NO _x value
1	21.4	28.6	34.2	47.1
2	39.2	52.5	62.6	86.6
2.5	56.6	75.5	90.1	124.3
Recommended	59.4	79.2	94.5	130.3
3	64.0	85.6	102.2	141.3
3.5	66.0	88.2	105.4	145.7
4	76.9	103.6	124.2	172.5
5	83.4	115.0	139.4	196.7
	Consumer NPV at 7% discount rate added with:			
	SCC case \$12.2/ metric ton CO ₂ and 7% low NO _x value	SCC case \$40.0/ metric ton CO ₂ and 7% low NO _x value	SCC case \$62.3/ metric ton CO ₂ and 7% low NO _x value	SCC case \$117/ metric ton CO ₂ and 7% low NO _x value
1	7.8	15.0	20.6	33.5
2	14.5	27.7	37.9	61.9
2.5	21.4	40.3	54.8	89.0
Recommended	21.7	41.6	56.9	92.6
3	24.0	45.6	62.3	101.3
3.5	24.5	46.8	63.9	104.2
4	28.1	54.8	75.4	123.7
5	29.3	61.0	85.4	142.6

* For the Recommended TSL, the NES is forecasted over the lifetime of equipment sold from 2018–2048. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2048.

TABLE V-40—NET PRESENT VALUE OF CONSUMER SAVINGS COMBINED WITH PRESENT VALUE OF MONETIZED BENEFITS FROM CO₂ AND NO_x EMISSIONS REDUCTIONS FOR COMMERCIAL WARM AIR FURNACES

TSL	Consumer NPV at 3% discount rate added with: (billion 2014\$)			
	SCC case \$12.2/ metric ton and medium NO _x value	SCC case \$41.2/ metric ton and medium NO _x value	SCC case \$63.4/ metric ton and medium NO _x value	SCC case \$121/ metric ton and medium NO _x value
1	1.3	1.6	1.8	2.4
2	1.2	1.4	1.7	2.2
3	0.3	0.7	1.1	2.0
4	0.3	0.8	1.1	2.0
5	4.6	7.4	9.6	14.7
	Consumer NPV at 7% discount rate added with:			
	SCC case \$12.0/ metric ton and medium NO _x value	SCC case \$40.5/ metric ton and medium NO _x value	SCC case \$62.4/ metric ton and medium NO _x value	SCC case \$119/ metric ton and medium NO _x value
1	0.5	0.8	1.1	1.6
2	0.4	0.7	0.9	1.4
3	(0.2)	0.3	0.7	1.6
4	(0.2)	0.3	0.7	1.6
5	0.8	3.6	5.8	10.9

* For TSL 2, the NES is forecasted over the lifetime of equipment sold from 2023–2048. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2048.

In considering the above results, two issues are relevant. First, the national operating cost savings are domestic U.S. monetary savings that occur as a result of market transactions, while the value of CO₂ reductions is based on a global value. Second, the assessments of operating cost savings and the SCC are performed with different methods that use different time frames for analysis. The national operating cost savings is measured for the lifetime of equipment shipped in the applicable analysis period. Because CO₂ emissions have a very long residence time in the atmosphere,⁵ the SCC values in future years reflect future climate-related impacts that continue beyond 2100.

C. Conclusion

When considering new or amended energy conservation standards, the standards that DOE adopts for any type (or class) of covered product or equipment must be designed to achieve significant additional conservation of

energy that the Secretary determines is technologically feasible and economically justified. (42 U.S.C. 6313(a)(6)(A)(ii)(II)) In determining whether a standard is economically justified, the Secretary must determine whether the benefits of the standard exceed its burdens by, to the greatest extent practicable, considering the seven statutory factors discussed previously. (42 U.S.C. 6313(a)(6)(B)(ii)(I)–(VII))

For this direct final rule, DOE considered the impacts from amended standards for CUACs/CUHPs and CWAfs at each TSL, beginning with the maximum technologically feasible level, to determine whether that level was economically justified. Where the max-tech level was not justified, DOE then considered the next most efficient level and undertook the same evaluation until it reached the highest efficiency level that is both technologically feasible and economically justified and saves a significant amount of energy.

To aid the reader as DOE discusses the benefits and/or burdens of each TSL, tables in this section present a summary of the results of DOE's quantitative analysis for each TSL. In addition to the quantitative results presented in the tables, DOE also considers other burdens and benefits that affect economic justification.

1. Benefits and Burdens of TSLs Considered for Small, Large, and Very Large Air-Cooled Commercial Package Air Conditioning and Heating Equipment

Table V-41 and Table V-42 summarize the quantitative impacts estimated for each TSL for CUACs and CUHPs. The national impacts are measured over the lifetime of CUACs and CUHPs purchased in the 2018–2048 period. The energy savings, emissions reductions, and value of emissions reductions refer to FFC results. The efficiency levels contained in each TSL are described in section V.A.

TABLE V-41—SUMMARY OF ANALYTICAL RESULTS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT: NATIONAL IMPACTS

Category	TSL 1	TSL 2	TSL 2.5	Recommended TSL *	TSL 3	TSL 3.5	TSL 4	TSL 5
National FFC Energy Savings (quads)								
	5.3	9.8	13.9	14.8	15.9	16.4	19.7	23.4

⁵ The atmospheric lifetime of CO₂ is estimated of the order of 30–95 years. Jacobson, MZ, "Correction

to 'Control of fossil-fuel particulate black carbon and organic matter, possibly the most effective

method of slowing global warming,'" 110 *J. Geophys. Res.* D14105 (2005).

TABLE V-41—SUMMARY OF ANALYTICAL RESULTS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT: NATIONAL IMPACTS—Continued

Category	TSL 1	TSL 2	TSL 2.5	Recommended TSL *	TSL 3	TSL 3.5	TSL 4	TSL 5
NPV of Consumer Benefits (2014\$ billion)								
3% discount rate.	18.0	32.8	47.5	50.0	53.7	55.3	64.1	68.2
7% discount rate.	5.4	10.1	15.1	15.2	16.8	17.1	19.2	18.8
Cumulative Emissions Reduction (Total FFC Emissions)								
CO ₂ (million metric tons).	314	578	824	873	943	973	1,167	1,383
SO ₂ (thousand tons).	164	303	431	454	493	508	610	722
NO _x (thousand tons).	586	1,080	1,538	1,634	1,759	1,815	2,180	2,584
Hg (tons)	0.61	1.12	1.59	1.68	1.82	1.88	2.25	2.66
CH ₄ (thousand tons).	1,401	2,582	3,677	3,917	4,208	4,342	5,215	6,185
N ₂ O (thousand tons).	3.45	6.35	9.05	9.54	10.34	10.67	12.80	15.16
CH ₄ (million tons CO ₂ eq **).	39.2	72.3	103.0	109.7	117.8	121.6	146.0	173.2
N ₂ O (thousand tons CO ₂ eq **).	913	1,682	2,397	2,528	2,741	2,828	3,392	4,017
Value of Emissions Reduction (Total FFC Emissions)								
CO ₂ (2014\$ billion) †.	1.845 to 27.53	3.409 to 50.82	4.870 to 72.52	5.046 to 75.94	5.556 to 82.83	5.729 to 85.44	6.860 to 102.4	8.127 to 121.4
NO _x —3% discount rate (2014\$ million).	1,592 to 3,514	2,941 to 6,492	4,203 to 9,276	4,361 to 9,610	4,795 to 10,583	4,945 to 10,913	5,922 to 13,066	7,020 to 15,483
NO _x —7% discount rate (2014\$ million).	547 to 1,221	1,011 to 2,259	1,448 to 3,235	1,445 to 3,231	1,647 to 3,680	1,696 to 3,789	2,022 to 4,520	2,386 to 5,334

* For the Recommended TSL, the NES is forecasted over the lifetime of equipment sold from 2018–2048. For the other TSLs, the NES is forecasted over the lifetime of equipment sold from 2019–2048.

** CO₂eq is the quantity of CO₂ that would have the same global warming potential (GWP).

† Range of the economic value of CO₂ reductions is based on estimates of the global benefit of reduced CO₂ emissions.

TABLE V-42—SUMMARY OF ANALYTICAL RESULTS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT: MANUFACTURER AND CONSUMER IMPACTS *

Category	TSL 1	TSL 2	TSL 2.5	Recommended TSL	TSL 3	TSL 3.5	TSL 4	TSL 5
Manufacturer Impacts								
Industry NPV (2014\$ million) (No-new-standards case INPV = 1,638.2).	1,431.0 to 1,705.5.	1,421.9 to 1,758.6.	1,300.5 to 1,721.1.	1,204.1 to 1,606.1	1,197.4 to 1,697.0.	1,138.2 to 1,670.3.	1,025.0 to 1,660.9.	762.7 to 1,737.6
Industry NPV (% change).	(6.5) to 3.7	(13.5) to 6.9	(20.9) to 4.7	(26.8) to (2.3)	(27.2) to 3.2	(30.8) to 1.6	(37.7) to 1.0	(53.6) to 5.7
Commercial Consumer Average LCC Savings (2014)								
Small CUACs ...	(210)	870	3,777	4,233	4,233	3,517	3,035	5,326
Large CUACs ...	3,997	3,728	7,991	10,135	10,135	12,266	16,803	12,900
Very Large CUACs.	1,547	4,777	8,610	8,610	8,881	8,881	18,386	18,338
Average *	1,045	1,971	5,340	6,220	6,238	6,396	8,370	8,697
Commercial Consumer PBP (years)								
Small CUACs ...	14.9	8.5	4.9	4.9	4.9	2.6	2.5	4.6
Large CUACs ...	1.3	2.4	2.4	2.6	2.6	2.6	2.5	4.6
Very Large CUACs.	5.8	7.0	6.2	6.2	7.2	7.2	5.6	6.3
Average *	10.6	6.7	4.3	4.4	4.5	3.0	2.8	4.8

TABLE V-42—SUMMARY OF ANALYTICAL RESULTS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT: MANUFACTURER AND CONSUMER IMPACTS *—Continued

Category	TSL 1	TSL 2	TSL 2.5	Recommended TSL	TSL 3	TSL 3.5	TSL 4	TSL 5
% of Consumers that Experience Net Cost								
Small CUACs ...	48%	25%	5%	5%	5%	13%	25%	16%
Large CUACs ...	0%	10%	5%	2%	2%	1%	1%	11%
Very Large CUACs.	7%	13%	7%	7%	23%	23%	3%	6%
Average *	32%	20%	5%	4%	6%	11%	16%	14%

Parentheses indicate negative (–) values.

* Weighted by shares of each equipment class in total projected shipments in the year of compliance.

DOE first considered TSL 5, which represents the max-tech efficiency levels. TSL 5 would save 23.4 quads of energy, an amount DOE considers significant. Under TSL 5, the NPV of consumer benefit would be \$18.8 billion using a 7-percent discount rate, and \$68.2 billion using a 3-percent discount rate.

The cumulative emissions reductions at TSL 5 are 1,383 million Mt of CO₂, 722 thousand tons of SO₂, 2,584 thousand tons of NO_x, 2.66 ton of Hg, 6,185 thousand tons of CH₄, and 15.16 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 5 ranges from \$8.127 billion to \$121.4 billion.

At TSL 5, the average LCC impact is a savings of \$5,326 for small CUACs, \$12,900 for large CUACs, and \$18,338 for very large CUACs. The simple payback period is 4.6 years for small CUACs, 4.6 years for large CUACs, and 6.3 years for very large CUACs. The fraction of consumers experiencing a net LCC cost is 16 percent for small CUACs, 11 percent for large CUACs, and 6 percent for very large CUACs. Although DOE did not estimate consumer impacts for CUHPs, the results would be very similar to those for CUACs for the reasons stated in section V.B.1.

At TSL 5, the projected change in INPV ranges from a decrease of \$881.9 million to an increase of \$93.1 million, which correspond to a change of –53.7 percent and 5.7 percent, respectively. The industry is expected to incur \$591.0 million in total conversion costs at this level. DOE projects that 98.7 percent of current equipment listings would require redesign at this level to meet this standard level today. At this level, DOE recognizes that manufacturers could face technical resource constraints. Manufacturers stated they would require additional engineering expertise and additional test laboratory capacity. It is unclear whether manufacturers could complete the hiring of the necessary technical expertise and construction of the

necessary test facilities in time to allow for the redesign of all equipment to meet max-tech by 2019. Furthermore, DOE recognizes that a standard set at max-tech could greatly limit equipment differentiation in the small, large, and very large CUAC/CUHP market. By commoditizing a key differentiating feature, a standard set at max-tech would likely accelerate consolidation in the industry.

The Secretary concludes that at TSL 5 for CUACs and CUHPs, the benefits of energy savings, positive NPV of consumer benefits, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the economic burden on some consumers, and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a large reduction in INPV. Consequently, the Secretary has concluded that TSL 5 is not economically justified.

DOE then considered TSL 4. TSL 4 would save 19.7 quads of energy, an amount DOE considers significant. Under TSL 4, the NPV of consumer benefit would be \$19.2 billion using a 7-percent discount rate, and \$64.1 billion using a 3-percent discount rate.

The cumulative emissions reductions at TSL 4 are 1,167 million Mt of CO₂, 610 thousand tons of SO₂, 2,180 thousand tons of NO_x, 2.25 ton of Hg, 5,215 thousand tons of CH₄, and 12.80 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 4 ranges from \$6.860 billion to \$102.4 billion.

At TSL 4, the average LCC impact is a savings of \$3,035 for small CUACs, \$16,803 for large CUACs, and \$18,386 for very large CUACs. The simple payback period is 2.5 years for small CUACs, 2.5 years for large CUACs, and 5.6 years for very large CUACs. The fraction of consumers experiencing a net LCC cost is 25 percent for small CUACs, 1 percent for large CUACs, and 3 percent for very large CUACs. Although DOE did not estimate consumer impacts

for CUHPs, the results would be very similar to those for CUACs for the reasons stated in section V.B.1.

At TSL 4, the projected change in INPV ranges from a decrease of \$619.6 million to an increase of \$16.3 million, which corresponds to a change of –37.7 percent and 1.0 percent, respectively. The industry is expected to incur \$538.8 million in total conversion costs at this level. DOE projects that 96.0 percent of current equipment listings would require redesign at this level to meet this standard level today.

The Secretary concludes that at TSL 4 for CUACs and CUHPs, the benefits of energy savings, positive NPV of consumer benefits, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the economic burden on some consumers, and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a reduction in INPV. Consequently, the Secretary has concluded that TSL 4 is not economically justified.

DOE then considered TSL 3.5. TSL 3.5 would save 16.4 quads of energy, an amount DOE considers significant. Under TSL 3.5, the NPV of consumer benefit would be \$17.1 billion using a 7-percent discount rate, and \$55.3 billion using a 3-percent discount rate.

The cumulative emissions reductions at TSL 3.5 are 973 million Mt of CO₂, 508 thousand tons of SO₂, 1,815 thousand tons of NO_x, 1.88 ton of Hg, 4,342 thousand tons of CH₄, and 10.67 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 3.5 ranges from \$5.729 billion to \$85.44 billion.

At TSL 3.5, the average LCC impact is a savings of \$3,517 for small CUACs, \$12,266 for large CUACs, and \$8,881 for very large CUACs. The simple payback period is 2.6 years for small CUACs, 2.6 years for large CUACs, and 7.2 years for very large CUACs. The fraction of consumers experiencing a net LCC cost is 13 percent for small CUACs, 1 percent

for large CUACs, and 23 percent for very large CUACs. Although DOE did not estimate consumer impacts for CUHPs, the results would be very similar to those for CUACs for the reasons stated in section V.B.1.

At TSL 3.5, the projected change in INPV ranges from a decrease of \$506.4 million to an increase of \$25.7 million, which corresponds to a change of –30.8 percent and 1.6 percent, respectively. The industry is expected to incur \$489.2 million in total conversion costs at this level. DOE projects that 93.5 percent of current equipment listings would require redesign at this level to meet this standard level today.

The Secretary concludes that at TSL 3.5 for CUACs and CUHPs, the benefits of energy savings, positive NPV of consumer benefits, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the economic burden on some consumers, and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a reduction in INPV. Consequently, the Secretary has concluded that TSL 3.5 is not economically justified.

DOE then considered TSL 3. TSL 3 would save 15.9 quads of energy, an amount DOE considers significant. Under TSL 3, the NPV of consumer benefit would be \$16.8 billion using a 7-percent discount rate, and \$53.7 billion using a 3-percent discount rate.

The cumulative emissions reductions at TSL 3 are 943 million Mt of CO₂, 493 thousand tons of SO₂, 1,759 thousand tons of NO_x, 1.82 ton of Hg, 4,208 thousand tons of CH₄, and 10.34 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 3 ranges from \$5.556 billion to \$82.83 billion.

At TSL 3, the average LCC impact is a savings of \$4,233 for small CUACs, \$10,135 for large CUACs, and \$8,881 for very large CUACs. The simple payback period is 4.9 years for small CUACs, 2.6 years for large CUACs, and 7.2 years for very large CUACs. The fraction of consumers experiencing a net LCC cost is 5 percent for small CUACs, 2 percent for large CUACs, and 23 percent for very large CUACs. Although DOE did not estimate consumer impacts for CUHPs, the results would be very similar to those for CUACs for the reasons stated in section V.B.1.

At TSL 3, the projected change in INPV ranges from a decrease of \$447.2 million to an increase of \$52.4 million, which corresponds to a change of –27.2 percent and 3.2 percent, respectively. DOE projects that 81.6 percent of current equipment listings would

require redesign at this level to meet this standard level today.

The Secretary concludes that at TSL 3 for CUACs and CUHPs, the benefits of energy savings, positive NPV of consumer benefits, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the economic burden on some consumers, and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a large reduction in INPV. Consequently, the Secretary has concluded that TSL 3 is not economically justified.

DOE then considered the Recommended TSL, which reflects the standard levels recommended by the ASRAC Working Group. The Recommended TSL would save 14.8 quads of energy, an amount DOE considers significant. Under the Recommended TSL, the NPV of consumer benefit would be \$15.2 billion using a 7-percent discount rate, and \$50.0 billion using a 3-percent discount rate.

The cumulative emissions reductions at the Recommended TSL are 873 million Mt of CO₂, 454 thousand tons of SO₂, 1,634 thousand tons of NO_x, 1.68 ton of Hg, 3,917 thousand tons of CH₄, and 9.54 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at the Recommended TSL ranges from \$5.046 billion to \$75.94 billion.

At the Recommended TSL, the average LCC impact is a savings of \$4,233 for small CUACs, \$10,135 for large CUACs, and \$8,610 for very large CUACs. The simple payback period is 4.9 years for small CUACs, 2.6 years for large CUACs, and 6.2 years for very large CUACs. The fraction of consumers experiencing a net LCC cost is 5 percent for small CUACs, 2 percent for large CUACs, and 7 percent for very large CUACs. Although DOE did not estimate consumer impacts for CUHPs, the results would be very similar to those for CUACs for the reasons stated in section V.B.1.

The Recommended TSL as developed by the Working Group and submitted to DOE by ASRAC, aligns the effective dates of the CUAC/CUHP and CWFAC rulemakings. That recommended approach adopts the ASHRAE 90.1–2013 efficiency levels for this equipment for compliance starting in 2018 and will phase into a higher level starting in 2023 as recommended to ASRAC by the Working Group. DOE expects that aligning the effective dates reduces total conversion costs and cumulative regulatory burden, while also allowing industry to gain clarity on

potential regulations that could affect refrigerant availability before the higher appliance standard takes effect in 2023. DOE projects that 31.5 percent of current equipment listings would require redesign at this level to meet the 2018 standard level, while 79.6 percent of current equipment listings would require redesign at this level to meet the 2023 standard level.

At the Recommended TSL, the projected change in INPV ranges from a decrease of \$440.4 million to a decrease of \$38.5 million, which corresponds to a change of –26.8 percent and –2.3 percent, respectively. The industry is expected to incur \$520.8 million in total conversion costs at this level. However, the industry members of the Working Group noted that aligning the compliance dates for the CUAC/CUHP and CWFAC standards in the manner recommended would allow manufacturers to coordinate their redesign and testing expenses for these equipment (CUAC: AHRI and ACEEE, No. 80 at p. 1). With this coordination, manufacturers explained that there would be a reduction in the total conversion costs associated with this direct final rule. These synergies resulting from the alignment of the CUAC/CUHP and CWFAC compliance dates would yield INPV impacts that are less severe than the forecasted INPV range of –26.8 percent to –2.3 percent.

After considering the analysis and weighing the benefits and burdens, DOE has determined that the recommended standards are in accordance with 42 U.S.C. 6313(a)(6)(B), which contains provisions for adopting a uniform national standard more stringent than the amended ASHRAE Standard 90.1 for the equipment considered in this document. Specifically, the Secretary has determined, supported by clear and convincing evidence as described in this direct final rule and accompanying TSDs, that such adoption would result in the significant additional conservation of energy and is technologically feasible and economically justified. In determining whether the recommended standards are economically justified, the Secretary has determined that the benefits of the recommended standards exceed the burdens. Namely, the Secretary has concluded that under the recommended standards for CUACs and CUHPs, the benefits of energy savings, positive NPV of consumer benefits, emission reductions, the estimated monetary value of the emissions reductions, and positive average LCC savings would outweigh the negative impacts on some consumers and on manufacturers, including the conversion costs that

could result in a reduction in INPV for manufacturers.

Under the authority provided by 42 U.S.C. 6295(p)(4) and 6316(b)(1), DOE is issuing this direct final rule that

establishes amended energy conservation standards for CUACs and CUHPs at the Recommended TSL. The amended energy conservation standards

for CUACs and CUHPs, which prescribe the minimum allowable IEER and, for commercial unitary heat pumps, COP, are shown in Table V–43.

TABLE V–43—AMENDED ENERGY CONSERVATION STANDARDS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT

Equipment type	Heating type	Proposed energy conservation standard	Compliance date
Small Commercial Packaged AC and HP (Air-Cooled)— ≥65,000 Btu/h and <135,000 Btu/h Cooling Capacity	Electric Resistance Heating or No Heating.	12.9 IEER	January 1, 2018.
		14.8 IEER	January 1, 2023.
		12.7 IEER	January 1, 2018.
		14.6 IEER	January 1, 2023.
	All Other Types of Heating	12.2 IEER	January 1, 2018.
		3.3 COP	
		14.1 IEER	January 1, 2023.
		3.4 COP	
	All Other Types of Heating	12.0 IEER	January 1, 2018.
		3.3 COP	
		13.9 IEER	January 1, 2023.
		3.4 COP	
Large Commercial Packaged AC and HP (Air-Cooled)— ≥135,000 Btu/h and <240,000 Btu/h Cooling Capacity	Electric Resistance Heating or No Heating.	12.4 IEER	January 1, 2018.
		14.2 IEER	January 1, 2023.
		12.2 IEER	January 1, 2018.
		14.0 IEER	January 1, 2023.
	All Other Types of Heating	11.6 IEER	January 1, 2018.
		3.2 COP	
		13.5 IEER	January 1, 2023.
		3.3 COP	
	All Other Types of Heating	11.4 IEER	January 1, 2018.
		3.2 COP	
		13.3 IEER	January 1, 2023.
		3.3 COP	
Very Large Commercial Packaged AC and HP (Air-Cooled)— ≥240,000 Btu/h and <760,000 Btu/h Cooling Capacity	Electric Resistance Heating or No Heating.	11.6 IEER	January 1, 2018.
		13.2 IEER	January 1, 2023.
		11.4 IEER	January 1, 2018.
		13.0 IEER	January 1, 2023.
	All Other Types of Heating	10.6 IEER	January 1, 2018.
		3.2 COP	
		12.5 IEER	January 1, 2023.
		3.2 COP	
	All Other Types of Heating	10.4 IEER	January 1, 2018.
		3.2 COP	
		12.3 IEER	January 1, 2023.
		3.2 COP	

The benefits and costs of the adopted standards can also be expressed in terms of annualized values. The annualized net benefit is the sum of: (1) The annualized national economic value (expressed in 2014\$) of the benefits from operating equipment that meet the adopted standards (consisting primarily of operating cost savings from using less energy, minus increases in product purchase costs, and (2) the annualized monetary value of the benefits of CO₂ and NO_x emission reductions.⁶

⁶ To convert the time-series of costs and benefits into annualized values, DOE calculated a present

Table V–44 shows the annualized values for CUACs and CUHPs under the Recommended TSL, expressed in 2014\$. The results under the primary estimate

value in 2014, the year used for discounting the NPV of total consumer costs and savings. For the benefits, DOE calculated a present value associated with each year's shipments in the year in which the shipments occur (2020, 2030, etc.), and then discounted the present value from each year to 2015. The calculation uses discount rates of 3 and 7 percent for all costs and benefits except for the value of CO₂ reductions, for which DOE used case-specific discount rates. Using the present value, DOE then calculated the fixed annual payment over the analysis period, starting in the compliance year that yields the same present value.

are as follows. Using a 7-percent discount rate for benefits and costs other than CO₂ reduction, (for which DOE used a 3-percent discount rate along with the SCC series that has a value of \$40.0/t in 2015),⁷ the estimated cost of the standards in this rule is \$708 million per year in increased equipment costs, while the estimated annual benefits are \$2,099 million in reduced equipment operating costs, \$1,320

⁷ DOE used a 3-percent discount rate because the SCC values for the series used in the calculation were derived using a 3-percent discount rate (see section IV.L).

million in CO₂ reductions, and \$132.0 million in reduced NO_x emissions. In this case, the net benefit amounts to \$2,843 million per year. Using a 3-percent discount rate for all benefits

and costs and the SCC series has a value of \$40.0/t in 2015, the estimated cost of the standards is \$792 million per year in increased equipment costs, while the estimated annual benefits are \$3,441

million in reduced operating costs, \$1,320 million in CO₂ reductions, and \$231.3 million in reduced NO_x emissions. In this case, the net benefit amounts to \$4,201 million per year.

TABLE V-44—ANNUALIZED BENEFITS AND COSTS OF ADOPTED STANDARDS FOR SMALL, LARGE, AND VERY LARGE AIR-COOLED COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT

	Discount rate	Million 2014\$/year		
		Primary estimate *	Low net benefits estimate	High net benefits estimate
Benefits				
Consumer Operating Cost Savings	7%	2,099	2,021	2,309
	3%	3,441	3,287	3,830
CO ₂ Reduction Value (\$12.2/t case) **	5%	357	355	361
CO ₂ Reduction Value (\$40.0/t case) **	3%	1,320	1,313	1,337
CO ₂ Reduction Value (\$62.3/t case) **	2.5%	1,973	1,964	1,999
CO ₂ Reduction Value (\$117/t case) **	3%	4,028	4,009	4,080
NO _x Reduction Value †	7%	132.0	131.3	299.1
	3%	231.3	230.2	516.3
Total Benefits ††	7% plus CO ₂ range ...	2,588 to 6,259 ...	2,507 to 6,160 ...	2,970 to 6,689
	7%	3,551	3,465	3,946
	3% plus CO ₂ range	4,029 to 7,701 ...	3,872 to 7,525 ...	4,708 to 8,427
	3%	4,992	4,830	5,684
Costs				
Consumer Incremental Product Costs	7%	708	888	275
	3%	792	1028	231
Net Benefits				
Total ††	7% plus CO ₂ range ...	1,880 to 5,551 ...	1,619 to 5,273 ...	2,695 to 6,414
	7%	2,843	2,578	3,671
	3% plus CO ₂ range	3,238 to 6,909 ...	2,843 to 6,497 ...	4,477 to 8,196
	3%	4,201	3,802	5,453

* This table presents the annualized costs and benefits associated with CUACs and CUHPs shipped in 2018–2048. These results include benefits to consumers which accrue after 2048 from the CUACs and CUHPs purchased in 2018–2048. The results account for the incremental variable and fixed costs incurred by manufacturers due to the standard, some of which may be incurred in preparation for the rule. The Primary, Low Benefits, and High Benefits estimates utilize projections of energy prices from the AEO 2015 Reference case, Low Economic Growth case, and High Economic Growth case, respectively. In addition, incremental product costs reflect a constant price trend in the Primary estimate, a slightly increasing price trend in the Low Benefits estimate, and a slightly decreasing price trend in the High Benefits estimate. The methods used to project price trends are explained in section IV.D.1.

** The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

† The \$/ton values used for NO_x are described in section IV.L.2. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the Regulatory Impact Analysis for the Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants, published in June 2014 by EPA's Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposalRIAFinal0602.pdf>.) For DOE's Primary Estimate and Low Net Benefits Estimate, the agency is primarily using a national benefit-per-ton estimate for particulate matter emitted from the Electric Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). For DOE's High Net Benefits Estimate, the benefit-per-ton estimates were based on the Six Cities study (Lepule et al., 2011), which are nearly two-and-a-half times larger than those from the ACS study. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emission, DOE intends to investigate refinements to the agency's current approach of one national estimate by assessing the regional approach taken by EPA's Regulatory Impact Analysis for the Clean Power Plan Final Rule.

†† Total Benefits for both the 3% and 7% cases are derived using the series corresponding to the average SCC with 3-percent discount rate (\$40.0/t) case. In the rows labeled "7% plus CO₂ range" and "3% plus CO₂ range," the operating cost and NO_x benefits are calculated using the labeled discount rate, and those values are added to the full range of CO₂ values.

2. Benefits and Burdens of TSLs Considered for Commercial Warm Air Furnaces

Table V-45 and Table V-46 summarize the quantitative impacts

estimated for each TSL for CWAFFs. For TSL 2, the national impacts are projected over the lifetime of equipment sold in 2023–2048. For the other TSLs, the impacts are projected over the lifetime of equipment sold in 2019–

2048. The energy savings, emissions reductions, and value of emissions reductions refer to FFC results. The efficiency levels contained in each TSL are described in section V.A.

TABLE V-45—SUMMARY OF ANALYTICAL RESULTS FOR COMMERCIAL WARM AIR FURNACES: NATIONAL IMPACTS

	Trial standard level				
	1	2	3	4	5
Cumulative FFC Energy Savings quads	0.25	0.23	0.41	0.41	2.4.

TABLE V-45—SUMMARY OF ANALYTICAL RESULTS FOR COMMERCIAL WARM AIR FURNACES: NATIONAL IMPACTS—Continued

	Trial standard level				
	1	2	3	4	5
NPV of Consumer Costs and Benefits (2014\$ billion)					
3% discount rate	1.1	1.0	−0.1	−0.1	2.6.
7% discount rate	0.4	0.3	−0.4	−0.4	−0.4.
Cumulative FFC Emissions Reduction					
CO ₂ million metric tons	13.4	12.4	22.0	22.0	126.
SO ₂ thousand tons	0.40	0.40	0.63	0.67	−10.2.
NO _x thousand tons	43.0	41.2	70.5	72.2	473.
Hg tons	0.001	0.001	0.002	0.002	−0.04.
CH ₄ thousand tons	159	146	260	260	1,673.
CH ₄ thousand tons CO ₂ eq*	4,440	4,096	7,289	7,292	46,831.
N ₂ O thousand tons	0.03	0.03	0.05	0.06	0.08.
N ₂ O thousand tons CO ₂ eq*	8.8	8.4	14.3	14.6	21.2.
Value of Emissions Reduction					
CO ₂ 2014\$ million**	79.8 to 1,185	71.4 to 1,078	126 to 1,891	126 to 1,897	713 to 10,809.
NO _x —3% discount rate 2014\$ million	120 to 264	110 to 243	188 to 414	192 to 424	1258 to 2772.
NO _x —7% discount rate 2014\$ million	42.3 to 94.4	36.1 to 80.9	64.2 to 144	65.9 to 147	423 to 945.

For TSL 2, the impacts are projected over the lifetime of equipment sold in 2023–2048. For the other TSLs, the impacts are projected over the lifetime of equipment sold in 2019–2048.

*CO₂eq is the quantity of CO₂ that would have the same global warming potential (GWP).

**Range of the economic value of CO₂ reductions is based on estimates of the global benefit of reduced CO₂ emissions.

TABLE V-46—SUMMARY OF ANALYTICAL RESULTS FOR COMMERCIAL WARM AIR FURNACES: MANUFACTURER AND CONSUMER IMPACTS

Category	Trial standard level				
	1	2	3	4	5
Manufacturer Impacts					
Industry NPV (2014\$ million) (No-New-Standards Case INPV = 96.3).	85.8 to 92.6	83.0 to 90.5	65.5 to 125.2	60.4 to 124.8	(19.3) to 143.5.
Industry NPV (% change)	(11.0) to (3.9)	(13.9) to (6.1)	(32.0) to 29.9	(37.3) to 29.5	(120.1)† to 49.0.
Consumer Average LCC Savings (2014\$)					
Gas-Fired Commercial Warm Air Furnaces	\$284	\$284	\$75	\$75	\$766.
Oil-Fired Commercial Warm Air Furnaces ..	NA	\$400	NA	\$400	\$1,817.
Average*	\$284	\$285	\$75	\$79	\$781.
Consumer Simple PBP (years)					
Gas-Fired Commercial Warm Air Furnaces	1.4	1.4	12.3	12.3	11.3.
Oil-Fired Commercial Warm Air Furnaces ..	NA	1.9	NA	1.9	7.5.
Average*	1.4	1.4	12.3	12.1	11.3.
% of Consumers That Experience Net Cost					
Gas-Fired Commercial Warm Air Furnaces	6%	6%	58%	58%	58%.
Oil-Fired Commercial Warm Air Furnaces ..	0%	11%	0%	11%	54%.

*Weighted by shares of each equipment class in total projected shipments in 2019.

†At max tech, the standard will likely require CWAf manufacturers to make design changes to the cooling components of commercial HVAC products and to the chassis that houses the heating and cooling components. Because these cooling system changes are triggered by the CWAf standard, they are taken into account in the MIA's estimate of conversion costs. The additional expense of updating the commercial cooling product contributes to an INPV loss that is greater than 100%.

DOE first considered TSL 5, which represents the max-tech efficiency levels. TSL 5 would save 2.4 quads of energy, an amount DOE considers significant. Under TSL 5, the NPV of

consumer cost would be \$0.4 billion using a 7-percent discount rate, and the NPV of consumer benefit would be \$2.6 billion using a 3-percent discount rate.

The cumulative emissions reductions at TSL 5 are 126 Mt of CO₂, 473

thousand tons of NO_x, 1,673 thousand tons of CH₄, and 0.08 thousand tons of N₂O. Projected emissions show an increase of 10.2 thousand tons of SO₂ and 0.04 ton of Hg. The estimated

monetary value of the CO₂ emissions reduction at TSL 5 ranges from \$713 million to \$10,809 million.

At TSL 5, the average LCC impact is a savings of \$766 for gas-fired CWAFFs and \$1,817 for oil-fired CWAFFs. The simple payback period is 11.3 years for gas-fired CWAFFs and 7.5 years for oil-fired CWAFFs. The fraction of consumers experiencing a net LCC cost is 58 percent for gas-fired CWAFFs and 54 percent for oil-fired CWAFFs.

At TSL 5, the projected change in INPV ranges from a decrease of \$115.7 million to an increase of \$47.2 million, which corresponds to a change of -120.1 percent and 49.0 percent, respectively. The industry is expected to incur \$157.5 million in total conversion costs at this level. DOE projects that 99 percent of current equipment listings would require redesign at this level.

The Secretary concludes that at TSL 5 for CWAFFs, the benefits of energy savings, positive NPV of consumer benefits using a discount rate of 3-percent, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the economic burden on most consumers, the negative NPV of consumer benefits using a 7-percent discount rate, and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a large reduction in INPV. Consequently, the Secretary has concluded that TSL 5 is not economically justified.

DOE then considered TSL 4. TSL 4 would save 0.41 quads of energy, an amount DOE considers significant. Under TSL 4, the NPV of consumer cost would be \$0.4 billion using a 7-percent discount rate, and \$0.1 billion using a 3-percent discount rate.

The cumulative emissions reductions at TSL 4 are 22 Mt of CO₂, 0.67 thousand tons of SO₂, 72.2 thousand tons of NO_x, 0.002 ton of Hg, 260 thousand tons of CH₄, and 0.06 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 4 ranges from \$126 million to \$1,897 million.

At TSL 4, the average LCC impact is a savings of \$75 for gas-fired CWAFFs and \$400 for oil-fired CWAFFs. The simple payback period is 12.3 years for gas-fired CWAFFs and 1.9 years for oil-fired CWAFFs. The fraction of consumers experiencing a net LCC cost is 58 percent for gas-fired CWAFFs, and 11 percent for oil-fired CWAFFs.

At TSL 4, the projected change in INPV ranges from a decrease of \$35.9 million to an increase of \$28.4 million, which corresponds to a change of -37.3 percent and 29.5 percent, respectively.

The industry is expected to incur \$47.6 million in total conversion costs at this level; DOE projects that 94 percent of current product listings would require redesign at this level.

The Secretary concludes that at TSL 4 for CWAFFs, the benefits of energy savings, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the economic burden on many consumers, negative NPV of consumer benefits, and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a large reduction in INPV. Consequently, the Secretary has concluded that TSL 4 is not economically justified.

DOE then considered TSL 3. TSL 3 would save 0.41 quads of energy, an amount DOE considers significant. Under TSL 3, the NPV of consumer cost would be \$0.4 billion using a 7-percent discount rate, and \$0.1 billion using a 3-percent discount rate.

The cumulative emissions reductions at TSL 3 are 22 Mt of CO₂, 0.63 thousand tons of SO₂, 70.5 thousand tons of NO_x, 0.002 ton of Hg, 260 thousand tons of CH₄, and 0.05 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 3 ranges from \$126 million to \$1,891 million.

At TSL 3, the average LCC impact is a savings of \$75 for gas-fired CWAFFs. The simple payback period is 12.3 years for gas-fired CWAFFs. The fraction of consumers experiencing a net LCC cost is 58 percent for gas-fired CWAFFs. The EL at TSL 3 for oil-fired CWAFFs is the baseline, so there are no LCC impacts for oil-fired CWAFFs at TSL 3.

At TSL 3, the projected change in INPV ranges from a decrease of \$30.9 million to an increase of \$28.8 million, which corresponds to a change of -32.0 percent and 29.9 percent, respectively. The industry is expected to incur \$41.0 million in total conversion costs at this level; DOE projects that 91 percent of current equipment listings would require redesign at this level.

The Secretary concludes that at TSL 3 for CWAFFs, the benefits of energy savings, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the economic burden on many consumers, negative NPV of consumer benefits, and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a large reduction in INPV. Consequently, the Secretary has concluded that TSL 3 is not economically justified.

DOE then considered TSL 2. TSL 2 would save 0.23 quads of energy, an amount DOE considers significant. Under TSL 2, the NPV of consumer benefit would be \$0.3 billion using a 7-percent discount rate, and \$1.0 billion using a 3-percent discount rate.

The cumulative emissions reductions at TSL 2 are 12.4 Mt of CO₂, 0.40 thousand tons of SO₂, 41.2 thousand tons of NO_x, 0.001 ton of Hg, 146 thousand tons of CH₄, and 0.03 thousand tons of N₂O. The estimated monetary value of the CO₂ emissions reduction at TSL 2 ranges from \$71.4 million to \$1,078 million.

At TSL 2, the average LCC impact is a savings of \$284 for gas-fired CWAFFs and \$400 for oil-fired CWAFFs. The simple payback period is 1.4 years for gas-fired CWAFFs and 1.9 years for oil-fired CWAFFs. The fraction of consumers experiencing a net LCC cost is 6 percent for gas-fired CWAFFs and 11 percent for oil-fired CWAFFs.

At TSL 2, 57 percent of current equipment listings would require redesign at this level. The projected change in INPV ranges from a decrease of \$13.4 million to a decrease of \$5.9 million, which corresponds to a decrease of 13.9 percent and 6.1 percent, respectively. The CWAFF industry is expected to incur \$22.2 million in total conversion costs. However, the industry noted that aligning the compliance dates for the CUAC/CUHP and CWAFF standards, as recommended by the Working Group, would allow manufacturers to coordinate their redesign and testing expenses for this equipment. If this occurs, there could be a reduction in the total conversion costs associated with this direct final rule. These synergies resulting from aligning the compliance dates of the CUAC/CUHP and CWAFF standards would result in INPV impacts that are less severe than the forecasted INPV range of -13.9 percent to -6.1 percent.

After considering the analysis and weighing the benefits and burdens, DOE has determined that the recommended standards are in accordance with 42 U.S.C. 6313(a)(6)(B), which contains provisions for adopting a uniform national standard more stringent than the amended ASHRAE/IES Standard 90.1 for the equipment considered in this document. Specifically, the Secretary has determined, supported by clear and convincing evidence, that such adoption would result in significant additional conservation of energy and is technologically feasible and economically justified. In determining whether the recommended standards are economically justified, the

Secretary has determined that the benefits of the recommended standards exceed the burdens. Namely, the Secretary has concluded that under the recommended standards for CWAFFs, the benefits of energy savings, positive NPV of consumer benefits, emission reductions, the estimated monetary

value of the emissions reductions, and positive average LCC savings would outweigh the negative impacts on some consumers and on manufacturers, including the conversion costs that could result in a reduction in INPV for manufacturers.

Under the authority provided by 42 U.S.C. 6295(p)(4) and 6316(b)(1), DOE is

issuing this direct final rule that establishes amended energy conservation standards for CWAFFs at TSL 2. The amended energy conservation standards for CWAFFs, which are expressed in terms of TE, are shown in Table V–47.

TABLE V–47—AMENDED ENERGY CONSERVATION STANDARDS FOR COMMERCIAL WARM AIR FURNACES

Equipment type	Input capacity (Btu/h)	Thermal efficiency (%)
Gas-fired CWAFFs	≥225,000 Btu/h	81
Oil-fired CWAFFs	≥225,000 Btu/h	82

The benefits and costs of the adopted standards can also be expressed in terms of annualized values. The annualized net benefit is the sum of: (1) The annualized national economic value (expressed in 2014\$) of the benefits from operating equipment that meet the adopted standards (consisting primarily of operating cost savings from using less energy, minus increases in equipment purchase costs), and (2) the annualized monetary value of the benefits of CO₂ and NO_x emission reductions.

Table V–48 shows the annualized values for CWAFFs under TSL 2, expressed in 2014\$. The results under

the primary estimate are as follows.

Using a 7-percent discount rate for benefits and costs other than CO₂ reductions, (for which DOE used a 3-percent discount rate along with the average SCC series corresponding to a value of \$40.0/ton in 2015 (2014\$)), the estimated cost of the adopted standards for CWAFFs is \$4.31 million per year in increased equipment costs, while the estimated benefits are \$49 million per year in reduced equipment operating costs, \$24 million per year in CO₂ reductions, and \$4.91 million per year in reduced NO_x emissions. In this case,

the net benefit amounts to \$74 million per year.

Using a 3-percent discount rate for all benefits and costs and the average SCC series corresponding to a value of \$40.0/ton in 2015 (in 2014\$), the estimated cost of the adopted standards for CWAFFs is \$4.38 million per year in increased equipment costs, while the estimated benefits are \$71 million per year in reduced operating costs, \$24 million per year in CO₂ reductions, and \$7.59 million per year in reduced NO_x emissions. In this case, the net benefit amounts to \$99 million per year.

TABLE V–48—ANNUALIZED BENEFITS AND COSTS OF ADOPTED STANDARDS (TSL 2) FOR COMMERCIAL WARM AIR FURNACES

	Discount rate %	(Million 2014\$/year)		
		Primary estimate*	Low net benefits estimate*	High net benefits estimate*
Benefits				
Consumer Operating Cost Savings	7	49	48	54
	3	71	70	81
CO ₂ Reduction Value (\$12.2/t case)**	5	6.99	7.08	7.37
CO ₂ Reduction Value (\$40.0/t case)**	3	24	25	26
CO ₂ Reduction Value (\$62.3/t case)**	2.5	36	36	38
CO ₂ Reduction Value (\$117/t case)**	3	74	75	79
NO _x Reduction Value †	7	4.91	4.98	11.44
	3	7.59	7.70	17.61
Total Benefits ††	7 plus CO ₂ range	61 to 128	60 to 128	73 to 144
	7	78	78	91
	3 plus CO ₂ range	86 to 153	84 to 152	106 to 177
	3	103	102	124
Costs				
Consumer Incremental Installed Costs	7	4.31	5.04	3.92
	3	4.38	5.22	3.94
Net Benefits				
Total ††	7 plus CO ₂ range	57 to 124	55 to 123	69 to 140
	7	74	72	87
	3 plus CO ₂ range	82 to 149	79 to 147	102 to 173

TABLE V-48—ANNUALIZED BENEFITS AND COSTS OF ADOPTED STANDARDS (TSL 2) FOR COMMERCIAL WARM AIR FURNACES—Continued

	Discount rate %	(Million 2014\$/year)		
		Primary estimate*	Low net benefits estimate*	High net benefits estimate*
3	99	97	120	

* This table presents the annualized costs and benefits associated with CWAFFs shipped in 2023–2048. These results include benefits to consumers which accrue after 2048 from the CWAFFs purchased from 2023–2048. The results account for the incremental variable and fixed costs incurred by manufacturers due to the standard, some of which may be incurred in preparation for the rule. The Primary, Low Benefits, and High Benefits Estimates utilize projections of energy prices from the AEO 2015 Reference case, Low Economic Growth case, and High Economic Growth case, respectively. In addition, incremental equipment costs reflect a medium decline rate in the Primary Estimate, a low decline rate in the Low Benefits Estimate, and a high decline rate in the High Benefits Estimate. The methods used to derive projected price trends are explained in section IV.H.3.

** The CO₂ values represent global monetized values of the SCC, in 2014\$, in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

† The \$/ton values used for NO_x are described in section IV.L.2. DOE estimated the monetized value of NO_x emissions reductions using benefit per ton estimates from the *Regulatory Impact Analysis for the Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants*, published in June 2014 by EPA's Office of Air Quality Planning and Standards. (Available at: <http://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposalRIAFinal0602.pdf>.) For DOE's Primary Estimate and Low Net Benefits Estimate, the agency is primarily using a national benefit-per-ton estimate for particulate matter emitted from the Electric Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al., 2009). For DOE's High Net Benefits Estimate, the benefit-per-ton estimates were based on the Six Cities study (Lepule et al., 2011), which are nearly two-and-a-half times larger than those from the ACS study. Because of the sensitivity of the benefit-per-ton estimate to the geographical considerations of sources and receptors of emission, DOE intends to investigate refinements to the agency's current approach of one national estimate by assessing the regional approach taken by EPA's Regulatory Impact Analysis for the Clean Power Plan Final Rule.

†† Total Benefits for both the 3% and 7% cases are derived using the series corresponding to the average SCC with 3-percent discount rate (\$40.0/t case. In the rows labeled “7% plus CO₂ range” and “3% plus CO₂ range,” the operating cost and NO_x benefits are calculated using the labeled discount rate, and those values are added to the full range of CO₂ values.

VI. Procedural Issues and Regulatory Review

A. Review Under Executive Orders 12866 and 13563

Section 1(b)(1) of Executive Order 12866, “Regulatory Planning and Review,” 58 FR 51735 (Oct. 4, 1993), requires each agency to identify the problem that it intends to address, including, where applicable, the failures of private markets or public institutions that warrant new agency action, as well as to assess the significance of that problem. The problems that the adopted standards for CUACs/CHUPs and CWAFFs are intended to address are as follows:

(1) Insufficient information and the high costs of gathering and analyzing relevant information lead some consumers to miss opportunities to make cost-effective investments in energy efficiency.

(2) In some cases, the benefits of more efficient equipment are not realized due to misaligned incentives between purchasers and users. An example of such a case is when the equipment purchase decision is made by a building contractor or building owner who does not pay the energy costs to operate that equipment.

(3) There are external benefits resulting from the improved energy efficiency of CWAFFs that are not captured by the users of such equipment. These benefits include externalities related to public health,

environmental protection and national energy security that are not reflected in energy prices, such as reduced emissions of air pollutants and greenhouse gases that impact human health and global warming. DOE attempts to qualify some of the external benefits through use of social cost of carbon values.

The Administrator of the Office of Information and Regulatory Affairs (“OIRA”) in the OMB has determined that the proposed regulatory action is a significant regulatory action under section (3)(f) of Executive Order 12866. Accordingly, pursuant to section 6(a)(3)(B) of the Order, DOE has provided to OIRA: (i) The text of the draft regulatory action, together with a reasonably detailed description of the need for the regulatory action and an explanation of how the regulatory action will meet that need; and (ii) An assessment of the potential costs and benefits of the regulatory action, including an explanation of the manner in which the regulatory action is consistent with a statutory mandate. DOE has included these documents in the rulemaking record.

In addition, the Administrator of OIRA has determined that the proposed regulatory action is an “economically” significant regulatory action under section (3)(f)(1) of Executive Order 12866. Accordingly, pursuant to section 6(a)(3)(C) of the Order, DOE has provided to OIRA an assessment,

including the underlying analysis, of benefits and costs anticipated from the regulatory action, together with, to the extent feasible, a quantification of those costs; and an assessment, including the underlying analysis, of costs and benefits of potentially effective and reasonably feasible alternatives to the planned regulation, and an explanation why the planned regulatory action is preferable to the identified potential alternatives. These assessments can be found in the technical support documents for this rulemaking.

DOE has also reviewed this regulation pursuant to Executive Order 13563, issued on January 18, 2011. (76 FR 3281, Jan. 21, 2011) EO 13563 is supplemental to and explicitly reaffirms the principles, structures, and definitions governing regulatory review established in Executive Order 12866. To the extent permitted by law, agencies are required by Executive Order 13563 to: (1) Propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs (recognizing that some benefits and costs are difficult to quantify); (2) tailor regulations to impose the least burden on society, consistent with obtaining regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations; (3) select, in choosing among alternative regulatory approaches, those approaches that maximize net benefits (including

potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity); (4) to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt; and (5) identify and assess available alternatives to direct regulation, including providing economic incentives to encourage the desired behavior, such as user fees or marketable permits, or providing information upon which choices can be made by the public.

DOE emphasizes as well that Executive Order 13563 requires agencies to use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible. In its guidance, OIRA has emphasized that such techniques may include identifying changing future compliance costs that might result from technological innovation or anticipated behavioral changes. For the reasons stated in the preamble, DOE believes that this direct final rule is consistent with these principles, including the requirement that, to the extent permitted by law, benefits justify costs and that net benefits are maximized.

B. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires preparation of a final regulatory flexibility analysis ("FRFA") for any rule that by law must be proposed for public comment, unless the agency certifies that the rule, if promulgated, will not have a significant economic impact on a substantial number of small entities. As required by Executive Order 13272, "Proper Consideration of Small Entities in Agency Rulemaking," 67 FR 53461 (August 16, 2002), DOE published procedures and policies on February 19, 2003, to ensure that the potential impacts of its rules on small entities are properly considered during the rulemaking process. 68 FR 7990. DOE has made its procedures and policies available on the Office of the General Counsel's Web site (<http://energy.gov/gc/office-general-counsel>). DOE has prepared the following FRFA for the products that are the subject of this rulemaking.

For manufacturers of CUAC/CUHP and CWF equipment, the Small Business Administration ("SBA") has set a size threshold, which defines those entities classified as "small businesses" for the purposes of the statute. DOE used the SBA's small business size standards to determine whether any small entities would be subject to the

requirements of the rule. See 13 CFR part 121. The size standards are listed by North American Industry Classification System ("NAICS") code and industry description and are available at <http://www.sba.gov/category/navigation-structure/contracting/contracting-officials/small-business-size-standards>. Manufacturing of CUACs/CUHPs and CWFs is classified under NAICS 333415, "Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing." The SBA sets a threshold of 750 employees or less for an entity to be considered as a small business for this category.

1. Commercial Unitary Air Conditioners and Heat Pumps

a. Description of Estimated Number of Small Entities Regulated

To better assess the potential impacts of this rulemaking on small entities, DOE conducted a focused inquiry of the companies that could be small business manufacturers of equipment covered by this rulemaking. DOE conducted a market survey using available public information to identify potential small manufacturers. DOE's research involved industry trade association membership directories (including AHRI⁸), individual company Web sites, and market research tools (e.g., Hoovers reports⁹) to create a list of companies that manufacture or sell CUAC/CUHP equipment covered by this rulemaking. DOE also asked industry representatives if they were aware of any other small manufacturers during manufacturer interviews. DOE reviewed publicly-available data and contacted companies on its list, as necessary, to determine whether they met the SBA's definition of a small business manufacturer. DOE screened out companies that do not offer equipment covered by this rulemaking, do not meet the definition of a "small business," or are foreign-owned and operated.

DOE identified 12 CUAC/CUHP manufacturers who sell covered equipment in the U.S. market. DOE determined that nine of these manufacturers were large and three met the SBA's "small business" definition.

⁸ Based on listings in the AHRI directory accessed on August 2, 2013 (Available at: <https://www.ahridirectory.org/ahridirectory/pages/home.aspx>).

⁹ Hoovers | Company Information | Industry Information | Lists, D&B (2013) (Available at: <http://www.hoovers.com/>) (Last accessed April 3, 2013).

b. Description and Estimate of Compliance Requirements

The first small manufacturer specialized in double-duct products. A review of its product literature and Web site showed that its only covered equipment were double-duct systems. Since this direct final rule does not amend the standards for double-duct equipment, this rule will not have an impact on this small manufacturer.

The second small manufacturer did not own any production assets for the covered equipment. The company outsourced the design and manufacture to a supplier. Thus, the small business would not face any capital conversion costs and very limited equipment conversion costs.

The third small manufacturer produced covered equipment that are subject to this direct final rule. Before issuing this final rule, DOE attempted to contact this small business manufacturer. However, the business chose not to participate in an MIA interview. Based on DOE's research, this third small manufacturer has three platforms with 11 models covered by the CUAC/CUHP rulemaking. However, it is difficult for DOE to discern the potential conversion costs required to comply with the direct final rule's standard since no IEER ratings were provided for these units.

Based on literature reviews, DOE believes this third small manufacturer specializes in custom and semi-custom products. This would suggest the manufacturer has less hard-tooling than their large competitors and their capital requirements would vary dramatically from the industry average. The company's capital conversion costs would likely be smaller in absolute dollars relative to large competitors. However, the small manufacturer would likely need to recover those costs over a lower volume of shipments.

2. Commercial Warm Air Furnaces

a. Description of Estimated Number of Small Entities Regulated

To better assess the potential impacts of this rulemaking on small entities, DOE conducted a focused inquiry of the companies that could be small business manufacturers of equipment covered by this rulemaking. DOE conducted a market survey using available public information to identify potential small manufacturers. DOE's research involved industry trade association membership directories (including AHRI¹⁰),

¹⁰ Based on listings in the AHRI directory accessed on August 2, 2013 (Available at: <https://www.ahridirectory.org/ahridirectory/pages/home.aspx>).

individual company Web sites, and market research tools (e.g., Hoovers reports¹¹) to create a list of companies that manufacture or sell CWFAP equipment covered by this rulemaking. DOE also asked industry representatives if they were aware of any other small manufacturers during manufacturer interviews. DOE reviewed publicly-available data and contacted companies on its list, as necessary, to determine whether they met the SBA's definition of a small business manufacturer. DOE screened out companies that do not offer equipment covered by this rulemaking, do not meet the definition of a "small business," or are foreign-owned and operated.

DOE identified 14 manufacturers of CWFAPs sold in the U.S. market. DOE determined that eleven manufacturers were large and three manufacturers met the SBA's definition of a "small business".

Before issuing this document, DOE attempted to contact each small business CWFAP equipment manufacturer it had identified. None of them, however, consented to formal interviews. DOE also attempted to obtain information about small business impacts while interviewing large manufacturers.

DOE identified one small gas-fired CWFAP manufacturer and two small oil-fired CWFAP manufacturers. The gas-fired CWFAP manufacturer accounts for 17 of the 250 gas-fired CWFAPs listings in the AHRI Directory,¹² or approximately 7 percent of the listings. This small manufacturer offers product exclusively at 80-percent TE, and at the recommended TSL, would need to update all equipment offerings to meet a standard of 82-percent TE. However, this position is not unique. There are also some large gas-fired CWFAP manufacturers that would need to update all equipment offerings to meet the direct final rule's standard. From a design perspective, DOE believes that most gas-fired equipment lines on the market today can be upgraded to achieve the standard with increases in heat exchange surface area.

www.ahridirectory.org/ahridirectory/pages/home.aspx).

¹¹ Hoovers | Company Information | Industry Information | Lists, D&B (2013) (Available at: <http://www.hoovers.com/>) (Last accessed April 3, 2013).

¹² The AHRI directory lists approximately 1,000 units. Many of these units are from the same model line, share the same chassis, and have the same level of performance, but have different heating capacities or installed product options. DOE consolidated the AHRI listing of CWFAPs such that all units from the same model line and chassis are listed together as a single unit.

With respect to oil-fired small business CWFAP manufacturers, the first of these entities DOE examined accounts for 11 of the 16 oil-fired CWFAPs listings in the AHRI Directory. This manufacturer produces some of the most efficient products on the market at 92-percent TE. Similarly, the second small oil-fired manufacturer produces the most efficient non-condensing equipment on the market at 84-percent TE. These two small oil-fired manufacturers would unlikely be at a technological disadvantage relative to its competitors at the recommended TSL. It is possible the small manufacturers would have a competitive advantage given its technological lead and experience in the niche market of high-efficiency commercial oil-fired warm air furnaces.

Since CWFAPs have relatively low sales volumes, and because the industry as a whole generally produces equipment at the baseline, DOE believes the average impacts will be similar for large and small business manufacturers. DOE was unable to identify any publicly available information that would lead to a conclusion that small manufacturers would be differentially impacted by this direct final rule. Therefore, DOE assumed that small business manufacturers would face similar conversion costs as larger businesses. However, the small CWFAP manufacturers may need to allocate a greater portion of their technical resources or may need to access outside capital to support the transition to the direct final rule's standard.

3. Duplication, Overlap, and Conflict With Other Rules and Regulations

DOE is not aware of any rules or regulations that duplicate, overlap, or conflict with the rule being considered today.

4. Significant Alternatives to the Rule

The discussion above analyzes impacts on small businesses that would result from the direct final rule. In addition to the other TSLs being considered, the direct final rule TSDs analyzing the potential impacts from standards for CUACs/CHHPs and CWFAPs include an analysis of the following policy alternatives: (1) No change in standard; (2) consumer rebates; (3) consumer tax credits; (4) manufacturer tax credits; (5) voluntary energy efficiency targets; and (6) bulk government purchases. While these alternatives may mitigate to some varying extent the economic impacts on small entities compared to the adopted standards, DOE does not intend to consider these alternatives further

because in several cases, they would not be feasible to implement without authority and funding from Congress, and in all cases, DOE has determined that the energy savings of these alternatives are significantly smaller than those that are expected to result from adoption of the standards (0.2 percent to 2.4 percent of the energy savings from the adopted standards for CUACs/CHHPs, and less than 0.1 percent to 46 percent for CWFAPs).¹³ Accordingly, DOE is declining to adopt any of these alternatives and is adopting the standards set forth in this document. (See chapter 17 of the direct final rule TSDs for further detail on the policy alternatives DOE considered.)

Further, EPCA provides that a manufacturer whose annual gross revenue from all of its operations does not exceed \$8,000,000 may apply for an exemption from all or part of an energy conservation standard for a period not longer than 24 months after the effective date of a final rule establishing the standard. Additionally, Section 504 of the Department of Energy Organization Act, 42 U.S.C. 7194, authorizes the Secretary to adjust a rule issued under EPCA in order to prevent "special hardship, inequity, or unfair distribution of burdens" that may be imposed on that manufacturer as a result of such rule. See 10 CFR part 430, subpart E, and part 1003 for additional details.

C. Review Under the Paperwork Reduction Act

Manufacturers of CUACs/CHHPs and CWFAPs must certify to DOE that their equipment complies with any applicable energy conservation standards. In certifying compliance, manufacturers must test their equipment according to the DOE test procedures for CUACs/CHHPs and CWFAPs, including any amendments adopted for those test procedures. DOE has established regulations for the certification and recordkeeping requirements for all covered consumer products and commercial equipment, including CUACs/CHHPs and CWFAPs. 76 FR 12422 (March 7, 2011); 80 FR 5099 (Jan. 30, 2015). The collection-of-information requirement for certification and recordkeeping is subject to review and approval by OMB under the Paperwork Reduction Act ("PRA"). This requirement has been approved by OMB under OMB control number 1910-1400. The public

¹³ Bulk government purchase have a small impact on CWFAP energy use in the nation, while commercial consumer rebates could significantly impact energy use.

reporting burden for the certification is estimated to average 30 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA, unless that collection of information displays a currently valid OMB Control Number.

D. Review Under the National Environmental Policy Act of 1969

Pursuant to the National Environmental Policy Act of 1969 (“NEPA”), DOE has determined that the rule fits within the category of actions included in Categorical Exclusion (“CX”) B5.1 and otherwise meets the requirements for application of a CX. See 10 CFR part 1021, app. B, B5.1(b); § 1021.410(b) and app. B, B(1)–(5). The rule fits within the category of actions because it is a rulemaking that establishes energy conservation standards for consumer products or industrial equipment, and for which none of the exceptions identified in CX B5.1(b) apply. Therefore, DOE has made a CX determination for this rulemaking, and DOE does not need to prepare an Environmental Assessment or Environmental Impact Statement for this rule. DOE’s CX determination for this rule is available at <http://energy.gov/nepa/categorical-exclusion-cx-determinations-cx>.

E. Review Under Executive Order 13132

Executive Order 13132, “Federalism,” 64 FR 43255 (August 10, 1999) imposes certain requirements on Federal agencies formulating and implementing policies or regulations that preempt State law or that have Federalism implications. The Executive Order requires agencies to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion of the States and to carefully assess the necessity for such actions. The Executive Order also requires agencies to have an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have Federalism implications. On March 14, 2000, DOE published a statement of policy describing the intergovernmental consultation process it will follow in the development of such regulations. 65 FR 13735. DOE has

examined this direct final rule and has determined that it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. EPCA governs and prescribes Federal preemption of State regulations as to energy conservation for the equipment subject to this direct final rule. States can petition DOE for exemption from such preemption to the extent, and based on criteria, set forth in EPCA. (42 U.S.C. 6297) Therefore, no further action is required by Executive Order 13132.

F. Review Under Executive Order 12988

With respect to the review of existing regulations and the promulgation of new regulations, section 3(a) of Executive Order 12988, “Civil Justice Reform,” imposes on Federal agencies the general duty to adhere to the following requirements: (1) Eliminate drafting errors and ambiguity; (2) write regulations to minimize litigation; (3) provide a clear legal standard for affected conduct rather than a general standard; and (4) promote simplification and burden reduction. 61 FR 4729 (Feb. 7, 1996). Regarding the review required by section 3(a), section 3(b) of Executive Order 12988 specifically requires that Executive agencies make every reasonable effort to ensure that the regulation: (1) Clearly specifies the preemptive effect, if any; (2) clearly specifies any effect on existing Federal law or regulation; (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction; (4) specifies the retroactive effect, if any; (5) adequately defines key terms; and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of Executive Order 12988 requires Executive agencies to review regulations in light of applicable standards in section 3(a) and section 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE has completed the required review and determined that, to the extent permitted by law, this direct final rule meets the relevant standards of Executive Order 12988.

G. Review Under the Unfunded Mandates Reform Act of 1995

Title II of the Unfunded Mandates Reform Act of 1995 (“UMRA”) requires each Federal agency to assess the effects of Federal regulatory actions on State, local, and Tribal governments and the private sector. Pub. L. 104–4, sec. 201

(codified at 2 U.S.C. 1531). For a regulatory action likely to result in a rule that may cause the expenditure by State, local, and Tribal governments, in the aggregate, or by the private sector of \$100 million or more in any one year (adjusted annually for inflation), section 202 of UMRA requires a Federal agency to publish a written statement that estimates the resulting costs, benefits, and other effects on the national economy. (2 U.S.C. 1532(a), (b)) The UMRA also requires a Federal agency to develop an effective process to permit timely input by elected officers of State, local, and Tribal governments on a “significant intergovernmental mandate,” and requires an agency plan for giving notice and opportunity for timely input to potentially affected small governments before establishing any requirements that might significantly or uniquely affect them. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820. DOE’s policy statement is also available at http://energy.gov/sites/prod/files/gcprod/documents/umra_97.pdf.

DOE has concluded that this direct final rule may require expenditures of \$100 million or more in any one year on the private sector. Such expenditures may include: (1) Investment in research and development and in capital expenditures by CUAC/CUHP and CWAFF manufacturers in the years between the direct final rule and the compliance date for the new standards, and (2) incremental additional expenditures by consumers to purchase higher-efficiency CUACs/CUHPs and CWAFFs.

Section 202 of UMRA authorizes a Federal agency to respond to the content requirements of UMRA in any other statement or analysis that accompanies the direct final rule. (2 U.S.C. 1532(c)) The content requirements of section 202(b) of UMRA relevant to a private sector mandate substantially overlap the economic analysis requirements that apply under section 325(o) of EPCA and Executive Order 12866. The **SUPPLEMENTARY INFORMATION** section of this document and the “Regulatory Impact Analysis” section of the TSD for this direct final rule respond to those requirements.

Under section 205 of UMRA, the Department is obligated to identify and consider a reasonable number of regulatory alternatives before promulgating a rule for which a written statement under section 202 is required. (2 U.S.C. 1535(a)) DOE is required to select from those alternatives the most cost-effective and least burdensome

alternative that achieves the objectives of the rule unless DOE publishes an explanation for doing otherwise, or the selection of such an alternative is inconsistent with law. This direct final rule would establish amended energy conservation standards for CUACs/ CUHPs and CWAFFs that are designed to achieve the maximum improvement in energy efficiency that DOE has determined to be both technologically feasible and economically justified. A full discussion of the alternatives considered by DOE is presented in chapter 17 of the CUACs/ CUHPs and CWAFFs TSDs for this direct final rule.

H. Review Under the Treasury and General Government Appropriations Act, 1999

Section 654 of the Treasury and General Government Appropriations Act, 1999 (Pub. L. 105–277) requires Federal agencies to issue a Family Policymaking Assessment for any rule that may affect family well-being. This direct final rule would not have any impact on the autonomy or integrity of the family as an institution. Accordingly, DOE has concluded that it is not necessary to prepare a Family Policymaking Assessment.

I. Review Under Executive Order 12630

Pursuant to Executive Order 12630, “Governmental Actions and Interference with Constitutionally Protected Property Rights,” 53 FR 8859 (March 18, 1988), DOE has determined that this direct final rule would not result in any takings that might require compensation under the Fifth Amendment to the U.S. Constitution.

J. Review Under the Treasury and General Government Appropriations Act, 2001

Section 515 of the Treasury and General Government Appropriations Act, 2001 (44 U.S.C. 3516, note) provides for Federal agencies to review most disseminations of information to the public under information quality guidelines established by each agency pursuant to general guidelines issued by OMB. OMB’s guidelines were published at 67 FR 8452 (Feb. 22, 2002), and DOE’s guidelines were published at 67 FR 62446 (Oct. 7, 2002). DOE has reviewed this direct final rule under the OMB and DOE guidelines and has concluded that it is consistent with applicable policies in those guidelines.

K. Review Under Executive Order 13211

Executive Order 13211, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,” 66 FR 28355 (May

22, 2001), requires Federal agencies to prepare and submit to OIRA at OMB, a Statement of Energy Effects for any significant energy action. A “significant energy action” is defined as any action by an agency that promulgates or is expected to lead to promulgation of a final rule, and that: (1) Is a significant regulatory action under Executive Order 12866, or any successor order; and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy, or (3) is designated by the Administrator of OIRA as a significant energy action. For any significant energy action, the agency must give a detailed statement of any adverse effects on energy supply, distribution, or use should the proposal be implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use.

DOE has concluded that this regulatory action, which sets forth amended energy conservation standards for CUACs/ CUHPs and CWAFFs, is not a significant energy action because the standards are not likely to have a significant adverse effect on the supply, distribution, or use of energy, nor has it been designated as such by the Administrator at OIRA. Accordingly, DOE has not prepared a Statement of Energy Effects on this direct final rule.

L. Review Under the Information Quality Bulletin for Peer Review

On December 16, 2004, OMB, in consultation with the Office of Science and Technology Policy (OSTP), issued its Final Information Quality Bulletin for Peer Review (the Bulletin). 70 FR 2664 (Jan. 14, 2005). The Bulletin establishes that certain scientific information shall be peer reviewed by qualified specialists before it is disseminated by the Federal Government, including influential scientific information related to agency regulatory actions. The purpose of the bulletin is to enhance the quality and credibility of the Government’s scientific information. Under the Bulletin, the energy conservation standards rulemaking analyses are “influential scientific information,” which the Bulletin defines as “scientific information the agency reasonably can determine will have, or does have, a clear and substantial impact on important public policies or private sector decisions.” *Id.* at FR 2667.

In response to OMB’s Bulletin, DOE conducted formal in-progress peer reviews of the energy conservation standards development process and analyses and has prepared a Peer Review Report pertaining to the energy conservation standards rulemaking

analyses. Generation of this report involved a rigorous, formal, and documented evaluation using objective criteria and qualified and independent reviewers to make a judgment as to the technical/scientific/business merit, the actual or anticipated results, and the productivity and management effectiveness of programs and/or projects. The “Energy Conservation Standards Rulemaking Peer Review Report” dated February 2007 has been disseminated and is available at the following Web site:

www1.eere.energy.gov/buildings/appliance_standards/peer_review.html.

M. Congressional Notification

As required by 5 U.S.C. 801, DOE will report to Congress on the promulgation of this direct final rule prior to its effective date. The report will state that it has been determined that the rule is a “major rule” as defined by 5 U.S.C. 804(2). DOE also will submit the supporting analyses to the Comptroller General in the U.S. Government Accountability Office (“GAO”) and make them available to each House of Congress.

VII. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this direct final rule.

List of Subjects in 10 CFR Part 431

Administrative practice and procedure, Confidential business information, Energy conservation, Household appliances, Imports, Intergovernmental relations, Reporting and recordkeeping requirements, Small businesses.

Issued in Washington, DC, on December 17, 2015.

David T. Danielson,

Assistant Secretary, Energy Efficiency and Renewable Energy.

For the reasons set forth in the preamble, DOE amends part 431 of chapter II, subchapter D, of title 10 of the Code of Federal Regulations, as set forth below:

PART 431—ENERGY EFFICIENCY PROGRAM FOR CERTAIN COMMERCIAL AND INDUSTRIAL EQUIPMENT

■ 1. The authority citation for part 431 continues to read as follows:

Authority: 42 U.S.C. 6291–6317.

■ 2. Section 431.77 is revised to read as follows:

§ 431.77 Energy conservation standards and their effective dates.

(a) *Gas-fired commercial warm air furnaces.* Each gas-fired commercial warm air furnace must meet the following energy efficiency standard levels:

(1) For gas-fired commercial warm air furnaces manufactured starting on January 1, 1994, until January 1, 2023, the TE at the maximum rated capacity (rated maximum input) must be not less than 80 percent; and

(2) For gas-fired commercial warm air furnaces manufactured starting on January 1, 2023, the TE at the maximum rated capacity (rated maximum input) must be not less than 81 percent.

(b) *Oil-fired commercial warm air furnaces.* Each oil-fired commercial warm air furnace must meet the following energy efficiency standard levels:

(1) For oil-fired commercial warm air furnaces manufactured starting on January 1, 1994, until January 1, 2023, the TE at the maximum rated capacity (rated maximum input) must be not less than 81 percent; and

(2) For oil-fired commercial warm air furnaces manufactured starting on January 1, 2023, the TE at the maximum rated capacity (rated maximum input) must be not less than 82 percent.

■ 3. Section 431.92 is amended by adding the definition of “Double-duct

air conditioner or heat pump means air-cooled commercial package air conditioning and heating equipment” in alphabetical order to read as follows:

§ 431.92 Definitions concerning commercial air conditioners and heat pumps.

* * * * *

Double-duct air conditioner or heat pump means air-cooled commercial package air conditioning and heating equipment that—

(1) Is either a horizontal single package or split-system unit; or a vertical unit that consists of two components that may be shipped or installed either connected or split;

(2) Is intended for indoor installation with ducting of outdoor air from the building exterior to and from the unit, as evidenced by the unit and/or all of its components being non-weatherized, including the absence of any marking (or listing) indicating compliance with UL 1995, “Heating and Cooling Equipment,” or any other equivalent requirements for outdoor use;

(3)(i) If it is a horizontal unit, a complete unit has a maximum height of 35 inches; (ii) If it is a vertical unit, a complete unit has a maximum depth of 35 inches; and

(4) Has a rated cooling capacity greater than or equal to 65,000 Btu/h and up to 300,000 Btu/h.

* * * * *

■ 4. Section 431.97 is amended by:

■ a. Redesignating Tables 5 through 11 as Tables 7 through 13;

■ b. Revising paragraph (b) and the introductory text of paragraph (c);

■ c. In paragraph (d)(1) introductory text, removing “Table 7” and adding in its place “Table 9”;

■ d. In paragraph (d)(2) introductory text, removing “Table 8” and adding in its place “Table 10”; and

■ e. In paragraph (d)(3) introductory text, removing “Table 9” and adding in its place “Table 11”.

The revisions read as follows:

§ 431.97 Energy efficiency standards and their compliance dates.

* * * * *

(b) Each commercial air conditioner or heat pump (not including single package vertical air conditioners and single package vertical heat pumps, packaged terminal air conditioners and packaged terminal heat pumps, computer room air conditioners, and variable refrigerant flow systems) manufactured starting on the compliance date listed in the corresponding table must meet the applicable minimum energy efficiency standard level(s) set forth in Tables 1 through 6 of this section.

TABLE 1 TO § 431.97—MINIMUM COOLING EFFICIENCY STANDARDS FOR AIR CONDITIONING AND HEATING EQUIPMENT

[Not including single package vertical air conditioners and single package vertical heat pumps, packaged terminal air conditioners and packaged terminal heat pumps, computer room air conditioners, and variable refrigerant flow multi-split air conditioners and heat pumps]

Equipment type	Cooling capacity	Subcategory	Heating type	Efficiency level	Compliance date: Equipment manufactured starting on . . .
Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Split-System).	<65,000 Btu/h	AC	All	SEER = 13	June 16, 2008.
		HP	All	SEER = 13	June 16, 2008. ¹
Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Single-Package).	<65,000 Btu/h	AC	All	SEER = 13	June 16, 2008. ¹
		HP	All	SEER = 13	June 16, 2008. ¹
Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled).	≥65,000 Btu/h and <135,000 Btu/h.	AC	No Heating or Electric Resistance Heating.	EER = 11.2	January 1, 2010. ²
		HP	All Other Types of Heating No Heating or Electric Resistance Heating.	EER = 11.0	January 1, 2010. ²
		HP	All Other Types of Heating No Heating or Electric Resistance Heating.	EER = 11.0	January 1, 2010. ²
		HP	All Other Types of Heating No Heating or Electric Resistance Heating.	EER = 11.0	January 1, 2010. ²
Large Commercial Package Air Conditioning and Heating Equipment (Air-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	AC	All Other Types of Heating No Heating or Electric Resistance Heating.	EER = 10.8	January 1, 2010. ²
		HP	All Other Types of Heating No Heating or Electric Resistance Heating.	EER = 10.8	January 1, 2010. ²
		HP	All Other Types of Heating No Heating or Electric Resistance Heating.	EER = 10.6	January 1, 2010. ²
			All Other Types of Heating	EER = 10.4	January 1, 2010. ²

TABLE 1 TO § 431.97—MINIMUM COOLING EFFICIENCY STANDARDS FOR AIR CONDITIONING AND HEATING EQUIPMENT—
Continued

[Not including single package vertical air conditioners and single package vertical heat pumps, packaged terminal air conditioners and packaged terminal heat pumps, computer room air conditioners, and variable refrigerant flow multi-split air conditioners and heat pumps]

Equipment type	Cooling capacity	Subcategory	Heating type	Efficiency level	Compliance date: Equipment manufactured starting on . . .
Very Large Commercial Package Air Conditioning and Heating Equipment (Air-Cooled).	≥240,000 Btu/h and <760,000 Btu/h.	AC	No Heating or Electric Resistance Heating.	EER = 10.0	January 1, 2010. ²
		HP	All Other Types of Heating No Heating or Electric Resistance Heating.	EER = 9.8 EER = 9.5	January 1, 2010. ² January 1, 2010. ²
Small Commercial Package Air Conditioning and Heating Equipment (Water-Cooled).	<65,000 Btu/h	AC	All Other Types of Heating All	EER = 9.3 EER = 12.1	January 1, 2010. ² October 29, 2003.
.....	≥65,000 Btu/h and <135,000 Btu/h.	AC	No Heating or Electric Resistance Heating.	EER = 12.1	June 1, 2013.
Large Commercial Package Air-Conditioning and Heating Equipment (Water-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	AC	All Other Types of Heating No Heating or Electric Resistance Heating.	EER = 11.9 EER = 12.5	June 1, 2013. June 1, 2014.
Very Large Commercial Package Air-Conditioning and Heating Equipment (Water-Cooled).	≥240,000 Btu/h and <760,000 Btu/h.	AC	All Other Types of Heating No Heating or Electric Resistance Heating.	EER = 12.3 EER = 12.4	June 1, 2014. June 1, 2014.
Small Commercial Package Air-Conditioning and Heating Equipment (Evaporatively-Cooled).	<65,000 Btu/h	AC	All Other Types of Heating All	EER = 12.2 EER = 12.1	June 1, 2014. October 29, 2003.
.....	≥65,000 Btu/h and <135,000 Btu/h.	AC	No Heating or Electric Resistance Heating.	EER = 12.1	June 1, 2013.
Large Commercial Package Air-Conditioning and Heating Equipment (Evaporatively-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	AC	All Other Types of Heating No Heating or Electric Resistance Heating.	EER = 11.9 EER = 12.0	June 1, 2013. June 1, 2014.
Very Large Commercial Package Air Conditioning and Heating Equipment (Evaporatively-Cooled).	≥240,000 Btu/h and <760,000 Btu/h.	AC	All Other Types of Heating No Heating or Electric Resistance Heating.	EER = 11.8 EER = 11.9	June 1, 2014. June 1, 2014.
Small Commercial Package Air-Conditioning and Heating Equipment (Water-Source: Water-to-Air, Water-Loop).	<17,000 Btu/h	HP	All Other Types of Heating All	EER = 11.7 EER = 11.2	June 1, 2014. October 29, 2003. ³
.....	≥17,000 Btu/h and <65,000 Btu/h.	HP	All	EER = 12.0	October 29, 2003. ³
.....	≥65,000 Btu/h and <135,000 Btu/h.	HP	All	EER = 12.0	October 29, 2003. ³

¹ And manufactured before January 1, 2017. See Table 3 of this section for updated efficiency standards.² And manufactured before January 1, 2018. See Table 3 of this section for updated efficiency standards.³ And manufactured before October 9, 2015. See Table 3 of this section for updated efficiency standards.

TABLE 2 TO § 431.97—MINIMUM HEATING EFFICIENCY STANDARDS FOR AIR CONDITIONING AND HEATING EQUIPMENT
[HEAT PUMPS]

[Not including single package vertical air conditioners and single package vertical heat pumps, packaged terminal air conditioners and packaged terminal heat pumps, computer room air conditioners, variable refrigerant flow multi-split air conditioners and heat pumps, and double-duct air-cooled commercial package air conditioning and heating equipment]

Equipment type	Cooling capacity	Efficiency level	Compliance date: Equipment manufactured starting on . . .
Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Split-System).	<65,000 Btu/h	HSPF = 7.7	June 16, 2008. ¹
Small Commercial Package Air-Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Single-Package).	<65,000 Btu/h	HSPF = 7.7	June 16, 2008. ¹
Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled).	≥65,000 Btu/h and <135,000 Btu/h.	COP = 3.3	January 1, 2010. ²
Large Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	COP = 3.2	January 1, 2010. ²
Very Large Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥240,000 Btu/h and <760,000 Btu/h.	COP = 3.2	January 1, 2010. ²
Small Commercial Packaged Air Conditioning and Heating Equipment (Water-Source: Water-to-Air, Water-Loop).	<135,000 Btu/h	COP = 4.2	October 29, 2003.

¹ And manufactured before January 1, 2017. See Table 4 of this section for updated heating efficiency standards.

² And manufactured before January 1, 2018. See Table 4 of this section for updated heating efficiency standards.

TABLE 3 TO § 431.97—UPDATES TO THE MINIMUM COOLING EFFICIENCY STANDARDS FOR AIR CONDITIONING AND HEATING EQUIPMENT

[Not including single package vertical air conditioners and single package vertical heat pumps, packaged terminal air conditioners and packaged terminal heat pumps, computer room air conditioners, variable refrigerant flow multi-split air conditioners and heat pumps, and double-duct air-cooled commercial package air conditioning and heating equipment]

Equipment type	Cooling capacity	Subcategory	Heating type	Efficiency level	Compliance date: Equipment manufactured starting on . . .
Small Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥65,000 Btu/h and <135,000 Btu/h.	AC	Electric Resistance Heating or No Heating.	IEER = 12.9 IEER = 14.8	January 1, 2018. ¹ January 1, 2023.
			All Other Types of Heating	IEER = 12.7 IEER = 14.6	January 1, 2018. ¹ January 1, 2023.
		HP	Electric Resistance Heating or No Heating.	IEER = 12.2 IEER = 14.1	January 1, 2018. ¹ January 1, 2023.
			All Other Types of Heating	IEER = 12.0 IEER = 13.9	January 1, 2018. ¹ January 1, 2023.
Large Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	AC	Electric Resistance Heating or No Heating.	IEER = 12.4 IEER = 14.2	January 1, 2018. ¹ January 1, 2023.
			All Other Types of Heating	IEER = 12.2 IEER = 14.0	January 1, 2018. ¹ January 1, 2023.
		HP	Electric Resistance Heating or No Heating.	IEER = 11.6 IEER = 13.5	January 1, 2018. ¹ January 1, 2023.
			All Other Types of Heating	IEER = 11.4 IEER = 13.3	January 1, 2018. ¹ January 1, 2023.
Very Large Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥240,000 Btu/h and <760,000 Btu/h.	AC	Electric Resistance Heating or No Heating.	IEER = 11.6 IEER = 13.2	January 1, 2018. ¹ January 1, 2023.
			All Other Types of Heating	IEER = 11.4 IEER = 13.0	January 1, 2018. ¹ January 1, 2023.
		HP	Electric Resistance Heating or No Heating.	IEER = 10.6 IEER = 12.5	January 1, 2018. ¹ January 1, 2023.
			All Other Types of Heating	IEER = 10.4 IEER = 12.3	January 1, 2018. ¹ January 1, 2023.
Small Commercial Package Air-Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Split-System).	<65,000 Btu/h	AC	All	SEER = 13.0 ..	June 16, 2008.
Small Commercial Package Air-Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Single-Package).	<65,000 Btu/h	HP	All	SEER = 14.0 ..	January 1, 2017.
		AC	All	SEER = 14.0 ..	January 1, 2017.
		HP	All	SEER = 14.0 ..	January 1, 2017.

TABLE 3 TO § 431.97—UPDATES TO THE MINIMUM COOLING EFFICIENCY STANDARDS FOR AIR CONDITIONING AND HEATING EQUIPMENT—Continued

[Not including single package vertical air conditioners and single package vertical heat pumps, packaged terminal air conditioners and packaged terminal heat pumps, computer room air conditioners, variable refrigerant flow multi-split air conditioners and heat pumps, and double-duct air-cooled commercial package air conditioning and heating equipment]

Equipment type	Cooling capacity	Subcategory	Heating type	Efficiency level	Compliance date: Equipment manufactured starting on . . .
Small Commercial Packaged Air-Conditioning and Heating Equipment (Water Source: Water-to-Air, Water-Loop).	<17,000 Btu/h	HP	All	EER = 12.2	October 9, 2015.
	≥17,000 Btu/h and <65,000 Btu/h.	HP	All	EER = 13.0	October 9, 2015.
	≥65,000 Btu/h and <135,000 Btu/h.	HP	All	EER = 13.0	October 9, 2015.

¹ And manufactured before January 1, 2023.

TABLE 4 TO § 431.97—UPDATES TO THE MINIMUM HEATING EFFICIENCY STANDARDS FOR AIR-COOLED AIR CONDITIONING AND HEATING EQUIPMENT [HEAT PUMPS]

[Not including single package vertical air conditioners and single package vertical heat pumps, packaged terminal air conditioners and packaged terminal heat pumps, computer room air conditioners, variable refrigerant flow multi-split air conditioners and heat pumps, and double-duct air-cooled commercial package air conditioning and heating equipment]

Equipment type	Cooling capacity	Efficiency level. ¹	Compliance date: Equipment manufactured starting on . . .
Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Split-System).	<65,000 Btu/h	HSPF = 8.2	January 1, 2017.
Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Single Package).	<65,000 Btu/h	HSPF = 8.0	January 1, 2017.
Small Commercial Package Air Conditioning and Heating Equipment (Water-Source: Water-to-Air, Water-Loop).	<135,000 Btu/h	COP = 4.3	October 9, 2015.
Small Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥65,000 Btu/h and <135,000 Btu/h	COP = 3.3	January 1, 2018. ²
	≥135,000 Btu/h and <240,000 Btu/h	COP = 3.4	January 1, 2023.
Large Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥240,000 Btu/h and <760,000 Btu/h	COP = 3.2	January 1, 2018. ²
	≥240,000 Btu/h and <760,000 Btu/h	COP = 3.3	January 1, 2023.
Very Large Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥240,000 Btu/h and <760,000 Btu/h	COP = 3.2	January 1, 2018.

¹ For units tested using the relevant AHRI Standards, all COP values must be rated at 47 °F outdoor dry-bulb temperature for air-cooled equipment.

² And manufactured before January 1, 2023.

TABLE 5 TO § 431.97—MINIMUM COOLING EFFICIENCY STANDARDS FOR DOUBLE-DUCT AIR-CONDITIONING AND HEATING EQUIPMENT

Equipment type	Cooling capacity	Subcategory	Heating type	Efficiency level	Compliance date: Equipment manufactured starting on . . .
Small Double-Duct Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥65,000 Btu/h and <135,000 Btu/h.	AC	Electric Resistance Heating or No Heating.	EER = 11.2	January 1, 2010.
		HP	All Other Types of Heating Electric Resistance Heating or No Heating.	EER = 11.0 EER = 11.0	January 1, 2010. January 1, 2010.
Large Commercial Double-Duct Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	AC	All Other Types of Heating Electric Resistance Heating or No Heating.	EER = 10.8 EER = 11.0	January 1, 2010. January 1, 2010.
		HP	All Other Types of Heating Electric Resistance Heating or No Heating.	EER = 10.8 EER = 10.6	January 1, 2010. January 1, 2010.
Very Large Double-Duct Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥240,000 Btu/h and <300,000 Btu/h.	AC	All Other Types of Heating Electric Resistance Heating or No Heating.	EER = 10.4 EER = 10.0	January 1, 2010. January 1, 2010.
			All Other Types of Heating Electric Resistance Heating or No Heating.	EER = 10.4 EER = 10.0	January 1, 2010. January 1, 2010.

TABLE 5 TO § 431.97—MINIMUM COOLING EFFICIENCY STANDARDS FOR DOUBLE-DUCT AIR-CONDITIONING AND HEATING EQUIPMENT—Continued

Equipment type	Cooling capacity	Subcategory	Heating type	Efficiency level	Compliance date: Equipment manufactured starting on . . .
		HP	All Other Types of Heating Electric Resistance Heating or No Heating. All Other Types of Heating	EER = 9.8 EER = 9.5 EER = 9.3	January 1, 2010. January 1, 2010. January 1, 2010.

TABLE 6 TO § 431.97—MINIMUM HEATING EFFICIENCY STANDARDS FOR DOUBLE-DUCT AIR-COOLED AIR CONDITIONING AND HEATING EQUIPMENT
[Heat pumps]

Equipment type	Cooling capacity	Heating type	Efficiency level ¹	Compliance date: Equipment manufactured starting on . . .
Small Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥65,000 Btu/h and <135,000 Btu/h.	Electric Resistance Heating or No Heating.	COP = 3.3	January 1, 2010.
Large Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥135,000 Btu/h and <240,000 Btu/h.	All Other Types of Heating Electric Resistance Heating or No Heating.	COP = 3.3 COP = 3.2	January 1, 2010. January 1, 2010.
Very Large Commercial Packaged Air Conditioning and Heating Equipment (Air-Cooled).	≥240,000 Btu/h and <300,000 Btu/h.	All Other Types of Heating Electric Resistance Heating or No Heating.	COP = 3.2 COP = 3.2	January 1, 2010. January 1, 2010.
		All Other Types of Heating	COP = 3.2	January 1, 2010.

¹For units tested using the relevant AHRI Standards, all COP values must be rated at 47 °F outdoor dry-bulb temperature for air-cooled equipment.

(c) Each packaged terminal air conditioner (PTAC) and packaged terminal heat pump (PTHP) manufactured starting on January 1, 1994, but before October 8, 2012 (for standard size PTACs and PTHPs) and before October 7, 2010 (for non-standard

size PTACs and PTHPs) must meet the applicable minimum energy efficiency standard level(s) set forth in Table 7 of this section. Each standard size PTAC and PTHP manufactured starting on October 8, 2012, and each non-standard size PTAC and PTHP manufactured

starting on October 7, 2010, must meet the applicable minimum energy efficiency standard level(s) set forth in Table 6 of this section.

* * * * *

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Part IV

Environmental Protection Agency

40 CFR Part 98

2015 Revisions and Confidentiality Determinations for Data Elements Under the Greenhouse Gas Reporting Rule; Proposed Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 98

[EPA-HQ-OAR-2015-0526; FRL-9934-93-OAR]

RIN 2060-AS60

2015 Revisions and Confidentiality Determinations for Data Elements Under the Greenhouse Gas Reporting Rule

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule; grant of reconsideration.

SUMMARY: The Environmental Protection Agency (EPA) is proposing to amend specific provisions in the Greenhouse Gas Reporting Rule to streamline and improve implementation of the rule, to improve the quality and consistency of the data collected under the rule, and to clarify or provide minor updates to certain provisions that have been the subject of questions from reporting entities. This action also proposes confidentiality determinations for the reporting of certain data elements to the program. This action also proposes action in response to a petition to reconsider specific aspects of the Greenhouse Gas Reporting Rule.

DATES: Comments must be received on or before February 29, 2016.

Public hearing. The EPA does not plan to conduct a public hearing unless requested. To request a hearing, please contact the person listed in the following **FOR FURTHER INFORMATION CONTACT** section by January 20, 2016. If requested, the hearing will be conducted on February 1, 2016, in the Washington, DC area. The EPA will provide further information about the hearing on its Web site (<http://www.epa.gov/ghgreporting/index.html>) if a hearing is requested.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2015-0526, to the Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or withdrawn. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (i.e. on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www2.epa.gov/dockets/commenting-epa-dockets>.

FOR FURTHER INFORMATION CONTACT:

Carole Cook, Climate Change Division, Office of Atmospheric Programs (MC-6207J), Environmental Protection Agency, 1200 Pennsylvania Ave. NW., Washington, DC 20460; telephone number: (202) 343-9263; fax number: (202) 343-2342; email address: GHGReporting@epa.gov. Alternatively, you may contact the Greenhouse Gas Reporting Rule Helpline at: http://www.epa.gov/climatechange/emissions/ghgrule_contactus.htm or Carole Cook at 202-343-9263.

Worldwide Web (WWW). In addition to being available in the docket, an electronic copy of today's proposal will also be available through the WWW.

Following the Administrator's signature, a copy of this action will be posted on the EPA's Greenhouse Gas Reporting Rule Web site at <http://www.epa.gov/ghgreporting>.

SUPPLEMENTARY INFORMATION: *Regulated entities.* These proposed revisions affect entities that must submit annual greenhouse gas (GHG) reports under the Greenhouse Gas Reporting Program (GHGRP) (40 CFR part 98). This proposed rule would impose on entities across the U.S. a degree of reporting consistency for Greenhouse Gas Emissions from most sectors of the economy and therefore is "nationally applicable" within the meaning of section 307(b)(1) of the Clean Air Act (CAA). Although the EPA concludes that the rule is nationally applicable, the EPA is also making a determination, for purposes of CAA section 307(b)(1), that this action is of nationwide scope and effect and is based on such a determination. (See CAA section 307(b)(1) (a petition for review may be filed in the United States Court of Appeals for the District of Columbia "if such action is based on a determination of nationwide scope or effect and if in taking such action the Administrator finds and publishes that such action is based on such a determination"). Further, the Administrator has determined that rules codified in 40 CFR part 98 are subject to the provisions of Clean Air Act (CAA) section 307(d). See CAA section 307(d)(1)(V) (the provisions of section 307(d) apply to "such other actions as the Administrator may determine"). These are proposed amendments to existing regulations. If finalized, these amended regulations would affect owners or operators of certain suppliers and direct emitters of GHGs. Regulated categories and entities include, but are not limited to, those listed in Table 1 of this preamble:

TABLE 1—EXAMPLES OF AFFECTED ENTITIES BY CATEGORY

Category	NAICS	Examples of affected facilities
General Stationary Fuel Combustion Sources .....	.....	Facilities operating boilers, process heaters, incinerators, turbines, and internal combustion engines.
	211	Extractors of crude petroleum and natural gas.
	321	Manufacturers of lumber and wood products.
	322	Pulp and paper mills.
	325	Chemical manufacturers.
	324	Petroleum refineries, and manufacturers of coal products.
	316, 326, 339	Manufacturers of rubber and miscellaneous plastic products.
	331	Steel works, blast furnaces.
	332	Electroplating, plating, polishing, anodizing, and coloring.
	336	Manufacturers of motor vehicle parts and accessories.
	221	Electric, gas, and sanitary services.
	622	Health services.
	611	Educational services.
Acid Gas Injection Projects	211111 or 211112	Projects that inject acid gas containing CO ₂ underground.

TABLE 1—EXAMPLES OF AFFECTED ENTITIES BY CATEGORY—Continued

Category	NAICS	Examples of affected facilities
Adipic Acid Production	325199	Adipic acid manufacturing facilities.
Aluminum Production	331312	Primary aluminum production facilities.
Ammonia Manufacturing	325311	Anhydrous and aqueous ammonia manufacturing facilities.
CO ₂ Enhanced Oil and Gas Recovery Projects	211	Oil and gas extraction projects using CO ₂ enhanced oil and gas recovery.
Electrical Equipment Use	221121	Electric bulk power transmission and control facilities.
Electronics Manufacturing	334111	Microcomputers manufacturing facilities.
	334413	Semiconductor, photovoltaic (solid-state) device manufacturing facilities.
	334419	LCD unit screens manufacturing facilities. MEMS manufacturing facilities.
Geologic Sequestration Sites	N/A	CO ₂ geologic sequestration projects.
Glass Production	327211	Flat glass manufacturing facilities.
	327213	Glass container manufacturing facilities.
	327212	Other pressed and blown glass and glassware manufacturing facilities.
HCFC–22 Production and HFC–23 Destruction	325120	Chlorodifluoromethane manufacturing facilities
Hydrogen Production	325120	Hydrogen manufacturing facilities.
Iron and Steel Production	331111	Integrated iron and steel mills, steel companies, sinter plants, blast furnaces, basic oxygen process furnace shops.
Lime Production	327410	Calcium oxide, calcium hydroxide, dolomitic hydrates manufacturing facilities.
Nitric Acid Production	325311	Nitric acid manufacturing facilities.
Petrochemical Production	325111	Ethylene dichloride manufacturing facilities.
	325199	Acrylonitrile, ethylene oxide, methanol manufacturing facilities.
	325110	Ethylene manufacturing facilities.
	325182	Carbon black manufacturing facilities.
Phosphoric Acid Production	325312	Phosphoric acid manufacturing facilities.
Petroleum Refineries	324110	Petroleum refineries.
Pulp and Paper Manufacturing	322110	Pulp mills.
	322121	Paper mills.
	322130	Paperboard mills.
Municipal Solid Waste Landfills	562212	Solid waste landfills.
	221320	Sewage treatment facilities.
Soda Ash Manufacturing	325181	Akalies and chlorine manufacturing facilities.
	212391	Soda ash, natural, mining and/or beneficiation.
Suppliers of Coal Based Liquids Fuels	211111	Coal liquefaction at mine sites.
Suppliers of Petroleum Products	324110	Petroleum refineries.
Suppliers of Natural Gas and NGLs	221210	Natural gas distribution facilities.
	211112	Natural gas liquid extraction facilities.
Suppliers of Industrial Greenhouse Gases	325120	Industrial gas manufacturing facilities.
Suppliers of Carbon Dioxide	325120	Industrial gas manufacturing facilities.
Underground Coal Mines	212113	Underground anthracite coal mining operations.
	212112	Underground bituminous coal mining operations.
Industrial Wastewater Treatment	322110	Pulp mills.
	322121	Paper mills.
	322122	Newsprint mills.
	322130	Paperboard mills.
	311611	Meat processing facilities.
	311411	Frozen fruit, juice, and vegetable manufacturing facilities.
	311421	Fruit and vegetable canning facilities.
	325193	Ethanol manufacturing facilities.
	324110	Petroleum refineries.
Industrial Waste Landfills	562212	Solid waste landfills.
	221320	Sewage treatment facilities.
	322110	Pulp mills.
	322121	Paper mills.
	322122	Newsprint mills.
	322130	Paperboard mills.
	311611	Meat processing facilities.
	311411	Frozen fruit, juice and vegetable manufacturing facilities.
	311421	Fruit and vegetable canning facilities.

Table 1 of this preamble is not intended to be exhaustive, but rather provides a guide for readers regarding facilities likely to be affected by this action. Other types of facilities than

those listed in the table could also be subject to reporting requirements. To determine whether you are affected by this action, you should carefully examine the applicability criteria found

in 40 CFR part 98, subpart A or the relevant criteria in the sections related to industrial gas suppliers and direct emitters of GHGs. If you have questions regarding the applicability of this action

to a particular facility, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section. Many facilities that are affected by 40 CFR part 98 have GHG emissions from multiple source categories listed in Table 1 of this preamble.

Acronyms and Abbreviations. The following acronyms and abbreviations are used in this document.

ASTM American Society for Testing and Materials
 CAA Clean Air Act
 CAS Chemical Abstracts Service
 CBI confidential business information
 CEMS continuous emission monitoring system
 CFR Code of Federal Regulations
 CH₄ methane
 CO₂ carbon dioxide
 CO₂e carbon dioxide equivalent
 DE destruction efficiency
 EDC ethylene dichloride
 e-GGRT electronic Greenhouse Gas Reporting Tool
 EF emission factor
 EGU NSPS Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units
 EIA Energy Information Administration
 EO Executive Order
 ER enhanced oil and gas recovery
 EPA U.S. Environmental Protection Agency
 FR Federal Register
 GHG greenhouse gas
 GHGRP Greenhouse Gas Reporting Program
 GWP Global warming potential
 Hg mercury
 HHV high heat value
 ICR Information Collection Request
 IPCC Intergovernmental Panel on Climate Change
 ISBN International Standard Book Number
 IUPAC International Union of Pure and Applied Chemistry
 IVT Inputs Verification Tool
 kg kilograms
 LDC local distribution company
 LNG liquefied natural gas
 mmBtu/hr million British thermal units per hour
 mmcfcd million cubic feet per day
 MSHA Mine Safety and Health Administration
 MSW municipal solid waste
 mtCO₂e metric tons of CO₂ equivalents
 N₂O nitrous oxide
 NGL natural gas liquid
 NAICS North American Industry Classification System
 OAQPS Office of Air Quality Planning and Standards
 ODS ozone-depleting substances
 OMB Office of Management and Budget
 PRA Paperwork Reduction Act
 PFC perfluorocarbon
 QA/QC quality assurance/quality control
 RFA Regulatory Flexibility Act
 RY Reporting year
 SF₆ Sulfur hexafluoride
 UIC Underground Injection Control
 U.S. United States
 UMRA Unfunded Mandates Reform Act of 1995

VCM vinyl chloride monomer

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I. Background

A. How is this preamble organized?

The first section of this preamble contains background information regarding the origin of the proposed amendments. This section also discusses the EPA's legal authority under the CAA to promulgate (including subsequent amendments to) the Greenhouse Gas Reporting Rule, codified at 40 CFR part 98 (hereinafter referred to as "Part 98") and the EPA's legal authority to make confidentiality determinations for new or revised data elements required by this amendment or for existing data elements for which a confidentiality determination has not previously been proposed. Section I of this preamble also discusses when the proposed amendments would apply and provides additional information regarding materials referenced in this rulemaking. Section II of this preamble describes the types of amendments included in this rulemaking, and includes the rationale for each type of proposed change. Section III of this preamble is organized by Part 98 subpart and contains detailed information on the proposed revisions to each subpart and the rationale for the proposed revisions in each section. Section IV of this preamble discusses the proposed confidentiality determinations for new or substantially

revised (i.e., requiring additional or different data to be reported) data reporting elements, as well as proposed confidentiality determinations for certain existing data elements in subparts I, Z, MM, NN, PP, and RR for which the EPA has not previously made a determination or where the EPA has determined that the current determination is no longer appropriate. Section V of this preamble discusses the impacts of the proposed amendments. Finally, section VI of this preamble describes the statutory and executive order requirements applicable to this action.

B. Executive Summary

The GHGRP is a well-known, reliable source for high-quality, timely greenhouse gas emissions data that enables key stakeholders to understand greenhouse gas emissions, identify emission reduction opportunities, and take action. Since the first year of data collection through the GHGRP, the EPA has responded to tens of thousands of questions from reporters, engaged in stakeholder outreach through compliance assistance webinars, solicited feedback via a public testing process to help improve the EPA's electronic Greenhouse Gas Reporting Tool (e-GGRT), and learned about various site specific scenarios via interaction with reporters during the verification of submitted data. Through these extensive outreach efforts, the EPA has improved our understanding of the technical challenges and burden associated with implementation of the Part 98 provisions, as well as issues that may impact the quality of the data received. The proposed changes would amend specific provisions in the Greenhouse Gas Reporting Rule to streamline and improve implementation of the rule, improve the quality and consistency of the data collected under the rule, and clarify or provide minor updates to certain provisions that have been the subject of questions and feedback from reporting entities.

The EPA is proposing amendments that can be categorized as follows:

- Revisions to streamline implementation and reduce burden. These changes reduce or simplify requirements in a manner that would ease burden on reporters and the EPA. The changes would also improve the usefulness of data for the public. Such revisions include revising requirements

to focus EPA and reporter resources on relevant data, removing reporting requirements for specific facilities that report little to no emissions, or removing reported data elements that are no longer necessary.

- Amendments to improve quality of data. These amendments are needed to ensure that accurate data are being collected under the rule and would expand monitoring or reporting requirements that are necessary to improve verification and improve the accuracy of data used to inform the Inventory of U.S. Greenhouse Gas Emissions and Sinks (hereafter referred to as the "U.S. GHG Inventory").

- Minor amendments to better reflect industry processes and emissions. Such revisions include amendments to calculation, monitoring, or measurement methods that would address prior petitioner or commenter concerns (e.g., amendments that provide additional flexibility for facilities or that more accurately reflect industry processes and emissions).

- Minor clarifications and corrections to improve understanding of the rule. Such revisions include the following: Corrections to errors in terms and definitions in certain equations; clarifications that provide additional information for reporters to better or more fully understand compliance obligations; changes to correct cross references within and between subparts; and other editorial or harmonizing changes that would improve the public's understanding of the rule.

This action also proposes to establish confidentiality determinations for the reporting of certain data elements added or revised in these proposed amendments, and for certain existing data elements for which no confidentiality determination has been previously proposed.¹ Finally, section III.S of this preamble describes the proposed changes in response to a petition to reconsider specific aspects of

subpart HH, which applies to municipal solid waste landfills.

The proposed revisions are anticipated to increase burden for Part 98 reporters in cases where they would expand current applicability, monitoring, or reporting, and are anticipated to decrease burden for reporters in cases where they would streamline Part 98 to remove notification or reporting requirements or simplify the data that must be reported. The estimated incremental change in burden from the proposed amendments to Part 98 includes burden associated with: (1) Changes to the reporting requirements by adding, revising, or removing existing reporting requirements; (2) revisions to the applicability of subparts such that additional facilities would be required to report; and (3) additional monitoring requirements for underground coal mines. Many of the amendments that the EPA is proposing in this action are not anticipated to have a significant impact on burden. As discussed in section I.E of this preamble, we are proposing to implement these changes over reporting years 2016, 2017, and 2018 in order to stagger the implementation of these changes over time. The burden has subsequently been determined based on when the proposed revisions would be implemented in each year (e.g., the burden for RY2016 only reflects changes to subparts I (Electronics Manufacturing) and HH (Municipal Solid Waste Landfills), and related changes to subpart A (General Provisions)). The EPA determined that one-time implementation costs would apply for certain revisions to applicability and monitoring requirements that would first apply in reporting year (RY) 2017 and RY2018; therefore, we have estimated costs through RY2019 to reflect the subsequent annual costs incurred by industry. As more fully explained in section V of this preamble, the EPA has determined that the total estimated incremental burden associated with all revisions in this proposed rulemaking would be \$2,049,478 over the 3 years covered by the proposed rule, with an estimated annual burden of \$1,081,830 per year once all changes have been implemented. The incremental implementation costs for each reporting year are summarized in Table 2 of this preamble.

¹ During the development of Part 98, the EPA received a number of comments from stakeholders regarding their concern that some of the data reported consisted of confidential business information that, if released to the public, would likely harm their competitive position. The EPA has subsequently published a series of notices to establish determinations for the confidentiality status of data required to be reported under the GHGRP (i.e., "confidentiality determinations"). See section IV.A of this preamble for additional information.

TABLE 2—INCREMENTAL BURDEN FOR REPORTING YEARS 2016–2019
[\$/year]

Reporting year	2016	2017	2018	2019
Total Annual Cost (all subparts)	\$9K	\$34K	\$2.0M	\$1.1M

C. Background on This Proposed Rule

The GHG Reporting Rule was published in the **Federal Register** on October 30, 2009 (74 FR 56260). The final rule became effective on December 29, 2009 and requires reporting of GHGs from various facilities and suppliers, consistent with the 2008 Consolidated Appropriations Act.²

The EPA subsequently proposed and finalized amendments to various subparts, including subparts in this action. The amendments generally did not change the basic requirements of Part 98, but were intended to improve clarity and ensure consistency across the calculation, monitoring, and data reporting requirements. The EPA issued additional rules in 2010 finalizing the requirements for subparts T, FF, II, and TT (75 FR 39736, July 12, 2010); subparts I, L, DD, QQ, and SS (75 FR 74774, December 1, 2010); and subparts RR and UU (75 FR 75060, December 1, 2010). Following the promulgation of these subparts, the EPA finalized several technical and clarifying amendments to these and other subparts under the GHGRP. A number of subparts have been revised since promulgation (75 FR 79092, December 17, 2010; 76 FR 73866, November 29, 2011; 77 FR 10373, February 22, 2012; 77 FR 29935, May 21, 2012; 77 FR 51477, August 24, 2012; 78 FR 68162, November 13, 2013; 78 FR 71904, November 29, 2013; 79 FR 63750, October 24, 2014; and 79 FR 73750, December 11, 2014). The amendments in this action are a continuation of the effort to improve the GHGRP and address issues identified during implementation.

D. Legal Authority

The EPA is proposing these rule amendments under its existing CAA authority provided in CAA section 114. As stated in the preamble to the 2009 final GHG reporting rule (74 FR 56260), CAA section 114(a)(1) provides the EPA broad authority to require the information proposed to be gathered by

this rule because such data would inform and are relevant to the EPA's carrying out a wide variety of CAA provisions. See the preambles to the proposed and final GHG reporting rule for further information.

In addition, the EPA is proposing confidentiality determinations for proposed new, revised, and existing data elements in Part 98 under its authorities provided in sections 114, 301, and 307 of the CAA. Section 114(c) of the CAA requires that the EPA make publicly available information obtained under CAA section 114, except for information (excluding emission data) that qualifies for confidential treatment. The Administrator has determined that this proposed rule is subject to the provisions of section 307(d) of the CAA. Generally section 307(d) contains a set of procedures relating to the issuance and review of certain enumerated CAA rules.

E. When would the proposed amendments apply?

In this action, the EPA is proposing: (1) Numerous amendments to Part 98 including subpart-specific revisions that would streamline implementation of Part 98, improve the quality of the data collected under the rule, update certain provisions to more accurately reflect industry processes and emissions, and other corrections, as described in sections II and III of this preamble; and (2) new or revised confidentiality determinations for data elements that are added or revised in the proposed amendments or for certain existing data elements, as described in section IV of this preamble. The EPA is planning to phase in implementation of the proposed requirements depending on the nature of the revision. Some of the amendments would apply in RY2016, some in RY2017, and some in RY2018. This section describes when each of the proposed amendments would apply.

We are proposing that amendments to 40 CFR part 98, subparts I (Electronics Manufacturing) and HH (Municipal

Solid Waste Landfills), with related revisions to subpart A (General Provisions), would apply to the RY2016 reports, which must be submitted by March 31, 2017. The remaining amendments proposed in this action would apply to annual reports submitted for RY2017, except for amendments to V (Nitric Acid Production), Y (Petroleum Refineries), FF (Underground Coal Mines) and OO (Suppliers of Industrial Greenhouse Gases) which would apply to reports for RY2018.

We are proposing to implement these revisions over reporting years 2016, 2017, and 2018 in order to stagger the implementation of these changes over time, in consideration of the types of changes being made and the associated revisions needed to implement them, including impacts to reporters and revisions to EPA's e-GGRT. Specifically, some of the proposed changes include revisions to software that would need to be updated in e-GGRT. The time phasing also allows sufficient lead time for reporters to implement the proposed changes following the promulgation of the final rule revisions. For example, where the proposed changes would require reporters to collect new data that are not readily available or that could not be determined from existing monitoring and recordkeeping, the EPA would not apply these changes to RY2016 reports. The proposed schedule also provides sufficient time for new reporters who would become subject to Part 98 as a result of the proposed amendments to acquire monitoring equipment and begin collecting data. The amendments that would apply to RY2016, RY2017, and RY2018 reports are discussed in sections I.E.1, I.E.2, and I.E.3 of this preamble.

1. Which proposed amendments would apply beginning with RY2016?

Table 3 of this preamble lists the affected subparts and proposed changes that would apply to RY2016.

² Consolidated Appropriations Act, 2008, Public Law 110–161, 121 Stat. 1844, 2128.

TABLE 3—PROPOSED CHANGES TO PART 98 APPLICABLE TO RY2016

Subpart affected ^a	Changes applicable in RY2016
A—General Provisions	40 CFR 98.6 (definition of “Gas collection system or landfill gas collection system” only).
I—Electronics Manufacturing	All proposed changes in subpart.
HH—Municipal Solid Waste Landfills	All proposed changes in subpart.

^a Subpart names may also be found in the Table of Contents for this preamble.

We are proposing that all changes to subparts I and HH, and minor revisions to subpart A, would apply to reports for RY2016, which must be submitted by March 31, 2017. For subpart I, we are proposing several revisions that would improve the quality of the data collected. For example, we are proposing to revise the requirements of the technology triennial report in 40 CFR 98.96(y), which applies to semiconductor manufacturing facilities with emissions from subpart I processes greater than 40,000 metric tons of carbon dioxide equivalent (mtCO₂e) per year. Per the requirements of 40 CFR 98.96(y)(1), facilities are required to submit the first triennial report on March 31, 2017. The changes we are proposing to 40 CFR 98.96(y) would clarify the types of data and measurements to be submitted with the triennial report, but would not fundamentally alter the data reported or require additional data collection from reporters. Specifically, we are clarifying that where reporters provide any utilization and by-product formation rates and/or destruction or removal efficiency data in the triennial report, they must also include information on the methods and conditions under

which the data were collected, where available (see section III.F of this preamble for additional information). We are proposing to implement the changes to subpart I in RY2016 in order to ensure that the data submitted in the triennial reports submitted on March 31, 2017 reflects these methods and conditions, which will help the EPA to more efficiently review the reported data. In addition to the proposed changes to 40 CFR 98.96(y), the EPA is proposing revisions to improve the methodology used to calculate the fraction of fluorinated-GHG and fluorinated-GHG byproduct destroyed or removed in a fab using the stack testing methodology.

Under subpart HH, we are proposing several revisions to improve the quality of the data collected, better align the rule requirements with industry operating practices, and streamline the reporting requirements. We are also proposing one related change to subpart A of Part 98 to update the definition of “gas collection system or landfill gas collection system” in 40 CFR 98.6. These revisions, which are described in section III.S of this preamble, are proposed to apply to RY2016 reports because they provide additional

clarifications and flexibility regarding the existing regulatory requirements that address questions raised by reporters during implementation.

We have determined that it would be feasible for existing reporters to implement the proposed changes to subparts A, I, and HH for RY2016 because these changes are consistent with the data collection and calculation methodologies in the current rule. The proposed revisions would not add new monitoring requirements, and would not substantially affect the type of information that must be collected. The owners or operators are not required to actually submit RY2016 reports until March 31, 2017, which is three months or more after we expect the final rule amendments based on this proposal to be published, thus providing ample opportunity for reporters to adjust to the amendments.

2. Which proposed amendments would apply beginning with RY2017?

Table 4 of this preamble lists the affected subparts and proposed changes that would apply to RY2017. For these revisions, reporters would submit an annual report on March 31, 2018.

TABLE 4—PROPOSED CHANGES TO PART 98 APPLICABLE TO RY2017

Subpart affected	Changes applicable in RY2017
A—General Provisions	§ 98.2; § 98.3; § 98.4; § 98.6; § 98.7(e)(33); and Tables A–3 and A–4.
C—General Stationary Fuel Combustion Sources	All proposed changes in subpart.
E—Adipic Acid Production	All proposed changes in subpart.
F—Aluminum Production	All proposed changes in subpart.
G—Ammonia Manufacturing	All proposed changes in subpart.
N—Glass Production	All proposed changes in subpart.
O—HCFC–22 Production and HFC–23 Destruction	All proposed changes in subpart.
P—Hydrogen Production	All proposed changes in subpart.
Q—Iron and Steel Production	All proposed changes in subpart.
S—Lime Manufacturing	All proposed changes in subpart.
U—Miscellaneous Uses of Carbonate	All proposed changes in subpart.
X—Petrochemical Production	All proposed changes in subpart.
Z—Phosphoric Acid Production	All proposed changes in subpart.
AA—Pulp and Paper Manufacturing	All proposed changes in subpart.
CC—Soda Ash Manufacturing	All proposed changes in subpart.
DD—Use of Electric Transmission and Distribution Equipment	All proposed changes in subpart.
II—Industrial Wastewater Treatment	All proposed changes in subpart.
LL—Suppliers of Coal-based Liquid Fuels	All proposed changes in subpart.
MM—Suppliers of Petroleum Products	All proposed changes in subpart.
NN—Suppliers of Natural Gas and Natural Gas Liquids	All proposed changes in subpart.
PP—Suppliers of Carbon Dioxide	All proposed changes in subpart.
RR—Geologic Sequestration of Carbon Dioxide	All proposed changes in subpart.
TT—Industrial Waste landfills	All proposed changes in subpart.

TABLE 4—PROPOSED CHANGES TO PART 98 APPLICABLE TO RY2017—Continued

Subpart affected	Changes applicable in RY2017
UU—Injection of Carbon Dioxide	All proposed changes in subpart.

The changes to subparts listed in Table 4 of this preamble would apply to the annual reports submitted for RY2017 on March 31, 2018; these changes are proposed to apply to the 2017 reporting year in order to allow for adequate time for the agency to integrate the revisions through e-GGRT and the Inputs Verification Tool (IVT), as well as prepare to incorporate the revisions into other GHGRP datasets and publications. The changes to subparts included in Table 4 of this preamble would be feasible for reporters to implement for RY2017 because these changes are consistent with the data collection and calculation methodologies in the current rule. In most cases, the proposed revisions include minor revisions such as editorial corrections, corrections to cross-references, and technical clarifications regarding the existing regulatory requirements. Where calculation equations are proposed to be modified, the changes generally clarify terms in the emission calculation equations and do not materially affect monitoring requirements or how emissions are calculated. In some cases, we are adding flexibility by providing alternative monitoring methods or missing data procedures that would reduce burden on reporters. For example, in subpart AA (Pulp and Paper Manufacturing), for missing

measurements of the mass of spent liquor solids or spent pulping liquor flow rates, we are proposing to allow reporters to use the daily mass of spent liquor solids fired that are currently reported under 40 CFR 63, subpart MM (National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills) as an alternative to maximum mass and flow rate values currently required in 40 CFR 98.275(b) (see section III.O of this preamble for additional information). Other proposed changes would reduce the type of information that must be collected; *e.g.*, we are proposing to revise 40 CFR 98.2(i) of subpart A to clarify the EPA's policies allowing reporters to cease reporting under Part 98 (see section III.A.1 of this preamble), and we are proposing to remove reporting requirements in subpart O (HFC-22 Production and HFC-23 Destruction) (see section III.H of this preamble) and subpart LL (Suppliers of Coal-based Liquid Fuels) (see section III.U of this preamble) that are no longer needed to support verification or other activities. Although some of the proposed revisions included in Table 4 of this preamble would include reporting additional data, the EPA has determined that the data we are proposing to collect would be readily

available to reporters. For example, we are proposing to add requirements to 40 CFR part 98, subpart DD (Electrical Transmission and Distribution Equipment Use) and subpart NN (Suppliers of Natural Gas and Natural Gas Liquids) for reporters to include the name of the U.S. state or territory covered in the facility's annual report. Because these revisions would not require the collection of additional data or changes to existing monitoring requirements, it is feasible for these revisions to be implemented for RY2016. However, we are not implementing these changes until RY2017 to allow the agency sufficient time to incorporate the revisions into e-GGRT and IVT. Finally, we note that the reporters affected under the subparts in Table 4 of this preamble are not required to actually submit RY2017 reports until March 31, 2018. Because a final rule based on this proposal would be finalized in late 2016, reporters will have over a year to prepare for the amendments before they must submit RY2017 reports.

3. Which proposed amendments would apply beginning with RY2018?

We are proposing that the revisions to the subparts listed in Table 5 of this preamble would apply to annual reports submitted for RY2018, which must be submitted by March 31, 2019.

TABLE 5—PROPOSED CHANGES TO PART 98 APPLICABLE FOR RY2018

Subpart affected	Changes applicable in RY2018
A—General Provisions	§ 98.7(l)(1); Table A-5.
V—Nitric Acid Production	All proposed changes in subpart.
Y—Petroleum Refineries	All proposed changes in subpart.
FF—Underground Coal Mines	All proposed changes in subpart.
OO—Suppliers of Industrial Greenhouse Gases	All proposed changes in subpart.

We are proposing that revisions to subparts V, Y, FF, and OO, and related changes to 40 CFR 98.7(l)(1) and Table A-5 of subpart A, would apply to RY2018, with reporters following the revised rule requirements beginning January 1, 2018. In several cases, the proposed changes would revise the applicability of a source category to certain facilities or significantly revise existing calculation or monitoring methodologies. For example, we are proposing to revise the definition of the

industrial gas supplier source category in 40 CFR part 98, subpart OO to include facilities that destroy, but do not produce, fluorinated GHGs and fluorinated HTFs. These proposed changes could expand the applicability of Part 98 to additional facilities that were not previously required to report under the rule; these facilities would require more time to acquire and install monitoring equipment and begin collecting data under Part 98. Similarly, we are proposing to revise the

calculation methodology for delayed coking units in 40 CFR part 98, subpart Y (Petroleum Refineries) to better reflect industry emissions (see section III.M of this preamble).

As discussed in section III.R of this preamble, we are proposing some methodological changes to subpart FF to clarify the type of facilities included in the source category and revise the monitoring and data collection requirements to improve the quality of the data collected. We are proposing a related revision to 40 CFR 98.7(l)(1) in

subpart A to incorporate updated methods for sampling methane concentration and conducting measurements of flow rate, temperature, pressure, and moisture content. Given that the final rule revisions would not be finalized until the second half of 2016, it is assumed that it would not be feasible for these facilities to acquire, install, and calibrate new monitoring equipment, or to perform more frequent monitoring, in time for the reports submitted for RY2017. However, the EPA is also seeking comment on whether underground coal mine facilities would indeed be able to meet these revised requirements for RY2017.

In past rulemakings, the EPA has typically required monitoring to begin a few months after finalization of revised rules, and has offered Best Available Monitoring Methods (BAMM) to be used temporarily to provide sufficient time for facilities to come into full compliance with the newly finalized monitoring methods. In this action, to avoid the need to offer the use of BAMM and to stagger the burden associated with making revisions to e-GGRT, we are proposing that the revisions to these subparts would apply to RY2018 reports. If finalized, subpart V, Y, FF, and OO reporters, including new reporters, would begin following the revised rule requirements on January 1, 2018 and submit the first annual reports using the revised monitoring and data collection methods on March 31, 2019. This schedule would allow at least one year for subpart V, Y, FF, and OO reporters to acquire, install, and calibrate any new monitoring equipment, as well as implement any changes to existing monitoring methods, for the 2018 reporting year. The proposed timeline also allows sufficient time for the agency to integrate any associated changes to reporting requirements in the affected subparts into e-GGRT and other GHGRP activities, such as verification.

The EPA is proposing one related change to subpart A that could apply to certain subpart FF reporters prior to January 1, 2018. In keeping with the proposed changes discussed in section III.A.1 of this preamble, we are proposing to revise 40 CFR 98.2(i) of subpart A to streamline the reporting requirements for closed coal mines. These proposed revisions would apply beginning January 1, 2017, consistent with the proposed revisions to 40 CFR 98.2 listed in Table 4 of this preamble, and could affect owners and operators of abandoned underground mines (see section III.A and III.R of this preamble for additional information). All other proposed revisions related to subpart FF

would apply beginning January 1, 2018 for the reasons described above.

F. Where can I get a copy of information related to the proposed rule?

This preamble references several documents developed to support the proposed rulemaking. These documents provide additional information regarding the proposed changes to Part 98, and supplementary information which the EPA considered in the development of the proposed revisions. These documents are referenced in sections II through V of this preamble and are available in the docket to this rulemaking or other rulemaking dockets, as follows:

- “Table of 2015 Revisions to the Greenhouse Gas Reporting Rule.” EPA memorandum summarizing the less substantive minor corrections, clarifications, and harmonizing revisions in the proposed rule, as discussed in section II of this preamble. Available in the docket for this proposed rulemaking, Docket Id. No. EPA-HQ-OAR-2015-0526.

- “Re: Strong Nitric Acid Facilities in the U.S.” From Natalie Tang, EPA to Alexis McKittrick and Mausami Desai, EPA, dated January 29, 2015. Memorandum supporting proposed revisions to subpart V (Nitric Acid Production) as discussed in section III.K of this preamble. Available in the docket for this proposed rulemaking, Docket Id. No. EPA-HQ-OAR-2015-0526.

- “Request to Consider IPCC Balanced EDC/VCM Process Studies and Data for the Elimination of e-GGRT Validation Messages at VCM Production Facilities Reporting Under Subpart X.” Letter received from Occidental Chemical Company, July 10, 2015, as discussed in section III.L of this preamble. Available in the docket for this proposed rulemaking, Docket Id. No. EPA-HQ-OAR-2015-0526.

- “Proposed Changes to Flare Pilot Gas Reporting Requirements under the Greenhouse Gas Reporting Program (GHGRP).” From Jeff Coburn, Leslie Pearce and Kevin Bradley, RTI International (RTI) to Brian Cook, EPA, dated July 10, 2015. Memorandum supporting proposed revisions to subpart Y (Petroleum Refineries) as discussed in section III.M of this preamble. Available in the docket for this proposed rulemaking, Docket Id. No. EPA-HQ-OAR-2015-0526.

- “Revised Emission Methodology for Delayed Coking Units.” From Jeff Coburn, RTI to Brian Cook, EPA, dated June 4, 2015. Memorandum supporting proposed revisions to subpart Y (Petroleum Refineries) as discussed in section III.M of this preamble. Available

in the docket for this proposed rulemaking, Docket Id. No. EPA-HQ-OAR-2015-0526.

- “Evaluating Possible VAM Emissions Estimation Errors Based on Different Sampling Intervals (Quarterly, Monthly, Weekly).” Ruby Canyon Engineering, dated June 10, 2015. Memorandum supporting revisions to subpart FF (Underground Coal Mines) as discussed in section III.R of this preamble. Available in the docket for this proposed rulemaking, Docket Id. No. EPA-HQ-OAR-2015-0526.

- “Use of Inspection Data from the Mine Safety Health Administration for Reporting Quarterly Methane Liberation from Mine Ventilation Shafts.” From Clark Talkington, Advanced Resources International, Inc. (ARI) to Cate Hight, EPA, dated November 13, 2015.

Memorandum supporting revisions to subpart FF (Underground Coal Mines) as discussed in section III.R of this preamble. Available in the docket for this proposed rulemaking, Docket Id. No. EPA-HQ-OAR-2015-0526.

- “Review of Oxidation Studies and Associated Cover Depth in the Peer-Reviewed Literature.” From Kate Bronstein, Meaghan McGrath, and Jeff Coburn, RTI to Rachel Schmeltz, EPA, dated June 17, 2015. Memorandum supporting proposed revisions to subpart HH (Municipal Solid Waste Landfills) as discussed in section III.S of this preamble. Available in the docket for this proposed rulemaking, Docket Id. No. EPA-HQ-OAR-2015-0526.

- “Review of Site-Specific Industrial Waste Degradable Organic Content Data” from Jeff Coburn and Katherine Bronstein, RTI to Rachel Schmeltz, EPA, dated June 17, 2015. Memorandum supporting proposed revisions to subpart TT (Industrial Waste Landfills) as discussed in section III.Y of this preamble. Available in the docket for this proposed rulemaking, Docket Id. No. EPA-HQ-OAR-2015-0526.

- “Proposed Data Category Assignments and Confidentiality Determinations for Data Elements in the Proposed 2015 Revisions.” Memorandum listing all proposed new, substantially revised, and existing data elements with proposed category assignments and confidentiality determinations, as described in Section IV of this preamble. Available in the docket for this proposed rulemaking, Docket Id. No. EPA-HQ-OAR-2015-0526.

- “Final Evaluation of Competitive Harm from Disclosure of ‘Inputs to Equations’ Data Elements Deferred to March 31, 2015.” Memorandum, September 2014. Available in Docket Id. No. EPA-HQ-OAR-2010-0929.

- “Summary of Evaluation of Greenhouse Gas Reporting Program (GHGRP) Part 98 ‘Inputs to Emission Equations’ Data Elements Deferred Until 2013.” Memorandum, December 17, 2012. Available in the docket for this proposed rulemaking, Docket Id. No. EPA-HQ-OAR-2015-0526.

- “Final Data Category Assignments and Confidentiality Determinations for Part 98 Reporting Elements.” Memorandum, April 29, 2011. Available in Docket Id. No. EPA-HQ-OAR-2009-0924.

- “Assessment of Burden Impacts of 2015 Revisions to the Greenhouse Gas Reporting Rule.” Memorandum describing the costs of the proposed revisions to Part 98, as discussed in section V of this preamble. Available in the docket for this proposed rulemaking, Docket Id. No. EPA-HQ-OAR-2015-0526.

G. Methods Incorporated by Reference

In this rulemaking, the EPA is proposing to include in a final EPA rule regulatory text for 40 CFR 98.7 that includes incorporation by reference. In accordance with requirements of 1 CFR 51.5, the EPA is proposing to incorporate by reference the following:

- Standard Test Methods for Determining the Biobased Content of Solid, Liquid, and Gaseous Samples using Radiocarbon Analysis (ASTM D6866-12), which would apply to subpart C reporters (see section III.B.2 of this preamble). These standards are available on the ASTM Web site (<http://www.astm.org/>) to everyone at a cost determined by the ASTM (\$50). The ASTM also offers memberships or subscriptions that allow unlimited access to their methods. The cost of obtaining these methods is not a significant financial burden, making the methods reasonably available for reporters. The EPA will also make a copy of these documents available in hard copy at the appropriate EPA office (see the **FOR FURTHER INFORMATION CONTACT** section of this preamble for more information) for review purposes only.

- Inspection and sampling standards from the Coal Mine Safety and Health General Inspection Procedures Handbook Number: PH13-V-1 (February 2013) as published by the Mine Safety and Health Administration (MSHA), which would apply to subpart FF reporters (see section III.R.2 of this preamble). These standards are available free of charge through the MSHA Web site (<http://www.msha.gov>). The EPA has also made, and will continue to make, these documents available

electronically through www.regulations.gov.

Because these standards do not present a significant financial burden to reporters, the EPA has determined that these methods are reasonably available. The EPA has also made, and will continue to make, these documents generally available in hard copy at the appropriate EPA office (see the **FOR FURTHER INFORMATION CONTACT** section of this preamble for more information).

II. Overview and Rationale for Proposed Amendments to Part 98

In this action, the EPA is proposing to revise specific provisions in Part 98 to simplify and streamline implementation of the rule, improve the quality and consistency of the data collected under the rule, and to clarify or provide minor updates to certain provisions that have been the subject of questions and feedback from reporting entities. The EPA has identified four categories of changes that we are proposing in this rulemaking, which include the following:

- Revisions to streamline implementation of the rule by reducing or simplifying requirements that would ease burden on reporters and the EPA, such as revising requirements to focus GHGRP and reporter resources on relevant data, removing reporting requirements for specific facilities which report little to no emissions, or removing reported data elements that are no longer necessary;

- Amendments that would expand monitoring, applicability, or reporting requirements that are necessary to enhance the quality of the data collected, improve verification of collected data under the GHGRP, and improve the accuracy of data included in the U.S. GHG Inventory;

- Other amendments, such as amendments to calculation, monitoring, or measurement methods that would address prior petitioner or commenter concerns (e.g., amendments that provide additional flexibility for facilities or that more accurately reflect industry processes and emissions).

- Minor clarifications and corrections, including: corrections to terms and definitions in certain equations; clarifications that provide additional information for reporters to better or more fully understand compliance obligations; changes to correct cross references within and between subparts; and other editorial or harmonizing changes that would improve the public’s understanding of the rule.

Sections II.A through II.D of this preamble describe each of the above

categories in more detail and provide rationale for the changes included in each category.

The proposed changes in this action would advance the EPA’s goal of maximizing rule effectiveness. For example, these proposed changes would clarify existing rule provisions, thus enabling government, regulated entities, and the public to easily identify and understand rule requirements. In addition, specific changes such as increasing the flexibility given to reporting entities related to requesting extensions for revising annual reports would make compliance easier than non-compliance. The proposed changes also serve to clarify whether and when reporting requirements apply to a facility, and more specifically when a facility may discontinue reporting, thereby allowed a regulated entity to regularly assess their compliance and prevent noncompliance.

The proposed changes would also improve the EPA’s ability to assess compliance by adding reporting elements that allow the EPA to more thoroughly verify GHG data and understand trends in emissions. For example, the proposed requirement to report the date of installation of any abatement equipment at Adipic Acid and Nitric Acid Production facilities will increase the EPA and public’s understanding of the use of and trends in emissions reduction technologies. Lastly, the proposed changes further advance the ability of the Greenhouse Gas Reporting Program to provide access to quality data on greenhouse gas emissions by adding key data elements to improve the usefulness of the data. One example is the proposed addition of the reporting of emissions by state for Suppliers of Natural Gas (subpart NN reporters). This data will allow users of the GHGRP data to more easily identify the state within which the reporter operates, which will be useful for determining state level GHG totals associated with natural gas supply and increase transparency and usefulness of the data reported.

Additional details for the specific amendments proposed for each subpart are included in section III of this preamble. To reduce the length of this preamble, we have summarized the remaining less substantive minor corrections, clarifications, and harmonizing revisions in the memorandum, “Table of 2015 Revisions to the Greenhouse Gas Reporting Rule” (hereafter referred to as the “Table of Revisions”) available in the docket for this rulemaking (EPA-HQ-OAR-2015-0526). These changes include straightforward clarifications of

requirements to better reflect the EPA's intent; harmonizing changes within subparts (such as harmonizing terminology); corrections to calculation terms and cross-references; editorial and minor error corrections; and removal of redundant text. The Table of Revisions describes each proposed change within a subpart, including those itemized in this preamble, and provides the current rule text and the proposed correction. Where the proposed change is listed only in the Table of Revisions, the rationale for the proposed change is also listed there.

We are seeking public comment only on the issues specifically identified in this notice (including the changes listed in the Table of Revisions) for the identified subparts. We are not reopening other aspects of Part 98.

A. Revisions To Streamline Implementation of Part 98

Following implementation of Part 98, the EPA has identified several areas of the rule which could be revised or simplified to improve the efficiency of the requirements or to reduce the burden on reporters and the EPA. We are consequently proposing several revisions that would streamline the requirements as well as improve implementation of the rule.

Several of the proposed revisions would clarify and revise the requirements of Part 98 in order to focus the GHGRP and reporter resources on the most relevant data. In some cases, we are proposing to revise requirements to reduce when facilities must report emissions, such as by clarifying requirements for facilities that may report very little or no emissions. The EPA does not anticipate a significant change in the overall reported emissions or a reduction in the quality of reported carbon dioxide equivalent (CO₂e) emissions and supply. Removing these instances of reporting would also reduce burden on some reporters.

As an example, we are proposing to revise 40 CFR part 98, subpart FF to allow an underground coal mine to cease reporting after it has closed and its status is determined to be "abandoned" by MSHA. The CO₂e emissions from abandoned and sealed mines are far below the reporting threshold. The EPA is proposing these types of changes to reduce burden, as well as to focus the collection of data under the GHGRP on those sources that are expected to emit, import, or export larger amounts of greenhouse gases.

In addition, the EPA is proposing in this rulemaking that pilot gas, which is considered the gas used to maintain a pilot flame at the flare tip, may be

excluded from the quantity of flare gas used to perform GHG emissions calculations for subparts Q (Iron and Steel Production), X (Petrochemical Production), and Y (Petroleum Refineries). The quantity of GHG emissions associated with pilot gas is very small relative to the total GHG emissions from a flare at petroleum refineries, petrochemical production facilities, and iron and steel production facilities. Eliminating the monitoring of this small quantity of emissions will not adversely impact the quality of the greenhouse gas data collected and may decrease the burden associated with monitoring the flare gas. We are proposing similar revisions to other subparts that simplify data collection for reporters and focus the provisions of the rule on the essential data that the EPA requires to review, assess, and verify reported emissions.

Other proposed revisions to the rule include changes that would streamline the rule, such as removing reported data elements that are no longer necessary. For example, for 40 CFR part 98, subpart LL (Suppliers of Coal-based Liquid Fuels), we are proposing to remove requirements of 40 CFR 98.386 that are no longer needed to support verification or other activities. In a prior notice, "2013 Revisions to the Greenhouse Gas Reporting Rule and Final Confidentiality Determinations for New or Substantially Revised Data Elements" (78 FR 71904, November 29, 2013, hereafter referred to as "2013 Revisions Rule"), we finalized amendments to subpart LL that removed requirements in 40 CFR 98.386 for suppliers to report the annual quantity of each product or natural gas liquid on the basis of the measurement method used. Subpart LL reporters are currently only required to report the total annual quantities of each product or natural gas liquid in metric tons or barrels supplied. In this action, we are proposing to remove the provisions of 40 CFR 98.386 that require suppliers to report the methods used to measure the quantities of each product reported. This change would harmonize with the previously finalized revisions which removed the requirement to report products by method and would reduce the burden on reporters.

We are also proposing certain revisions that would streamline the reporting and verification process. These proposed changes would ease the burden on reporters (e.g., by reducing the actions required of reporters) and improve agency implementation of the rule. For example, we are proposing to revise 40 CFR 98.2(i) to clarify the EPA's policies allowing reporters to cease reporting under Part 98. The existing

provisions of 40 CFR 98.2(i) provide options for reporters to discontinue reporting when annual emissions are less than certain thresholds, or if process operations are permanently shut down. We are proposing to clarify when these requirements apply for suppliers, processes or operations that cease operation in the reporting year, and facilities where the operations are changed such that a process or operation no longer meets the "Definition of Source Category" for a subpart. These provisions are anticipated to streamline reporting by specifying when reporters are no longer required to report for a particular process or operation.

We are proposing similar changes to Part 98 which would improve the efficiency of the reporting process. The specific changes that we are proposing that are intended to streamline Part 98, as described in this section, are described for each subpart, as appropriate, in sections III.A through III.Y of this preamble.

B. Revisions To Improve the Quality of Data Collected Under Part 98 and Improve the U.S. GHG Inventory

The EPA is also proposing amendments in this action that would improve the existing applicability, monitoring, or reporting requirements of Part 98 in order to enhance the quality and accuracy of the data collected under the GHGRP, improve verification of collected data, and provide additional data to help improve estimates included in the U.S. GHG Inventory.

Several of the amendments in this action are being proposed to improve the quality of the data collected under the GHGRP. The data collected under Part 98 are used to inform the EPA's understanding of the relative emissions and distribution of emissions from specific industries, the factors that influence GHG emission rates, and to inform policy options and potential regulations. Following several years of implementation of the rule, the EPA has identified certain areas of the rule where clarifying amendments to source category definitions, revisions to calculation methodologies or monitoring methods, and revisions or additions to reporting requirements are needed to ensure that accurate data are being collected under the rule. For example, we are proposing revisions to subpart FF to revise the monitoring requirements for methane liberated from ventilation systems to remove the option to use quarterly testing by the MSHA. This change is being proposed because we have determined that the quarterly flowrate data gathered by

MSHA cannot be used to reliably estimate coal mine emissions for GHG reporting purposes. Instead, coal mines will be required to use one of the other existing methods to measure emissions from ventilation, either collection of grab samples or use of continuous emissions monitoring systems (CEMS). In proposing this change, the EPA is seeking comment on whether other alternatives, such as surface level samples taken at the fan mouth, would achieve the same objectives for improved data quality from mine ventilation systems. The EPA is also seeking comment on increasing the frequency with which grab samples must be taken at underground coal mines. Currently coal mines must take grab samples on a quarterly basis and report methane liberation on a quarterly basis. In this action, the EPA is seeking comment on increasing the frequency of grab samples to monthly sampling in order to provide more transparent and reliable measurement of methane emissions from ventilation systems while more closely aligning the monitoring requirements for mine ventilation with those for degasification systems. The EPA also seeks comments on other monitoring frequencies higher than monthly (such as biweekly) or monitoring frequencies higher than quarterly but less than monthly (such as bimonthly). For comments on increasing the monitoring frequency and the availability of other alternative monitoring methods, the EPA encourages commenters to submit studies, data, and background information on multi-year ventilation system monitoring on a basis that is more frequent than quarterly. This information will help determine the appropriate frequency of monitoring for ventilation emissions that is needed to ensure reliable and accurate measurements.

In another case, we are proposing to revise existing reporting requirements to collect more detailed facility data. For example, we are proposing to amend the reporting requirements of 40 CFR part 98, subpart O (HFC-22 Production and HFC-23 Destruction) to require reporting of the information under 40 CFR 98.156(a) at a process level. Currently, reporters are required to submit the annual mass of HCFC-22 produced, the annual mass of reactants fed into the process, the annual mass of HFC-23 emitted, and additional information under 40 CFR 98.156(a) at the facility level. Collecting this information on a process-level basis would further our understanding of emissions from HCFC-22 production

processes and provide a more accurate emissions profile for this sector.

Some of the proposed amendments include revisions to existing reporting requirements to clarify the data that are currently reported or improve verification of reported data. For example, we are proposing amendments to 40 CFR part 98, subpart HH to add a requirement for landfills with gas collection systems to report the number of hours active gas flow was sent to each destruction device instead of the annual operating hours for each destruction device. This revision is needed in order for the EPA's reporting tool to accurately calculate a key variable in certain equations used to calculate emissions. Although the proposed change would require different data to be reported, it would improve verification of the existing data by reducing the number of reporters that override their equation results, resulting in fewer verification errors and follow-up messages to reporters.

We are also proposing several amendments to ensure data collected by the GHGRP adequately support the U.S. GHG Inventory. As described in the preamble of the proposed GHG Reporting Rule (74 FR 16448, April 10, 2009), the GHGRP is intended to supplement and complement the U.S. GHG Inventory by advancing the understanding of emission processes and monitoring methodologies for particular source categories or sectors. Specifically, the GHGRP complements the U.S. GHG Inventory by providing data from individual facilities and suppliers above certain thresholds to improve the assumptions and emissions values used in the U.S. GHG Inventory. The collected facility, unit, and process-level GHG data from the GHGRP provide and confirm the national statistics and emission estimates presented in the U.S. GHG Inventory, which are calculated using aggregated national data. These proposed amendments include clarifications to source category definitions, revisions to calculation methodologies, and revisions or additions to reporting requirements that will improve the accuracy of the data included in the U.S. GHG Inventory and improve our ability to inform the development of GHG policies and programs. For example, we are proposing revisions to 40 CFR part 98, subpart E (Adipic Acid Production) and 40 CFR part 98, subpart V (Nitric Acid Production) that would require reporting of the date of installation of any abatement systems (if applicable). The addition of these data elements would help improve the accuracy of trend estimates for these

sectors in the U.S. GHG Inventory. Specifically, the proposed data elements would allow the agency to apply emission factors with and without abatement systems over the correct time periods using the reported dates.

The specific changes that we are proposing for each subpart, as appropriate, are described in sections III.A through III.Y of this preamble.

C. Other Amendments

In addition to the amendments described in sections II.A and II.B of this preamble, the EPA is proposing other amendments to certain subparts of Part 98. Through outreach and communication with stakeholders, the EPA has identified certain aspects of the rule that may require substantive revision, such as amending calculation, monitoring, or measurement methods to provide flexibility for certain facilities, or to more accurately reflect industry processes and emissions. These changes would respond to comments raised by stakeholders in prior rulemakings and issues raised by petitioners for certain subparts, and would more closely align rule requirements with the processes conducted at specific facilities. For example, for 40 CFR part 98, subpart TT (Industrial Waste Landfills), we are proposing to add several waste types for pulp and paper, including associated degradable organic content (DOC) and k-values, to Table TT-1 of subpart TT to include common industrial waste subtypes. The EPA is proposing these revisions following comments on 2013 Revisions Rule, in which stakeholders requested the EPA add these common waste types to Table TT-1 of subpart TT. These proposed revisions would improve the accuracy of calculated emissions reported by these facilities.

Additional details for the amendments described in this section are discussed for each subpart, as appropriate, in sections III.A through III.Y of this preamble.

D. Minor Corrections, Clarifications, and Harmonizing Revisions

The EPA is proposing additional minor corrections, clarifications, and harmonizing revisions that would improve understanding of the rule. These revisions primarily include simple revisions of requirements to better reflect the EPA's intent, such as clarifying changes to definitions, calculation methodologies, monitoring and quality assurance requirements, missing data procedures, and reporting requirements. Some of these proposed changes result from questions raised by reporters through the GHGRP Help Desk or e-GGRT and are intended to resolve

uncertainties in the regulatory text. The proposed changes would reduce confusion for reporters and correct inconsistencies in the rule.

In some cases, we are proposing minor amendments that would clarify general monitoring requirements, measurement methods, or reported data elements. These revisions include less substantive changes, such as simple corrections to calculation terms, revisions of cross-references, harmonizing changes (such as changes to terminology within a subpart for consistency), simple editorial corrections, and removal of redundant text. As discussed earlier in section II of this preamble, these less substantive revisions are summarized in the Table of Revisions available in the docket for this rulemaking (EPA-HQ-OAR-2015-0526).

III. Proposed Amendments to Each Subpart

This section summarizes the specific substantive amendments proposed for each Part 98 subpart, as generally described in section II of this preamble. Sections III.A through III.Z of this preamble also identify where additional minor corrections to a subpart are included in the Table of Revisions.

A. Subpart A—General Provisions

In this action, we are proposing several amendments, clarifications, and corrections to subpart A of Part 98. This section discusses the substantive changes to subpart A; additional minor amendments, corrections, and clarifications are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

1. Revisions to Subpart A To Streamline Implementation

For the reasons described in section II.A of this preamble, we are proposing several amendments that are intended to simplify and streamline the requirements of subpart A and increase the efficiency of the report submittal process. First, we are proposing to revise 40 CFR 98.2(i) to clarify the EPA's policies allowing reporters to cease reporting under Part 98. The existing provisions of 40 CFR 98.2(i)(1) and (2) provide options for reporters to discontinue reporting if annual emissions are less than 25,000 mtCO₂e for five reporting years or less than 15,000 mtCO₂e for three reporting years, or if process operations are permanently shut down. There has been confusion among reporters as to whether these off-ramp provisions apply to both direct emitters and suppliers, given the use of

the term “emissions” in 40 CFR 98.2(i)(1) and (2) since suppliers report the quantity of product supplied into the economy and the emissions that would occur if the products were completely released, combusted, or oxidized when used by their customers. The EPA's original intention was that these off-ramp provisions apply to both suppliers (subparts LL through QQ) and direct emitters (subparts A through KK and subparts SS and TT), as well as the Injection of Carbon Dioxide source category (subpart UU). The EPA is adding a new paragraph to 40 CFR 98.2(i) to clarify this point. We are proposing to retain the current language in 40 CFR 98.2(i)(1) and (2) (i.e., “reported emissions”) to continue to refer to direct emitters and to add new paragraph 40 CFR 98.2(i)(4) to clarify that the provisions of 40 CFR 98.2(i)(1) and (2) apply to suppliers (i.e., by specifying in 40 CFR 98.2(i)(4) that 40 CFR 98.2(i)(1) and (2) apply to suppliers by substituting the term “quantity of GHG supplied” for “emissions” in 40 CFR 98.2(i)(1) and (2)). For example, a supplier of industrial greenhouse gases might qualify under proposed 40 CFR 98.2(i)(4) to discontinue reporting as an exporter of industrial greenhouse gases because GHG exports are less than 25,000 mtCO₂e for five reporting years (i.e., as provided in 40 CFR 98.2(i)(1)). Further, we have clarified that, for suppliers, these off-ramp provisions apply individually to each importer, exporter, petroleum refinery, fractionator of natural gas liquids, local natural gas distribution company, and producer of carbon dioxide (CO₂), nitrous oxide (N₂O), or fluorinated greenhouse gases. For example, regarding the example above where a supplier of industrial greenhouse gases qualifies under proposed 40 CFR 98.2(i)(4) to discontinue reporting as an exporter of industrial greenhouse gases, this same supplier would still be required to report as an importer if they also report GHG imports that do not qualify under proposed 40 CFR 98.2(i)(4) to discontinue reporting because GHG imports are not less than the thresholds specified in 40 CFR 98.2(i)(1) or (2). Likewise, a company might qualify under 40 CFR 98.2(i)(4) to discontinue reporting as a supplier of industrial greenhouse gases under subpart OO (Suppliers of Industrial Greenhouse Gases) because the reported quantity of industrial greenhouse gases supplied is less than 15,000 mtCO₂e for three reporting years (i.e., as provided in 40 CFR 98.2(i)(2)), but the company might still be required to report as a supplier of carbon dioxide under

subpart PP because the reported quantity of carbon dioxide supplied is not less than the thresholds specified in 40 CFR 98.2(i)(1) or (2). Additionally, the proposed off-ramp requirements for suppliers would be applied separately from those for direct emitters. This would occur whether the supplier and direct emitter report as two separate entities in e-GGRT or, for simplicity, as one entity in e-GGRT. For example, if a facility reports under subpart Y (a direct emitter subpart) and subpart MM (a supplier subpart), and the facility meets the off-ramp requirements in proposed 40 CFR 98.2(i)(4) for the GHG quantities reported under subpart MM but does not meet the off-ramp requirements in 40 CFR 98.2(i)(1) or (2) for GHG emissions under subpart Y, then the facility may cease reporting under subpart MM while still reporting under subpart Y. If the subpart MM and subpart Y data were submitted in two different annual reports under two different e-GGRT identification numbers, the facility would discontinue submitting reports for subpart MM all together while continuing to submit reports for subpart Y. If the subpart MM and subpart Y data were submitted in one annual report under one e-GGRT identification number, the facility would continue to submit reports under that e-GGRT identification number with the subpart Y data and without the subpart MM data.

The requirements of 40 CFR 98.2(i)(3) allow reporters to discontinue reporting if all processes or operations cease operation (e.g., plant closure). There has been confusion among reporters as to whether there is a similar provision to cease reporting for situations where a single process or operation ceases operation. The EPA is proposing to revise 40 CFR 98.2(i)(3) to specify that reporting is not required for any process or operation that ceases operation in the reporting years following the reporting year in which the process or operation ceased operation, provided the owner or operator submits a notification to the Administrator and explains the reasons for the cessation of operation. For example, if a facility previously reporting under 40 CFR part 98, subpart C (Stationary Fuel Combustion Sources) and 40 CFR part 98, subpart T (Magnesium Production) removes all of their combustion sources, but continues their magnesium casting operations under subpart T, the proposed revision to 40 CFR 98.2(i)(3) would clarify that this facility is exempt from the subpart C reporting of the combustion processes in the reporting years following the year in which the combustion sources ceased

operation. Note that 40 CFR 98.2(i)(3) does not apply to seasonal or other temporary cessation of operations, and that reporting must resume for any future calendar year during which any of the GHG-emitting processes or operations resume operation. A similar change is being proposed to streamline reporting for operators of underground coal mines subject to 40 CFR part 98, subpart FF. Specifically, we are proposing to amend 40 CFR 98.2(i)(3) to delete an exclusion for abandoned underground coal mines that precludes them from the off-ramp. Data submitted by closed and abandoned mines during the first four years of the GHGRP have improved the EPA's understanding of emissions from these mines and have shown that they produce GHG emissions in quantities well below the reporting threshold. This change is further discussed in section III.R.1 of this preamble.

In addition, there has been confusion regarding how Part 98 addresses situations where a facility no longer meets the "Definition of Source Category" specified in an applicable subpart. For example, subpart II of Part 98 (Industrial Wastewater Treatment) applies to anaerobic processes that treat wastewater from either meat processing operations (NAICS 3116) or fruit and vegetable processing (NAICS 3114). If a facility were subject to subpart II because it processes meat byproducts into human food, but switched its operations to producing animal food or to processing seafood rather than meat byproducts, then the processing plant would no longer meet the source category definition of "industrial wastewater treatment" in 40 CFR 98.350 because it no longer falls under the classification of NAICS 3116. The facility, therefore, would not be subject to reporting under subpart II. The EPA is proposing to add a new provision in 40 CFR 98.2(i)(5) to clarify that if the operations of a facility or supplier are changed such that a process or operation no longer meets the "Definition of Source Category" as specified in an applicable subpart, then the owner or operator is exempt from reporting under any such subpart for the reporting years following the year in which change occurs, provided that the owner or operator submits a notification to the Administrator that announces the cessation of reporting for the process or operation no later than March 31 of the year following such changes. For any future calendar year during which the process or operation meets the "Definition of Source Category" as specified in an applicable subpart, the

owner or operator would be required to resume reporting for the process or operation.

Lastly, the EPA is proposing to limit resubmittal of reports to five years prior to the current reporting year. For example, in RY2016, resubmittal of reports from RY2011–2015 would be allowed, but a resubmittal of a RY2010 report would no longer be permitted. The EPA currently requires facilities to resubmit past year reports for the Greenhouse Gas Reporting Rule in which a substantive error is identified, and allows resubmittals going back to the first year of the program. Based on the resubmittals to the program to date, the EPA has determined that the number of reports that are resubmitted falls drastically after the active verification period of 6 months, and continues to fall over time. Because there is significant burden to the EPA for maintaining the reporting forms needed for facilities to resubmit reports for past years, the EPA is seeking comment on limiting the resubmittals to 5-years prior to the current reporting year. The EPA would set the limit at five years in part because there is a 5-year recordkeeping requirement in Part 98.³ The EPA has determined that this change will have minimal impact on the quality of the data set, as resubmissions for past years to date have not impacted overall sector or total emission trends. While this change would not require a revision to the regulatory text, the EPA wishes to seek input from stakeholders prior to implementing this policy. As a result, in this action, the EPA is asking for comment on limiting resubmittal of reports to five years before the current reporting year.

2. Revisions to Subpart A To Improve the Quality of Data Collected Under Part 98

The EPA is proposing several amendments to subpart A that would improve the quality of the data collected under the GHGRP. For the reasons described in section II.B of this preamble, these proposed revisions are intended to collect data that would improve the EPA's understanding of sector GHG emissions, and are anticipated to generally result in only a slight increase in burden for reporters.

First we are proposing revisions to 40 CFR 98.3(c) to revise the content of the annual report to include three new data elements to uniquely identify

individually reported fluorinated GHGs and fluorinated heat transfer fluids (HTF): Chemical name, CAS registry number, and the linear chemical formula. Currently, 40 CFR 98.3(c)(4)(iii)(E) and (F) require reporting of each fluorinated GHG and fluorinated HTF from applicable source categories, and 40 CFR 98.3(c)(5)(ii) requires the reporting of each fluorinated GHG from suppliers. The rule, however, does not specify how to identify each compound; instead, only the name of a GHG is required in a facility's annual report. Generally, reporters identify the GHGs in their annual report from Table A–1 of subpart A, which provides a list of fluorinated GHG along with the GWP of each gas, a registry number assigned by the Chemical Abstracts Service (CAS), and the chemical formula. When newly developed compounds are not listed in Table A–1 of subpart A, reporters classify the GHG as "other" and provide a chemical name. In these situations, different reporters sometimes refer to the "other" gas by different names (*e.g.*, a standard IUPAC name as well as one or more common or trade names), especially when compounds have more than one name that is scientifically valid. This also results in facilities reporting the same gas under a different name from year to year. As an example, in prior reporting years, separate facilities under 40 CFR part 98, subpart I (Electronics Manufacturing) have reported emissions of the same fluorinated GHGs under multiple common names (*e.g.*, octafluorotetrahydrofuran may be reported separately as octafluorotetrahydrofuran, perfluorotetrahydrofuran, and $\text{C}_4\text{F}_8\text{O}$). Further, with the fast pace of technology development, new fluorinated chemicals are routinely being developed. Because of the rapid pace at which new chemicals enter the marketplace, it is not feasible for the EPA to update Table A–1 or the fluorinated GHG and fluorinated HTF lists in the GHGRP's electronic reporting system fast enough to keep pace with all chemicals in use at any point in time. If a fluorinated GHG were to be reported under a different name in a future reporting year, it could result in delays or errors in data analysis and trends if the GHGRP dataset contains information for the GHG associated with two different names.

To improve the usefulness of the emissions and supplier data reported, we are proposing to revise 40 CFR 98.3(c)(4) and (5) to include two additional identifiers of fluorinated

³ According to 40 CFR 98.3(g), facilities using the Inputs Verification Tool are required to maintain all records at the facility for five years. Facilities that are not required to use the Inputs Verification Tool for any subparts under which they are reporting are required to maintain records for three years.

GHGs and fluorinated HTFs so that each compound can be identified unambiguously. To the extent available, we propose to require chemical identifiers provided by national consensus organizations. The International Union of Pure and Applied Chemistry (IUPAC) provides a naming convention that can be used for all organic chemicals. The Chemical Abstracts Service (CAS) of the American Chemical Society assigns a chemical registry number that is widely used in industry and academia to identify individual chemical compounds. However, even with these two standardized services, we have learned that chemicals often are reported under different names for a variety of reasons. Therefore, knowing the linear chemical formula would help the EPA to classify compounds consistently. (We are proposing to require reporting of the linear chemical formula rather than the condensed chemical formula because the former provides information on the structure of the fluorinated GHG or fluorinated HTF that is useful for identifying the compound and distinguishing it from other fluorinated GHGs or fluorinated HTFs that have the same number of atoms of each element in different arrangements.) Accordingly, we are proposing to require reporting all three of the following data elements to ensure that the EPA can properly classify and identify each unique compound reported:

- Chemical name. If a chemical is not included in Table A-1 of subpart A (or not listed in the Web forms in the EPA's reporting tool), then facilities or suppliers would be required to report the name using the chemical naming convention provided by IUPAC.

- CAS Registry Number. If a CAS number is not assigned or if the CAS number is not associated with a single fluorinated GHG or fluorinated heat transfer fluid, then reporters would report an identification number assigned by the EPA's Substance Registry Services.⁴

- Linear chemical formula.

Next, we are proposing to add a sentence to 40 CFR 98.3(c)(8) to clarify the missing data provisions. The proposed revision explains that missing data provisions apply not only to reported parameters, but to any parameter used to monitor or calculate

emissions. Use of missing data procedures can affect the accuracy of an emission estimate regardless of whether that parameter is reported. It is the EPA's intention that the effect be documented, such that the accuracy of the reported emissions may be better understood.

We are proposing a change to 40 CFR 98.4(i) to update the content of the certificate of representation (COR). For each facility or supplier, all GHG reports and other communications are submitted by a "designated representative" of the owners and operators of the facility or supplier. The designated representative (DR) acts as a legal representative between the facility or supplier and the agency. The DR is appointed by submitting to the EPA a COR at least 60 days prior to the deadline for submission of the initial annual GHG report. Currently, 40 CFR 98.4(i) specifies that the COR must contain the following information:

- Identification of the facility or supplier;
- Name and contact information for the DR;
- A list of the owners and operators of the facility or supplier;
- Certification statements that the DR was appointed by a binding agreement with the owners and operators, that the DR has the necessary authority to carry out the duties and responsibilities on behalf of the owners and operators, and that the owners and operators are bound by the representations, actions, inactions, or submissions of the DR; and
- Signature of the DR.

We are proposing the addition of one item to the COR, which is a list of all the 40 CFR 98 subparts under which the facility or supplier intends to report. The information on the subparts anticipated to be reported is for the EPA's internal planning and management purposes, and would streamline the EPA's internal processes related to preparing for upcoming reporting seasons. This new COR requirement would impose no new burden on reporters. The revised content of the COR would apply only to newly submitted CORs for facilities that have not previously reported to the GHGRP. The DR would not be required to re-submit a previously submitted COR to add the new information. For example, the new information would not be required for a revised COR that is submitted to change the DR, address, or list of owners. The information submitted on anticipated subpart applicability would be based on whatever applicability analysis the facility or supplier has conducted on their own to determine that Part 98

applies, and on best engineering judgment as to the specific subparts that apply at the time that the COR is submitted. There would be no legal obligation to include GHG data for a particular subpart in the annual GHG report only because that subpart was included in the list of subparts submitted in the COR. Rather, the annual report must include all of the subparts that the DR determines meet the applicability requirements of 40 CFR 98.2 at any time during a reporting year. Also, the facility or supplier is not required to maintain any records to support the listing of subparts in the COR.

Finally, we are proposing to add provision 40 CFR 98.2(i)(6) to include a requirement that a facility must inform the EPA whenever the facility (or supplier) stops reporting under one e-GGRT identification number because the emissions (or quantity supplied) are being reported under another e-GGRT identification number. The EPA anticipates that this would occur when one facility purchases another facility (in its entirety) that is physically adjacent. The emissions from the purchased process equipment would automatically become part of the facility for the purchaser, and the facility previously reported by the seller would no longer exist. In general, the rule currently requires a facility reporting under an e-GGRT identification number to have a valid reason for discontinuing reporting under that e-GGRT identification number and to notify the EPA of that valid reason. The e-GGRT system is set up to collect such notification from the discontinuing reporter, and the EPA routinely follows up with all facilities that have discontinued reporting without providing a valid reason. On several occasions, a facility that was discontinuing reporting under its e-GGRT identification number contacted the GHGRP Help Desk in an attempt to notify the EPA that the emissions would be reported under another e-GGRT identification number. In those cases, the discontinuing reporter was looking for a formal way to transfer the reporting obligation to the other facility and confirm that the reporter was no longer responsible for reporting those emissions. The rule currently does not require reporting of any information from which the EPA could ascertain that the discontinuation of reporting was done for a valid reason or with which the discontinuing reporter could make a formal notification. To ensure that the EPA is aware of situations when an annual report for a facility or supplier

⁴ Substance Registry Services (SRS) is the EPA's central system for information about substances that are tracked or regulated by EPA or other sources. It is the authoritative resource for basic information about chemicals, biological organisms, and other substances of interest to EPA and its state and tribal partners. See http://ofmpub.epa.gov/sor_internet/registry/substreg/home/overview/home.do.

is no longer required because the emissions will now be reported under a different facility, we are proposing the following changes: If a facility reported GHG emissions in the previous year, and the GHG emissions are being reported as part of another facility in the current reporting year, the prior facility must notify the EPA of the e-GGRT facility identification number under which the emissions are reported in the current reporting year. A similar requirement would apply to suppliers. In other words, whenever a business relationship such as an acquisition, merger, or joint venture abrogates a facility or supplier that previously registered in e-GGRT and submitted an annual GHG report, the designated representative for the subsumed facility or supplier would have to report the e-GGRT identification number of the reconstituted facility or supplier. The facility identification number should be readily available to the reporter, and this change would allow the EPA to better assess compliance with the Program while providing the subsumed facility or supplier a formal method of notifying the EPA of their valid reason for discontinuing reporting. This provision would not include Onshore Petroleum and Natural Gas Production Facilities reporting under subpart W, consistent with FAQ 749,⁵ which currently does not require these facilities to notify the EPA when they discontinue reporting because of a change in ownership of all wells and associated equipment in a basin. In proposing this change, the EPA is seeking comment on whether requiring the reconstituted entity to report the e-GGRT identification number of the subsumed facility or supplier would impose less burden on the regulated community while achieving the same objectives.

For more information on subpart A confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

3. Other Amendments to Subpart A

For reasons described in section II.C of this preamble, we are also proposing to revise 40 CFR 98.3(h)(4) to simplify the process for requesting an extension for the reporter to respond to the EPA's questions on a submitted report or submit a revised report to correct a reporting error identified by the EPA during report verification. Currently, reporters are allowed a 45-day period to

respond to the EPA's questions and may request an extension of 30 days, which is automatically granted, if needed. The Administrator may also grant an additional extension beyond the automatic 30-day extension, if the owner or operator submits a request for an additional extension at least 5 business days prior to the expiration of the automatic 30-day extension. We are proposing to remove the requirement that the request for an extension beyond the automatic 30 days must be submitted at least 5 days prior to the expiration of the automatic 30-day extension. Reporters would still be required to submit a request for the additional extension, but they may do so closer to (but not after) the expiration date of the automatic 30-day extension.

We are also proposing two amendments to subpart A of Part 98 to clarify a definition in 40 CFR 98.6. We are proposing to amend the definition of "gas collection system" to clarify that active venting systems that convey landfill gas to the surface of the landfill by mechanical convection, but the landfill gas is never recovered or thermally destroyed prior to release to the atmosphere, are not considered a landfill gas collection system. The requirements in subpart HH for gas collection systems are specific to landfill gas that is recovered or destroyed, but "active venting" systems appear to meet the definition of gas collection systems. The proposed revision clarifies that "active venting systems" are not subject to the monitoring and calculation requirements for landfills with gas collection systems.

The EPA is proposing to amend the definitions for "ventilation hole or shaft" in 40 CFR 98.6 to clarify that the term "vent hole or shaft" for mine ventilation systems includes mine portals, adits, and other mine entrances and exits used to move air from the ventilation system out of the mine. The proposed change is prompted by questions that we have received from reporters during the first four years of implementation, seeking guidance on whether these ventilation system components are considered part of the source category definition. Portal and adit are terms sometimes used to describe mine entries and shafts. The intent of the rule is to capture all points in the ventilation system where methane emissions may exhaust to the atmosphere. Adding these terms should provide clarity for reporters. We do not expect this rule change to result in an additional burden to reporters; it is a clarification to provide further guidance in applicability. However, the EPA does

expect this proposed change to improve the accuracy of reporting.

4. Minor Corrections and Clarifications to Subpart A

For the reasons described in section II.D of this preamble, we are proposing several minor corrections and clarifications to subpart A of Part 98, including clarifications to definitions, editorial changes, and clarifications to reporting requirements. These minor revisions are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

B. Subpart C—General Stationary Fuel Combustion Sources

In this action, we are proposing several amendments, clarifications, and corrections to subpart C of Part 98. This section discusses the substantive changes to subpart C; additional minor amendments, corrections, and clarifications are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

1. Revisions to Subpart C To Improve Quality of Data Collected in Part 98

For the reasons described in section II.B of this preamble, we are proposing revisions that would allow the EPA to collect data that would improve the EPA's ability to verify data under Part 98, while generally resulting in only a slight increase in burden for reporters. First, the EPA is proposing to require reporting of the moisture content used to correct the default high heating value (HHV) for wood and wood residuals (dry basis) in Table C-1, in accordance with the procedures of footnote 5 in Table C-1. The Table C-1 default HHV for wood and wood residuals assumes that the wood and wood residuals are dry (*i.e.*, zero percent moisture content). However, wood and wood residuals are often wet when combusted. Applying the wet weight of the wood to the dry basis HHV overestimates emissions, as a portion of the weight that is combusted is water.

Facilities raised this concern through the GHGRP Help Desk and the EPA responded by adding footnote 5 to Table C-1 in the 2013 Revisions Rule, which allowed reporters to correct the default dry basis HHV to a wet basis. Currently e-GGRT and IVT require the use of the default dry basis HHV when reporting wood and wood residuals using Equations C-1 and C-8. For reporters that need to correct their HHV, the only option available is to override the e-GGRT or IVT calculated value, which is on a dry basis.

⁵ The EPA publishes Frequently Asked Questions to provide general and administrative information about 40 CFR part 98. FAQ 749 is available at: <http://www.ccdsupport.com/confluence/pages/viewpage.action?pageId=198705183>.

The EPA is proposing to add the moisture correction calculation as a reporting element, as well as a data element that would be entered into IVT for those reporters using IVT. This would allow the EPA to verify the accuracy of the moisture content and resultant emissions. Based on current reporting year data, approximately 132 facilities (167 units) would be affected by this new data element. The EPA anticipates that the impact of this new data element will be minimal, as moisture content is already determined by the facilities that correct the HHV of their wood products.

Because the new data element is an input to an emission equation, the EPA evaluated the data element to determine if its public release would cause disclosure concerns as was done for all inputs to equations through a previous action (79 FR 63750, October 24, 2014).⁶ In the evaluation conducted for the October 24, 2014 action, the EPA described in section 2.2 of Part 2 of the memorandum “Final Evaluation of Competitive Harm from Disclosure of ‘Inputs to Equations’ Data Elements Deferred to March 31, 2015,” September 2014 (available in Docket Id. No. EPA–HQ–OAR–2010–0929) that data related to “process design, process performance, and/or cost to do business” could be detrimental to a firm’s competitiveness. After considering this newly proposed data element, we have determined that for those subpart C combustion sources that do not meet the criteria specified in 40 CFR 98.36(f),⁷ this data element fits the

description of being related to “process design, process performance, and/or costs to do business.” Specifically, for industrial facilities that produce wood and wood residuals as a production process byproduct (e.g., pulp and paper production), the moisture content of the wood and wood residuals affects the heating value of the wood fuel used to produce steam for the production process. As such, moisture content could reveal information about process efficiency and the cost to produce a product. However, given the wide range of industries subject to the wood and wood residuals reporting requirements under subpart C, it is possible that there are industries that do not have concerns disclosing the proposed new data element. In light of the above, we propose to allow reporters to elect under 40 CFR 98.3(d)(3)(v) and 40 CFR 98.36(a) (for subpart C sources that do not meet the criteria specified in 40 CFR 98.36(f)) to either enter the moisture content into IVT or, if potential disclosure is not a concern to the reporter, report the data.⁸ If a reporter were to elect to enter the data into IVT, the reporter would also be required to keep a record of the data as specified in proposed new 40 CFR 98.37(b)(37).

After considering whether disclosure concerns exist for those sources that meet the criteria in 40 CFR 98.36(f), the EPA has determined that the moisture content of the wood and wood residuals would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Site-specific fuel characteristics do not vary significantly from publicly-known average values. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers. The EPA is proposing that, for sources that meet the criteria in 40 CFR 98.36(f), there are no disclosure concerns and the moisture content of the wood and wood residuals must be reported in e-GGRT.

unit connected to a fuel-fired electric generator owned or operated by an entity that is subject to regulation of customer billing rates by the public utility commission (excluding generators that are connected to combustion units that are subject to subpart D of this part); and (2) the stationary fuel combustion source is located at a facility for which the sum of the nameplate capacities for all electric generators specified in paragraph (f)(1) of this section is greater than or equal to 1 megawatt electric output.

⁸ If a reporter elects to report the moisture content of wood and wood residuals for a source that does not meet the criteria specified in 40 CFR 98.36(f), e-GGRT will require the reporter to waive the right to make confidentiality claims before reporting the moisture content via e-GGRT.

For emissions reported using the aggregation of units (GP) and common pipe (CP) configurations, the EPA does not currently have the ability to compare emissions to the cumulative maximum rated heat input capacity for the units in the configuration. This information is important for verifying these emissions. The EPA is proposing to resolve this gap in verification by requiring reporting of the cumulative maximum rated heat input capacity for all units (within the configuration) that have a maximum rated heat input capacity greater than or equal to 10 (mmBtu/hr).

When originally promulgated, 40 CFR 98.36(c) required the cumulative heat input capacity for all units in GP and CP configurations. These requirements were removed in December 2010 amendments to the Greenhouse Gas Reporting Rule (75 FR 79092, December 17, 2010). The 2010 final rule noted that for verification purposes, “the only critical data element is the maximum rated heat input capacity of the largest unit in the group” (75 FR 79117). Although the highest maximum rated heat input capacity of any unit in these configurations is useful in verifying compliance with the rule requirements, it does not provide enough information to assess the quality of emissions reported under these configurations.

Currently over 50 percent non-biogenic CO₂ reported under subpart C is reported using GP and CP configurations. Therefore, we have identified the need to obtain additional information on these reporting configurations to further assess data quality for these reported emissions. The cumulative maximum rated heat input capacity will be used to verify that emissions data are not over or under reported for GP and CP configurations.

In the December 2010 amendments (75 FR 79117), commenters highlighted the burden associated with determining the maximum rated heat input capacity and maintaining an equipment count for small domestic combustion sources (e.g., water heaters, furnaces, space heaters) located at large industrial facilities. The EPA agrees with the commenters’ position and believes that meaningful data verification can be achieved without requiring information on small domestic combustions sources, as GHG emissions data are typically dominated by larger emission units.

There were approximately 7,000 GP and CP configurations reported in 2014, out of the total 18,000 configurations reported in subpart C. Of these, approximately 2,250 reporting configurations reported that the highest maximum rated heat input capacity of

⁶ The October 24, 2014 action used the process established in the notice “Change to the Reporting Date for Certain Data Elements Required Under the Mandatory Reporting of Greenhouse Gases Rule” (76 FR 53057, August 25, 2011, hereafter referred to as the “Final Deferral Notice”) and the accompanying memorandum entitled “Process for Evaluating and Potentially Amending Part 98 Inputs to Emission Equations” (Docket Id. No. EPA–HQ–OAR–2010–0929) to determine if there are any associated disclosure concerns. In the “Revisions to Reporting and Recordkeeping Requirements under the GHGRP” (79 FR 63750, October 24, 2014, hereafter referred to as the “Final Inputs Rule”), the EPA finalized an approach for addressing disclosure concerns associated with inputs to emissions equations, in which the inputs for which disclosure concerns were identified are entered and verified in the EPA’s inputs verification tool (IVT). IVT is a software tool that verifies emissions without the inputs being reported to EPA. Inputs to emissions equations for which disclosure concerns have been identified are entered into the tool. IVT uses the entered inputs to calculate emission equation results. IVT does not retain the entered inputs but conducts certain checks of the inputs and calculated emissions values and generates a verification summary. The same process was used for the evaluation of this new input to equation data element.

⁷ 40 CFR 98.36(f) specifies the following criteria for combustion sources: (1) The stationary fuel combustion source contains at least one combustion

any unit in the configuration was less than 10 (mmBtu/hr). The total non-biogenic CO₂ reported from these 2,250 configurations was approximately 2 percent of the total non-biogenic CO₂ reported for all 7,000 GP and CP configurations. The remaining 98 percent of non-biogenic CO₂ reported came from the 4,750 GP and CP configurations that identified the highest maximum rated heat input capacity of any unit as greater than or equal to 10 (mmBtu/hr). These data provide evidence that using the heat input capacity information from units greater than or equal to 10 mmBtu/hr will allow for meaningful data validation without mandating over-burdensome requirements for reporters.

When reporting the cumulative maximum rated heat input capacity, reporters will not be required to account for units less than 10 mmBtu/hr. For GP configurations, this means that the cumulative maximum rated heat input capacity will be determined as the sum of the maximum rated heat input capacities for all units in the group that are greater than or equal to 10 (mmBtu/hr) and less than or equal to 250 (mmBtu/hr). Units with a maximum rated heat input capacity greater than 250 mmBtu/hr are not allowed to use the GP configuration. For CP configurations, the cumulative maximum rated heat input capacity will be determined as the sum of the maximum rated heat input capacities for all units served by the pipe that are greater than or equal to 10 (mmBtu/hr). Note that fuel use and corresponding emissions are still required to be reported for units with a maximum rated heat input capacity less than 10 (mmBtu/hr). Emissions reporting of GHGs for GP and CP configurations will remain unchanged.

Approximately 2,250 existing GP and CP reporting configurations will not be affected by this new requirement. Approximately 4,750 GP and CP reporting configurations will be required to determine and report cumulative maximum rated heat input capacity. This equates to approximately 3,540 affected facilities (out of the roughly 5,925 reporting in subpart C). However, many of these affected facilities will likely benefit from not having to account for units with a heat input capacity less than 10 (mmBtu/hr). The EPA believes that the burden associated with determining the cumulative maximum rated heat input capacity for GP and CP configurations will be minimal. Existing air permits and compliance records for other federal and state regulations likely contain heat input capacity data for many of the

affected sources (*i.e.*, units greater than or equal to 10 mmBtu/hr). The proposed requirement for reporting of the cumulative maximum rated heat input capacity for GP and CP reporting configurations would greatly improve the ability to verify emissions for these configurations.

For more information on subpart C confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

2. Other Amendments to Subpart C

For the reasons described in section II.C of this preamble, we are proposing revisions to the requirements of 40 CFR part 98, subpart C (General Stationary Fuel Combustion Sources) to (1) clarify the reporting requirements when the results of HHV sampling are received less frequently than monthly for certain sources; (2) streamline the conversion factors used to convert short tons to metric tons; and (3) revise Tables C-1 and C-2 to more clearly define emission factors for certain petroleum products.

First, we are proposing to amend 40 CFR 98.33(a)(2)(ii)(A) to clarify the definition of terms for Equation C-2b in cases where the results of HHV sampling are received less frequently than monthly. Reporters subject to 40 CFR 98.33(a)(2)(ii)(B) may use Equation C-2b, however the equation currently defines the frequency of HHV sampling as monthly. This proposed revision will replace the term “month” in the equation inputs “(HHV)_i,” “(Fuel)_i,” and “n” with the term “samples.”

We are proposing changes to Tables C-1 and C-2 to remove duplication and to further classify several fuels to provide clarity. These changes are minor clarifications to existing rule requirements and, therefore, do not impact the burden on reporters. The first change that we are proposing to Table C-1 is to remove duplication of default HHV and CO₂ emission factors for petroleum coke. Petroleum coke is currently listed under both the “Petroleum products” category and “Other fuels—solid” category. To avoid confusion with the classification of this fuel, we propose to remove petroleum coke from both of these categories and to include the fuel under a new category entitled “Petroleum products—solid.”

The second change to Table C-1 proposed is to move the fuel propane gas from the “Other fuels—gaseous” category into a new category entitled “Petroleum products—gaseous.” Propane is also included under the “Petroleum products” category, and we are not proposing to remove propane from this category as a majority of reporters use this fuel type when

reporting use of propane. To help clarify that all fuels in the “Petroleum products” category are liquid fuels, we propose to rename this category to “Petroleum products—liquid.” In conjunction with the changes to Table C-1 for propane and petroleum coke, we are also proposing to change Table C-2 to further clarify that these fuels are considered petroleum products and their methane (CH₄) and N₂O emissions should be calculated and reported accordingly. Therefore we propose to change the “Petroleum (All fuel types in Table C-1)” category to “Petroleum Products (All fuel types in Table C-1),” which will encompass all liquid, solid, and gaseous petroleum products.

We are also proposing another change to Table C-2 to further streamline the CH₄ and N₂O emission factors for fuels in the “Other fuels—solid” category. With the proposed reclassification of petroleum coke from this category to a new solid petroleum products category, the remaining fuels are municipal solid waste (MSW), tires and plastics. Both MSW and tires are listed in Table C-2 and have identical CH₄ and N₂O emission factors, however plastics are not included in the table. We are proposing to combine the MSW and tire line items into an “Other fuels—solid” category, which would encompass all three solid fuels (*i.e.*, MSW, tires and plastics).

Finally, we are proposing to update the Standard Test Methods for Determining the Biobased Content of Solid, Liquid, and Gaseous Samples using Radiocarbon Analysis (ASTM D6866-08) to the current standard (ASTM D6866-12). The proposed change would revise references to the method in 40 CFR 98.34(d) and (e), 40 CFR 98.36(e)(2), and include a harmonizing change to 40 CFR 98.7(e)(33).

3. Minor Corrections and Clarifications to Subpart C

In addition to the substantive changes proposed, as described in section II.D of this preamble, we are proposing minor revisions that are intended to clarify specific provisions in subpart C. These minor revisions are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

C. Subpart E—Adipic Acid Production

In this action, we are proposing amendments to subpart E of Part 98 (Adipic Acid Production). This section discusses all of the proposed amendments to subpart E.

1. Revisions to Subpart E To Streamline Implementation

For the reasons described in section II.A of this preamble, we are proposing one amendment that is intended to simplify and streamline the requirements of subpart E and increase the efficiency of the report submittal process. We are proposing to revise 40 CFR 98.53(a)(2) to remove the annual approval for an alternative method for determining N₂O emissions request by the reporter and the annual request approval by the EPA if the reporter's methodology has not changed.

Reporters that are subject to subpart E are allowed to use an alternative method to calculate N₂O emissions from the production of adipic acid. The alternative method must be approved by the EPA before being used to comply with subpart E. Currently, reporters who choose to use the alternative method are required to request approval on an annual basis and provide the following information:

- The calculation method for determining annual N₂O emissions;
- associated data collection procedures (parameters, how the parameters will be determined, frequency of data collection);
- initial and ongoing monitoring and quality assurance (QA)/quality control (QC) procedures;
- missing data procedures that will be applied in the event that quality-assured parameters are unavailable (*e.g.*, if a CEMS malfunctions during a unit operation);
- any N₂O emissions abatement technology that is being used on this unit or process;
- any specific test methods or industry consensus standards that would be applied (ASTM, EPA, etc.) for data collection or monitoring; and
- any data reporting elements, in addition to the elements required in the rules, which would be provided to the EPA to verify the calculated emissions using the alternative method.

In this rulemaking, the EPA is proposing to allow additional flexibility in the use of alternative methods by removing the annual approval request. Unless there have been changes in the reporter's methodology. If a reporter received approval to use an alternative method in the previous reporting year and the methodology has not changed, the EPA is proposing that the request for use of the alternative method be automatically approved for subsequent reporting years. For most reporters, the alternative method is based on innovative methodologies that are already in practice at the facility, so the

underlying monitoring, data collection, and QA/QC procedures used are unlikely to change from one reporting year to the next. The reporter would only need to notify the EPA that it is using an already approved alternative method. This notification would be included in the annual report submission. If, however, a reporter makes any changes to the previously-approved alternative method, then it must request permission to use the revised method as stated in 40 CFR 98.53(a)(2). Not only would this proposed change add flexibility to the reporters, it would also reduce the burden for reporters to comply with subpart E. By requiring requests only for new approvals or for methodologies that have changed since prior approval, the EPA burden required to review and approve the methodologies would also be reduced.

2. Revisions to Subpart E To Improve the Quality of Data Collected Under Part 98 and Improve the U.S. GHG Inventory

For the reasons described in section II.B of this preamble, we are proposing one amendment that is intended to improve the quality of data collected under subpart E while generally resulting in only a slight increase in burden for reporters. We are proposing to revise 40 CFR 98.56(f) to require reporting of the date of installation of any N₂O abatement technology (if applicable). This information is readily available or already collected by reporters, and would not require additional data collection or monitoring. This data element could be carried over from one reporting year to the next. The reporter would not be required to make changes unless additional abatement technology is installed at a later date. The addition of this data element would help improve our understanding of the use and trends in emissions reduction technologies and the accuracy of the U.S. GHG Inventory by improving the accuracy of trend estimates for this sector. Specifically, the proposed data element would allow for improved analysis of emissions by enabling the EPA to more accurately apply the applicable emission factors over specific time periods, depending on whether the emissions were exhausted to an N₂O abatement technology during that time period. For more information on subpart E confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

D. Subpart F—Aluminum Production

In this action, we are proposing several technical amendments to 40 CFR part 98, subpart F (Aluminum

Production). This section discusses the substantive changes to subpart F; additional minor corrections and clarifications are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

1. Revisions to Subpart F To Improve Quality of Data Collected in Part 98 and Improve the U.S. GHG Inventory

For the reasons described in section II.B of this preamble, we are proposing several amendments to 40 CFR 98, subpart F to improve the quality of the data collected under Part 98 and improve the U.S. GHG Inventory. We are proposing to require reporting of two data elements that influence perfluorocarbon (PFC) emissions from aluminum production: annual average anode effect minutes per cell-day and annual smelter-specific slope coefficients. These proposed revisions are intended to collect more accurate and informative data. As discussed in section II.B of this preamble, these proposed revisions would allow the EPA to collect data that would improve the EPA's understanding of GHG emissions from aluminum production while generally resulting in only a slight increase in burden for reporters.

The annual average anode effect minutes per cell day is a measure of the fraction of the time during which aluminum electrolysis cells are operating that the cells are experiencing process disturbances known as anode effects. PFC emissions from aluminum production are closely associated with the frequency and duration of anode effects.⁹ Smelter-specific slope coefficients are a measure of the relationship between average anode effect minutes per cell day, aluminum production, and PFC emissions at individual smelters.

Both data elements were included in the 2009 Greenhouse Gas Reporting Rule. However, in the Final Deferral Notice published on August 25, 2011, we deferred reporting of the data elements because they were classified as inputs to emission equations (76 FR 53057).¹⁰ The two data elements were

⁹Recent research has revealed that PFC emissions may also occur from some aluminum smelters in the absence of anode effects as those are traditionally defined. These "non-anode-effect emissions" are particularly prevalent in recently built smelters that use very large cells, *i.e.*, cells containing 40 or more anodes. Most U.S. smelters do not use such large cells.

¹⁰See the final rule titled "Revisions to Reporting and Recordkeeping Requirements, and Confidentiality Determinations Under the Greenhouse Gas Reporting Program," (79 FR 63753–54, October 24, 2014) for a full discussion of the

considered inputs into Equation F–2. In the Final Inputs Rule (79 FR 63750, October 24, 2014), we decided not to collect these data elements and to include the inputs into Equation F–2 in IVT. However, after further investigation, we have determined that for average anode effect minutes per cell day, the actual input in Equation F–2 is a monthly average, while the removed reporting element is an annual average.¹¹ Consequently, annual average anode effect minutes per cell day is not an input to an emission equation and, if restored as a reporting element, would be eligible for confidential treatment. As discussed in section IV of this preamble, we are proposing to determine that the annual average of the anode effect minutes per cell day is CBI.

IVT currently requires the entry of monthly anode effect minutes and smelter-specific slope coefficients (along with monthly metal production), allowing PFC emission estimates from smelters to be verified. However, our interest in anode effect minutes and slope coefficients goes beyond verification of emission estimates. Specifically, the annual average of anode effect minutes is of interest because it provides insight into one of the key drivers of PFC emissions from primary aluminum production at the facility and U.S. level. This data element helps us to understand why emissions have increased or decreased in a particular year or over longer periods. Thus, it is important for informing the development of future GHG policies and programs. In addition, it is important for explaining U.S. emission trends through the U.S. GHG Inventory. Before the GHGRP became effective, anode effect minutes (as well as smelter-specific slope coefficients) had been provided to the EPA by most U.S. smelters under the Voluntary Aluminum Industrial Partnership (VAIP), although anode effect minutes was reported as a company-wide (rather than smelter-specific) average by some companies in some years.¹²

Smelter-specific slope coefficients also influence emissions. Because they are relatively stable over time (under subpart F, they are required to be re-measured every ten years), they do not drive trends in the same way that metal production and anode effect minutes do.

history of EPA's treatment of inputs to emission equations under the GHGRP.

¹¹ Although a monthly total of metal production is used in Equation F–2, the annual total metal production is used in Equations F–5 and F–6; thus, we are not proposing to collect annual metal production.

¹² Although the VAIP program continues, GHGRP reporting supplanted reporting under the VAIP.

However, they do contribute to differences in emission rates from different smelters and are therefore of interest for purposes of informing GHG policies and programs.

Smelter-specific slope coefficients are inputs to emission equations (i.e., to Equation F–2). In the analysis titled, “Final Evaluation of Competitive Harm from Disclosure of ‘Inputs to Equations’ Data Elements Deferred to March 31, 2015” (September, 2014, available in docket EPA–HQ–OAR–2010–0929), we concluded that smelter-specific slope coefficients provided data related to process efficiency and also provided data that could be used to calculate the mass of aluminum produced if both the anode effect minutes and reported GHG emissions were also known. (The product of the slope coefficient, monthly metal produced, and monthly average anode effect minutes is the CF₄ emissions from the smelter or potline.) However, we are now revisiting this conclusion in light of our proposed determination that the annual average of the anode effect minutes is CBI. Without data on anode effect minutes, data on smelter-specific slope coefficients pose few, if any, disclosure concerns. Most variability in process efficiency is driven by anode effect minutes, not smelter-specific slope coefficients, and it is not possible to back-calculate metal production without anode effect minutes.¹³ Therefore, in conjunction with our proposed determination that the annual average of the anode effect minutes is CBI, we are proposing to revise the findings in the Final Inputs Rule and to now find no disclosure concerns associated with this input to equation, and are proposing to collect this data. Note that we would continue to use IVT to verify the results of Equation F–2 because we would be collecting only one of the three inputs to this equation.¹⁴

2. Minor Corrections and Clarifications to Subpart F

In addition to the substantive changes proposed, as described in section II.D of this preamble, we are proposing minor revisions that are intended to clarify specific provisions in subpart F. These minor corrections are summarized in

¹³ A review of the slope coefficients and anode effect minutes provided under the VAIP showed that the relative standard deviation of smelter-specific slope coefficients was 32 percent, while the relative standard deviation of anode effect minutes was 95 percent. The comparison was made for the year 2007 because that is the most recent year for which detailed smelter-specific slope coefficients were available.

¹⁴ IVT will use the data element reported to e-GGRT to calculate the emissions value.

the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA–HQ–OAR–2015–0526).

E. Subpart G—Ammonia Manufacturing

In this action, we are proposing multiple amendments to subpart G of Part 98 (Ammonia Manufacturing). This section discusses all of the proposed changes to subpart G.

1. Revisions to Subpart G To Improve Quality of Data Collected in Part 98 and Improve the U.S. GHG Inventory

For the reasons described in section II.B of this preamble, we are proposing revisions that would allow the EPA to collect data that would improve the EPA's understanding of GHG emissions from ammonia manufacturing while generally resulting in only a slight increase in burden for reporters. Specifically, we are proposing to add three data reporting elements. We are proposing to amend 40 CFR 98.76(a) to require reporting of annual ammonia production for facilities where a CEMS is used to measure CO₂ emissions, 40 CFR 98.76(b)(2) to require reporting of annual feedstock consumption, and 40 CFR 98.76(b)(7) to require reporting of annual average carbon content. These data elements are readily available so these proposed changes would have no impact on burden for the reporters.

The addition of these data elements would improve the EPA's ability to verify reported GHGRP emissions, and enable the EPA to transparently apply more advanced calculation methods¹⁵ (based on total fuel requirements) for determining emissions from ammonia production within the U.S. GHG Inventory, using aggregated facility level GHGRP data. Currently, the annual U.S. GHG Inventory emissions estimates are based on multiplication of a technology-feedstock type specific default emission factor and national ammonia production. Further data on feedstock consumption and associated carbon contents would assist the EPA in reconciling CO₂ estimates of non-energy use of fuels in the energy sector and CO₂ process emissions from ammonia production. Finally, collecting annual ammonia production from facilities where a CEMS is used to measure CO₂ emissions ensures data completeness if ammonia manufacturers begin employing CEMS in the future, and enhances the EPA's ability to verify

¹⁵ See Equation 3.4 (Tier 3), p. 3.13 and 3.15. 2006 IPCC Guidelines for National Inventories, Volume 3, Chapter 3, Section 3.2: Ammonia Production; Section 4.5 (p. 4–20) of U.S. Inventory. Available at: <http://www.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2015-Chapter-4-Industrial-Processes.pdf>.

reported information. Currently, annual ammonia production is collected on a facility basis, but only for facilities without CO₂ CEMS. For more information on subpart G confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

2. Other Amendments to Subpart G

For the reasons described in section II.C of this preamble, we are proposing multiple amendments to Subpart G to clarify the EPA's intentions related to the reporting of annual ammonia production and annual methanol production. We are proposing to amend 40 CFR 98.74(f) to read, "You may use company records or an engineering estimate to determine the annual ammonia production and the annual methanol production." We are also proposing to clarify the requirement to report annual methanol production for each process unit in 40 CFR 98.76(b)(15) by adding that this information must be reported "regardless of whether the methanol is subsequently destroyed, vented, or sold as product." These amendments will clarify the original intent of the requirements and reduce uncertainty from reporters by addressing multiple Help Desk questions, including questions related to the reporting of methanol that were raised during the RY2014 reporting period.

F. Subpart I—Electronics Manufacturing

In this action, we are proposing several amendments, clarifications, and corrections to subpart I of Part 98 (Electronics Manufacturing). The reporting requirements for the electronics manufacturing sector were initially promulgated under subpart I on December 1, 2010 (75 FR 74774). Since the promulgation of that final rule, the EPA has published several rules to amend the calculation, monitoring, and reporting provisions of subpart I to respond to concerns raised by reporters and representatives from the semiconductor industry. Notably, the EPA finalized substantial amendments to provisions in subpart I on November 13, 2013 (78 FR 68162). These amendments included significant revisions to the methods for calculating GHG emissions, including revised default emission factors and the addition of a new stack test methodology, as well as substantial revisions to monitoring methodologies, data reporting and recordkeeping requirements, and clarifications to terms and definitions. These amendments became effective on January 1, 2014, and reporters used the revised

requirements in the submittal of their annual reports for RY2014.

In this action, we are not proposing revisions that would include significant changes to the calculation methodologies, monitoring provisions, or data reporting and recordkeeping requirements of subpart I. Rather, we are proposing revisions that we have identified following implementation of the November 13, 2013 final rule and through discussions with industry stakeholders on how to improve the emissions estimates from the electronics manufacturing sector. These proposed changes are needed to improve the clarity of the calculation requirements and quality of the data collected under subpart I and to improve the EPA's understanding of GHG emissions from the electronics manufacturing sector.

This section discusses the substantive changes to subpart I; additional minor amendments, corrections, and clarifications are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

1. Revisions to Subpart I To Improve the Quality of Data Collected Under Part 98

For the reasons described in section II.B of this preamble, the EPA is proposing several amendments to subpart I that would improve the quality of the data collected under the GHGRP. As discussed in section II.B of this preamble, we are proposing revisions that would allow the EPA to collect more accurate and detailed data which would improve the EPA's understanding of sector GHG emissions, while generally resulting in only a slight increase in burden for reporters.

First, the EPA is proposing to revise Equation I-24, including revising the name to Equation I-24A, which calculates the weighted-average fraction of a fluorinated GHG destroyed or removed in a fab using the stack testing methodology in 40 CFR 98.93(i), to incorporate two changes. First, instead of calculating the weighted-average fraction of gas destroyed or removed weighted by the consumption of that gas in different process types, the EPA is proposing to revise the equation so that the average fraction destroyed or removed is weighted by the estimated uncontrolled emissions of that gas from different process types. This change is needed to address the fact that the same gas can have different emissions when used in different process types, and these differences could potentially lead to errors in the calculation of the fraction of gas destroyed or removed, especially at facilities with a large percentage of tools fitted with

abatement. To calculate the estimated uncontrolled emissions of each gas, the EPA is proposing to use the input gas emission factors from Tables I-3 to I-7 of subpart I and the consumption of each gas in each process type for each fab.

The second proposed change is to create a second equation (Equation I-24B) in 40 CFR 98.93(i) to calculate the weighted-average fraction of fluorinated GHG by-product gas "k" destroyed or removed in abatement systems in each fab using the stack testing methodology. This change is needed to clarify how the term d_{kf} , which is used in several other equations in subpart I, should be calculated. This second equation would also address the fact that the same by-product gas can be formed at different rates from different input gas and process combinations, which could potentially lead to errors in the calculation of the average fraction of by-product gas destroyed or removed, especially at facilities with a large percentage of tools fitted with abatement. The EPA is also proposing conforming changes throughout Subpart I to the rule sections where Equation I-24A and I-24B should be referenced.

Finally, for the triennial technology report required of certain facilities as specified in 40 CFR 98.96(y), the EPA is proposing to specify that reporters that are providing any utilization and by-product formation rates and/or destruction or removal efficiency data must also include information on the methods and conditions under which the data were collected, where such information is available. The triennial report would describe, for any utilization, by-product formation rate, and/or destruction or removal efficiency data submitted: the methods used for the measurements, the wafer size, film type being manufactured, substrate type, the linewidth or technology node, process type, process subtype for chamber clean processes, the input gases used and measured, the utilization rates measured, and the by-product formation rates measured, where this information is available. All of these data elements, with the exception of substrate type and linewidth, were submitted with the emission factor measurements provided to the EPA by semiconductor manufacturers during the development of the 2010 and 2013 final rules. This information is necessary to enable the EPA to better understand the data being submitted and to better apply it in the development of new or revised emission factors. Without collecting this data, the agency would not be able to effectively evaluate how emissions may vary by

wafer size, film type, substrate type, linewidth or technology node, and process type or process subtype. The current subpart I is based on the recognition that emission factors vary significantly by wafer size and process type and subtype, and given the high rate of technical evolution in this sector, film type, substrate type, and linewidth may also increasingly affect emission factors. Additionally, the input gases used, methods used for measurement, and measured utilization rates and byproduct formation rates are vital for the development of accurate and useful emission factors.

For more information on subpart I confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

2. Minor Corrections and Clarifications to Subpart I

For the reasons described in section II.D of this preamble, we are proposing several minor corrections and clarification to subpart I of Part 98, including editorial changes, harmonizing changes, and clarifications to reporting requirements. These minor revisions are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

G. Subpart N—Glass Production

In this action, we are proposing amendments to subpart N of Part 98 (Glass Production). This section discusses the substantive changes to subpart N; additional minor corrections are summarized in the Table of Revisions available in the docket for this rulemaking (Docket ID No. EPA-HQ-OAR-2015-0526).

For the reasons described in section II.C of this preamble, we are proposing amendments that are intended to clarify the rule requirements in subpart N, while resulting in no impact on burden for reporters. Specifically, the changes clarify that a default value of 1.0 can be used for the fraction of calcination and the carbonate mass fraction for each carbonate type contained in the raw materials charged to the furnace. The current rule is unclear as to whether a reporter must perform a chemical analysis if they select to use a default value of 1.0. We are proposing to revise 40 CFR 98.144(b), 40 CFR 98.144(c), 40 CFR 98.144(d), 40 CFR 98.146(b)(5), and 40 CFR 98.146(b)(7) to clarify that no further chemical analysis is required if the default value of 1.0 is selected. These amendments will clarify the original intent of the requirements and address multiple Help Desk questions. Additional minor editorial corrections

may be found in the Table of Revisions in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

H. Subpart O—HCFC-22 Production and HFC-23 Destruction

In this action we are proposing several amendments to subpart O of Part 98 (HCFC-22 Production and HFC-23 Destruction). This section discusses all of the changes to subpart O.

1. Revisions to Subpart O To Streamline Implementation

For the reasons described in section II.A of this preamble, we are proposing several amendments to subpart O that are intended to simplify and streamline GHGRP requirements and increase the efficiency of the report submittal process, generally resulting in a decrease in burden on reporters. We are proposing to revise subpart O to remove three reporting requirements related to the revised destruction efficiency that facilities are required to calculate in the event that the HFC-23 concentration that they annually measure at the outlet of the destruction device exceeds the concentration measured during the performance test that is the basis for the current destruction efficiency. The reporting requirements are found at 40 CFR 98.156(d)(2), (3), and (4) and include, respectively, the concentration (mass fraction) of HFC-23 at the outlet of the destruction device, the flow rate at the outlet of the destruction device in kilograms per hour (kg/hr), and the emission rate (in kg/hr) calculated from these two parameters. These reporting requirements were originally intended to allow us to verify the calculation of a revised destruction efficiency. However, the requirements to report the revised destruction efficiency (the result of the calculation) and the flow rate of HFC-23 being fed into the destruction device (another input into the calculation) were removed by the Final Inputs Rule, and verification of HFC-23 emissions, including their destruction, is now conducted by the IVT. Thus, reporting these data elements to the EPA is no longer needed.

2. Revisions to Subpart O To Improve the Quality of Data Collected Under Part 98 and Improve the U.S. GHG Inventory

We are also proposing revisions to subpart O to (1) reinstate in 40 CFR 98.156(d) reporting of the method used to calculate the revised destruction efficiency, and (2) require facilities to report HCFC-22 production and HFC-23 emissions for each HCFC-22 production process rather than for the facility as a whole. As discussed in

section II.B of this preamble, we are proposing revisions that would allow the EPA to collect data that would improve the EPA's understanding of GHG emissions from HCFC-22 production and HFC-23 destruction while generally resulting in only a slight increase in burden for reporters.

The requirement to report the method used to calculate the revised destruction efficiency (not an input to emission equation) was inadvertently removed by the Final Inputs Rule. We are proposing to reinstate this requirement because it is useful for understanding data quality, specifically, the rigor of the method used to revise the destruction efficiency.

Subpart O currently requires facilities to report production and emissions information at the facility level although these quantities are monitored and calculated at the process level. We are proposing to revise the reporting requirements in 40 CFR 98.156(a) to require that facilities report production and emissions information for each HCFC-22 production process. At the time the EPA finalized the subpart O requirements (74 FR 56260, October 30, 2009), we had intended to collect data on individual HCFC-22 processes, with the understanding that each facility had one HCFC-22 process. We have learned since that time that some facilities may have more than one HCFC-22 process and we are proposing to revise the rule to require reporting for each individual process. In the event that a facility has more than one HCFC-22 production process, this would provide more precise information that would allow us to better verify emissions and understand HFC-23 trends.

Reporters in this subpart already monitor, estimate, and record process and emissions data on a process basis per 40 CFR 98.153; therefore, these proposed rule revisions to report the production and emissions data on a process basis are not expected to significantly increase burden. For more information on subpart O confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

I. Subpart Q—Iron and Steel Production

In this action we are proposing amendments to subpart Q of Part 98 (Iron and Steel Production). This section discusses one substantive change to subpart Q; additional minor amendments, corrections, and clarifications are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

A revision is being made to align with revisions being proposed for subpart Y

(Petroleum Refineries). Under 40 CFR 98.172(b), facilities that report to subpart Q are referred to provisions in 40 CFR part 98, subpart Y for reporting CO₂ emissions from flares that burn blast furnace gas or coke oven gas. Subpart Q reporters should refer to section III.M.1 of this preamble for proposed revisions to subpart Y that would clarify that facilities should exclude pilot gas from the flare gas GHG emissions. As discussed in section II.A of this preamble, the proposed revisions would simplify data collection and may decrease the burden associated with monitoring the flare gas.

J. Subpart S—Lime Manufacturing

In this action, we are proposing amendments to subpart S of Part 98 (Lime Manufacturing). This section discusses all the proposed amendments to subpart S.

For the reasons described in section II.B of this preamble, the EPA is proposing several revisions to subpart S to improve the quality of data collected under Part 98. We are proposing to require reporting of three data elements that influence CO₂ emissions from lime manufacturing: Annual emission factors for each lime product type produced, annual emission factors for each calcined byproduct/waste by lime type that is sold, and annual average results of chemical composition analysis of each type of lime product produced and calcined byproduct/waste sold. As discussed in section II.B of this preamble, we are proposing revisions that would allow the EPA to collect data to improve the EPA's understanding of GHG emissions from lime manufacturing and the U.S. GHG Inventory while generally resulting in only a slight increase in burden for reporters.

Similar data elements were included in the 2009 Greenhouse Gas Reporting Rule; however, these data elements were monthly values, listed in 40 CFR 98.196(b)(2), 40 CFR 98.196(b)(3), and 40 CFR 98.196(b)(5). However, in a final rule published on August 25, 2011, we deferred reporting of the data elements because they were inputs to emission equations (76 FR 53057). In the Final Inputs Rule (79 FR 63750, October 24, 2014), we identified disclosure concerns with these data elements and therefore decided not to collect these monthly data elements and to include the inputs from Equations S-1 and S-2 in IVT.

IVT currently requires the entry of monthly calcium oxide and magnesium oxide content for Equation S-1, outputting the monthly emission factor for lime type; monthly calcium oxide and magnesium oxide content for

Equation S-2, outputting the monthly emission factor for calcined lime byproduct/waste type sold; calcium oxide and magnesium oxide content, and annual weight or mass of calcined byproducts or wastes for lime type that is not sold for Equation S-3, outputting the annual CO₂ emissions for calcined lime byproduct or waste type that is not sold; and monthly weight or mass of lime type produced, monthly weight or mass of calcined byproducts or wastes sold for Equation S-4, outputting the annual CO₂ process emissions from lime production from all lime kilns. The IVT inputs allow us to verify CO₂ emissions from lime kilns.

Collecting the annual emission factors for each lime product type produced, annual emission factors for each calcined byproduct/waste by lime type that is sold, and annual average results of chemical composition analysis of each type of lime product produced and calcined byproduct/waste sold would allow us to understand why emissions have increased or decreased in a particular year or over longer periods. Thus, they are important for informing the development of future GHG policies and programs. In addition, they are important for explaining U.S. emission trends through the U.S. GHG Inventory. These annual values are not inputs to equations; as described in section IV of this preamble, we are proposing that these data elements be eligible for confidential treatment.

For more information on subpart S confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

K. Subpart V—Nitric Acid Production

In this action, we are proposing three amendments to subpart V of Part 98 (Nitric Acid Production). This section discusses all of the proposed changes to subpart V.

1. Revisions to Subpart V To Streamline Implementation

For the reasons described in section II.A of this preamble, we are proposing one amendment that is intended to simplify and streamline the requirements of subpart V and increase the efficiency of the report submittal process. We are proposing to revise 40 CFR 98.223(a)(2) to conditionally remove the annual approval request by the reporter and the annual request approval by the EPA. As further discussed in section III.C of this preamble for subpart E, the EPA is proposing that the request for use of the alternative method be automatically approved for the next reporting year if the reporter received approval to use an

alternative method in the previous reporting year and the method has not changed.

2. Revisions to Subpart V To Improve the Quality of Data Collected Under Part 98

For the reasons described in section II.B of this preamble, we are proposing two amendments that are intended to improve the quality of data collected under subpart V that would result in a moderate increase in burden for reporters. First, we are proposing to revise 40 CFR 98.220 to change the definition of the source category to require reporting from all reporters that produce nitric acid, regardless of the nitric acid strength. The subpart V definition was based on the Standards of Performance for Nitric Acid Plants in 40 CFR part 60 (77 FR 48433, August 14, 2012) which covers the emissions of nitrogen oxides (NO_x) from the production of weak nitric acid (specifically between 30 percent and 70 percent in strength). Weak nitric acid is produced through a three step process. The majority of N₂O emissions from nitric acid production occur during ammonia oxidation, which is the first step in the process.

High-strength nitric acid is produced by two different methods. The first method begins with producing weak nitric acid and then uses extractive distillation to concentrate the nitric acid. Since N₂O emissions occur only during weak nitric acid production and the production of weak nitric acid is covered by the existing source category definition, N₂O emissions from this high-strength nitric acid production method are covered by the existing nitric acid source category definition. The second method is an extended version of the weak nitric acid production process, meaning that the high-strength nitric acid is produced in a single nitric acid train rather than two separate processes. This combined process is not currently covered by the existing source category definition, even though the amount of N₂O emissions from the process would be similar to the weak nitric acid production process.

When the Greenhouse Gas Reporting Rule was published in 2009, only one nitric acid plant in the United States produced nitric acid greater than 70 percent in strength. In the interim, further research has indicated the existence of three other nitric acid trains capable of producing high-strength nitric acid, including one existing plant and two potential plants becoming operational as early as the end of 2015. See the memorandum, "Re: Strong Nitric Acid Facilities in the U.S." from

Natalie Tang, EPA to Alexis McKittrick and Mausami Desai, EPA, dated January 29, 2015, in Docket Id. No. EPA-HQ-OAR-2015-0526.

Because of increased usage of the high-strength nitric acid process in the United States, we are proposing that the definition of nitric acid be updated to apply to all nitric acid strengths to ensure that subpart V reporting captures all N₂O emissions related to the production of nitric acid. By revising the definition, the rule would avoid confusion and ensure that all nitric acid trains and all N₂O emissions are subject to subpart V. The applicability change would help improve the completeness of reporting under subpart V and further standardize Part 98 to be consistent with Intergovernmental Panel for Climate Change (IPCC) guidance.

We are also proposing to revise 40 CFR 98.226(h) to require reporting of the date of installation of any N₂O abatement technology (if applicable). This date is readily available or already collected by reporters, and would not require additional data collection or monitoring. This data element could be carried over from one reporting year to the next. The reporter would not be required to make changes unless additional abatement technology is installed at a later date. The addition of this data element would help improve the accuracy of the U.S. GHG Inventory by improving the accuracy of trend estimates for this sector, while generally resulting in only a slight increase in burden. Specifically, the proposed data element would allow for improved analysis of emissions by enabling the EPA to more accurately apply the applicable emission factors over specific time periods, depending on whether the emissions were exhausted to an N₂O abatement technology during that time period. For more information on subpart V confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

L. Subpart X—Petrochemical Production

In this action we are proposing several amendments to 40 CFR part 98, subpart X (Petrochemical Production). This section discusses the substantive changes to subpart X; additional minor amendments, corrections, and clarifications are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

1. Revisions to Subpart X To Streamline Implementation

For the reasons described in section II.A of this preamble, we are proposing

amendments to subpart X that are intended to simplify, streamline, and align with other proposed GHGRP requirements, which would generally result in a decrease in burden for reporters. Under 40 CFR 98.243(c), facilities that report to subpart X are referred to provisions in subpart Y for reporting CO₂, CH₄, and N₂O emissions from flares. Subpart X reporters should refer to section III.M.1 of this preamble for proposed revisions to subpart Y that would clarify that facilities have the option to exclude pilot gas from the flare gas GHG emissions. As discussed in section II.A of this preamble, the proposed revisions would simplify data collection and may decrease the burden associated with monitoring the flare gas.

The EPA is also proposing to amend 40 CFR 98.246(a)(5) to allow operators of an integrated ethylene dichloride (EDC) and vinyl chloride monomer (VCM) process to report either the measured quantity of EDC produced or both the measured quantity of VCM and an estimate of the amount of EDC produced as an intermediate in the process. We are also proposing to modify 40 CFR 98.240(a) to indicate that a reporter may elect to consider the entire integrated process (rather than just the EDC operations) to be the petrochemical process for the purposes of complying with the mass balance method.

Subpart X currently requires EDC manufacturers to perform the mass balance around operations involved in the production of the EDC, including situations where EDC is produced as an intermediate in the production of VCM. In a letter received from Occidental Chemical Company titled "Request to Consider IPCC Balanced EDC/VCM Process Studies and Data for the Elimination of e-GGRT Validation Messages at VCM Production Facilities Reporting Under Subpart X," dated July 10, 2015, industry representatives indicated that an integrated EDC/VCM process is a continuous process with EDC produced as an intermediate that is not stored or measured. As an alternative to incurring the burden of modifying the process to enable measurement of the intermediate EDC stream, Occidental Chemical Company has requested that subpart X reporters be allowed to perform the mass balance over the entire integrated process and, for the quantity of petrochemical produced, report the quantity of VCM produced instead of the amount of EDC produced. Conducting the mass balance over the entire integrated process is acceptable to the EPA because the CO₂ process emissions (from oxidation of ethylene in the oxychlorination process

to produce EDC) and emissions from combustion of vent gases from the EDC operations are calculated under both methods. The alternative method also would estimate additional CO₂ emissions for combustion of both vent gases and liquid wastes from the VCM operations.

Under the proposed optional method, carbon emitted in vent streams from VCM operations and carbon in liquid wastes that are combusted would be assumed to be converted to CO₂. For most facilities, using the optional method likely means either a more complete reporting of total facility emissions or a shift from reporting under subpart C (if the subpart C applicability criteria are met) to reporting under subpart X. Facilities have indicated that vent gases from the VCM operations are combusted, typically in the same combustion unit as the vent gases from the EDC operations. Thus, the assumption that carbon in such vent streams is converted to CO₂ is expected to be valid. Liquid waste from the VCM operations that is not combusted would be included as a product for the purposes of the mass balance and, thus, any carbon in such stream would be subtracted from the total inlet carbon and not attributed to CO₂ emissions.

In addition to conducting the mass balance over the entire integrated process, the EPA is proposing that facilities electing to use this optional method would report both the measured amount of VCM produced and an estimate of the amount of EDC produced as an intermediate. Reporting the amount of VCM would help the EPA to verify the estimate of EDC reported. Reporting the estimate of EDC produced would enable the EPA to determine if there is a statistically significant difference in average emissions per metric ton of EDC between results reported by facilities that use the option for integrated processes versus results for facilities that report only for EDC operations.

The proposed change to 40 CFR 98.240(a) would harmonize the proposed integrated EDC/VCM mass balance option with other requirements related to petrochemical processes (or process units) in subpart X. For example, the mass balance calculation requirements in 40 CFR 98.243(c) and reporting requirements in 40 CFR 98.246(a) are per petrochemical "process unit." Thus, considering the entire integrated process to be the petrochemical process unit clarifies that these calculation and reporting requirements apply to the entire integrated process under the option, and

not to just the EDC portion of the process.

It is anticipated that the proposed amendments would reduce the compliance burden by not requiring monitoring equipment and/or sampling and analysis of an intermediate EDC stream just for the purpose of complying with subpart X. Instead, facilities would be allowed to measure the final product VCM, which is likely already being measured for other business reasons. A few facilities may have a liquid waste stream from the VCM operations that is not combusted. Such streams would need to be measured and included as products in the mass balance. The potential increase in burden for measurement of such streams is expected to be more than offset by the reduction for not measuring the intermediate EDC stream because not all facilities will have a liquid waste stream that is not combusted, and a waste stream is an output that would be more readily measured than an intermediate that is not stored.

2. Revisions to Subpart X To Improve the U.S. GHG Inventory

For the reasons described in section II.B of this preamble, we are proposing to amend subpart X to collect additional data to help improve estimates included in the U.S. GHG Inventory. The EPA is proposing to add reporting requirements for facilities that use the mass balance approach to determine emissions under 40 CFR 98.243(c) to report the annual average of the measurements of the carbon content and molecular weight of each feedstock and product reported under subpart X. Much of these data are currently required to be determined and retained per the recordkeeping requirements in 40 CFR 98.247, so adding the reporting requirement to report annual averages adds very little burden to reporters. These additional data elements will be aggregated to the national level and used to improve national emission estimates in the U.S. GHG Inventory for several reasons.

First, these data points will be helpful for understanding non-energy uses of fossil fuels by the chemical industry, so they can more accurately be allocated between the industrial process and energy sectors of the U.S. GHG Inventory. As noted in the U.S. GHG Inventory, currently some degree of double-counting may occur between CO₂ estimates of non-energy use of fuels in the energy sector and CO₂ process emissions from petrochemical production in this sector. Complete data integration is not feasible at this time as feedstock data from the Energy Information Administration (EIA) used

to estimate non-energy uses of fuels are aggregated by fuel type, rather than disaggregated by both fuel type and particular industries (e.g., petrochemical production). The EPA, through the GHGRP, obtained complete data on quantities of fuel consumed as feedstocks by petrochemical producers for the first time in 2015. The carbon content and molecular weight of feedstocks will facilitate conversion of the GHGRP feedstock quantity data (by fuel type) into energy units for integration with EIA data to ensure appropriate allocation of emissions across sectors in the national U.S. GHG Inventory, including addressing issues with double-counting.

Second, having annually averaged carbon content and molecular weight for products and feedstocks derived from facility-level GHGRP data would enable the EPA to transparently apply the IPCC mass balance method¹⁶ for determining emissions from petrochemical production in the U.S. GHG Inventory. Currently, only the aggregated facility-level products from application of the GHGRP mass balance are aggregated and published in the U.S. GHG Inventory.

For more information on subpart X confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

3. Minor Corrections and Clarifications to Subpart X

For the reasons described in section II.D of this preamble, we are proposing several minor corrections, and clarifications to subpart X of Part 98. These minor revisions are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

M. Subpart Y—Petroleum Refineries

In this action we are proposing several amendments to 40 CFR part 98, subpart Y (Petroleum Refineries). This section discusses the substantive changes to subpart Y; additional minor amendments, corrections, and clarifications are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

1. Revisions to Subpart Y To Streamline Implementation

For the reasons described in section II.A of this preamble, we are proposing several amendments that are intended to simplify and streamline the requirements of subpart Y. To reduce

reporter burden, the EPA is proposing to clarify in this rulemaking that pilot gas, which is considered the gas used to maintain a pilot flame at the flare tip, may be excluded from the quantity of flare gas used to perform GHG emissions calculations. As described below, the quantity of GHG emissions associated with pilot gas is very small relative to the total GHG emissions from a flare at petroleum refineries, petrochemical production facilities, and iron and steel production facilities, and monitoring the quantity of pilot gas may impose additional burden on some facilities.

Generally flares combust waste gas (excess gas generated by the facility that needs disposal which the flare was designed to treat/destroy), purge/sweep gas (gas that must be added to the flare header system or to the base of the flare in order to prevent oxygen ingress during periods of low waste gas flow), and pilot gas (gas used to maintain a pilot flame at the flare tip). The majority of gas combusted by a flare is waste gas. The remaining gas combusted by the flare is comprised of purge/sweep and pilot gas. The amount of purge/sweep gas needed is dependent on the complexity of the flare gas header system and the flare diameter and tip design. As discussed in the memorandum “Proposed Changes to Flare Pilot Gas Reporting Requirements under the Greenhouse Gas Reporting Program (GHGRP)” from Jeff Coburn, Leslie Pearce and Kevin Bradley, RTI to Brian Cook, EPA, dated July 10, 2015 (see Docket Id. No. EPA-HQ-OAR-2015-0526), flares generally require at least 0.1 to 0.2 foot per second (ft/s) flow velocity at the tip to prevent oxygen ingress, but can be significantly higher for flares with complex header systems. For a 2 foot diameter flare, this translates to a minimum flow of 1,100 to 2,200 cubic feet per hour or 1 to 2 mmBtu/hr. Recommended heat rate for industrial flare pilots is approximately 0.05 mmBtu/hr, so GHG emissions from flare pilot gas are typically 10 percent or less of the emissions from the flare purge/sweep gas while the flare is on standby (i.e., no active waste gas flow). Therefore, we expect the resultant GHG emissions from pilot gas to be low, especially in the context of the broader flare emissions.

Further, it is difficult for facilities to estimate the quantities of pilot gas without the use of a meter. Facilities generally measure the flare gas, but do not always have unit-specific meters installed for the gas used for the pilot flame (typically natural gas). The EPA does not intend for facilities to install a separate meter to measure the pilot gas for the purposes of reporting under this

¹⁶ See Equation 3.17, p. 3.67. 2006 IPCC Guidelines for National Inventories, Volume 3, Chapter 3, Section 3.9: Petrochemical and Carbon Black Production.

rulemaking, either to include or exclude this quantity of pilot gas. Installation of an additional meter for this purpose would be burdensome to reporters, especially when considering the increase in reported GHG emissions would be very low. Therefore, we are proposing to amend the rule to allow, but not require, facilities to exclude pilot gas from the flare gas GHG emissions calculations in Part 98 subparts Q, X, and Y. Purge/sweep gas would still be included in the flare GHG emissions calculations.

Finally, the EPA is proposing to amend the reporting requirements in 40 CFR 98.256(e) to add a requirement that facilities provide a yes/no indication as to whether a flare has a flare gas recovery system. Currently, 40 CFR 98.256(e) requires facilities to report general information as to the type of flare (e.g., air-assisted, steam-assisted, or non-assisted) and the flare service (e.g., general facility flare, unit flare, or emergency flare). Several offices within the EPA (as well as external researchers) use the GHGRP data on flares to characterize flare emissions, assess trends, and evaluate GHG emission reductions that could be achieved under various policies. In using the GHGRP data for flares for these purposes, we identified a key deficiency in the GHGRP data set is the lack of information regarding which flares have flare gas recovery systems. Flare gas recovery is a primary means by which owners and operators of flares may reduce flare emissions. The inclusion of information on which flares have flare gas recovery systems will provide useful information to characterize emission trends in key industries using flares and provide critical information needed by the EPA to make policy decisions. Only an indication of whether or not the flare is serviced by a flare gas recovery system is being proposed, so this amendment would add only a slight increase in burden to subpart Q, X, and Y reporters that have flares. For more information on subpart Y confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

2. Revisions to Subpart Y To Improve the Quality of Data Collected Under Part 98

For the reasons described in section II.B of this preamble, the EPA is proposing several amendments that would improve the quality of the data collected from subpart Y reporters while resulting in only a slight increase in burden for reporters.

The EPA originally promulgated rules for the reporting of GHG emissions from

various source categories, including petroleum refineries, on October 30, 2009. Since the reporting requirements were developed, understanding of emissions from delayed coking units (DCU) has improved. The rule originally established a methodology to estimate methane emissions from a DCU based on a simple gas expansion model (i.e., Equation Y-18) which the EPA is proposing to replace with a new methodology that will more accurately determine emissions from DCU.

Recently, EPA's Office of Air Quality Planning and Standards (OAQPS) conducted a detailed information collection request (ICR) (OMB Control No. 2060-0657) of the petroleum refining industry that gathered information about DCU operations and the decoking process. Based on the information collected, the EPA determined that the simple gas expansion model did not accurately reflect the emissions source and significantly underestimated emissions from the DCU. First, there is less gaseous void space in the coke drum than previously thought because the coke drum is filled with water and the void (vapor) space in the coke drum is small. Second and more importantly, there is a significant quantity of steam generated and released from the coke drum during the depressurizing process because the boiling point of the water decreases as the pressure of the vessel decreases. That is, there is a phase change and gas generation that occurs during the venting process. Consequently, the total quantity of gas discharged during a venting event is actually much greater than predicted by the simple pressure expansion (no phase change) model previously used in Equation Y-18. Upon review of the test data collected in response to the ICR, the EPA determined that methane emissions are a function of steam generation, not the initial void volume in the delayed coking unit vessel. Based on these determinations, the EPA developed and used a steam generation model to estimate emissions from the DCU (see Docket Item No. EPA-HQ-OAR-2010-0682-0202) and revised and incorporated this methodology as part of the emissions factors update for petroleum refineries (see http://www.epa.gov/ttn/chief/consentdecree/index_consent_decree.html; April 2015). We are now proposing to amend the DCU GHG emission calculation methodology to align the GHGRP's methodology with the methodology recently incorporated into the emission factors update and to provide a more

accurate means of estimating methane emissions from the DCU.

The proposed methodology uses a heat balance on the DCU coke drum vessel contents to estimate the volume of steam produced during the DCU decoking operations (steam venting, draining, vessel deheading, and coke cutting). Methane emissions per venting cycle is proportional to the quantity of steam generated. Key inputs to the heat balance include the mass of water and coke in the coke drum vessel and the average temperature of the coke drum contents when venting first occurs. We are proposing to allow reporters to determine the mass of coke in the coke drum based on company records or to estimate the mass of coke in the coke drum based on drum dimensions and drum outage (parameters already required to be recorded under the current rule) and a new equation provided in the rule (Equation Y-18a). We are proposing to require reporters to determine the mass of water in the coke drum based on the height of water in the coke drum and the mass of coke in the coke drum. We are proposing to allow either one of two methods to estimate the average temperature of the coke bed contents: (1) A method based on the measured overhead temperature of the drum, and (2) a method based on the overhead pressure using a temperature-pressure correlation equation provided in the rule.

While the EPA generally considers the temperature method to be the most accurate means to determine the average temperature of the coke bed contents, the EPA understands that there are concerns that the temperature measurements in the overhead line may be erroneously high due to additional steam purges in the overhead line to prevent coke build-up on the monitoring equipment, so we have provided the temperature-pressure correlation equation as well to provide reporters additional flexibility. Additionally, the EPA has not previously required temperature monitoring for the DCU in subpart Y of Part 98, but the previous methodology for delayed coking units in subpart Y required the vessel pressure prior to venting to be monitored and used as an input to the previous equation. Consequently, the EPA is providing the use of the temperature-pressure correlation to allow reporters to use current pressure monitoring and recordkeeping practices to obtain the information needed to implement the new methodology. As such, the new methodology will not require the installation or use of new monitoring systems.

Finally, we are proposing to allow facilities that have DCU vent gas measurements to use these measurements to develop a unit-specific methane emissions factor for the DCU. This allows reporters that have previously used the combined Equation Y-18/Y-19 method (as well as other reporters) to use the measurement data available to provide an improved, site-specific emissions estimate. If a unit-specific methane emissions factor is not available, we are proposing that reporters use the default methane emissions factor for DCU of 7.9 kg methane per metric ton of steam generated. Additional background on this change is available in the memo "Revised Emission Methodology for Delayed Coking Units" from Jeff Coburn, RTI International to Brian Cook, EPA, dated June 4, 2015 (see Docket Id. No. EPA-HQ-OAR-2015-0526).

The EPA is proposing that the new methodology be used to estimate the emissions for each DCU and the EPA is proposing to amend the reporting requirements for DCU to only require reporting at the unit level. This change is being proposed for several reasons. Currently, DCU emissions are reported at the facility level. The decision was originally made to require reporting at the facility level to allow facilities that have two identical DCU (with same sized drums) to apply Equation Y-18 to the set of drums one time to reduce burden. However, the rule contains several required reporting elements be submitted on a DCU unit-specific basis, so the burden reduction associated with this simplification is very small, and facility-level data hindered the EPA's ability to verify the reported data.

Facilities currently have the option to use a combination of Equation Y-18 and Y-19 (process vent method) for estimating the emissions from the DCU. This further splits certain reporting elements between the DCU process unit and the process vents inputs. This split in the DCU reporting elements has caused confusion among reporters and made verification of the reported data challenging. For example, facilities that did not have a DCU were required to actively report a zero for their emissions from this source. Also, because emissions were to be reported at the facility level, the emissions from process vents added for DCU vents needed to be reported as zero for the DCU vent at the process vent level. However, many reporters reported emissions at the process vent level and may or may not have fully reported the DCU emissions at the facility level.

Due to the difficulties associated with the split reporting requirements, we are

proposing that the new methodology be implemented to estimate the emissions for each delayed coking unit separately. This will simplify the reporting requirements for facilities and allow the EPA to simplify and streamline recordkeeping and reporting requirements for most reporters. Additionally, in the proposed approach, DCU vent measurements may be used to develop a unit-specific methane emissions factor so the available measurement data can be used within the context of the proposed DCU methodology, rather than splitting the emissions estimates between two different methodologies (i.e., Equations Y-18 and Y-19). For these reasons, the EPA anticipates the burden on reporters would be reduced by streamlining the DCU reporting requirements so that DCU-related reporting elements are only required to be reported at the DCU unit level.

In related revisions, we are proposing to revise 40 CFR 98.253(j) to delete "CH₄ emissions if you elected to use the method in paragraph (i)(1) of this section," because the DCU methodology no longer includes an option to use a combination of techniques to determine the CH₄ emissions from DCU decoking operations. We are also including "coke produced per cycle" in the list of quantities of petroleum process streams that are determined using company records in 40 CFR 98.254(j), and adding a requirement that temperature and pressure measurements associated with the DCU are to be determined "using process instrumentation operated, maintained, and calibrated according to manufacturer's instructions." These revisions are included to clarify monitoring requirements associated with the new DCU methodology. Additionally, we are proposing to revise the recordkeeping requirements in 40 CFR 98.257 associated with the DCU to harmonize the recordkeeping requirements with the new DCU methodology equations.

The EPA is also proposing to amend 40 CFR 98.253(h)(1) and (h)(2) to clarify the appropriate equations to be used for reporters with an asphalt blowing unit with a control device other than a vapor scrubber, thermal oxidizer, or flare (classified as "other (specify)" in e-GGRT). The current rule language in 40 CFR 98.253(h)(1) and (h)(2) only specifies the methodology to use for these three control systems and for uncontrolled asphalt blowing. In the proposed amendments, we are revising 40 CFR 98.253(h)(1) to clarify that reporters with "asphalt blowing operations controlled either by vapor scrubbing or by another non-combustion

control device" must use Equations Y-14 and Y-15 to calculate their GHG emissions. We are also revising 40 CFR 98.253(h)(2) to clarify that reporters with "asphalt blowing operations controlled by either a thermal oxidizer, a flare, or other vapor combustion control device" must use Equations Y-16a/Y-16b and Y-17 to calculate their GHG emissions. These amendments will yield more accurate emissions values as reporters will now be required to use the most appropriate equations for "other" control systems used for asphalt blowing operations. For more information on subpart Y confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

3. Minor Corrections and Clarifications to Subpart Y

For the reasons described in section II.D of this preamble, we are proposing several minor corrections, and clarifications to subpart Y of Part 98. These minor revisions are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

N. Subpart Z—Phosphoric Acid Production

In this action, we are proposing amendments to subpart Z of Part 98 (Phosphoric Acid Production). This section discusses all the proposed amendments to subpart Z. For the reasons described in section II.B of this preamble, we are proposing to revise subpart Z of Part 98 (Phosphoric Acid Production) to allow the EPA to collect data that would improve the EPA's understanding of GHG emissions from phosphoric acid production while generally resulting in only a slight increase in burden for reporters.

We are proposing to revise 40 CFR 98.266(f)(3) to require that the annual report must include the annual phosphoric acid production capacity (tons) for each wet-process phosphoric acid line, rather than the annual permitted phosphoric acid production capacity. In a prior technical correction to the rule (78 FR 19823, April 2, 2013) we acknowledged that not all phosphoric acid production facilities have a permitted production capacity, and additionally, not all facilities produce to the permitted capacity. During that action, we removed the word "permitted" from the requirement at 40 CFR 98.266(b) to report the facility-level production capacity. We are proposing a similar revision in this action to remove the word "permitted" from the requirement to report the process-level production capacity,

noting similarly that not all facilities have a permitted production capacity at the process-level or produce to the permitted capacity. We are also proposing to clarify the units of measurement for this reporting requirement. The current text for 40 CFR 98.266(f)(3) requires the reporting of “annual phosphoric acid permitted production capacity (tons) for each wet-process phosphoric acid process line (metric tons).” In this action, we are proposing to remove the units of measurement “(metric tons)” from this text to provide further clarity on the requirements that the unit of measurement is “tons” and not “metric tons.” The revision to the process-level capacity is necessary to ensure that the EPA collects consistent annual production capacity data and will provide a better characterization of the relationship between industry production and emissions. For more information on subpart Z confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

O. Subpart AA—Pulp and Paper Manufacturing

In this action, we are proposing several amendments, clarifications, and corrections to subpart AA of Part 98 (Pulp and Paper Manufacturing). This section discusses all of the proposed changes to subpart AA.

1. Revisions to Subpart AA To Streamline Implementation of Part 98

For the reasons described in section II.A of this preamble, we are proposing one amendment to subpart AA that would streamline the requirements of the rule and improve implementation, while generally reducing burden. We are proposing to clarify that Tier 4 CEMS are not used to report emissions under subpart AA. Subpart AA currently requires that fossil-fuel based CO₂ emissions be calculated using subpart C methodologies. Subpart AA states that Tier 1 or a higher tier may be used. Subpart AA reporters have not used the Tier 4 CEMS methodology during any previous reporting year, and are not expected to do so given the mixture of biogenic and fossil-fuel CO₂ emissions in the exhaust streams from subpart AA emission units. Therefore, we are proposing amendments to clarify that Tier 4 is not included in 40 CFR 98.273(a)(1), (b)(1), and (c)(1), which refer to the subpart C calculation methodologies for CO₂ emissions from combustion of fossil-fuel. This clarification will provide clarity to reporters and also reduce the EPA burden and related program expense

required to maintain e-GGRT CEMS web forms and associated verification checks and documentation.

2. Other Amendments to Subpart AA

As described in section II.C of this preamble, through communication with stakeholders, we have identified certain aspects of the rule that may require revision, including those we are proposing in response to comments submitted by stakeholders on prior rulemakings. Subpart AA requires pulp mill reporters to determine the annual mass of spent liquor solids fired in chemical recovery furnaces and chemical recovery combustion units by either measuring the mass of spent liquor solids annually (or more frequently) with a Technical Association of the Pulp and Paper Industry (TAPPI) method, or using records of measurements made with an online measurement system. Missing measurements are currently required to be populated with either the maximum spent liquor mass or fuel flow rate for the combustion unit, or the maximum mass or flow rate that the fuel meter can measure. Representatives of the forest products industry requested revisions to the missing data requirements for spent liquor solids in 40 CFR 98.275(b).¹⁷ The industry representatives explained that use of the maximum potential spent liquor solids firing rate or the maximum the meter can measure can overstate GHG emissions. The industry representatives stated that this procedure is unnecessarily burdensome and confusing because this requirement differs from the way mills handle spent liquor solids flow monitoring for other federal air rules, such as the National Emission Standards for Hazardous Air Pollutants in 40 CFR part 63, subpart MM. The industry representatives noted that having a data acquisition, analysis, and reporting program that uses one value for liquor feed rate for GHG reporting purposes and another feed rate for all other purposes is overly complicated for both mill personnel and regulatory agencies. The industry representatives requested that 40 CFR 98.275(b) of subpart AA be amended to require use of the mass of spent liquor solids reported under 40 CFR 63.866 of subpart MM for missing measurements.

The EPA has reviewed the industry representatives' request and agrees that use of the daily value recorded under 40

CFR 63.866(c)(1) of subpart MM results in an acceptable missing data estimate for the combustion unit. Thus, the EPA is proposing to amend 40 CFR 98.275(b) to allow use of the daily mass of spent liquor solids fired reported under 40 CFR 63.866(c)(1) as an alternative to maximum values. The provisions of 40 CFR 63.866(c)(1) require pulp mills to retain records of the mass of spent liquor solids fired in megagrams (Mg) or tons per day. This proposed amendment acknowledges that the daily value recorded under 40 CFR 63.866(c)(1) may need to be adjusted to match the duration of missing data under subpart AA. For example, the daily measurement may need to be adjusted to represent only a few hours of monitor downtime. We are proposing to retain the original requirements of 40 CFR 98.275(b) in addition to proposing the alternative to use the value recorded under 40 CFR 63.866(c)(1) to avoid requiring reconfiguration of data systems in mills that may have configured their data reporting systems to supply maximum values for subpart AA.

We are proposing one additional revision to subpart AA that is a minor clarification and that would improve the understanding of the rule. We are proposing a clarification to column labels in Table AA-2. Table AA-2 contains CH₄ and N₂O emission factors for “kraft lime kilns” and “kraft calciners,” both of which are “pulp mill lime kilns” as defined in 40 CFR 98.6. The N₂O emission factors differ for these two technologies. Because calcining (thermal removal of carbonates from lime mud) occurs in both types of equipment, there has been some confusion regarding which N₂O emission factors apply. To eliminate this confusion, we are proposing minor wording changes to clarify that the columns for “kraft lime kilns” in Table AA-2 refers specifically to “kraft rotary lime kilns.” We are also proposing to add a footnote to Table AA-2 indicating that fluid bed calciners are an example of kraft calciners. The majority of kraft pulp mills operate rotary lime kilns while at least one kraft mill operates a fluidized bed calciner.

P. Subpart CC—Soda Ash Manufacturing

In this action, we are proposing amendments to subpart CC of Part 98 (Soda Ash Manufacturing). This section discusses the substantive changes to subpart CC; additional minor amendments, corrections, and clarifications are summarized in the Table of Revisions available in the

¹⁷ See docket item EPA-HQ-OAR-2012-0934-0058. Although this request was received in comments on the 2013 Revisions Rule, this request was determined to be outside the scope of the 2013 proposed amendments and was not addressed at that time. This request is being considered as part of these proposed amendments.

docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

1. Revisions to Subpart CC To Improve the Quality of Data Collected Under Part 98

We are proposing two revisions that are intended to improve the quality of data collected under subpart CC, while only resulting in a slight increase in burden for reporters. We are proposing to revise 40 CFR 98.296(a) and (b) to require reporting of the facility-level annual consumption of trona or liquid alkaline feedstock. For the reasons described in section II.B of this preamble, we are proposing the addition of this data element to help improve the quality of the U.S. GHG Inventory by using aggregated facility level data. These data are already required to be reported on the manufacturing-line basis for subpart CC reporters that report using CEMS. For non-CEMS subpart CC reporters, the requirements to report consumption data for each manufacturing line, previously required per 40 CFR 98.269(b)(5), was removed in the Final Inputs Rule. This action would propose to streamline the reporting of facility-level consumption data from both CEMS and non-CEMS reporters on a more aggregate level. Currently, the U.S. Inventory estimates CO₂ emissions based on application of default emissions factors to estimated trona production.¹⁸ Consistent collection of this data element from facilities would enable the EPA to aggregate and integrate GHGRP emission estimates, and transparently determine national emissions based on trona consumption within the U.S. GHG Inventory and allow for the application of more advanced calculation methods. For more information on subpart CC confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

2. Minor Corrections and Clarifications to Subpart CC

For the reasons described in section II.D of this preamble, we are proposing one minor correction to subpart CC of Part 98. This minor revision is summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

Q. Subpart DD—Use of Electric Transmission and Distribution Equipment

In this action, we are proposing several amendments, clarifications, and corrections to subpart DD of Part 98 (Use of Electric Transmission and Distribution Equipment). This section discusses all of the proposed changes to subpart DD.

For the reasons described in section II.B of this preamble, the EPA is proposing several changes to subpart DD that will improve the quality and usefulness of the data received by the GHGRP, while generally resulting in only a slight increase in burden for reporters.

A facility is defined under subpart DD at 40 CFR 98.308 as an electric power system, comprised of all electric transmission and distribution equipment insulated with or containing SF₆ or PFC that is linked through electric power transmission or distribution lines and functions as an integrated unit that is owned, serviced, or maintained by a single electric power transmission or distribution entity (or multiple entities with a common owner), and that is located between: (1) The point(s) at which electric energy is obtained from an electricity generating unit or a different electric power transmission or distribution entity that does not have a common owner; and (2) the point(s) at which any customer or another electric power transmission or distribution entity that does not have a common owner receives the electric energy. The facility also includes servicing inventory for such equipment that contains SF₆ or PFC.

Given the nature of electric power systems, subpart DD facilities generally span a geographic area, and in some cases, may cross state boundaries. Currently, subpart DD reporters provide the EPA with the facility address on their certificate of representation. However, this address does not provide complete information on where the electric power system actually lies. The EPA is proposing to add new reporting requirements at 40 CFR 98.306(m) to make data collected under subpart DD more useful to the public. The new data elements would require the electric power system to provide the name of the U.S. state, states, or territory in which the electric power system lies and the total miles of transmission and distribution lines that lie in each state or territory. These data elements would allow users of GHGRP data to more easily identify the state, states, or territory within which the electric power system lies. Users of GHGRP data

would also be able to compare the miles of transmission and distribution lines in each state or territory to the total miles of transmission and distribution lines for the facility and then approximate the percentage of emissions that occur within each state or territory. (As discussed in the U.S. GHG Inventory, SF₆ emissions from electric power systems are correlated with the length of their transmission lines.) This would be useful for determining state- and territory-level GHG emissions associated with particular electric power systems. Although requiring facilities to report their emissions by state or territory would provide more precise estimates of emissions by state or territory, such a requirement would probably significantly increase the burden of reporting. In comparison, reporting the total miles of transmission and distribution lines that lie in each state and territory appears likely to be relatively straightforward for electric power systems. We request comment on whether it would be less burdensome for facilities to report the total transmission and distribution lines that lie in each state or territory within the facility boundary or to report the emissions for each state or territory within the facility boundary. We also request comment on whether miles of transmission lines alone are likely to be a better predictor of SF₆ use and emissions than combined miles of transmission and distribution lines. If so, the EPA could simply require reporting of the miles of transmission lines in each state or territory.

We are also proposing to add reporting elements to subpart DD that are related to the nameplate capacities and numbers of pieces of new and retiring equipment. Currently, electric transmission and distribution facilities are required to include the nameplate capacities of new and retiring hermetically sealed-pressure equipment, along with the corresponding quantities for other electrical equipment, in their emission calculations. They are also required to report the total nameplate capacity of new equipment, including hermetically sealed-pressure equipment, and the total nameplate capacity of retiring equipment, including hermetically sealed-pressure equipment. However, they are not required to distinguish between hermetically sealed-pressure and other equipment in these reports.

In lieu of reporting the total nameplate capacity for all hermetically sealed-pressure equipment and other equipment, we are proposing to require facilities to separately report the nameplate capacities of hermetically

¹⁸ See p. 3.52–53 (Tier 2 and 3). 2006 IPCC Guidelines for National Inventories, Volume 3, Chapter 3, Section 3.3: Natural Soda Ash Production. See also Section 4.11 (pp. 4–40 through 4–42) of U.S. GHG Inventory <http://www.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2015-Chapter-4-Industrial-Processes.pdf>.

sealed-pressure equipment and other equipment that they install and retire during the year. We are also proposing to require facilities to report the numbers of pieces of hermetically sealed-pressure equipment and other equipment that they install and retire during the year. These additional requirements would not require any additional data gathering but would enable us to better understand the quantities of SF₆ contained in hermetically sealed-pressure equipment, which is typically used in medium voltage, distribution applications. Currently, the GHGRP does not require reporting of the quantity of SF₆ inside such equipment or the number of pieces of such equipment.¹⁹ Information on the nameplate capacities and numbers of pieces of such equipment being installed and retired, along with the corresponding information for other types of equipment, would provide insight into the relative importance of the two types of equipment as potential emission sources (e.g., upon disposal), and a rough but useful gauge of the average charge sizes of both types of equipment, which affects the choice of strategy for reducing emissions. Historically, hermetically sealed-pressure equipment has been considered to be a relatively small source of SF₆ in the U.S., but its importance is known to be growing internationally and may also be growing domestically. These data elements represent information that reporters are expected to have readily available and would therefore generally result in only a slight increase in reporting burden.

The proposed amendments would add reporting of the nameplate capacities of new hermetically sealed-pressure switchgear (proposed 40 CFR 98.306(a)(2)), new SF₆- or PFC-insulated equipment other than hermetically sealed-pressure switchgear (proposed 40 CFR 98.306(a)(3)), retired hermetically sealed-pressure switchgear (proposed 40 CFR 98.306(a)(4)), and retired SF₆- or PFC-insulated equipment other than hermetically sealed-pressure switchgear (proposed 40 CFR 98.306(a)(5)). These data elements are inputs to an emission equation (Equation DD-1). Therefore,

the EPA evaluated these data elements to determine if their public release would cause disclosure concerns, using the process established in the Final Deferral Notice (76 FR 53057, August 25, 2011). The EPA determined that facilities reporting under this subpart consist of public utilities, including electric cooperatives, public supply corporations (e.g., Tennessee Valley Authority), federal agencies (e.g., Bonneville Power Administration), and municipally-owned electric utilities. These are public or publicly-regulated utilities that are not affected by competitive market conditions that may apply to other industries. The reported data relates to maintenance activities and installation of new/replacement of existing gas-insulated equipment (e.g., circuit breakers, switchgear, power transformers, etc.) and amounts of SF₆ and PFC used or recovered in servicing or replacing such equipment. These data elements do not disclose any information about a manufacturing process or operating conditions that would be proprietary. Therefore, the EPA is proposing that there are no disclosure concerns with these proposed data elements, and they must be reported in e-GGRT.

Because we recognize that the range of charge sizes can be large (e.g., greater than an order of magnitude) for both types of equipment, we are requesting comment on an alternative approach in which facilities would report the numbers of pieces of each type of equipment that are newly installed or retired and that fall into particular nameplate capacity ranges. One possible set of ranges is shown in Table 6 of this preamble:

TABLE 6—NAMEPLATE CAPACITY RANGES FOR REPORTING NUMBERS OF PIECES OF NEW AND RETIRING EQUIPMENT

[Pounds of SF₆]

0 to 0.5.
>0.5 to 1.
>1 to 15.
>15 to 30.
>30 to 100.
>100 to 500.
>500.

While this approach would require more effort than providing the total numbers of pieces of equipment newly installed and retired for hermetically sealed-pressure equipment and for all other equipment, it would provide more precise data. For example, it would enable us to distinguish between situations in which most newly installed, hermetically sealed-pressure

equipment had a charge size of 1 or 2 pounds, and situations in which most such equipment had a charge size of one or two ounces, but the average charge size was inflated by a few outliers with charge sizes of ten pounds or more.

For more information on subpart DD confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

R. Subpart FF—Underground Coal Mines

In this action, we are proposing several amendments, clarifications, and corrections to subpart FF of Part 98 (Underground Coal Mines). This section discusses the substantive changes to subpart FF; additional minor amendments, corrections, and clarifications are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

1. Revisions to Subpart FF To Streamline Implementation

For the reasons described in section II.A of this preamble, the EPA is proposing three changes to subpart FF that will streamline reporting of GHG emissions under subpart FF.

First, for the reasons described in section III.A.1 of this preamble, the EPA is proposing to amend 40 CFR 98.2(i)(3), which provides that an owner or operator of a facility that has reported to the GHGRP can stop reporting to the program if all applicable GHG-emitting processes and operations permanently cease to operate. Facilities may take advantage of this provision beginning in the year after the cessation of operations. However, paragraph (i)(3) expressly precludes owners and operators of underground coal mines from using this off-ramp even after a mine is closed and abandoned. Underground coal mines may only cease reporting after meeting the other criteria in 40 CFR 98.2(i): (1) If GHG emissions fall below 25,000 mtCO₂e for five consecutive years, or (2) if GHG emissions fall below 15,000 mtCO₂e for three consecutive years. The EPA is proposing to amend 40 CFR 98.2(i)(3) to give owners and operators of abandoned underground mines the opportunity to use the off-ramp provided by paragraph (i)(3). Specifically, we are proposing to amend paragraph (i)(3) to state that paragraph (i)(3) does not apply to underground coal mines, except those whose status is determined to be “abandoned” by MSHA. In keeping with the proposed changes to 40 CFR 98.2(i) discussed in section III.A.1 of this preamble, these proposed revisions would apply beginning on January 1,

¹⁹ We excluded hermetically sealed-pressure equipment from the requirement to annually inventory the total nameplate capacity of the facility's electrical equipment because hermetically sealed-pressure equipment tends to have small individual charge sizes, to be serviced only rarely or not at all, and to be spread in large numbers throughout transmission and distribution networks, making it relatively difficult to track after it is installed. However, it is relatively easy (and currently required) to track this equipment when it is installed or retired (75 FR 74803, December 1, 2010).

2017. All other proposed revisions to subpart FF, as discussed in this section, would apply beginning January 1, 2018 (see section I.E of this preamble for additional information).

In proposing this change, the EPA recognizes that non-flooded underground coal mines continue to liberate methane even after the mining operations cease. However, methane liberation from closed mines occurs on a rapidly declining basis until the mine is sealed and declared abandoned by MSHA, and sealed shafts emit virtually no methane to the atmosphere. This is supported by the EPA's work in developing a methodology for calculating emissions from abandoned underground mines.²⁰

The proposed change will streamline reporting under subpart FF by limiting reporting to facilities actively emitting measurable volumes of methane. Reports submitted by closed and abandoned mines during the first four years of the GHGRP show that abandoned and sealed mines produce quantities of GHG emissions far below the reporting threshold, and the data are of limited value for the GHGRP and U.S. GHG Inventory while resulting in additional reporting burden for facilities.

With respect to defining when a mine is considered abandoned, the EPA is proposing to rely on the MSHA determination of a mine's operational status as "abandoned," because it is a transparent, publicly available indicator of mine operational activity. The operational status of any mine can be found using MSHA's on-line Mine Data Retrieval System (MDRS) <http://www.msha.gov/drs/drshome.htm>. Moreover, the MSHA abandoned status provides confidence that closed mines are sealed, and are, therefore, not emitting methane. MSHA regulations require operators to seal any mine that has been permanently closed or abandoned for more than 90 days.²¹ The MSHA operating procedures require an MSHA district manager to inspect and certify that the mine is sealed as part of the abandonment process.²²

Furthermore, the EPA believes that this proposed change has the added benefit of removing a perceived conflict with 40 CFR 98.320(c), "Definition of

the source category", in subpart FF. This provision exempts abandoned and closed underground coal mines as source categories required to report to the GHGRP. Some reporters are uncertain which provision, 40 CFR 98.2(i) or 40 CFR 98.320(c), takes precedence when formerly operating and reporting mines change status to abandoned and sealed mines. The EPA believes the proposed modification would remove any ambiguity and uncertainty, clarifying when underground coal mines may cease reporting to the GHGRP and streamlining implementation of the GHGRP.

Second, the EPA is proposing several amendments to clarify when moisture content is to be reported. The first several amendments apply to 40 CFR 98.326, which lists the data reporting requirements for subpart FF. The EPA is proposing to amend 40 CFR 98.326(o) to require reporting of moisture content only in those cases where the volumetric flow rate and CH₄ concentration from a specific mine ventilation or degasification monitoring point are not measured on the same dry or wet basis, and in the case that flow rate is measured with a flow meter that does not automatically correct for moisture content. For example, if the volumetric flow rate at a specified monitoring point is measured on a dry basis but CH₄ concentration at that monitoring point is measured on a wet basis, then the reporter must report moisture content for the monitoring point unless using a flow meter that automatically corrects for moisture content. The EPA is proposing to amend 40 CFR 98.326 (f) through (i) to require reporters to specify whether volumetric flow rate and CH₄ concentration measurements for ventilation and degasification systems are determined on a wet or dry basis. The proposed changes would also amend 40 CFR 98.326(f) and (h) to specify that where a flow meter is used, the reporter must indicate whether the flow meter automatically corrects for moisture content. This information will provide the necessary information for the reporter and for the EPA to determine if moisture content should be reported for an individual facility.

Third, the EPA is proposing several amendments related to moisture content in 40 CFR 98.323 and 40 CFR 98.324, which lists the requirements for calculating GHG emissions. The EPA is proposing to amend 40 CFR 98.323(a)(2) to read, "Values of V, C, T, P, and, if applicable, (f_{H2O}). . . ." so that "if applicable" more explicitly applies to the moisture content term, (f_{H2O}). The

EPA is proposing the same change for 40 CFR 98.323(b)(1) and 40 CFR 98.324(b)(1). The changes to 40 CFR 98.323 and 40 CFR 98.324 are being proposed to ensure consistency with the proposed change to 40 CFR 98.326(o).

2. Revisions to Subpart FF To Improve the Quality of Data Collected Under Part 98

For the reasons described in section II.B of this preamble, the EPA is proposing two changes to subpart FF that will improve the quality of data received by the GHGRP and seeking comment on a third. First, the EPA is proposing to amend 40 CFR 98.324(b) to no longer allow MSHA quarterly inspection reports to be used as a source of data for monitoring methane liberated from ventilation systems. Instead, the facility will be required to use either of the two other methods set forth in the rule to monitor methane released from mine ventilation systems: CEMS or independently collected grab samples. Second, the EPA is proposing to add annual coal production to the list of data reporting requirements outlined in 40 CFR 98.326. Third, the EPA is seeking comment on increasing the frequency with which grab samples must be taken, from quarterly to monthly.

Under 40 CFR 98.324(b)(1) through (3), reporters may choose to monitor methane liberated from mine ventilation systems using any one or a combination of three approved methods: 40 CFR 98.324(b)(1)—quarterly grab samples; 40 CFR 98.324(b)(2)—data from MSHA quarterly inspection reports; or 40 CFR 98.324(b)(3)—use of a CEMS. MSHA conducts health and safety inspections at all operating mines at least once every quarter. Each inspection includes a methane survey of the ventilation system to ensure that the mines are operating within prescribed safety limits. To obtain methane measurements, an MSHA inspector takes grab samples using sealed test tubes. The samples are analyzed at an MSHA laboratory. A handheld anemometer is used to determine ventilation air flow. Approximately 50 percent of the 125 mines reporting to the GHGRP use MSHA quarterly reports as the basis for reporting methane liberation from ventilation.

The EPA is proposing to remove the option of using MSHA quarterly inspection reports as an accepted methodology for monitoring methane liberation in mine ventilation systems. Reporters would be required to collect grab samples or use a CEMS to monitor mine ventilation systems. This change will remove 40 CFR 98.324(b)(2). We are

²⁰ U.S. Environmental Protection Agency. Methane Emissions from Abandoned Coal Mines in the United States: Emission Inventory Methodology and 1990–2002 Emissions Estimates. Washington, DC, April 2004. http://epa.gov/cmop/docs/amm_final_report.pdf.

²¹ See 30 CFR 75.1711.

²² U.S. Department of Labor, Mine Safety & Health Administration. Coal Mine Safety And Health General Inspection Procedures Handbook. Handbook Number: PH13–V–1.

proposing this change because we have determined, through several reporting cycles and a review of MSHA quarterly inspection reports for 30 of the highest emitting mines, that the quarterly flow rate data gathered by MSHA cannot reliably be used for GHG reporting purposes. MSHA regulations and inspections are intended to ensure mine worker health and safety rather than to quantify specific mine operating parameters. MSHA inspections provide important data for assessing mine safety, and if complete, MSHA data may provide a reasonable estimate of methane emissions from underground coal mines. However, the EPA found that for many facilities the MSHA data can result in too many data gaps to meet the objectives of the GHGRP, adding considerable uncertainty to the calculation of facility and sector-wide GHG emissions. One common example is the occasional inconsistency in the locations within specific mines where MSHA inspectors take volumetric flow measurements and methane grab samples. Sampling locations are not fixed and, from quarter to quarter, inspectors may use more than one name for a single approach. In addition, approaches and even shafts may not appear in every quarterly report. For more information on the EPA's review of the MSHA data see the memorandum titled "Use of Inspection Data from the Mine Safety Health Administration for Reporting Quarterly Methane Liberation from Mine Ventilation Shafts" from Clark Talkington, ARI to Cate Hight, EPA, dated November 13, 2015, in Docket Id. No. EPA-HQ-OAR-2015-0526. Although this rule change will increase the burden on facilities that currently use MSHA data to meet the requirements of 40 CFR 98.324(b), the EPA has determined that the proposed amendment is necessary to improve the quality of data consistent with the intended purpose of Part 98. In proposing this change, the EPA is seeking comment on whether other alternatives, such as surface level samples taken at the fan mouth, would achieve the same objectives for improved data quality from mine ventilation systems. The EPA encourages commenters to submit studies, data, and background information that can support additional analysis.

The second proposal to improve data quality under subpart FF adds a new provision 40 CFR 98.326(u). The EPA is proposing to require reporters to report the total volume of coal produced, in short tons, during the reporting period. An important approach for verifying the

accuracy of subpart FF annual reports is a comparison of year to year changes in methane liberation and methane emissions for each facility. To support report verification, the EPA is proposing to add coal production to the list of required data to be reported under subpart FF. In many instances, an increase or decrease in coal production is a reasonable explanation for a corresponding increase or decrease in methane liberation. Obtaining annual coal production data with the annual subpart FF report would allow the EPA to review year-to-year changes in methane emissions in light of changes in coal production. These data are expected to reduce the burden on reporters and the EPA in verifying the annual reports. This change will not result in additional reporting burden for the mine because coal companies closely track coal production and report quarterly production totals to MSHA. MSHA makes quarterly and annual coal production publicly available through MSHA's Mine Data Retrieval System (MDRS) at <http://www.msha.gov/drs/drshome.htm>. Total annual coal production for the reporting year is publicly available by the March 31st GHGRP submission date in the year following the reporting year.

Third, the EPA is seeking comment on increasing the sampling frequency for reporters using grab samples from quarterly to monthly in order to provide more accurate and reliable data. Currently, mines that monitor methane liberation from grab samples must take at least one grab sample per quarter for each ventilation monitoring point (40 CFR 98.324(b)(1)), and report methane liberation on a quarterly basis. Mine-specific daily and weekly data sets show that significant day-to-day and week-to-week variation in methane emissions can occur depending on operating and geologic conditions at a mine. According to the IPCC Guidelines, frequent measurements of underground coal mine emissions can account for such variability and also reduce the intrinsic errors in the measurement techniques. As emissions vary over the course of a year due to variations in coal production rate and associated drainage, good practice is to collect measurement data as frequently as practical, preferably biweekly or monthly to smooth out variations.²³ Preliminary analysis of high frequency ventilation air emissions at underground coal mines shows that uncertainty decreases as

sampling frequency increases.

Therefore, increasing the frequency with which grab samples are taken from quarterly to monthly could improve the accuracy of ventilation data reported to the GHGRP. In considering this change, the EPA analyzed high-frequency datasets of ventilation air methane (VAM) emissions at three mines (Mines "A", "B", and "C") to examine the uncertainty associated with weekly, monthly, and quarterly sampling based on using a random day selection approach.

Using VAM emissions data recorded daily and weekly from the three underground coal mines (one with daily sampling and two with weekly sampling), the EPA analyzed the average daily VAM emissions rate by randomly selecting the sampling day or week during a 12 month reporting period. Mine A had daily CH₄ emissions ranging from 1 to 4 million cubic feet per day (mmcf/d) with an average of ~2.5 million cubic feet per day mmcf/d. Mine B had daily CH₄ emissions ranging from 4 to 18 mmcf/d (avg. ~10.1 mmcf/d). Mine C had daily CH₄ emissions ranging from 1 to 7 mmcf/d (averaging. ~3.6 mmcf/d).

To assess the variability in emissions, each case was run for a weekly, monthly, and quarterly sampling frequency over a 12 month reporting period. For Mine A, the results showed that weekly sampling produced a small standard deviation of 1.6% compared to daily sampling. For all three mines, the results showed the standard deviations increased to 4.3–5.2% when sampling frequency decreased from weekly to monthly sampling. Finally, the results showed the standard deviations increased to 12.1–13.4% when sampling frequency decreased from monthly sampling to quarterly sampling. Due to the day-to-day variability in VAM emissions, ranges of maximum possible errors are also greater with decreased sampling frequency. Deviations from the actual value for monthly sampling ranged from 8.8–10.7%, while deviations for quarterly sampling ranged from 20.6–35.1%.

This analysis demonstrates that uncertainty decreases as sampling frequency increases, most noticeably when the frequency decreases from quarterly to monthly. Although the EPA considered requiring weekly sampling, it appears that monthly sampling strikes the most appropriate balance between improving data quality while limiting the additional burden on reporters for more frequent sampling. The EPA also notes that a number of mines reporting to the GHGRP already take grab samples on a more frequent basis than the quarterly MSHA sampling requirements.

²³ From 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 4. See: http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_4_Ch4_Fugitive_Emissions.pdf.

In addition, based on published papers the EPA understands that many mining operations conduct ventilation surveys on a monthly and possibly more frequent basis as a critical element of good practice health and safety. Air samples are taken as part of the ventilation survey to confirm levels of hazardous gases. Therefore, the EPA believes an amendment to increase monitoring frequency is feasible for the industry. The EPA is also seeking comment on other monitoring frequencies higher than monthly (such as biweekly) or monitoring frequencies higher than quarterly but less than monthly (such as bimonthly).

For additional information regarding the EPA's preliminary analysis for increasing monitoring frequency, see the memorandum entitled "Evaluating Possible VAM Emissions Estimation Errors Based on Different Sampling Intervals (Quarterly, Monthly, Weekly)," Ruby Canyon Engineering, dated June 10, 2015, in Docket Id. No. EPA-HQ-OAR-2015-0526. The EPA encourages commenters to submit studies, data, and background information demonstrating multi-year VAM monitoring on a basis that is more frequent than quarterly. This information will help determine the appropriate frequency of monitoring for ventilation emissions that is needed to ensure accurate and reliable measurements.

Finally, we are also proposing a change to 40 CFR 98.324(b)(1) to require use of the most recent edition of the MSHA Handbook for inspections and sampling procedures entitled, Coal Mine Safety and Health General Inspection Procedures Handbook Number: PH13-V-1, February 2013.

In addition to improving the quality of data reported to the GHGRP, and, in turn, the quality of emissions data aggregated and reported to the public by the GHGRP, the proposed changes to monitoring methods for mine ventilation systems, as well as the addition of annual coal production to the data reporting requirement, would improve the emissions estimates for coal mines reported in the U.S. GHG Inventory. For more information on subpart FF confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

3. Other Amendments to Subpart FF

As described in section II.C of this preamble, we are proposing revisions to Part 98 to respond to issues raised by reporters and to more closely align rule requirements with the processes conducted at specific facilities. The following proposed revisions to subpart

FF are in response to comments and questions we have received since reporting under subpart FF began in 2011.

In 40 CFR 98.323(a) and (b), we are proposing to clarify for Equations FF-1 and FF-3 the method for determining the number of days in a month or week (n) where active ventilation and degasification are taking place. In both equations, the definition of Number of Days (n) is being clarified to note that (n) is determined by taking the number of hours in the monitoring period and dividing by 24 hours per day.

In 40 CFR 98.323(a)(3) and 40 CFR 98.323(b)(2), the text is being amended to state that the quarterly sum of CH₄ liberated from ventilation and degasification systems, respectively, "must be" rather than "should be" determined as the sum of the CH₄ liberated at each monitoring point during that quarter. This change is being proposed because calculating the quarterly sum of CH₄ liberated is required rather than being optional.

The EPA is proposing to remove "If applicable" in 40 CFR 98.324(h) to clarify that the provision requiring the owner or operator to document the procedures used to ensure the accuracy of gas flow rate, gas composition, temperature, pressure, and moisture content measurements is a requirement for all reporters, because grab samples and CEMS would be the only acceptable monitoring methods if the amendments to 40 CFR 98.324(b) are finalized as proposed.

In 40 CFR 98.326(r)(2), we are proposing to clarify the start date and end date for a well, shaft, or vent hole. This requirement has caused confusion for some reporters. The start date of a well, shaft, or vent hole is the date of actual initiation of operations and may begin in a year prior to the reporting year. For purposes of reporting, we are amending paragraph (r)(2) to state that the end date of a well, shaft, or vent hole is the last day of the reporting year if the well, shaft, or vent hole is operating on that date.

In 40 CFR 98.326(r)(3), we are proposing to add language clarifying the method for determining and reporting the number of days a well, shaft, or vent hole was in operation during the reporting year. The number of days is determined by dividing the total operating hours in the reporting year by 24 hours per day. This change is consistent with similar changes to the method for determining number of days in Equations FF-1 and FF-3, discussed earlier in this section.

4. Minor Corrections and Clarifications to Subpart FF

In addition to the substantive changes proposed, for the reasons described in section II.D of this preamble, we are proposing minor revisions that are intended to clarify specific provisions in subpart FF. These minor revisions are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

S. Subpart HH—Municipal Solid Waste Landfills

In this action, we are proposing several amendments, clarifications, and corrections to subpart HH of Part 98. This section discusses the substantive changes to subpart HH; additional minor amendments, corrections, and clarifications are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

1. Revisions to Subpart HH To Streamline Implementation

For the reasons described in section II.A of this preamble, we are proposing one amendment that is intended to simplify and streamline the requirements of subpart HH and focus the provisions of the rule on the essential data that the EPA requires to review, assess, and verify reported emissions. We are proposing to revise 40 CFR 98.346(f) to remove the requirement to report the surface area for each type of cover material used at the facility. The surface area for each cover material used has not been useful in assessing or verifying reported emissions and therefore, the EPA is proposing to remove the requirement to report this data. The proposed amendment will still require the reporting of the total surface area of the landfill containing waste (in square meters) and an identification of the type(s) of cover material used. This information is used during verification to check the consistency of the collection efficiency reported by the landfill. However, when multiple cover types are used, reporters will no longer be required to report the surface area of the landfill containing waste associated with each cover type. The proposed change would reduce the burden to reporters and the agency as described in section II.A of this preamble.

2. Revisions to Subpart HH To Improve the Quality of Data Collected Under Part 98

For the reasons described in section II.B of this preamble, the EPA is proposing several amendments to

subpart HH that would allow the EPA to collect data that would improve the EPA's understanding of sector GHG emissions while generally resulting in only a slight increase in burden for reporters.

First, we are seeking comment on whether revisions should be made to Table HH-3 to allow landfill owners or operators to determine the weighted average collection efficiency for their landfill using either an area-based weighting approach, as has been required in previous reporting years, or a volume-based weighting approach. We are also seeking comment on whether reporters should be given the option to use either approach, or if one approach should be required if reporters meet certain landfill characteristics and if so, what those landfill characteristics should be. We have received comments from reporters stating that the area weighted average does not accurately reflect the overall efficiency of the gas collection system due to differences in the waste depth or age in different portions of their landfill. We considered allowing reporters to define subareas of the landfill and perform all of the subpart HH calculations and report the equation inputs for each subarea. This approach would consider the effects of waste age, composition, and quantity for the different landfill subareas, but it would essentially double or triple the number of reporting elements, depending on the number of subareas defined. We next considered providing a volume-based weighting approach for calculating collection efficiency. This approach only considers some of the variables that influence methane generation rate, but these are variables already reported, namely the depths for each waste area defined in Table HH-3. If the option to use the area weighted approach or the volume-based weighting approach is finalized, no new reporting elements beyond an indication of which weighting approach is used would be required. This revision would allow us to use the data previously reported to develop a consistent time line, if necessary, without requiring reporters to revise previously submitted reports. If a requirement to use one approach over another for reporters with certain landfill characteristics is finalized, one or more new reporting elements may be required depending on what the certain landfill characteristics are.

Consequently, we are seeking comment on (1) whether reporters should be given the option to calculate the collection efficiency; (2) whether reporters should be allowed to use and report the option of either the area

weighted average or the volume weighted average approach; (3) whether reporters should be required to use one approach over the other depending on specific landfill characteristics (e.g., reporters with drastically different wastes depths in portions of their landfill should be required to use the volume weighted approach); and (4) what those specific landfill characteristics should be. We expect that the many landfills that have similar waste depths in different areas of their landfill (or a single area) will maintain their existing data collection and calculation procedures by using the area weighted average. In contrast, we expect reporters with different waste depths in portions of their landfill to use the volume weighted average approach, thereby improving the accuracy of the data reported for those landfills. If finalized, these changes would be effective beginning with the 2016 reporting year and are not retroactive.

We are proposing to broaden the description of area type A5 in Table HH-3 to include alternative final covers. Currently, facilities with landfill gas collection and approved alternative final covers are not allowed to use the 95 percent collection efficiency in their emissions calculations because an alternative final cover does not fit the exact language in the definition for area type A5 in Table HH-3. This proposed revision would allow facilities with alternative final covers to use a collection efficiency greater than 75 percent. Alternative final covers may include, but are not limited to, evapotranspiration covers, capillary barrier covers, asphalt covers, or concrete covers. The state, local, or other agency responsible for permitting the landfill determines whether an alternative final cover meets the applicable regulatory requirements and has been shown to adequately protect human health and the environment. This rule does not intend to provide details of the design or implementation of alternative final covers and solely relies on the agency responsible for permitting the landfill to approve an alternative final cover at the facility. For clarity, we are also proposing a definition for alternative final covers to this effect in 40 CFR 98.348.

We are also proposing to revise 40 CFR 98.346(i)(5) to require reporting of the annual hours that active gas flow was sent to each destruction device instead of reporting the annual operating hours for each destruction device associated with a given measurement location. The proposed revision refers to the fraction of hours the destruction device was operating

(f_{Dest}), which is a term used in Equations HH-6 and HH-8. The term f_{Dest} is defined as the "fraction of hours the destruction device associated with the n th measurement location was operating during active gas flow calculated as the annual operating hours for the destruction device divided by the annual hours flow was sent to the destruction device as measured at the n th measurement location . . ."

Although no changes are being made to the definition or calculation of f_{Dest} , there is currently no reporting requirement for the ". . . hours . . ." operating during active gas flow . . ." in the rule. By collecting these data, the proposed revision would allow the EPA's reporting tool to accurately calculate f_{Dest} , as well as the results of Equations HH-6 and HH-8. More accurate calculation by e-GGRT would improve verification of the existing data by reducing the number of reporters that override their equation results, resulting in fewer potential errors identified during the verification process. The removal of the current requirement to report the annual operating hours for each destruction device associated with a given measurement location would not impede verification of reported data, as this parameter is not used in the subpart calculations. We are also proposing to move the requirement to report the annual operating hours of the gas collection system for each measurement location in 40 CFR 98.346(i)(7) to 40 CFR 98.346(i)(5) to consolidate all reporting requirements that are associated with each measurement location to the same paragraph, consistent with reporting organization used in e-GGRT.

Finally, landfills with active gas collection systems must calculate and report their GHG emissions in two ways. Equation HH-6 is designed to be driven by the modeled methane generation (*i.e.*, Equation HH-1), whereas Equation HH-8 is driven by methane recovery (*i.e.*, Equation HH-4). For a landfill with an active gas collection system, where the quantity of recovered methane is greater than the modeled methane generation (*i.e.*, the result of Equation HH-4 is greater than the result of Equation HH-1), we are proposing that the facility must report the results of Equation HH-8 as the final subpart HH methane emissions instead of the value for Equation HH-6.

We allowed the term G_{CH_4} in Equation HH-6 to be substituted with the greater of the Equation HH-4 or Equation HH-1 value to avoid a negative result when the quantity of recovered methane is greater than the modeled methane generation. We reviewed several years

of facility data and found a few cases where the amount of methane recovered by the gas collection system was greater than the amount of modeled methane generation. After reviewing the reports where this occurs, as well as examining the difference in net emissions between Equation HH-6 and HH-8 at these facilities, we concluded that the value of Equation HH-6 is not reliable for use as the final subpart HH emissions when the amount of methane recovered is greater than the amount of modeled methane generation. The substitution of Equation HH-4 for G_{CH_4} was only done to prevent a negative value of methane emissions for Equation HH-6. The EPA did not intend for that value to then be used as the total subpart HH emissions since it is not possible to recover more methane from the landfill than was generated. To prevent inaccurate values from being reported as the final subpart HH methane emissions, we are proposing to expressly add the “methane emissions for the landfill” as a reporting element in 40 CFR 98.346(i)(13). This proposed new paragraph directs reporters to “Choose the methane emissions from either Equation HH-6 of this subpart or Equation HH-8 of this subpart that best represents the emissions from the landfill. If the quantity of recovered CH_4 from Equation HH-4 of this subpart is used as the value of G_{CH_4} in Equation HH-6 of this subpart, use the methane emissions calculated using Equation HH-8 of this subpart as the methane emissions for the landfill.”

For more information on subpart HH confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

3. Other Amendments to Subpart HH and Grant of Petition for Reconsideration

We are proposing two amendments for subpart HH for the reasons described in section II.C of this preamble. These proposed amendments are anticipated to have minimal or no impact on burden for reporters. On April 2, 2013, the EPA proposed flux-dependent oxidation fractions based on data provided by industry representatives (78 FR 19802). While we proposed the use of these oxidation fractions with no minimum soil cover requirement, we received comments on the proposed soil oxidation fractions noting that soil oxidation only occurs with soil of adequate depth, porosity, temperature and microbes. To respond to this comment, we reviewed the soil depths present in the peer-reviewed studies upon which the data were based and determined that the studies supporting

the higher flux-dependent oxidation fractions were performed on soils with an average depth across all of the studies reviewed of 24 inches or more of soil cover. We finalized the proposed flux dependent soil oxidation fractions, and also included a requirement that these flux dependent soil oxidation fractions could only be used if the majority of the landfill area that contains waste has a soil cover of at least 24 inches (78 FR 71971, November 29, 2013). We subsequently received an administrative petition for reconsideration from Waste Management, Inc. (hereafter referred to as “Petitioner”) on January 28, 2014 regarding the inclusion of this minimum soil cover requirement in order to use the flux-dependent soil oxidation fractions, titled “Waste Management’s Petition for Reconsideration of 2013 Revisions to Greenhouse Gas Reporting Rule and Final Confidentiality Determinations for New or Substantially Revised Data Elements Docket I.D. EPA-HQ-OAR-2012-0934” (hereafter referred to as the “Petition for Reconsideration,” available in the docket for this rulemaking). This section of this preamble discusses the specific issue raised in the Petition for Reconsideration that is addressed in this action, the review and analysis that was undertaken since the Petition for Reconsideration was received, and the changes the EPA is proposing in response to the petition. The EPA intends to complete its response to the Petition for Reconsideration through this rulemaking.

In response to the Petition for Reconsideration, the EPA re-evaluated the available peer-reviewed literature (27 studies) at the time of proposal regarding soil oxidation fractions. This review found that 85 percent of the data points in the literature where both methane oxidized and cover depth were reported had a cover depth of 24 inches or more. This investigation confirmed that the vast majority of the soil oxidation studies were performed on landfills with cover depths of 24 inches or more, which was the basis for the 24 inch soil depth requirement in the final rule (78 FR 71927, November 29, 2013). However, several of these studies investigated the oxidation profile within the cover soil and several of these studies indicated that the majority of soil oxidation occurs in the top 12 to 15 inches of the soil cover. While some of the data support the idea that the bulk of the oxidation may occur in the top 12 to 15 inches of the soil, it is unclear whether these soils would have had similar oxidation rates if only 12 or 15

inches of soil cover were present. For further details on the review of the soil oxidation literature, see the memorandum entitled “Review of Oxidation Studies and Associated Cover Depth in the Peer-Reviewed Literature” from Kate Bronstein, Meaghan McGrath, and Jeff Coburn, RTI International to Rachel Schmeltz, EPA, dated June 17, 2015, in Docket Id. Number EPA-HQ-OAR-2015-0526.

We also reviewed the codified state standards from all 50 states for requirements regarding intermediate or interim cover depth and found that the depth requirements are not consistent from state to state, and for some states depth requirements are not specified (e.g., Hawaii, Idaho, New Hampshire). Most states require a minimum intermediate cover thickness of 12 inches. Some states include a minimum intermediate cover depth in their regulations that is inclusive of the federally-mandated 6 inches of daily cover depth. For example, Massachusetts requires a minimum intermediate cover depth of 12 inches, including 6 inches of daily cover. Other states, such as Florida, require 12 inches of intermediate cover in addition to the 6 inches of initial cover, thereby requiring 18 inches of intermediate cover in total.

After reviewing the literature on the soil oxidation studies and the codified state standards for intermediate soil cover, we determined that while the literature studies are not conclusive regarding the minimum soil cover necessary for oxidation to occur, they do show that oxidation generally occurs with at least 12 inches of soil cover. Further, most states require at least 12 inches of intermediate soil cover. As a result, we are proposing to revise and clarify the soil cover requirements as follows. First, we are proposing to revise the phrase “. . . for a majority of the landfill area containing waste . . .” to read “. . . for at least 50 percent of the landfill area containing waste . . .” to clarify that we intended the majority of the landfill to mean 50 percent or more. Second, we are proposing to revise the requirement for “. . . a soil cover of at least 24 inches . . .” to read “. . . intermediate or interim soil cover . . .” Third, we propose to define intermediate or interim soil cover in 40 CFR 98.348 to mean “the placement of material over waste in a landfill for a period of time prior to disposal of additional waste and/or final closure as defined by state regulation, permit, guidance or written plan, or state accepted best management practice.” In the case where a landfill is located in a state that does not have an intermediate

or interim soil cover requirement as proposed to be defined, we are proposing to add a footnote to Table HH-4 stating that the landfill must have a soil cover of 12 inches or greater to use an oxidation fraction of 0.25 or 0.35.

Lastly, in our review of the oxidation studies, we noted that some investigators observed that soil methane flux near passive vent locations was low. Most of the landfills where methane flux and soil oxidation were measured occurred at landfills with active gas collection systems. For landfills with passive gas collection, a significant portion of the generated methane can be released via these passive vents and bypass diffusion through the cover soil. That is, landfill gas that is lost through the passive vents would not undergo any soil oxidation. The GHGRP does not currently require, nor are we proposing to require, direct measurement of passive vent flows; thus, a facility is unable to determine the fraction of the generated landfill gas that bypasses the soil cover and it is therefore not possible to estimate a weighted average soil oxidation fraction for landfills with passive vents. It is important to note that the Intergovernmental Panel on Climate Change 2006 Guidelines²⁴ recommends the use of oxidation fractions ranging from 0 to 10 percent largely due to the fact that landfill gas will flow primarily through channels of least flow resistance, which one would expect the passive vents to be. If there are fissures in the soil cover (or passive vent systems), a significant portion of the landfill gas will be released without any oxidation occurring. However, we are not proposing to require the use of an oxidation fraction of zero for landfills with passive or active venting because a small portion of the generated landfill gas will pass through the soil cover and undergo soil oxidation. Because we would expect a larger portion of the generated landfill gas to be released via the passive vents, for the portion of the landfill gas that does diffuse through the soil cover the methane flux rate is expected to be small, resulting in a fraction of methane oxidized that is expected to be greater than 10 percent. Considering the gas released through the passive or active vents and the methane that remains to be oxidized in the soil cover, while not precise, the overall oxidation fraction could be expected to

average approximately 10 percent. Therefore, we are proposing revisions to Table HH-4 to require landfills that have passive or active vent systems that service greater than 50-percent of the landfill area containing waste or landfills that have only passive or active vent systems to use the default 10 percent oxidation fraction in their emission calculations. The EPA is seeking comment on whether landfills with only passive or active vent systems or landfills with such systems on greater than 50 percent of the landfill area containing waste should be required to use the 10 percent oxidation fraction. If finalized, these changes to Table HH-4 would be effective beginning with the 2016 reporting year and are not retroactive. The table as it appeared before these proposed revisions applies to the relative earlier reporting years.

While we are proposing to lower the minimum amount of soil cover required to use certain oxidation fractions, we are proposing to require the use of a 10 percent oxidation fraction for landfills with passive or active venting, or for landfills with less than 12 inches of soil cover (that do not also have a geomembrane cover) because application of higher soil oxidation fractions would be inappropriate at landfills with limited cover soils or passive vent systems because a significant portion of the landfill gas may be released through channels or vents with little to no soil oxidation occurring.

We are also proposing to add definitions of “passive vent” and “active venting” to further clarify the rule requirements as they pertain to landfill gas collection system flow and composition monitoring and the use of soil oxidation fractions. Specifically, we are proposing “*Passive vent* means a pipe or a system of pipes that allows landfill gas to flow naturally, without the use of a fan or similar mechanical draft equipment, to the surface of the landfill where an opening or pipe (vent) allows for the free flow of landfill gas to the atmosphere or to a passive vent flare without diffusion through the top layer of surface soil.” “*Active venting* means a pipe or a system of pipes used with a fan or similar mechanical draft equipment (forced convection) used to actively assist the flow of landfill gas to the surface of the landfill where the landfill gas is discharged either directly to the atmosphere or to a non-combustion control device (such as a carbon absorber) and then to the atmosphere.” As described previously, we are proposing to require landfills with passive vents or active venting to use a default oxidation fraction of 0.1.

Providing these definitions clarifies the meaning of these terms and thereby clarifies the reporters that must use the 0.1 oxidation fraction.

4. Minor Corrections and Clarifications to Subpart HH

For the reasons described in section II.D of this preamble, we are proposing several minor corrections and clarifications to subpart HH of Part 98, including editorial changes and clarifications to reporting requirements. These minor revisions are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

T. Subpart II—Industrial Wastewater Treatment

We are proposing amendments to subpart II of Part 98 (Industrial Wastewater). This section discusses the substantive changes to subpart II; additional minor amendments, corrections, and clarifications are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

1. Revisions to Subpart II To Improve the Quality of Data Collected Under Part 98 and Improve the U.S. GHG Inventory

For the reasons described in section II.B of this preamble, the EPA is proposing amendments to subpart II reporting requirements that would provide additional data to support estimates included in the U.S. GHG Inventory, while generally resulting in only a slight increase in burden for reporters.

We are proposing an amendment to 40 CFR 98.356 to require facilities that perform ethanol production to indicate if their facility uses a wet milling process or a dry milling process. To clarify this requirement, we are proposing amendments to 40 CFR 98.358 to add definitions of “wet milling” and “dry milling.” The EPA intends to use the data on the numbers of facilities with wet versus dry milling processes and their respective wastewater characteristics to update assumptions used in the U.S. GHG Inventory and thereby improve the estimates of U.S. emissions from wastewater treatment at ethanol production facilities. In addition, the EPA intends to update the U.S. GHG Inventory using data on the level of biogas recovery in use at wet milling facilities and at dry milling facilities. For more information on subpart II confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

²⁴ See IPCC 2006, 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Prepared by the National Greenhouse Gas Inventories Programme, Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds). Published: IGES, Japan. Available at: <http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html>.

2. Other Amendments to Subpart II

For the reasons described in section II.C of this preamble, the EPA is proposing several clarifying amendments to subpart II; these proposed changes would have no impact on burden for reporters. In order to resolve uncertainties in the reporting requirements in 40 CFR 98.356(b)(1) and 40 CFR 98.356(d)(3) through (d)(6) regarding how to calculate weekly averages for chemical oxygen demand (COD) and 5-day biochemical oxygen demand (BOD₅) concentration, CH₄ concentration, biogas temperature, biogas moisture content, and biogas pressure, the EPA is proposing an amendment to 40 CFR 98.358 to add a definition of the term “weekly average.”

3. Minor Corrections and Clarifications to Subpart II

For the reasons described in section II.D of this preamble, we are proposing several minor clarifications to subpart II of Part 98. These minor revisions are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

U. Subpart LL—Suppliers of Coal-Based Liquid Fuels

In this action, we are proposing several amendments to subpart LL of Part 98 (Suppliers of Coal-based Liquid Fuels). This section discusses the substantive changes to subpart LL; additional minor amendments, corrections, and clarifications are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

1. Revisions to Subpart LL To Streamline Implementation

For the reasons described in section II.A of this preamble, we are proposing several revisions to 40 CFR part 98, subpart LL (Suppliers of Coal-based Liquid Fuels) to clarify requirements and amend data reporting requirements, resulting in a decrease in burden for reporters.

As described in section II.A of this preamble, we are proposing to remove the requirements of 40 CFR 98.386(a)(4), (a)(8), (a)(15), (b)(4), and (c)(4) for each facility, importer, and exporter to report the annual quantity of each coal-based liquid fuel on the basis of the measurement method used. Reporters would continue to report the annual quantities of each coal-based liquid fuel in metric tons or barrels at 40 CFR 98.386(a)(2), (a)(6), (a)(14), (b)(2), and (c)(2). We are also proposing to clarify that the quantity of bulk natural gas

liquids (NGLs) reported under 40 CFR 98.386(a)(20) should not include NGLs already reported as individual products under 40 CFR 98.386(a)(2). These changes not only clarify the reporting requirements, but also harmonize subpart LL requirements with those of subpart MM.

2. Minor Corrections and Clarifications to Subpart LL

For the reasons described in section II.D of this preamble, we are proposing several minor clarifications to subpart LL of Part 98. These minor revisions are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

V. Subpart NN—Suppliers of Natural Gas and Natural Gas Liquids

In this action, we are proposing several amendments, clarifications, and corrections to subpart NN of Part 98 (Suppliers of Natural Gas and Natural Gas Liquids). This section discusses the substantive changes to subpart NN; additional minor amendments, corrections, and clarifications are summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

1. Revisions to Subpart NN To Improve the Quality of Data Collected Under Part 98

For the reasons described in section II.B of this preamble, we are proposing one amendment to subpart NN that would improve the quality of the data collected under Part 98 while generally resulting in only a slight increase in burden for reporters. Each local distribution company (LDC) reporting under subpart NN is defined in 40 CFR 98.400(b) as a company that owns or operates distribution pipelines that physically deliver natural gas to end users that are within a single state. LDCs provide the EPA with a corporate address on their certificate of representation which may or may not be within the state where the LDC operates.

The EPA is proposing to add a new reporting requirement at 40 CFR 98.406(b)(14) to support data verification and make the data more useful to the public. The new data element would require LDCs to provide the name of the U.S. state or territory covered in the report. This data element will improve the EPA's ability to compare reported data to information contained in outside data sets (such as those from the EIA). Adding this requirement will enable the EPA to identify a larger portion of LDCs in the

EIA data set which will lead to improved data quality in both the EPA and the EIA data sets. This data element will also allow users of GHGRP data to more easily identify the state within which the LDC operates, which will be useful for determining state level GHG totals associated with natural gas supply.

For more information on subpart NN confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

2. Minor Corrections and Clarifications to Subpart NN

For the reasons described in section II.D of this preamble, the EPA is proposing several changes to subpart NN that are corrections, editorial changes, and minor clarifications to improve understanding of the rule. These additional minor corrections to subpart NN are discussed in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

W. Subpart OO—Suppliers of Industrial Greenhouse Gases

In this action, we are proposing several amendments to subpart OO of Part 98 (Suppliers of Industrial Greenhouse Gases). This section discusses all of the proposed changes to subpart OO.

As discussed in section II.B of this preamble, we are proposing revisions that would allow the EPA to collect data that would improve the EPA's understanding of industrial GHG supplies while generally resulting in only a slight increase in burden for reporters. We are proposing three amendments to subpart OO of Part 98 (Suppliers of Industrial Greenhouse Gases) that would improve the quality of the data collection under Part 98 and improve the U.S. GHG Inventory.

We are proposing two revisions to the definition of the source category to include facilities that (1) destroy 25,000 mtCO_{2e} or more of industrial greenhouse gases and/or fluorinated heat transfer fluids annually; or (2) produce, import, or export fluorinated heat transfer fluids (HTFs) that are not also fluorinated greenhouse gases. We are also proposing to expand the scope of monitoring and reporting to include production, transformation, destruction, imports, and exports of fluorinated HTFs that are not also fluorinated GHGs.

Revisions to Include Facilities that Destroy Fluorinated GHGs and Fluorinated HTFs. To develop an accurate estimate of the U.S. supply of fluorinated GHGs, it is necessary to track all significant additions to and

subtractions from that supply. Additions to the U.S. supply include production and import, while subtractions include transformation, destruction, and export. Currently, subpart OO requires producers and importers to report the quantities of fluorinated GHGs that they produce, import, transform, destroy, or send to another facility for destruction. (Exporters are required to report the quantities of fluorinated GHGs that they export.) While this reporting accounts for destruction by producers and importers, it does not account for destruction by other entities. This may result in a significant underestimate of the quantities destroyed because the fluorinated GHG market includes participants who neither produce nor import industrial GHGs but may end up destroying them, such as refrigerant reclaimers who clean used HFCs for reuse. On occasion, these reclaimers may destroy fluorinated GHGs that are found to be irretrievably contaminated. Alternatively, they may send such fluorinated GHGs to a facility other than a fluorinated gas producer or importer for destruction. In other cases, fluorinated GHG users may themselves recognize that recovered fluorinated GHGs are irretrievably contaminated and send them directly to a destruction facility.

By requiring facilities that destroy fluorinated GHGs to report that destruction, we would capture such destruction and thereby eliminate a potential overestimate of the U.S. supply of fluorinated GHGs. To avoid covering the destruction of very small quantities of fluorinated GHGs that do not have a material impact on the CO_{2e} fluorinated GHG supply, we are also proposing to require facilities that destroy fluorinated GHGs (and are not otherwise covered by subpart OO) to report that destruction only if they destroy 25,000 mtCO_{2e} or more of fluorinated GHGs annually. This is consistent with the thresholds currently applied to facilities that destroy HFC-23 under subpart O and to importers and exporters of industrial GHGs under subpart OO.

This expansion of the definition of the subpart OO source category would apply to facilities that destroy previously produced fluorinated GHGs and that are not already required to report any residual emissions of the destroyed fluorinated GHGs under another subpart. For example, cement kilns that annually accept and destroy a total of 25,000 mtCO_{2e} or more of irretrievably contaminated HFCs or SF₆ recovered from air-conditioning or electrical equipment would be covered,

but electronics manufacturing facilities that dissociate fluorinated GHGs during and/or after etching and chemical vapor deposition chamber cleaning processes would not be covered. Electronics facilities are currently required to report both their emissions and their effective destruction efficiencies under subpart I, and we therefore already receive data to account for the impacts of electronics manufacturing on fluorinated GHG supplies and emissions.

We estimate that five to ten destruction facilities would be newly covered by subpart OO under this amendment. This estimate is based on the number of facilities that report destruction of ozone-depleting substances (ODSs) to the EPA under the Stratospheric Protection Program. Because fluorinated GHGs are chemically similar to ODSs, are manufactured and imported by many of the same facilities and companies that manufacture and import ODSs, and are used in many of the same applications as ODSs, the set of facilities destroying fluorinated GHGs is likely to be similar to the set of facilities destroying ODSs. These facilities include hazardous waste treatment facilities that use a variety of different destruction technologies such as plasma arc and combustion. Facilities destroying very small quantities of ODSs were excluded from the total because similar quantities of fluorinated GHGs appeared unlikely to equal or exceed the proposed 25,000 mtCO_{2e} threshold (using an average GWP of 2000).

The same rationale applies to destruction of fluorinated HTFs; reporting by suppliers of fluorinated HTFs is discussed below.

Revisions to Include Facilities that Produce, Import, Transform, Export or Destroy Fluorinated Heat Transfer Fluids and to Require Reporting of these Activities. We are also proposing to revise subpart OO to include entities that produce, import, transform, export, or destroy fluorinated HTFs that are not also fluorinated GHGs under the subpart A definition, and to require monitoring and reporting of these activities from all suppliers that engage in them.

Currently, the Suppliers of Industrial Greenhouse Gas source category includes suppliers of, and requires reporting of, nitrous oxide and fluorinated GHGs. The definition of fluorinated GHG excludes compounds whose vapor pressures fall below 1 mm Hg at 25 degrees C, because in applications where temperatures are near or below 25 degrees C, such compounds are not likely to evaporate and enter the atmosphere (74 FR 56348, October 30, 2009). However, fluorinated

HTFs are used in electronics manufacturing applications where temperatures can be much higher. Consequently, even compounds whose vapor pressures fall below 1 mm Hg at 25 degrees C can enter the atmosphere when used in these applications. For this reason, subpart I (Electronics Manufacturing) defines fluorinated HTFs to include compounds whose vapor pressures fall below 1 mm Hg at 25 degrees C (as well as above this level) and that are used in temperature control, device testing, cleaning substrate surfaces and other parts, and soldering; and subpart I requires electronics manufacturing facilities to report emissions of these compounds. We are proposing to use essentially the same definition for subpart OO.

Collecting information on the U.S. supply of fluorinated HTFs would enable us to compare reported supplies to the demand for fluorinated HTFs that we calculate based on the emissions (1) reported under subpart I, and (2) estimated for electronics facilities that do not report under subpart I (e.g., because they fall below the threshold). Large differences would imply that emissions are being over- or underestimated, for example because some users and emitters of fluorinated HTFs are not being accounted for.²⁵ Because many fluorinated HTFs are composed of fully-fluorinated GHGs and have GWPs near 10,000, it is important to ensure that we are accurately accounting for fluorinated HTF emissions on a national level.

Suppliers of fluorinated HTFs would be subject to the same thresholds as suppliers of fluorinated GHGs. That is, there would be no threshold for producers of fluorinated HTFs, but the threshold for importers, exporters, and destroyers of fluorinated HTFs would be 25,000 mtCO_{2e} of fluorinated HTFs or GHGs. We anticipate that few, if any, suppliers of fluorinated HTFs would be required to begin reporting under this provision because all suppliers of fluorinated HTFs are believed to report under subpart OO already. (One possible exception is facilities that destroy but do not produce or import fluorinated HTFs, but this group of facilities is included in the set of destruction facilities discussed above.) The incremental burden associated with

²⁵ Such differences have been seen for other fluorinated GHGs; a recent comparison between the U.S. supply of SF₆ reported under OO and the demand for SF₆ calculated based on reporting under subparts I, T (Magnesium Production), DD (Electrical Transmission and Distribution Equipment Use), and SS (Electrical Equipment Manufacture or Refurbishment) found that in 2012, supplies exceeded the calculated demand by more than half.

reporting production, import, export, and destruction of fluorinated HTFs that are not also fluorinated GHGs is expected to be modest, *e.g.*, it may involve reporting supplies of one to twelve additional compounds by two to three suppliers of fluorinated HTFs.

For more information on subpart OO confidentiality determinations resulting from these proposed revisions, see section IV of this preamble.

X. Subpart RR—Geologic Sequestration of Carbon Dioxide

In this action, we are proposing amendments to subpart RR of Part 98 (Geologic Sequestration of Carbon Dioxide). This section discusses all of the proposed changes to subpart RR.

As discussed in section II.B of this preamble, we are proposing revisions that would allow the EPA to collect data that would improve the EPA's understanding of GHG emissions from geologic sequestration, while generally resulting in a minimal increase in burden for reporters. The EPA is proposing to add a data reporting element to 40 CFR 98.446 to indicate whether the facility is injecting a CO₂ stream in subsurface geologic formations to enhance the recovery of oil or natural gas. This additional data element will also allow the EPA to make categorical confidentiality determinations on data elements related to CO₂ received and CO₂ produced that currently have a confidentiality status that is evaluated on a case-by-case basis (77 FR 48072, 48081–48083; August 13, 2012). For more information on subpart RR confidentiality determinations resulting from this proposed revision, see section IV of this preamble.

Y. Subpart TT—Industrial Waste Landfills

In this action, we are proposing amendments to subpart TT of Part 98 (Industrial Waste Landfills). This section discusses the substantive changes to subpart TT; one additional correction is summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA–HQ–OAR–2015–0526).

1. Revisions to Subpart TT To Improve the Quality of Data Collected Under Part 98

For the reasons described in section II.B of this preamble, the EPA is proposing several amendments to Table TT–1 to subpart TT of Part 98 that would improve the quality of the data collected under the GHGRP and improve the EPA's understanding of sector GHG emissions, and are anticipated to either have no impact on

the burden for reporters or may reduce burden for some facilities currently using site-specific factors. During the development of subpart TT, we received several comments regarding the need to provide more default DOC values for specific industrial waste streams, particularly from the pulp and paper industry. Additionally, on May 17, 2013, we received written comments from the American Forest and Paper Association and the American Wood Council, with input from the National Council for Air and Stream Improvement, on the proposed 2013 Revisions to the Greenhouse Gas Reporting Rule and Proposed Confidentiality Determination for New or Substantially Revised Data Elements (78 FR 19802, April 2, 2013). These comments stated that the current DOC values in Table TT–1 overstate substantially the GHG emissions from landfills at pulp and paper mills. (See Docket Id. No. EPA–HQ–OAR–2012–0934). One suggested resolution was for the EPA to create separate categories of wastes that would include largely inorganic waste streams and assign a lower DOC value in Table TT–1. At that time, the information provided in the comments was considered new, the comments contained only limited data on which to base any changes, and they did not address items that were not part of the proposal. The EPA also did not have data to develop more waste specific DOC values for any of the industrial waste categories. Instead, we provided methods in the rule that allowed reporters to develop site-specific DOC values for wastes that may not be well-characterized by the default values provided in Table TT–1. While we still maintain that site-specific DOC values are preferable to the Table TT–1 defaults, we reviewed the site-specific DOC values reported under subpart TT from 2011 to 2013 to determine if we had adequate data to develop more specific industry default DOC values for inclusion in Table TT–1. For most industries, we did not have enough data from site-specific DOC estimates to establish new or revise default DOC values for inclusion in Table TT–1. However, we had site-specific DOC data for over 100 waste streams at pulp and paper manufacturing facilities. We note that the pulp and paper industry accounts for approximately 55 percent of the subpart TT reporters and accounts for 62 percent of the emissions reported during the 2013 reporting year. Within the data, we found four general pulp and paper waste types for which reporters commonly developed site-specific DOC values. These are: Boiler

ash, kraft recovery (causticizing) wastes, wastewater treatment sludges, and other (which included hydropulper rejects, bark wastes, and digester knots). We found that our general pulp and paper waste (other than industrial sludge) default DOC value was reasonable for the “other” waste category, but overestimated DOC content for other pulp and paper waste streams. Boiler ash and kraft recovery wastes had very low DOC values, but not low enough to be considered “inerts.” We also found that wastewater treatment sludges for the pulp and paper industry had, on average, a slightly higher DOC content than the default for “industrial sludge.” See memorandum, “Review of Site-Specific Industrial Waste Degradable Organic Content Data” from Jeff Coburn and Katherine Bronstein, RTI International to Rachel Schmeltz, EPA, dated June 17, 2015 in Docket Id. EPA–HQ–OAR–2015–0526.

Based on the available site-specific DOC values for these different pulp and paper industry wastes, we consider it appropriate to provide additional default DOC values for the pulp and paper industry for the purposes of improving the accuracy of the methane emissions estimates reported under subpart TT. Specifically, we are proposing to provide default DOC values for the four specific pulp and paper industry waste types previously listed. The proposed default DOC value for boiler ash is 0.06; the proposed default DOC value for kraft recovery wastes is 0.025. As proposed, these values, rather than the previous “pulp and paper waste (other than industrial sludge)” default value of 0.20 or the “Inert Waste [*i.e.*, waste listed in 40 CFR 98.460(c)(2)]” default value of 0, should be used for these specific waste streams. The proposed default DOC value for pulp and paper wastewater sludge is 0.12, which would be required, as proposed, for pulp and paper wastewater treatment sludges rather than the generic “Industrial Sludge” default value of 0.09. The fourth category being proposed is “Other Pulp and Paper Wastes (not otherwise listed)” and is to be used for all other pulp and paper wastes not included in the three other pulp and paper categories; the proposed default DOC value for this category is 0.20, which is consistent with the previous default for general pulp and paper wastes. In addition, we are adding a footnote to Table TT–1 to explain that kraft recovery wastes include green liquor dregs, slaker grits, and lime mud, which may also be referred to collectively as causticizing or recausticizing wastes.

Reporters used any and all of these terms in their submitted reports to refer to these waste types.

While we are proposing to provide these specific defaults for different types of waste in the pulp and paper industry, we do not intend to prevent the pulp and paper industry from using the other default values in Table TT-1 that may apply. For example, if construction and demolition wastes are disposed of in a landfill at a pulp and paper manufacturing facility, the reporter may still use the construction and demolition waste default DOC value for these waste streams. However, to clarify, we intend to require the pulp and paper industry to use the industry-specific wastewater sludge default DOC value, and are therefore proposing to revise the “Industrial Sludge” category to be “Industrial Sludge (other than pulp and paper industry sludge).”

2. Minor Corrections and Clarifications to Subpart TT

For the reasons described in section II.D of this preamble, we are proposing one minor correction to subpart TT of Part 98 that is an editorial change. This minor revision is summarized in the Table of Revisions available in the docket for this rulemaking (Docket Id. No. EPA-HQ-OAR-2015-0526).

Z. Other Minor Revisions, Clarifications, and Corrections

In addition to the substantive amendments proposed in sections III.A through III.Y of this preamble, for the reasons described in section II.D of this preamble, we are proposing minor revisions, clarifications, and corrections to subparts P, U, MM, PP, and UU of Part 98. The proposed changes to these subparts are provided in the Table of Revisions for this rulemaking, available in Docket Id. No. EPA-HQ-OAR-2015-0526, and include clarifying requirements to better reflect the EPA’s intent, corrections to calculation terms or cross-references that do not revise the output of calculations, harmonizing changes within a subpart (such as changes to terminology), simple typographical errors, and other minor corrections (*e.g.*, removal of redundant text).

IV. Proposed Confidentiality Determinations for New or Changed Data Reporting Elements

A. Overview and Background

In this notice we are proposing confidentiality determinations for new or substantially revised reporting data elements (*i.e.*, the data required to be reported would change under the

proposed revision) in the proposed subpart rule amendments. We are also proposing confidentiality determinations for certain existing data elements for which a confidentiality determination has not previously been proposed or finalized, or where the EPA has determined that the current determination is no longer appropriate.

In this action, we are proposing confidentiality determinations for 117 new or substantially revised data reporting requirements in 21 subparts. We are not proposing new confidentiality determinations for data reporting elements where the change does not require an additional or different data element to be reported. The final confidentiality determinations the EPA has previously made for these minimally revised data elements are unaffected by this proposed amendment and continue to apply.

We are also proposing confidentiality determinations for 27 existing data elements in subparts I, Z, MM, NN, PP, and RR that are not revised in the proposed amendments. These include 22 data elements in subparts I, Z, MM, and RR for which the EPA had not made previous confidentiality determinations under Part 98, as well as two data elements in subpart NN for which a previous confidentiality determination is proposed to be revised because of new information indicating the data element is not entitled to confidential treatment under the provisions in 40 CFR 2.208. We are also proposing confidentiality determinations for three data elements in subpart PP that were included in the finalized “Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units” (EGU NSPS) (Docket Id. No. EPA-HQ-OAR-2013-0495).

These proposed confidentiality determinations would be finalized before the end of 2016 based on public comment. The confidentiality determinations for new and substantially revised data elements would apply at the same time as the proposed rule amendments described in sections II and III of this preamble, as described in section I.E of this preamble. The confidentiality determinations for the existing Part 98 data elements would apply to reports submitted in RY2016 as well as all prior reporting years in which the data elements applied. This proposal is one of a series of rulemakings dealing with confidentiality determinations for data reported under Part 98. For more information on previous confidentiality

determinations for Part 98 data elements, see the following notices:

- 75 FR 39094, July 7, 2010; hereafter referred to as the “July 7, 2010 CBI proposal.” Describes the data categories and category-based determinations the EPA developed for the Part 98 data elements.

- 76 FR 30782, May 26, 2011; hereafter referred to as the “2011 Final CBI Rule.” Assigned data elements to data categories and published the final CBI determinations for the data elements in 34 Part 98 subparts, except for those data elements that were assigned to the “Inputs to Emission Equations” data category.

- 77 FR 48072, August 13, 2012, hereafter referred to as “2012 Final CBI Determinations Rule.” Finalized confidentiality determinations for data elements reported under nine subparts I, W, DD, QQ, RR, SS, UU; except for those data elements that are inputs to emission equations. Also finalized confidentiality determinations for new data elements added to subparts II and TT in the November 29, 2011 Technical Corrections Notice (76 FR 73886).

- 78 FR 68162; November 13, 2013; hereafter referred to as the “2013 Amendments and Confidentiality Determinations for Electronics Manufacturing.” Finalized confidentiality determinations for new data elements added to subpart I.

- 78 FR 69337, November 29, 2013; hereafter referred to as the “2013 Revisions Rule.” Finalized determinations for new and revised data elements in 15 subparts, except for those data elements assigned to the “Inputs to Emission Equations” data category.

- 79 FR 63750, October 24, 2014; Final Inputs Rule. Revised recordkeeping and reporting requirements for 23 subparts and finalized confidentiality determinations for new data elements in 11 subparts.

B. Approach to Proposed Confidentiality Determinations

To make the determinations proposed in this notice, we applied the same approach as previously used for making confidentiality determinations for data elements reported under the GHGRP, which consisted of assigning data elements to an appropriate data category and then either assigning the previously determined category-based confidentiality determination or making an individual determination if the data element is assigned to a category for which no category-based determination was previously made. The data categories used were those finalized in the 2011 Final CBI Rule.

In the 2011 Final CBI Rule, the EPA made categorical confidentiality determinations for data elements assigned to eight direct emitter data categories and eight supplier data categories. For two direct emitter data categories (“Unit/Process ‘Static’ Characteristics that Are Not Inputs to Emission Equations” and “Unit/Process Operating Characteristics that Are Not Inputs to Emission Equations,”) and three supplier data categories (“GHGs Reported,” “Production/Throughput Quantities and Composition,” and “Unit/Process Operating Characteristics”), the EPA did not make categorical CBI determinations; instead the EPA determined that none of the data elements were emissions data (as defined in 40 CFR 2.301(a)(2)(i)) and made CBI determinations for each individual data elements based on the criteria in 40 CFR 2.208. In subsequent amendments to Part 98,²⁶ the EPA assigned each new or substantially revised data element to an appropriate data category created in the 2011 Final CBI Rule and applied the categorical confidentiality determination if one was established in the 2011 Final CBI Rule. If a data element was assigned to one of the two direct emitter or three supplier data categories identified above that do not have categorical determinations, the EPA made individual CBI determinations.

In this action, we are proposing to assign new and substantially revised data elements in the proposed amendments, as well as certain existing data elements in subparts I, Z, II, MM, NN, PP, and RR, to the appropriate direct emitter or supplier data category.²⁷ For new, substantially

revised, or existing data elements being assigned to categories with categorical confidentiality determinations, we propose to apply the categorical determinations made in the 2011 Final CBI Rule to the assigned data elements. For new, substantially revised, or existing reporting elements assigned to the “Unit/Process ‘Static’ Characteristics that Are Not Inputs to Emission Equations” and the “Unit/Process ‘Operating’ Characteristics that Are Not Inputs to Emission Equations” direct emitter data categories or the “Production/Throughput Quantities and Composition” and “Unit/Process Operating Characteristics” supplier data categories, consistent with our approach toward data elements previously assigned to these data categories, we propose that these data elements are not emission data, and are making individual CBI determinations for the data elements in these categories.

Although the EPA grouped similar data into categories and made categorical confidentiality determinations for a number of data categories, the EPA also recognized in previous rulemakings that similar data elements may not always have the same confidentiality status²⁸. In these cases, the EPA made individual instead of categorical determinations for the data elements. In this action, for the reasons explained below in section IV.C of this preamble, we are proposing to make an individual CBI determination for one data element for which we are not assigning a data category.

Please see the memorandum titled “Proposed Data Category Assignments and Confidentiality Determinations for Data Elements in the Proposed 2015 Revisions” in Docket Id. No. EPA-HQ-OAR-2015-0526 for a list of the proposed new, substantially revised, and existing data elements, their proposed category assignments, and their proposed confidentiality determinations (whether categorical or individual).²⁹ Section IV.C of this preamble discusses the proposed CBI

determinations and supporting rationale for new or substantially revised data elements. Section IV.D of this preamble describes the proposed CBI determinations and supporting rationale for existing data elements for which we have not previously proposed a confidentiality determination. Finally, section IV.E of this preamble discusses the proposed changes to the determinations and rationale for two existing data elements in subpart NN for which a confidentiality determination was previously established.

C. Proposed Confidentiality Determinations for New or Substantially Revised Data Reporting Elements

In this action, the EPA is proposing to assign each of the 117 new or substantially revised data reporting requirements to the appropriate direct emitter or supplier data category. New and substantially revised data elements assigned to categories with categorical confidentiality determinations are summarized in the memorandum “Proposed Data Category Assignments and Confidentiality Determinations for Data Elements in the Proposed 2015 Revisions,” available in Docket Id. No. EPA-HQ-OAR-2015-0526. For new and substantially revised reporting elements assigned to direct emitter or supplier data categories without a categorical determination, we are proposing that these data elements are not emission data and are making individual CBI determinations for each data element. We are proposing individual CBI determinations for 48 data elements assigned to the “Unit/Process ‘Static’ Characteristics that Are Not Inputs to Emission Equations” and “Unit/Process ‘Operating’ Characteristics that Are Not Inputs to Emission Equations” direct emitter data categories and the “Production/Throughput Quantities and Composition” and “Unit/Process Operating Characteristics” supplier data categories. These data elements consist of 17 new data elements in the direct emitter subparts C, E, F, I, S, V, X, Y, DD, II, and subpart RR, and 27 new data elements in the supplier subpart OO. We are also proposing individual CBI determinations for four substantially revised data elements in subparts Y, DD, HH, and II. Table 7 of this preamble provides the category assignment and proposed rationale for the proposed determinations.

²⁶ See, e.g., FR 48072 (August 13, 2012) and 77 FR 51477 (August 24, 2012).

²⁷ With the exception of subpart RR, the EPA inadvertently did not proposed CBI determinations for these data elements. For subpart RR, the EPA initially proposed that all data elements were not CBI (see Proposed Confidentiality Determinations for Data Elements Under the Mandatory Reporting of Greenhouse Gases, 77 FR 1434; January 10, 2012). We then received comment that in certain cases, for enhanced recovery of oil or natural gas (ER), the data would be CBI. In the 2012 Final CBI Determinations Rule, the EPA did not have a subpart RR data element to distinguish between the ER and non-ER facilities. Therefore, the EPA did not finalize the CBI determinations for those certain cases, but rather noted that the EPA would evaluate the confidentiality status on a case-by-case basis. The remaining subpart RR data elements (including monitoring, reporting, and verification (MRV) plans, annual mass of CO₂ emitted by surface leakage, and annual mass of CO₂ sequestered) were determined not to be CBI in the 2012 Final CBI Determinations Rule. In this action, we are

proposing to add a new data element to indicate whether a facility is conducting ER, which now enables proposed confidentiality determinations to be made.

²⁸ See, e.g., “Greenhouse Gas Reporting Rule: 2014 Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems” (79 FR 70352, November 25, 2014).

²⁹ Excludes data elements assigned to the “Inputs to Emissions Equations” data category. “Inputs to Emissions Equations” are considered emissions data. This memorandum includes the data element that is not being assigned to a data category.

TABLE 7—NEW AND REVISED DATA ELEMENTS PROPOSED TO BE ASSIGNED TO DATA CATEGORIES WITHOUT CATEGORICAL DETERMINATIONS AND PROPOSED CBI DETERMINATIONS (SUBPARTS C, E, F, I, S, V, X, Y, DD, HH, II, OO, AND RR)

Subpart	Citation in 40 CFR part 98 (new or revised)	Data element	Confidentiality determination	Rationale for the proposed CBI determination
Data Elements Proposed To Be Assigned to the “Unit/Process ‘Static’ Characteristics That Are Not Inputs to Emission Equations” Direct Emitter Data Category				
C	98.36(c)(1)(iii) (new) ...	Cumulative maximum rated heat input capacity of the group, excluding units less than 10 (mmBtu/hr).	Not CBI	These data elements consist of descriptions of the cumulative heat input capacity for an aggregated group of stationary combustion units. These data elements do not reveal any proprietary information or any other information that could provide insight for competitors to gain an advantage because they do not provide specific design details. Further, these data elements provide information that is generally already available to the public through other sources (e.g., operating permits). Therefore, we are proposing that these data elements are not CBI.
C	98.36(c)(3)(ii) (new) ...	Cumulative maximum rated heat input capacity of the units served by the common pipe, excluding units less than 10 (mmBtu/hr).	Not CBI	
E	98.56(f) (new)	Date of installation of abatement technology.	Not CBI	These data elements do not provide insight into current production rates, raw material consumption, or other information that competitors could use to discern market share and other sensitive information. Information regarding the date of installation of abatement devices constitute general information that is already available to the public through other sources (e.g., construction permits). Therefore, we are proposing that this data element is not CBI.
I	98.96(y)(2)(iv) (new) ...	The report must include the information described in paragraphs (y)(2)(i) through (v) of this section. (iv) . . . For any utilization, by-product formation rate, and/or destruction or removal efficiency data submitted, the report must describe, where available: Wafer size.	Not CBI	The data element for the triennial technology review report is being revised to request additional information to be submitted as part of the report, if facilities are submitting data from utilization and by-product formation rate measurements conducted in the prior three years. The EPA previously made a determination that 40 CFR 98.96(y)(2)(iv) was emission data and, therefore, not CBI. Several of the data elements that we are proposing to clarify should be included are already reported under 40 CFR 98.96 (e.g., wafer diameter) and the EPA is proposing the same category assignment and confidentiality determination for these data elements, including: • the wafer size • substrate type. Wafer size and substrate type are data elements that are published in datasets available from the World Fab Forecast. Furthermore, for the purposes of the triennial report, these data elements may be reported by one or multiple semiconductor manufacturing facilities, and may include measurements made by tool manufacturers or other fabs in lieu of fab-specific information. Therefore, we have concluded that the release of these data elements would not cause substantial competitive harm. For these reasons, we are proposing to assign a determination of not CBI.
I	98.96(y)(2)(iv) (new) ...	The report must include the information described in paragraphs (y)(2)(i) through (v) of this section. (iv) . . . For any utilization, by-product formation rate, and/or destruction or removal efficiency data submitted, the report must describe, where available: substrate type.	Not CBI	

TABLE 7—NEW AND REVISED DATA ELEMENTS PROPOSED TO BE ASSIGNED TO DATA CATEGORIES WITHOUT CATEGORICAL DETERMINATIONS AND PROPOSED CBI DETERMINATIONS (SUBPARTS C, E, F, I, S, V, X, Y, DD, HH, II, OO, AND RR)—Continued

Subpart	Citation in 40 CFR part 98 (new or revised)	Data element	Confidentiality determination	Rationale for the proposed CBI determination
I	98.96(y)(2)(iv) (new) ...	The report must include the information described in paragraphs (y)(2)(i) through (v) of this section. (iv) . . . For any utilization, by-product formation rate, and/or destruction or removal efficiency data submitted, the report must describe, where available: Film type being manufactured.	CBI	This data element for the triennial technology review report is being revised to request additional information to be submitted as part of the report, if facilities are submitting data from utilization and by-product formation rate measurements conducted in the prior three years. We are proposing that the “film type” is CBI because this data element could potentially provide insight into facility operating practices or proprietary device designs that are considered sensitive by the reporter. Information provided by semiconductor manufacturers in prior rulemakings indicates that this data element is closely guarded and protected as sensitive business information.
I	98.96(y)(2)(iv) (new) ...	The report must include the information described in paragraphs (y)(2)(i) through (v) of this section. (iv) . . . For any utilization, by-product formation rate, and/or destruction or removal efficiency data submitted, the report must describe, where available: Linewidth or technology node.	Not CBI	The data element for the triennial technology review report is being revised to request additional information to be submitted as part of the report, if facilities are submitting data from utilization and by-product formation rate measurements conducted in the prior three years. We are proposing that the “linewidth or technology node” be categorized as “Unit/Process ‘Static’ Characteristics That are Not Inputs to Emission Equations” because this data elements describes basic characteristics of the products and processes in the facility that do not vary with time. We are proposing that the “the linewidth or technology node” are Not CBI because this data is publicly available. Specifically, these data elements are published in datasets available from the World Fab Forecast. We have therefore concluded that the release of this data will not cause substantial competitive harm.
V	98.226(h) (new)	Date of installation of abatement technology.	Not CBI	This data element does not provide insight into current production rates, raw material consumption, or other information that competitors could use to discern market share and other sensitive information. Information regarding the date of installation of abatement devices constitute general information that is already available to the public through other sources (e.g., construction permits). Therefore, we are proposing that this data element is not CBI.
Y	98.256(e)(3) (new)	An indication of whether or not the flare is serviced by a flare gas recovery system.	Not CBI	The proposed data element, which describes whether the flare is serviced by a flare gas recovery system, is similar to: 40 CFR 98.256(e)(3) (description of flare gas service) and 40 CFR 98.326(q) (annual operating hours of gas collection system), for which we have previously assigned a “Not CBI” designation. Descriptions of flare gas service are not CBI because describing the type of flare or whether a flare is serviced by a flare gas recovery system does not reveal any confidential information because flares are commonly used in the industry and no detailed specifications are required to be reported (see 75 FR 39113, July 7, 2010).

TABLE 7—NEW AND REVISED DATA ELEMENTS PROPOSED TO BE ASSIGNED TO DATA CATEGORIES WITHOUT CATEGORICAL DETERMINATIONS AND PROPOSED CBI DETERMINATIONS (SUBPARTS C, E, F, I, S, V, X, Y, DD, HH, II, OO, AND RR)—Continued

Subpart	Citation in 40 CFR part 98 (new or revised)	Data element	Confidentiality determination	Rationale for the proposed CBI determination
DD	98.306(m) (new)	Total miles of transmission and distribution lines located within each state or territory.	Not CBI	This data element is the same type of data that must be reported by these companies in 40 CFR 98.306(b) and (c), which requires reporting of the aggregate length all transmission lines carrying voltages above 35 kilovolt and the aggregate length all distribution lines carrying voltages above 35 kilovolt, for which we previously assigned a determination of not CBI. We had determined that the length of distribution lines and length of transmission lines are basic characteristics of equipment, and that facility-specific lines that do not vary with time or with the operations of the process. Moreover, facilities reporting under this subpart consist of public utilities, including electric cooperatives, public supply corporations (e.g., Tennessee Valley Authority), Federal agencies (e.g., Bonneville Power Administration), and municipally owned electric utilities. These are public or publicly-regulated utilities that are not affected by competitive market conditions that may apply to other industries. Further, data on transmission and distribution miles is publicly available in the Platts UDI Directory of Electric Power Producers and Distributors, which can be purchased by any interested party. Disclosure of this proposed new data element by the EPA would not provide any additional insight into facility-specific operating conditions or process design or to any other proprietary or sensitive information that would give insight for competitors to gain an advantage over the reporter.
DD	98.306(n) (new)	The following numbers of pieces of equipment: (1) New hermetically sealed-pressure switchgear during the year. (2) New SF6- or PFC-insulated equipment other than hermetically sealed-pressure switchgear during the year. (3) Retired hermetically sealed-pressure switchgear during the year. (4) Retired SF6- or PFC-insulated equipment other than hermetically sealed-pressure switchgear during the year.	Not CBI	Facilities reporting under this subpart consist of public utilities, including electric cooperatives, public supply corporations (e.g., Tennessee Valley Authority), Federal agencies (e.g., Bonneville Power Administration), and municipally owned electric utilities. These are public or publicly-regulated utilities that are not affected by competitive market conditions that may apply to other industries. The reported data relate to maintenance activities and installation of new/replacement of existing gas-insulated equipment (e.g., circuit breakers, switchgear, power transformers, etc.) and amounts of SF6 and PFC used or recovered in servicing or replacing such equipment. These data elements do not disclose any information about a manufacturing process or operating conditions that would be proprietary. Therefore, we are proposing that these data elements are not CBI.
II	98.356(a) (revised)	The average depth in meters of each anaerobic lagoon.	Not CBI	For the industries with industrial wastewater treatment, the types of information that are considered proprietary or have previously been determined to be CBI in the May 26, 2011 final CBI determination notice include information on quantities and composition of raw materials used in the manufacturing processes and information on quantities and compositions of manufactured products. We are proposing that this data element is not CBI because this data element would not provide detailed insight into the design and operation of the facility's manufacturing processes, raw materials, or products.

TABLE 7—NEW AND REVISED DATA ELEMENTS PROPOSED TO BE ASSIGNED TO DATA CATEGORIES WITHOUT CATEGORICAL DETERMINATIONS AND PROPOSED CBI DETERMINATIONS (SUBPARTS C, E, F, I, S, V, X, Y, DD, HH, II, OO, AND RR)—Continued

Subpart	Citation in 40 CFR part 98 (new or revised)	Data element	Confidentiality determination	Rationale for the proposed CBI determination
II	98.356(a) (revised)	Indicate whether biogas generated by each anaerobic process is recovered.	Not CBI	For these industries, the types of information that are considered proprietary or have previously been determined to be CBI in the May 26, 2011 final CBI determination notice include information on quantities and composition of raw materials used in the manufacturing processes and information on quantities and compositions of manufactured products. We are proposing that this data element is not CBI because indicating whether biogas is recovered from an anaerobic process would not provide detailed insight into the design and operation of the facility's manufacturing processes, raw materials, or products, and provides only general information about the wastewater treatment system that is not considered sensitive by manufacturers.
II	98.356(b)(6) (new)	For each anaerobic wastewater treatment process (reactor, deep lagoon, or shallow lagoon) you must report: If the facility performs an ethanol production processing operation as defined in § 98.358 of this subpart, you must indicate if the facility uses a wet milling process or a dry milling process.	Not CBI	For the industries with industrial wastewater treatment, the types of information that are considered proprietary or have previously been determined to be CBI in the May 26, 2011 final CBI determination notice include information on quantities and composition of raw materials used in the manufacturing processes and information on quantities and compositions of manufactured products. We are proposing that this data element is not CBI because this data element would not provide detailed insight into the design and operation of the facility's manufacturing processes raw materials, or products that is considered sensitive by reporters. This data element indicates only that the facility uses wet and/or dry milling, which is information that would be available from the facility's construction and Title V operating permits. This data element combined with the volume of wastewater entering the treatment plant (reported under 40 CFR 98.356(b)(2)) provides information on the quantities of wastewater generated by wet and dry milling activities. However, this information does not provide insight into any sensitive information, such as the amount of grain processed through the wet and dry milling processes, the amount of ethanol produced, plant production efficiency, or production costs.
RR	98.446(g) (new)	Whether the CO ₂ stream is being injected into subsurface geologic formations to enhance the recovery of oil or natural gas.	Not CBI	This data element would identify whether a facility is performing enhanced oil recovery. We are proposing that this data element is not CBI because this data element does not reveal any significant details regarding the activities at the facility, the quantities of CO ₂ received, or the CO ₂ utilization rates of the facility

TABLE 7—NEW AND REVISED DATA ELEMENTS PROPOSED TO BE ASSIGNED TO DATA CATEGORIES WITHOUT CATEGORICAL DETERMINATIONS AND PROPOSED CBI DETERMINATIONS (SUBPARTS C, E, F, I, S, V, X, Y, DD, HH, II, OO, AND RR)—Continued

Subpart	Citation in 40 CFR part 98 (new or revised)	Data element	Confidentiality determination	Rationale for the proposed CBI determination
Data Elements Proposed to be Assigned to the “Unit/Process ‘Operating’ Characteristics That Are Not Inputs to Emission Equations” Direct Emitter Data Category				
F	98.66(c)(2) (new)	The following PFC-specific information on an annual basis: Anode effect minutes per cell-day (AE-mins/cell-day), anode effect frequency (AE/cell-day), anode effect duration (minutes). (Or anode effect overvoltage factor ((kg CF ₄ /metric ton Al)/(mV/cell day)), potline overvoltage (mV/cell day), current efficiency (%)).	CBI	While the proposed new data elements share characteristics with data elements previously assigned to the “Production/Throughput Data that are Not Inputs to Equations” data categories, we have determined that they do not share the same characteristics or confidentiality status as the data elements already assigned to this data category. These data elements are not inputs to emissions equations. Annual anode effect minutes per cell day, anode effect frequency, anode effect duration (or annual anode effect overvoltage factor, potline overvoltage, and current efficiency) describe operating characteristics associated with aluminum production. Our review of these data elements shows that they qualify for confidential treatment. We are proposing to classify annual average anode effect minutes, anode effect frequency, and anode effect duration as CBI because these data elements are an important measure of process efficiency (which provides insight into a firm’s operational strengths and weaknesses) and are not otherwise publicly available.
S	98.196(b)(21) (new)	Annual average results of chemical composition analysis of each type of lime product produced and calcined product or waste sold.	CBI	The proposed data elements describe the material composition of the products manufactured. These values are not used as inputs to emissions equations, rather, they are annual average values for the purposes of QA/QC of the composition data used as inputs to the emissions calculations. We are proposing these data elements as CBI because the reported data provides information on the composition of lime produced or raw material. Disclosing information revealing a facility’s product compositions could give competitors insight into a firm’s local and regional market conditions and expansion plans, enabling competitors to devise strategies to prevent expansion and to steal market share in specific locations.
X	98.246(a)(14) (new)	Annual average of the measurements of the carbon content of each feedstock and product: (i) For feedstocks and products that are gaseous or solid, report this quantity in kg carbon per kg of feedstock or product. (ii) For liquid feedstocks and products, report this quantity either in units of kg carbon per kg of feedstock or production or kg C per gallon of feedstock or product.	CBI	The proposed data elements describe the carbon content and annually averaged weight of feedstocks. This information could disclose a facility’s feedstock composition, which could provide insight into its operational strengths and weaknesses, expose its competitive and marketing strategies, or reveal its suppliers and sourcing strategies. Therefore, we are proposing that these data element qualify as CBI.
X	98.246(a)(15) (new)	For each gaseous feedstock and product, the annual average of the measurements of molecular weight in units of kg per kg mole.	CBI	

TABLE 7—NEW AND REVISED DATA ELEMENTS PROPOSED TO BE ASSIGNED TO DATA CATEGORIES WITHOUT CATEGORICAL DETERMINATIONS AND PROPOSED CBI DETERMINATIONS (SUBPARTS C, E, F, I, S, V, X, Y, DD, HH, II, OO, AND RR)—Continued

Subpart	Citation in 40 CFR part 98 (new or revised)	Data element	Confidentiality determination	Rationale for the proposed CBI determination
Y	98.256(e)(6) (revised)	Annual mass of flare gas combusted (in kg/yr).	Not CBI	The proposed data element, which describes the annual mass of flare gas combusted, is similar to: 40 CFR 98.256(e)(3) (description of flare gas service) and 40 CFR 98.326(q) (annual operating hours of gas collection system), for which we have previously assigned a “Not CBI” designation. Descriptions of flare gas service are not CBI. Describing the annual mass of flare gas combusted during the reporting year does not reveal any confidential information because flares are commonly used in the industry and no detailed specifications are required to be reported (see 75 FR 39113, July 7, 2010).
HH	98.346(i)(5)(iii)(B) (revised).	The annual operating hours where active gas flow was sent to each destruction device.	Not CBI	This data element describes the operating characteristics of a destruction device. Although the proposed data element is similar to the prior data element in 40 CFR 98.346(i)(5) “Annual operating hours for each destruction device associated with a given measurement location,” this data element reflects a separate operating parameter. This data element is not an input to an emissions equation. We are proposing that this data element is Not CBI. This data element would not reveal any information about landfill fees, revenues, costs, or contracts. Such information does not reveal any trade secrets or other sensitive business information regarding the design or operation of an aeration system or the landfill. Further, this type of data on landfills is generally already publicly available from the municipalities operating landfills. We have therefore concluded that the release of this data will not cause substantial competitive harm.

Date Elements Proposed to be Assigned to the “Production/Throughput Quantities and Composition” Supplier Data Category

OO	98.416(a)(1) (new)	Mass in metric tons of each . . . fluorinated HTF . . . produced at that facility by process, except for amounts that are captured solely to be shipped off site for destruction.	CBI	These data elements describe production and throughput quantities and product compositions (including products produced, imported, or exported). These data elements are the same type of data that must be reported for fluorinated GHGs, for which we have previously assigned a determination of CBI. The disclosure of annual production quantities and composition of products (<i>i.e.</i> , quantities sold and/or delivered), could provide insight into a firm's market strength and position. Disclosure of facility-level production/throughput quantities and product compositions could give competitors insight into a firm's local and regional market conditions and expansion plans, enabling competitors to devise strategies to prevent expansion and to steal market share in specific locations. Therefore, the EPA proposes to determine that these data elements are CBI.
OO	98.416(a)(2) (new)	Mass in metric tons of each . . . fluorinated HTF . . . transformed at that facility, by process.	CBI	

TABLE 7—NEW AND REVISED DATA ELEMENTS PROPOSED TO BE ASSIGNED TO DATA CATEGORIES WITHOUT CATEGORICAL DETERMINATIONS AND PROPOSED CBI DETERMINATIONS (SUBPARTS C, E, F, I, S, V, X, Y, DD, HH, II, OO, AND RR)—Continued

Subpart	Citation in 40 CFR part 98 (new or revised)	Data element	Confidentiality determination	Rationale for the proposed CBI determination
OO	98.416(a)(3) (new)	Mass in metric tons of . . . fluorinated HTF that is destroyed at that facility and that was previously produced as defined at § 98.410(b). Quantities to be reported under this paragraph (a)(3) of this section include but are not limited to quantities that are shipped to the facility by another facility for destruction and quantities that are returned to the facility for reclamation but are found to be irretrievably contaminated and are therefore destroyed.	CBI	
OO	98.416(a)(5) (new)	Total mass in metric tons of each . . . fluorinated HTF . . . sent to another facility for transformation.	CBI	
OO	98.416(a)(6) (new)	Total mass in metric tons of each . . . fluorinated HTF sent to another facility for destruction, except . . . fluorinated HTFs that are not included in the mass produced in § 98.413(a) because they are removed from the production process as by-products or other wastes. Quantities to be reported under this paragraph (a)(6) could include, for example, fluorinated GHGs that are returned to the facility for reclamation but are found to be irretrievably contaminated and are therefore sent to another facility for destruction.	CBI	
OO	98.416(a)(7) (new)	Total mass in metric tons of each . . . fluorinated HTF that is sent to another facility for destruction and that is not included in the mass produced in § 98.413(a) because it is removed from the production process as a byproduct or other waste.	CBI	
OO	98.416(a)(11) (new)	Mass in metric tons of . . . fluorinated HTF that is fed into the destruction device and that was previously produced as defined at § 98.410(b). Quantities to be reported under this paragraph (a)(11) of this section include but are not limited to quantities that are shipped to the facility by another facility for destruction and quantities that are returned to the facility for reclamation but are found to be irretrievably contaminated and are therefore destroyed.	CBI	

TABLE 7—NEW AND REVISED DATA ELEMENTS PROPOSED TO BE ASSIGNED TO DATA CATEGORIES WITHOUT CATEGORICAL DETERMINATIONS AND PROPOSED CBI DETERMINATIONS (SUBPARTS C, E, F, I, S, V, X, Y, DD, HH, II, OO, AND RR)—Continued

Subpart	Citation in 40 CFR part 98 (new or revised)	Data element	Confidentiality determination	Rationale for the proposed CBI determination
OO	98.416(a)(12) (new)	Mass in metric tons of . . . fluorinated HTF . . . that is measured coming out of the production process, by process.	CBI	
OO	98.416(a)(14) (new)	Quantities (metric tons) of . . . of each . . . fluorinated HTF that were sent to each for transformation.	CBI	
OO	98.416(a)(15) (new)	Quantities (metric tons) of each . . . fluorinated HTF that were sent to each for destruction.	CBI	
OO	98.416(c)(1) (new)	Each bulk importer of . . . fluorinated HTFs . . . at the corporate level . . . (1) Total mass in metric tons of . . . each . . . fluorinated HTF imported in bulk, including each . . . fluorinated HTF constituent of the . . . fluorinated HTF product that makes up between 0.5 percent and 100 percent of the product by mass.	CBI	
OO	98.416(c)(2) (new)	Each bulk importer of . . . fluorinated HTFs . . . at the corporate level . . . (2) Total mass in metric tons of . . . fluorinated HTF imported in bulk and sold or transferred to persons other than the importer for use in processes resulting in the transformation or destruction of the chemical.	CBI	
OO	98.416(c)(6) (new)	Each bulk importer of . . . fluorinated HTFs . . . at the corporate level . . . (6) Commodity code of the . . . fluorinated HTFs . . . shipped.	CBI	
OO	98.416(c)(8) (new)	Each bulk importer of . . . fluorinated HTFs . . . at the corporate level . . . (8) Total mass in metric tons of each . . . fluorinated HTF destroyed by the importer.	CBI	
OO	98.416(c)(9) (new)	Each bulk importer of . . . fluorinated HTFs . . . at the corporate level . . . (9) Quantities of fluorinated HTFs sold or transferred to each facilities for transformation.	CBI	
OO	98.416(c)(10) (new)	Each bulk importer of . . . fluorinated HTFs . . . at the corporate level . . . (10) If applicable, the quantities (metric tons) of each . . . fluorinated HTF that were sold or transferred to each facility for destruction.	CBI	

TABLE 7—NEW AND REVISED DATA ELEMENTS PROPOSED TO BE ASSIGNED TO DATA CATEGORIES WITHOUT CATEGORICAL DETERMINATIONS AND PROPOSED CBI DETERMINATIONS (SUBPARTS C, E, F, I, S, V, X, Y, DD, HH, II, OO, AND RR)—Continued

Subpart	Citation in 40 CFR part 98 (new or revised)	Data element	Confidentiality determination	Rationale for the proposed CBI determination
OO	98.416(d)(1) (new)	Each bulk exporter of fluorinated GHGs, fluorinated HTFs, or nitrous oxide . . . at the corporate level . . . (1) Total mass in metric tons of . . . each . . . fluorinated HTF exported in bulk.	CBI	
OO	98.416(d)(4) (new)	Each bulk exporter of fluorinated GHGs, fluorinated HTFs, or nitrous oxide . . . at the corporate level . . . (4) Commodity code of the . . . fluorinated HTFs . . . shipped.	CBI	
OO	98.416(i) (new) .....	. . . quantities that are shipped to the facility by another facility for destruction and quantities that are returned to the facility for reclamation but are found to be irretrievably contaminated and are therefore destroyed.	CBI	
OO	98.416(j) (new) .....	. . . the identities or concentrations of the fluorinated HTF or fluorinated GHG constituents of a fluorinated HTF product have changed, then the new or changed concentrations . . .	CBI	

Data Elements Proposed To Be Assigned to the “Unit/Process Operating Characteristics” Supplier Data Category

OO	98.416(b)(1) (new)	Any facility that destroys . . . fluorinated HTFs shall submit: (1) Destruction efficiency (DE).	Not CBI	The proposed data elements, which apply to fluorinated HTFs, are the same type of data that must be reported for fluorinated GHGs, for which we have previously assigned a determination of not CBI. The EPA previously determined that the destruction efficiency of each fluorinated GHG destruction unit, the chemical identity of the fluorinated GHG(s) used in the performance test conducted to determine the destruction efficiency, and the name of all applicable federal and state regulations that may apply to the destruction process are not CBI. The proposed data elements do not reveal sensitive business information about the process, nor do they reveal the technology used for fluorinated GHG destruction, or the operating conditions for a particular technology.
OO	98.416(b)(4) (new)	Any facility that destroys . . . fluorinated HTFs shall submit: (4) Chemical identity of the fluorinated GHG(s) used in the performance test conducted to determine DE.	Not CBI	
OO	98.416(b)(5) (new)	Any facility that destroys . . . fluorinated HTFs shall submit: (5) Name of all applicable federal or state regulations that may apply to the destruction process.	Not CBI	

TABLE 7—NEW AND REVISED DATA ELEMENTS PROPOSED TO BE ASSIGNED TO DATA CATEGORIES WITHOUT CATEGORICAL DETERMINATIONS AND PROPOSED CBI DETERMINATIONS (SUBPARTS C, E, F, I, S, V, X, Y, DD, HH, II, OO, AND RR)—Continued

Subpart	Citation in 40 CFR part 98 (new or revised)	Data element	Confidentiality determination	Rationale for the proposed CBI determination
OO	98.416(c)(3) (new)	Each bulk importer of . . . fluorinated HTFs . . . at the corporate level . . . (3) Date on which the . . . fluorinated HTFs . . . were imported.	CBI	These data elements describe the dates of import and export shipments, and the ports of entry or exit. The proposed data elements, which apply to fluorinated HTFs, are the same type of data that must be reported for fluorinated GHGs, for which we have previously assigned a determination of CBI. Release of these data elements to the public could allow competitors to link customs records on quantities and product composition with the import and export data reported under Part 98, thus allowing competitors to determine market share and devise marketing strategies to undermine or weaken a competitor's position. Because disclosure of these data elements is likely to cause harm, we have determined that these data elements qualify as CBI.
OO	98.416(c)(4) (new)	Each bulk importer of . . . fluorinated HTFs . . . at the corporate level . . . (4) Port of entry through which the . . . fluorinated HTFs . . . passed	CBI	
OO	98.416(d)(5) (new)	Each bulk exporter of fluorinated GHGs, fluorinated HTFs . . . at the corporate level . . . (5) Date on which, and the port from which, the . . . fluorinated HTFs . . . were exported from the United States or its territories	CBI	
OO	98.416(j) (new)	If . . . identities or concentrations of the fluorinated HTF or fluorinated GHG constituents of a fluorinated HTF product have changed, the date of the change . . .	Not CBI	The proposed data elements, which apply to fluorinated HTFs, are the same type of data that must be reported for fluorinated GHGs under 40 CFR 98.416(f), for which we have previously assigned a determination of not CBI. The date on which changes were made to the composition of a fluorinated HTF product does not disclose the actual composition of the product, the raw materials used to make the product, the method of manufacture, or the efficiency of the manufacturing process. Therefore, we are proposing that this data element is not CBI.

We are proposing to assign one revised data element in subpart Z (Phosphoric Acid Production) to the “Unit/Process ‘Static’ Characteristics that are Not Inputs to Emissions Equation Category” but are not making a confidentiality determination for this data element. The provision 40 CFR 98.266(f)(3) requires reporting the annual phosphoric acid production capacity (tons) for each wet-process phosphoric acid process line (metric tons). The EPA reviewed the available capacity information and determined that the situation may vary for individual facilities. While the production capacity data elements are generally publicly available through construction and Title V permits, there

may be facilities where these data are not public. Further, the information publicly available for facilities may not necessarily be the same as the data elements required under Part 98. For example, capacity data available in the Title V permit may be a plant-wide throughput capacity rather than the capacity of the individual process line reported under Part 98. For this reason, we have decided not to make a confidentiality determination for this revised data element, but instead determinations for this data element will be made on a case-by-case basis. This decision not to propose a determination for this data element is consistent with our treatment of other capacity data (*e.g.*, capacity of process

lines or production units) (see 2011 Final CBI Rule).

We are also proposing to make an individual confidentiality determination for one data element in subpart FF without assigning it to a data category. While our general approach for making confidentiality determination is to assign each data element to a data category and apply the categorical confidentiality determination where one has been made, we are not doing so here for the following reason. The data element at issue is in provision 40 CR 98.326(u), which requires the annual coal production in short tons for the reporting year. The proposed data element shares characteristics with data elements previously assigned to the

“Production/Throughput Data that are Not Inputs to Equations” data category, which the EPA has categorically determined to be CBI. However, unlike data elements assigned to that data category, the proposed data element is publicly available and therefore does not qualify as CBI. Coal production data are currently published quarterly and annually by MSHA and annually by the EIA.³⁰ We are therefore not assigning this proposed data element to the “Production/Throughput Data that are Not Inputs to Equations” data category. Because these data are already publically available, we are proposing a determination of “Not CBI.”

D. Proposed Confidentiality Determinations for Other Part 98 Data Reporting Elements for Which No Determination has Been Previously Established

We are proposing categorical determinations for 22 data elements currently in subparts I, Z, MM, and RR for which no determination has been previously proposed or finalized under Part 98, as well as for three data elements that were proposed to be

included in subpart PP in the finalized EGU NSPS. For subpart I, the affected data element was revised in final subpart I rule amendments on November 13, 2013 (78 FR 68162) following public comment. In this case, the EPA had not proposed a confidentiality determination for the revised data element and therefore did not finalize a determination in the final rule. For subpart Z, we are proposing to clarify the original determination for a data element in which it is unclear how to apply the final determination assigned in the 2011 Final CBI Rule. For subpart MM, we are proposing a determination for one data element where the EPA inadvertently failed to finalize a determination in the 2013 Revisions Rule. We are proposing confidentiality determinations for three data elements in subpart PP which were added to Part 98 in the EGU NSPS. Finally, we are proposing confidentiality determinations for 16 data elements in subpart RR. In the 2012 Final CBI Determinations Rule (77 FR 48072, August 13, 2012), we did not finalize a confidentiality determination for these data elements, which relate to facility-level and flow meter-level quantities of CO₂ received onsite, because the sensitivity of these data elements was dependent on whether the reporter conducted enhanced oil and gas recovery (ER) activities or non-ER activities. In this action, we are proposing to require that facilities report

whether they are conducting ER activities. As such, the proposed amendments would allow the submitted reports to indicate that the facility is conducting ER activities and therefore would allow for categorical confidentiality determinations for these data elements.

Of these data elements, we are proposing to assign one data element in subpart MM to the “Amount and Composition of Materials Received” supplier data category, which has a categorical confidentiality determination of CBI. We are proposing to assign the remaining data elements in subparts I, Z, PP, and RR to the “Unit/Process ‘Operating’ Characteristics that Are Not Inputs to Emission Equations” and “Unit/Process ‘Static’ Characteristics that Are Not Inputs to Emission Equations” direct emitter data categories and the “Production/Throughput Quantities and Composition” supplier data categories, and are proposing individual confidentiality determinations for these data elements. For 16 data elements in subpart RR, we are proposing separate determinations for each data element for facilities conducting ER operations and facilities conducting non-ER operations.

Table 8 of this preamble provides the category assignment and proposed rationale for the proposed determinations for the existing data elements in subparts I, Z, MM, PP, and RR.

³⁰ MSHA Mine Data Retrieval System (MDRS) (available at: <http://www.msha.gov/drs/drshome.htm>) and U.S. Department of Energy, Energy Information Administration Mine Level Data (available at: <http://www.eia.gov/beta/coal/data/browser/#/topic/38?agg=1,0&rank=g&geo=g0000000000003ms&mntp=g&freq=A&start=2001&end=2012&ctype=linechart<ype=pin&rtype=b&rse=0&pin=&maptype=0>)

TABLE 8—PROPOSED CBI DETERMINATIONS FOR OTHER DATA ELEMENTS IN PART 98
[Subparts I, Z, MM, PP, and RR]

Subpart	Citation in 40 CFR part 98	Data element	Confidentiality Determination	Rationale for the proposed CBI determination
Data Elements Proposed to be Assigned to the “Unit/Process ‘Static’ Characteristics that Are Not Inputs to Emission Equations” Direct Emitter Data Category				
I	98.96(a)	Annual manufacturing capacity of each fab at your facility used to determine the annual manufacturing capacity of your facility in Equation I-5 of this subpart.	CBI	The EPA revised this data element in the final rule published on November 13, 2013 (78 FR 68162), to apply at the fab level instead of at the facility level to be consistent with other revised data reporting requirements, but did not make a proposed or final confidentiality determination for the revised data element in the final rule. The EPA is now proposing to revise the confidentiality determination for this data element, and to consider it as CBI. This data element describes the annual product production capacity of individual fabs, and could cause competitive harm if released. Specifically, this data element could provide insight into facility operating practices that are considered sensitive by the reporter and could provide a competitor with a competitive advantage over other facilities. Additional information provided by industry indicates that this data element is closely guarded and protected by nearly all industry members as sensitive business information.
Z	98.266(a)	Origin of the phosphate rock	CBI	In the “Final Data Category Assignments and Confidentiality Determinations for Part 98 Reporting Elements” memorandum issued April 29, 2011, we categorized the subpart Z data element “Annual phosphoric acid production by origin of the phosphate rock” at 40 CFR 98.266(a) to be production/throughput data that are not inputs to emission equations, and therefore considered to be confidential business information. To clarify this determination, we are proposing to specify that both the annual phosphoric acid production and the origin of the phosphate rock are both considered to be confidential business information. This data element describes operating parameters related to the operating processes at the facility and is assigned to the “Unit/Process ‘Operating’ Characteristics That are Not Inputs to Emission Equations” data category. We are proposing that this data element is CBI because the data element could reveal information on the source and composition of raw materials used in the manufacturing processes, which could provide insight into the facility’s raw material suppliers, production costs and manufacturing processes.

TABLE 8—PROPOSED CBI DETERMINATIONS FOR OTHER DATA ELEMENTS IN PART 98—Continued
[Subparts I, Z, MM, PP, and RR]

Subpart	Citation in 40 CFR part 98	Data element	Confidentiality Determination	Rationale for the proposed CBI determination
Data Elements Proposed to be Assigned to the “Unit/Process ‘Operating’ Characteristics that Are Not Inputs to Emission Equations” Direct Emitter Data Category				
I	98.96(q)(2)	For all abatement systems through which fluorinated GHGs or N ₂ O flow at your facility, for which you are reporting controlled emissions, the following: (2) If you use default destruction or removal efficiency values in your emissions calculations under § 98.93(a), (b), or (i), certification that the site maintenance plan for abatement systems for which emissions are being reported contains manufacturer’s recommendations and specifications for installation, operation, and maintenance for each abatement system.	Not CBI	In the final rule amendments published on November 13, 2013 (78 FR 68162), the EPA revised 40 CFR 98.96(q) into four paragraphs and added paragraphs (q)(2) to (q)(4) to address comments received on the proposal related to abatement systems. However, because the EPA proposed no confidentiality determination for these three new paragraphs, the EPA made no final CBI determination. These data elements are similar to data element 40 CFR 98.96(q)(1). For 40 CFR 98.96(q)(1), the EPA made a final determination that this data element should be in the category for “Unit/Process ‘Operating’ Characteristics That are Not Inputs to Emission Equations” and that that this data element was not CBI. Similar to 40 CFR 98.96(q)(1), paragraphs (q)(2) to (q)(4) are certification statements that do not provide detailed information on sensitive business information of a competitive nature. Moreover, the EPA certification statements are the same language in 40 CFR 98.96(q)(2) through (4) and do not include any facility- or process-specific information that could be considered exclusive. Therefore, the EPA is proposing that these three data elements should also be assigned to the category for “Unit/Process ‘Operating’ Characteristics That are Not Inputs to Emission Equations,” and the EPA is proposing that these three data elements also be classified as “not CBI.”
I	98.96(q)(3)	For all abatement systems through which fluorinated GHGs or N ₂ O flow at your facility, for which you are reporting controlled emissions, the following: (3) If you use default destruction or removal efficiency values in your emissions calculations under § 98.93(a), (b), and/or (i), certification that the abatement systems for which emissions are being reported were specifically designed for fluorinated GHG or N ₂ O abatement, as applicable. You must support this certification by providing abatement system supplier documentation stating that the system was designed for fluorinated GHG or N ₂ O abatement, as applicable.	Not CBI.	
I	98.96(q)(4)	For all abatement systems through which fluorinated GHGs or N ₂ O flow at your facility, for which you are reporting controlled emissions, the following: (4) For all stack systems for which you calculate fluorinated GHG emissions according to the procedures specified in § 98.93(i)(3), certification that you have included and accounted for all abatement systems and any respective downtime in your emissions calculations under § 98.93(i)(3).	Not CBI.	

TABLE 8—PROPOSED CBI DETERMINATIONS FOR OTHER DATA ELEMENTS IN PART 98—Continued
[Subparts I, Z, MM, PP, and RR]

Subpart	Citation in 40 CFR part 98	Data element	Confidentiality Determination	Rationale for the proposed CBI determination
Data Elements Proposed to be Assigned to the “Amount and Composition of Materials Received” Supplier Data Category				
MM	98.396(a)(20)	For all crude oil that enters the refinery, report the annual quantity in barrels.	CBI	In rule amendments published on November 29, 2013 (78 FR 71904), we revised this data element from “the batch volume of crude oil that enters the refinery in barrels” to “the annual quantity of crude oil that enters the refinery in barrels.” However, we did not make a confidentiality determination for this revised data element at that time. We are proposing that the revised data element be assigned to the “Amount and Composition of Materials Received” category, which has a categorical confidentiality determination of CBI.
Data Elements Proposed to be Assigned to the “Production/Throughput Quantities and Composition” Supplier Data Category				
PP	98.426(h)(1)	If you capture a CO ₂ stream from an electricity generating unit that is subject to subpart D of this part and transfer CO ₂ to any facilities that are subject to subpart RR of this part, you must report the facility identification number associated with the annual GHG report for the subpart D facility.	Not CBI	This data element identifies subpart D facilities that transfer CO ₂ to any facilities that are subject to subpart RR of this part. This information does not reveal any significant details regarding production or production and import/export data that may be considered CBI. Therefore, we are proposing that this data element is not CBI.
PP	98.426(h)(2)	If you capture a CO ₂ stream from an electricity generating unit that is subject to subpart D of this part and transfer CO ₂ to any facilities that are subject to subpart RR of this part, you must report each facility identification number associated with the annual GHG reports for each subpart RR facility to which CO ₂ is transferred.	Not CBI	This data element identifies subpart RR facilities to which CO ₂ streams are transferred from subpart PP. This information does not reveal any significant details regarding production or production and import/export data that may be considered CBI. Therefore, we are proposing that this data element is not CBI.
PP	98.426(h)(3)	If you capture a CO ₂ stream from an electricity generating unit that is subject to subpart D of this part and transfer CO ₂ to any facilities that are subject to subpart RR of this part, you must report the annual quantity of CO ₂ in metric tons that is transferred to each subpart RR facility.	Not CBI	This data element describes the quantity of CO ₂ that is captured at an electric generating unit that is subject to subpart D and transferred to subpart RR facilities. This information does not reveal any significant details regarding production or production and import/export data that may be considered CBI. Therefore, we are proposing that this data element is not CBI.
RR	98.446(a)(1)	For enhanced oil and gas recovery (ER) Activities: If you receive CO ₂ by pipeline, report the following for each receiving flow meter: Total net mass of CO ₂ received (metric tons) annually.	CBI	We are proposing that these data elements are CBI when reported by facilities conducting enhanced oil or natural gas recovery, on the basis that they are not publicly available and cannot be derived from publicly available data. Further, the EPA has previously determined for subpart UU that the quantities of CO ₂ reported as received by specific ER facilities could enable CO ₂ suppliers and pipeline transportation companies to use the information to their advantage in price negotiations on future contracts with the CO ₂ purchasers, which would lead to an economic disadvantage for these facilities.
RR	98.446(a)(2)(i)	For ER Activities: If a volumetric flow meter is used to receive CO ₂ report the following unless you reported yes to § 98.446(a)(4): Volumetric flow through a receiving flow meter at standard conditions (in standard cubic meters) in each quarter.	CBI.	

TABLE 8—PROPOSED CBI DETERMINATIONS FOR OTHER DATA ELEMENTS IN PART 98—Continued
[Subparts I, Z, MM, PP, and RR]

Subpart	Citation in 40 CFR part 98	Data element	Confidentiality Determination	Rationale for the proposed CBI determination
RR	98.446(a)(2)(ii)	For ER Activities: If a volumetric flow meter is used to receive CO ₂ report the following unless you reported yes to § 98.446(a)(4): The volumetric flow through a receiving flow meter that is redelivered to another facility without being injected into your well (in standard cubic meters) in each quarter.	CBI.	
RR	98.446(a)(2)(iii)	For ER Activities: If a volumetric flow meter is used to receive CO ₂ report the following unless you reported yes to § 98.446(a)(4): CO ₂ concentration in the flow (volume percent CO ₂ expressed as a decimal fraction) in each quarter.	CBI.	
RR	98.446(a)(3)(i)	For ER Activities: If a mass flow meter is used to receive CO ₂ report the following unless you reported yes to § 98.446(a)(4): The mass flow through a receiving flow meter (in metric tons) in each quarter.	CBI.	
RR	98.446(a)(3)(ii)	For ER Activities: If a mass flow meter is used to receive CO ₂ report the following unless you reported yes to § 98.446(a)(4): The mass flow through a receiving flow meter that is redelivered to another facility without being injected into your well (in metric tons) in each quarter.	CBI.	
RR	98.446(a)(3)(iii)	For ER Activities: If a mass flow meter is used to receive CO ₂ report the following unless you reported yes to § 98.446(a)(4): The CO ₂ concentration in the flow (weight percent CO ₂ expressed as a decimal fraction) in each quarter.	CBI.	
RR	98.446(b)(1)	For ER Activities: If you receive CO ₂ in containers, report: The mass (in metric tons) or volume at standard conditions (in standard cubic meters) of contents in containers in each quarter.	CBI.	
RR	98.446(b)(2)	For ER Activities: If you receive CO ₂ in containers: Concentration of CO ₂ of contents in containers (volume or wt. % CO ₂ expressed as a decimal fraction) in each quarter.	CBI.	
RR	98.446(b)(3)	For ER Activities: If you receive CO ₂ in containers, report: The mass (in metric tons) or volume (in standard cubic meters) of contents in containers that is redelivered to another facility without being injected into your well in each quarter.	CBI.	
RR	98.446(b)(4)	For ER Activities: If you receive CO ₂ in containers: Net mass of CO ₂ received (metric tons) annually.	CBI.	
RR	98.446(c)	For ER Activities: If you use more than one receiving flow meter: Total net mass of CO ₂ received (metric tons) through all flow meters annually.	CBI.	

TABLE 8—PROPOSED CBI DETERMINATIONS FOR OTHER DATA ELEMENTS IN PART 98—Continued
[Subparts I, Z, MM, PP, and RR]

Subpart	Citation in 40 CFR part 98	Data element	Confidentiality Determination	Rationale for the proposed CBI determination
RR	98.446(f)(4)(i)	For ER Activities: If the date specified in § 98.446(e) is during the reporting year for this annual report, report the following starting on the date specified in § 98.446(e): For each separator flow meter (mass or volumetric), report CO ₂ mass produced (metric tons) annually.	CBI	We are proposing that these data elements, which are related to the quantity of produced CO ₂ measured at a separator meter, are CBI when reported by facilities performing enhanced oil and gas recovery. Previously, commenters have noted ³¹ that although some data from ER wells is publicly available, the total mass of produced CO ₂ by well or within a field is not already in the public domain. Publication of produced CO ₂ data, when coupled with publicly available information on oil and gas production by well, could enable competitors to calculate CO ₂ utilization rates for both individual wells and fields and possibly track changes in CO ₂ utilization over time. This data could be used to gain insight into production costs and reservoir performance, which could result in competitive harm.
RR	98.446(f)(4)(ii)	For ER Activities: If the date specified in § 98.446(e) is during the reporting year for this annual report, report the following starting on the date specified in § 98.446(e): For each separator flow meter (mass or volumetric), report CO ₂ concentration in flow (volume or wt. % CO ₂ expressed as a decimal fraction) in each quarter.	CBI.	
RR	98.446(f)(4)(iii)	For ER Activities: If the date specified in § 98.446(e) is during the reporting year for this annual report, report the following starting on the date specified in § 98.446(e): If a volumetric flow meter is used, volumetric flow rate at standard conditions (standard cubic meters) in each quarter.	CBI.	
RR	98.446(f)(4)(iv)	For ER Activities: If the date specified in § 98.446(e) is during the reporting year for this annual report, report the following starting on the date specified in § 98.446(e): If a mass flow meter is used, mass flow rate (metric tons) in each quarter.	CBI.	
RR	98.446(a)(1)	For Non-ER Activities: If you receive CO ₂ by pipeline, report the following for each receiving flow meter: Total net mass of CO ₂ received (metric tons) annually.	Not CBI	
				For non-ER facilities, we are proposing that these data elements are not eligible for CBI treatment because these data elements are publicly available or can be derived from publicly available data. These data can be derived from Underground Injection Control (UIC) permits, which are issued for each injection well by the EPA or by states that have assumed primary enforcement authority for permitting Class II injection wells. Unlike ER facilities, the CO ₂ received at non-ER facilities is not recycled and re-injected. The amount of CO ₂ received at non-ER facilities is equivalent to the amount of CO ₂ injected (which is reported per UIC permit conditions). Information related to the permits is reported to EPA or States at least annually and made available to the public upon request. Because this information is publicly available, the EPA finds that disclosure of these data elements is not likely to cause substantial competitive harm to reporters who conduct non-ER activities. The EPA proposes to determine that these data elements are not CBI.

TABLE 8—PROPOSED CBI DETERMINATIONS FOR OTHER DATA ELEMENTS IN PART 98—Continued
[Subparts I, Z, MM, PP, and RR]

Subpart	Citation in 40 CFR part 98	Data element	Confidentiality Determination	Rationale for the proposed CBI determination
RR	98.446(a)(2)(i)	For Non-ER Activities: If a volumetric flow meter is used to receive CO ₂ report the following unless you reported yes to §98.446(a)(4): Volumetric flow through a receiving flow meter at standard conditions (in standard cubic meters) in each quarter.	Not CBI.	
RR	98.446(a)(2)(ii)	For Non-ER Activities: If a volumetric flow meter is used to receive CO ₂ report the following unless you reported yes to §98.446(a)(4): The volumetric flow through a receiving flow meter that is redelivered to another facility without being injected into your well (in standard cubic meters) in each quarter.	Not CBI.	
RR	98.446(a)(2)(iii)	For Non-ER Activities: If a volumetric flow meter is used to receive CO ₂ report the following unless you reported yes to §98.446(a)(4): CO ₂ concentration in the flow (volume percent CO ₂ expressed as a decimal fraction) in each quarter.	Not CBI.	
RR	98.446(a)(3)(i)	For Non-ER Activities: If a mass flow meter is used to receive CO ₂ report the following unless you reported yes to §98.446(a)(4): The mass flow through a receiving flow meter (in metric tons) in each quarter.	Not CBI.	
RR	98.446(a)(3)(ii)	For Non-ER Activities: If a mass flow meter is used to receive CO ₂ report the following unless you reported yes to §98.446(a)(4): The mass flow through a receiving flow meter that is redelivered to another facility without being injected into your well (in metric tons) in each quarter.	Not CBI.	
RR	98.446(a)(3)(iii)	For Non-ER Activities: If a mass flow meter is used to receive CO ₂ report the following unless you reported yes to §98.446(a)(4): The CO ₂ concentration in the flow (weight percent CO ₂ expressed as a decimal fraction) in each quarter.	Not CBI.	
RR	98.446(b)(1)	For Non-ER Activities: If you receive CO ₂ in containers, report: The mass (in metric tons) or volume at standard conditions (in standard cubic meters) of contents in containers in each quarter.	Not CBI.	
RR	98.446(b)(2)	For Non-ER Activities: If you receive CO ₂ in containers: Concentration of CO ₂ of contents in containers (volume or wt. % CO ₂ expressed as a decimal fraction) in each quarter.	Not CBI.	
RR	98.446(b)(3)	For Non-ER Activities: If you receive CO ₂ in containers, report: The mass (in metric tons) or volume (in standard cubic meters) of contents in containers that is redelivered to another facility without being injected into your well in each quarter.	Not CBI.	
RR	98.446(b)(4)	For Non-ER Activities: If you receive CO ₂ in containers: Net mass of CO ₂ received (metric tons) annually.	Not CBI.	
RR	98.446(c)	For Non-ER Activities: If you use more than one receiving flow meter: Total net mass of CO ₂ received (metric tons) through all flow meters annually.	Not CBI.	

TABLE 8—PROPOSED CBI DETERMINATIONS FOR OTHER DATA ELEMENTS IN PART 98—Continued
[Subparts I, Z, MM, PP, and RR]

Subpart	Citation in 40 CFR part 98	Data element	Confidentiality Determination	Rationale for the proposed CBI determination
RR	98.446(f)(4)(i)	For Non-ER Activities: If the date specified in § 98.446(e) is during the reporting year for this annual report, report the following starting on the date specified in § 98.446(e): For each separator flow meter (mass or volumetric), report CO ₂ mass produced (metric tons) annually.	Not CBI	For non-ER facilities, we are proposing that these data elements are not eligible for CBI treatment because these data elements are publicly available or can be derived from publicly available data. These data can be derived from UIC permits, which are issued for each injection well by the EPA or by states that have assumed primary enforcement authority for permitting Class II injection wells. Unlike ER facilities, the CO ₂ received at non-ER facilities is not recycled and re-injected. The amount of CO ₂ received at non-ER facilities is equivalent to the amount of CO ₂ injected (which is reported per UIC permit conditions). Information related to the permits is reported to EPA or States at least annually and made available to the public upon request. Because this information is publicly available, the EPA finds that disclosure of these data elements is not likely to cause substantial competitive harm to reporters who conduct non-ER activities. The EPA proposes to determine that these data elements are not CBI.
RR	98.446(f)(4)(ii)	For Non-ER Activities: If the date specified in § 98.446(e) is during the reporting year for this annual report, report the following starting on the date specified in § 98.446(e): For each separator flow meter (mass or volumetric), report CO ₂ concentration in flow (volume or wt. % CO ₂ expressed as a decimal fraction) in each quarter.	Not CBI.	
RR	98.446(f)(4)(iii)	For Non-ER Activities: If the date specified in § 98.446(e) is during the reporting year for this annual report, report the following starting on the date specified in § 98.446(e): If a volumetric flow meter is used, volumetric flow rate at standard conditions (standard cubic meters) in each quarter.	Not CBI.	
RR	98.446(f)(4)(iv)	For Non-ER Activities: If the date specified in § 98.446(e) is during the reporting year for this annual report, report the following starting on the date specified in § 98.446(e): If a mass flow meter is used, mass flow rate (metric tons) in each quarter.	Not CBI.	

E. Proposed Revised Confidentiality Determination for Subpart NN Data Elements

We are proposing revised confidentiality determinations for two existing data elements in subpart NN. Under subpart NN, local distribution companies report the volume of natural gas withdrawn from on-system storage and the annual volume of liquefied natural gas (LNG) withdrawn from storage and vaporized for delivery on the distribution system (40 CFR 98.406(b)(3)). The EPA previously assigned these data elements to the “Amount and Composition of Materials Received” category, which has a

confidentiality determination of CBI. The EPA is proposing to change these data elements’ status from CBI to non-CBI. These data elements are reported to the EPA by LDCs subject to subpart W of Part 98 (Petroleum and Natural Gas Systems) in addition to subpart NN. In support of a recent subpart W rulemaking (79 FR 70352, November 25, 2014), review of publicly available data found that gas withdrawals from underground storage are reported to the EIA on form EIA-176 (Annual Report of Natural and Supplemental Gas Supply and Disposition). As we noted in the proposed version of that rule, the EIA considers all information submitted on EIA-176 to be non-proprietary

information and publishes the quantity of natural gas withdrawn from storage on their Web site. Data that are already in the public domain are not entitled to confidential treatment under the provisions in 40 CFR 2.208. Since the quantity of natural gas withdrawn from storage is publicly available, the EPA proposes to assign the confidentiality determination for 40 CFR 98.406(b)(3) to “not CBI.”

F. Request for Comments on Proposed Category Assignments and Confidentiality Determinations

For the CBI component of this rulemaking, we are soliciting comment on the following specific issues. We

specifically seek comment on the proposed data category assignment for each of the new and substantially revised data elements in the proposed amendments, for the existing data elements in subparts I, Z, MM, PP, and RR for which no determination was previously made, and the two data elements in subpart NN for which we are revising the prior confidentiality determination.

If you believe that the EPA has improperly assigned certain new, substantially revised, or existing data elements in these subparts to any of the data categories established in the 2011 Final CBI Rule, please provide specific comments identifying which of the data elements may be wrongly assigned along with a detailed explanation of why you believe them to be incorrectly assigned and in which data category you believe they belong. In addition, if you believe that a data element should be assigned to one of the five categories that do not have a categorical confidentiality determination, please also provide specific comment along with detailed rationale and supporting information on whether such data element does or does not qualify as CBI. We also seek comment on the proposed confidentiality status of the new, substantially revised, or existing data elements in the direct emitter data categories “Unit/Process ‘Operating’ Characteristics that Are Not Inputs to Emission Equations” and “Unit/Process ‘Static’ Characteristics that Are Not Inputs to Emission Equations” and the supplier data categories “Production/Throughput Quantities and Composition” and “Unit/Process Operating Characteristics.”

By proposing confidentiality determinations prior to data reporting through this proposal and rulemaking process, we provide potential reporters an opportunity to submit comments, particularly comments identifying data they consider sensitive and their rationales and supporting documentation. This opportunity to submit comments is the same opportunity that is afforded to submitters of information in case-by-case confidentiality determinations. In addition, it provides an opportunity to rebut the agency’s proposed determinations prior to finalization. We will evaluate the comments on our proposed determinations, including claims of confidentiality and information substantiating such claims, before finalizing the confidentiality determinations. Please note that this will be reporters’ only opportunity to substantiate a confidentiality claim. Upon finalizing the confidentiality

determinations of the data elements identified in this rule, the EPA will release or withhold these data in accordance with 40 CFR 2.301, which contains special provisions governing the treatment of Part 98 data for which confidentiality determinations have been made through rulemaking.

When submitting comments regarding the confidentiality determinations we are proposing in this action, please identify each individual proposed new, revised, or existing data element you do or do not consider to be CBI or emission data in your comments. Please explain specifically how the public release of that particular data element would or would not cause a competitive disadvantage to a facility. Discuss how this data element may be different from or similar to data that are already publicly available. Please submit information identifying any publicly available sources of information containing the specific data elements in question. Data that are already available through other sources would likely be found not to qualify for CBI protection. In your comments, please identify the manner and location in which each specific data element you identify is publicly available, including a citation. If the data are physically published, such as in a book, industry trade publication, or federal agency publication, provide the title, volume number (if applicable), author(s), publisher, publication date, and International Standard Book Number (ISBN) or other identifier. For data published on a Web site, provide the address of the Web site, the date you last visited the Web site and identify the Web site publisher and content author.

If your concern is that competitors could use a particular data element to discern sensitive information, specifically describe the pathway by which this could occur and explain how the discerned information would negatively affect your competitive position. Describe any unique process or aspect of your facility that would be revealed if the particular proposed new or revised data element you consider sensitive were made publicly available. If the data element you identify would cause harm only when used in combination with other publicly available data, then describe the other data, identify the public source(s) of these data, and explain how the combination of data could be used to cause competitive harm. Describe the measures currently taken to keep the data confidential. Avoid conclusory and unsubstantiated statements, or general assertions regarding potential harm. Please be as specific as possible and

include all information necessary for the EPA to evaluate your comments.

V. Impacts of the Proposed Amendments

The EPA is proposing amendments to Part 98 that would streamline and improve implementation of the rule, improve the quality and consistency of the data collected under the rule, and clarify certain provisions. The proposed revisions are anticipated to increase burden in cases where the proposed amendments would expand current applicability, monitoring, or reporting, and are anticipated to decrease burden in cases where the proposed amendments would streamline Part 98 to remove notification or reporting requirements or simplify the data that must be reported. For most subparts, we are proposing both revisions that would result in an increase in burden and revisions that would result in a decrease in burden. In several cases, we are proposing changes where we anticipate a decrease in burden, but are unable to quantify this decrease. This conservative approach means that the impacts for this proposed rule generally reflect an increase in burden for most subparts. For example, as discussed in section II.C and II.K of this preamble, we are proposing amendments to add new reporting requirements to subpart E and subpart V to improve the quality of the data collected under the rule, as well as amendments that would streamline the rule by conditionally removing the annual approval request for an alternative method for determining N₂O emissions currently required by reporters and the annual request approval by the EPA. The proposed changes for the annual approval request are anticipated to add flexibility for reporters and reduce the burden for subpart E and subpart V reporters using the alternative method. Additionally, we anticipate that the EPA burden required to review and approve the alternative methods would also be reduced. However, because the proposed changes would apply to an optional calculation method and are not required for compliance with Part 98, we have not included this reduction in burden in our analysis, and have only quantified the increase in burden associated with the proposed new reporting requirements.

As discussed in section I.E of this preamble, we are proposing to implement these changes over reporting years 2016, 2017, and 2018 in order to stagger the implementation of these changes over time and provide time for needed software revisions. The burden has subsequently been determined

based on when the proposed revisions would be implemented in each year (e.g., the burden for RY2016 only reflects changes to subparts I (Electronics Manufacturing) and HH (Municipal Solid Waste Landfills), and related changes to subpart A (General Provisions)). One-time implementation costs would apply for certain revisions to applicability and monitoring provisions that would be finalized in RY2017 and RY2018; therefore, we have

estimated costs through RY2019 to reflect the subsequent year costs incurred by industry. The incremental implementation costs for all subparts for each reporting year are summarized in Table 9 of this preamble. The estimated incremental burden is \$2,049,478 for all proposed revisions implemented between RY2016 through RY2018, including \$9,359 from revisions implemented in RY2016, \$33,782 from revisions implemented in RY2017, and

\$2,006,337 from revisions implemented in RY2018. The estimated annual burden is \$1,081,830 per year following implementation of all changes. The incremental burden by subpart is shown in Table 10 of this preamble. One-time implementation costs are incorporated into first year costs, while subsequent year costs represent the annual burden that will be incurred in total by all impacted reporters.

TABLE 9—INCREMENTAL BURDEN FOR REPORTING YEARS 2016–2019
[\$/year]

Cost summary	2016	2017	2018	2019
First Year Costs	^a \$9,359	\$25,650	^b ^c \$1,972,555	.....
Subsequent Year Annual Costs for Changes Implemented in:				
2016 .....	.....	8,132	8,132	^a 9,359
2017 .....	.....	.....	25,650	25,650
2018 .....	.....	.....	.....	1,046,821
Total Costs by Year (all subparts)	9,359	33,782	2,006,337	^a 1,081,830

^a Includes annual labor costs of \$1,226 for reporting additional data elements for subpart I for a triennial report submitted once every three years.

^b Includes one-time implementation costs for new monitoring under subpart FF.

^c Includes one-time implementation costs for new reporters under subparts V and OO.

TABLE 10—INCREMENTAL BURDEN BY SUBPART
[\$2011]

Subpart	Costs for additional reporters		Costs for revisions to reporting		Costs for revisions to monitoring provisions		Total cost	
	First-year	Subsequent-year	First-year	Subsequent-year	First-year	Subsequent-year	First-year	Subsequent-year
Changes Implemented in RY2016								
I	\$0	\$0	\$1,226	^a \$0	\$0	\$0	\$1,226	^a \$0
HH	0	0	8,132	8,132	0	0	8,132	8,132
Total Costs for Changes Implemented in RY2016 .....	.....	.....	.....	.....	.....	9,359	8,132	.....
Changes Implemented in RY2017								
A	0	0	4,906	4,906	0	0	4,906	4,906
C	0	0	12,139	12,139	0	0	12,139	12,139
E	0	0	10	10	0	0	10	10
F	0	0	73	73	0	0	73	73
G	0	0	228	228	0	0	228	228
N ^b	0	0	0	0	0	0	0	0
O	0	0	106	106	0	0	106	106
P ^b	0	0	0	0	0	0	0	0
Q ^b	0	0	0	0	0	0	0	0
S	0	0	744	744	0	0	744	744
U ^b	0	0	0	0	0	0	0	0
X	0	0	1,074	1,074	0	0	1,074	1,074
Z	0	0	40	40	0	0	40	40
AA ^b	0	0	0	0	0	0	0	0
CC	0	0	33	33	0	0	33	33
DD	0	0	2,000	2,000	0	0	2,000	2,000
II	0	0	2,562	2,562	0	0	2,562	2,562
LL ^c	0	0	–17	–17	0	0	–17	–17
MM ^b	0	0	0	0	0	0	0	0
NN	0	0	1,752	1,752	0	0	1,752	1,752
PP ^b	0	0	0	0	0	0	0	0
RR ^d	0	0	0	0	0	0	0	0
TT ^b	0	0	0	0	0	0	0	0
UU ^b	0	0	0	0	0	0	0	0

TABLE 10—INCREMENTAL BURDEN BY SUBPART—Continued
[\$2011]

Subpart	Costs for additional reporters		Costs for revisions to reporting		Costs for revisions to monitoring provisions		Total cost	
	First-year	Subsequent-year	First-year	Subsequent-year	First-year	Subsequent-year	First-year	Subsequent-year
Total Costs for Changes Implemented in RY2017							25,650	25,650
Changes Implemented in RY2018								
V	83,544	66,403	129	129	0	0	83,673	66,531
Y	0	0	1,448	1,448	0	0	1,448	1,448
FF	0	0	2,066	2,066	1,848,571	949,582	1,850,638	951,648
OO	36,215	26,612	582	582	0	0	36,797	27,194
Total Costs for Changes Implemented in RY2018							1,972,555	1,046,821
Total (All Subparts)	119,759	93,015	39,234	38,007	1,848,571	949,582	2,006,337	1,081,830

^a Costs for subpart I include new data elements related to the triennial technology report required by § 98.96(y). The first report must be submitted with RY2016 reports on March 31, 2017 and every three years thereafter. For the purposes of estimating burden, the annual costs associated with the data elements were included in the total incremental estimates for RY2016 and RY2019 (see Table 9 of this preamble) and not for RY2017 or RY2018.

^b The proposed changes to this subpart include only minor revisions, clarifications, and corrections that have no impact on the burden to reporters.

^c This entry is a negative value because certain reporting requirements were removed from subpart LL and no new reporting requirements were added for the subpart, resulting in a net cost savings for this source category.

^d There is no increase in costs under subpart RR (Geologic Sequestration of Carbon Dioxide) because there are no facilities currently reporting, or projected to report, under this source category in the next three years.

A full discussion of the impacts may be found in the memorandum, "Assessment of Burden Impacts of 2015 Revisions to the Greenhouse Gas Reporting Rule," available in Docket Id. No. EPA-HQ-OAR-2015-0526.

A. How was the incremental burden of the proposed rule estimated?

The estimated incremental change in burden from the proposed amendments to Part 98 include burden associated with: (1) Changes to the reporting requirements by adding, revising, or removing existing reporting requirements (21 subparts); (2) revisions to the applicability of subparts such that additional facilities would be required to report under Part 98 (subparts V and OO); and (3) additional monitoring requirements (subpart FF).

1. Burden Associated With the Revision of Reporting Requirements

Section III of this preamble describes proposed amendments to each subpart of Part 98 that improve the quality and accuracy of the data collected under the GHGRP, improve verification of collected data, and provide additional data to help improve estimates included in the U.S. GHG Inventory. In general, these proposed amendments would add reporting requirements or revise existing reporting requirements to collect more detailed facility data. The proposed amendments would collectively add or

revise data elements in 21 subparts of Part 98, including 97 data elements that were not previously required to be collected. With the exception of revisions to subpart FF (Underground Coal Mines), the collection of these new and revised data elements would not add new monitoring requirements, and would not substantially affect the type of information that must be collected. For all of these additional data elements, the EPA has estimated a nominal additional cost to report the data element and fulfill the recordkeeping requirements. The EPA is also proposing to remove 18 data elements in subparts O, Y, DD, HH, and LL. For these data elements, the EPA has estimated a nominal reduction in cost, since reporters would no longer be required to report the data element. The total incremental costs from the addition, revision, and removal of these reporting requirements are anticipated at \$39,234 annually (\$2011). This includes \$9,359 from revisions implemented in RY2016, \$25,650 from revisions first implemented in RY2017, and \$4,225 from revisions first implemented in RY2018. For subpart I, the new data elements in the proposed rule pertain to the triennial technology report required under 40 CFR 98.96(y), which must first be submitted with RY2016 reports on or before March 31, 2017 and every three years thereafter.

For the purposes of estimating burden, the annual costs associated with these data elements (\$1,226) would apply in RY2016 only. For RY2017 and RY2018, the estimated incremental cost associated with reporting the new, revised, and removed data elements for all affected source categories is \$33,782 and \$38,007, respectively.

All costs to the regulated industry resulting from changes to the reporting requirements for the GHGRP are labor costs (*i.e.*, the cost of labor by facility staff to meet the rule's information collection requirements). For each subpart, the EPA determined the incremental change in annual hourly labor estimates by multiplying the number of data elements that were added, revised, or removed in each subpart by the number of hours required to review each data element and the number of affected reporters for each subpart. Where data elements were removed in subparts O, Y, DD, HH, and LL, a reduction in the annual hourly labor estimate was assumed. Labor costs were applied to the total annual hour estimates for each labor category to obtain the total costs for each subpart.

2. Burden Associated With Revisions That Affect Applicability

The EPA is proposing revisions that would affect the applicability of two subparts of Part 98: Subpart V (Nitric Acid Production) and subpart OO

(Suppliers of Industrial Greenhouse Gases). The proposed changes would apply beginning in RY2018. These proposed changes are anticipated to require reporting for four additional reporters under subpart V, and five to ten additional reporters under subpart OO. (For the purposes of estimating burden, an average of eight additional reporters were assumed to be required to report under subpart OO of Part 98). The majority of facilities within these industries already report under Part 98; specifically, all four of the affected reporters under subpart V already submit annual reports. The total incremental burden from changes to applicability is \$119,759 in the first year and \$93,015 in subsequent years (\$2011). The incremental burden for the additional reporters for subpart V includes first-year costs of \$83,544 (\$20,866 per facility) and subsequent year costs of \$66,403 (\$16,601 per facility). The incremental burden for the additional reporters for subpart OO includes first-year costs of \$36,215 (\$4,527 per facility) and subsequent year costs of \$26,612 (\$3,327 per facility).

To estimate the cost impacts for additional reporters, the recent information collection request for the GHG reporting program³² was used to obtain the first year average cost per facility that is incurred from reporting under subparts V and OO (updated to \$2011) and the subsequent year burden. These average costs per facility include labor costs, capital costs, and operation and maintenance costs. We determined total reporting costs for each subpart by assigning these costs to model facilities that are representative of each industry sector. The total cost for each subpart was determined by multiplying the model facilities cost by the number of affected facilities.

3. Burden Associated With Revisions to Monitoring Requirements for Underground Coal Mines

As discussed in section III.R.2 of this preamble, we are proposing changes to the monitoring requirements of subpart FF of Part 98 to remove the option to allow MSHA quarterly inspection reports to be used as a source of data for monitoring methane liberated from ventilation systems. Instead, facilities would be required to independently collect their own grab samples or to use CEMS. The incremental increase in costs for subpart FF reporters who would no longer have the option to use MSHA data (and would need to collect

monthly grab samples) are \$28,440 per facility in the first year and \$14,609 per facility in subsequent years (\$2011); these revisions would affect approximately 65 reporters anticipated to use MSHA data annually. The proposed revisions would have an industry-wide incremental cost of \$1,848,571 in the first year and \$949,582 in subsequent years. The proposed changes would apply beginning in RY2018.

The incremental costs to the regulated industry resulting from changes to the monitoring requirements for Underground Coal Mines are based on the collection of independent grab samples in ventilation air. Currently, about 50 percent of subpart FF reporters collect quarterly gas samples. For mines that currently use MSHA data, the annual incremental costs for taking grab samples was estimated as the cost of taking the samples, less the avoided cost of obtaining, interpreting and reporting MSHA data. We assumed that facilities would not install a CEMS as a result of the monitoring changes.

The costs resulting from removing the use of MSHA quarterly data and requiring facilities to collect quarterly grab samples include additional labor costs (*i.e.*, the cost of labor by facility staff to meet the rule's information collection requirements), capital costs (*e.g.*, the costs of anemometers or sample kits, for reporters that are not currently conducting sampling), and operating and maintenance costs (*e.g.*, the cost associated with gas sample analysis). Hourly labor costs were estimated based on the number of labor hours for developing the sampling methodology and purchasing the devices, and the number of hours required for sampling.

B. Additional Impacts of the Proposed Revisions to Part 98

In addition to amendments that would revise the existing applicability, monitoring, or reporting requirements of Part 98, the EPA is proposing additional technical revisions and other clarifications to several subparts in Part 98 that are not anticipated to have a significant impact on burden. These include revisions discussed in section III of this preamble that are intended to streamline the rule requirements, including proposed revisions to clarify and revise the requirements of Part 98 in order to focus GHGRP and reporter resources on relevant data, to expand and clarify the conditions under which a facility can cease reporting, or to clarify requirements for facilities that report very little or no emissions, and revisions that would improve the

efficiency of the reporting and verification process. These changes are anticipated to minimally reduce burden for reporters.

The EPA is also proposing revisions that are intended to improve the quality of the rule but that would not impact burden, such as amending calculation methods to improve the accuracy of the emissions estimate (*e.g.*, subparts I and Y); these proposed amendments would increase the accuracy of reported emissions, but do not require additional monitoring or data collection by reporters, and would have no additional impact on burden.

We are proposing, for certain subparts, to amend monitoring or measurement methods to more closely align rule requirements with different operating scenarios in the industry. Other proposed amendments would provide flexibility for reporters and clarify reporting requirements, as described in section II.C of this preamble. These proposed amendments are anticipated to have no impact or minimally decrease burden for reporters.

The proposed revisions also include minor amendments, corrections, and clarifications, including simple revisions of requirements such as clarifying changes to definitions, calculation methodologies, monitoring and quality assurance requirements, missing data procedures, and reporting requirements. These proposed changes clarify Part 98 to better reflect the EPA's intent, and would not present any additional burden on reporters.

A full discussion of the burden associated with the proposed revisions for each subpart may be found in the memorandum, "Assessment of Burden Impacts of 2015 Revisions to the Greenhouse Gas Reporting Rule," available in Docket Id. No. EPA-HQ-OAR-2015-0526.

VI. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is a significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review because the proposed amendments raise novel legal or policy issues. Any changes made in response to OMB recommendations have been documented in the docket. The EPA prepared an economic analysis of the potential costs and benefits associated with this action. A copy of the analysis is available in Docket Id. No. EPA-HQ-

³² See Supporting Statement Part A: Information Collection Request for the Greenhouse Gas Reporting Program (U.S. EPA, 2013).

OAR-2015-0526 and is briefly summarized in section V of this preamble.

B. Paperwork Reduction Act (PRA)

The information collection activities in this proposed rule have been submitted for approval to the OMB under the PRA. The Information Collection Request (ICR) document that the EPA prepared has been assigned EPA ICR number 2300.18. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here.

This action is proposing to amend specific provisions in the Greenhouse Gas Reporting Rule to streamline and improve implementation of the rule, improve the quality and consistency of the data collected under the rule, and to clarify or propose minor updates to certain provisions that have been the subject of questions from reporting entities. These proposed amendments would improve the quality and consistency of the data collected, as well as improve the efficiency of the reporting process for both the EPA and reporters. The proposed amendments are anticipated to increase burden in cases where the proposed amendments would expand current applicability, monitoring, or reporting, and are anticipated to decrease burden in cases where the proposed amendments would streamline Part 98 to remove notification or reporting requirements or simplify the data that must be reported.

Specifically, this action proposes to amend the reporting requirements to add or revise 118 data elements in 21 subparts of Part 98. These revisions are necessary to improve the quality of the data collected under the GHGRP. The EPA is also proposing to remove 18 data elements in five subparts, which would streamline rule requirements. This action also proposes amendments that would affect the applicability of two subparts of Part 98: subparts V (Nitric Acid Production) and OO (Suppliers of Industrial Greenhouse Gases). These amendments could increase the number of facilities required to report under Part 98. Finally, this action proposes to revise the monitoring requirements of subpart FF of Part 98 (Underground Coal Mines). The proposed amendments would remove the option to allow Mine Safety and Health Administration (MSHA) quarterly inspection reports to be used as a source of data for monitoring methane liberated from ventilation systems, and require facilities to independently collect their own grab samples or to use continuous emissions monitoring. Impacts associated with the proposed changes to the applicability, monitoring, and

reporting requirements are detailed in the memorandum "Assessment of Burden Impacts of 2015 Revisions to the Greenhouse Gas Reporting Rule" (see Docket Id. No. EPA-HQ-OAR-2015-0526). Burden is defined at 5 CFR 1320.3(b).

The total estimated incremental burden and cost associated with the proposed revisions is 23,456 hours and \$2,049,478 over the 3 years covered by the information collection. These costs include \$9,359 in RY2016, \$33,782 in RY2017, and \$2,006,337 in RY2018, averaging \$683,159 per year over the three years. The total estimated number of reporters affected by the proposed amendments is 8,240. The proposed frequency of response for these changes is once annually, with the exception of certain data elements for subpart I which would be submitted once every three years.

The estimated incremental costs and hour burden associated with the addition and revision of 118 data elements and the removal of 18 data elements in 21 subparts is 682 hours and \$39,234 annually (\$2011), including \$9,359 from revisions first implemented in RY2016, \$25,650 from revisions first implemented in RY2017, and \$4,225 from revisions first implemented in RY2018. For subpart I, the new data elements in the proposed rule pertain to the triennial technology report required under 40 CFR 98.96(y), which must first be submitted with RY2016 reports on or before March 31, 2017 and every three years thereafter. For the purposes of estimating burden for the three years covered by the information collection, the annual burden and costs associated with these data elements (21 hours and \$1,226) would apply for RY2016 only. Therefore, the estimated incremental burden and cost associated with reporting the new, revised, and removed data elements for all affected source categories is 588 hours and \$33,782 in RY2017, and 661 hours and \$38,007 for RY2018. The annual reporting burden associated with these changes is estimated to average 0.17 hour per response, and the estimated number of reporters affected is 7,127.

The estimated incremental cost burden associated with additional reporters to subparts V and OO is \$119,759 in the first year (RY2018) and \$93,015 in subsequent years. The incremental burden for the additional reporters for subpart V includes first-year costs of \$83,544 and subsequent year costs of \$66,403. The incremental burden for the additional reporters for subpart OO includes first-year costs of \$36,215 and subsequent year costs of \$26,612. The estimated number of likely

new respondents that would result from these amendments is 12, including four additional reporters under subpart V, and an average of eight additional reporters for subpart OO. The annual hourly burden for these additional reporters is based on the annual average hourly burden for existing reporters under subparts V and OO, which is 191 hours and 55 hours per reporter, respectively.

The incremental increase in costs for subpart FF reporters from the revised monitoring requirements are \$28,440 per facility in the first year (RY2018) and \$14,609 in subsequent years (\$2011). The proposed revisions are estimated to affect 65 respondents and would have an industry incremental cost of \$1,848,571 in the first year (RY2018) and \$949,582 in subsequent years. The annual hourly burden associated with these monitoring costs are 320 hours per reporter in the first year and 165 hours in subsequent years.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations in 40 CFR are listed in 40 CFR part 9.

Submit your comments on the agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden to the EPA using the docket identified at the beginning of this rule. You may also send your ICR-related comments to OMB's Office of Information and Regulatory Affairs via email to oria_submissions@omb.eop.gov, Attention: Desk Officer for the EPA. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after receipt, OMB must receive comments no later than February 16, 2016. The EPA will respond to any ICR-related comments in the final rule.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule. The impacts to small entities due to the revisions was evaluated for each subpart. The EPA conducted a screening assessment

comparing compliance costs for revisions to reporting requirements, applicability to new reporters, and monitoring revisions under subparts V, FF, and OO to specific receipts data for establishments owned by small businesses in each industry. This ratio constitutes a “sales” test that computes the annualized compliance costs of this rule as a percentage of sales and determines whether the ratio exceeds 1 percent. The cost-to-sales ratios were constructed at the establishment level (average reporting program costs per establishment/average establishment receipts) for several business size ranges. We determined that the cost-to-sales ratios are less than 1 percent for all establishments in all business size ranges for subparts V, OO, and FF, except the ratio for the 1–19 employee size range for facilities in subpart FF was greater than 1 percent and less than 2 percent. The sales test for this size category was also exceeded in the original EIA³³ and the EPA noted that mines owned by enterprises with less than 19 employees would be unlikely to be covered by this rule. Therefore, we do not anticipate any impacts on small entities for subpart FF reporters, and we have determined that there will not be a significant economic impact to small entities for these three subparts. For all other subparts, which are only affected by revisions for adding, revising, or removing reporting requirements, we determined that these facilities will experience annual impacts of approximately \$11 per facility. Because this cost is minimal, no small entity impacts are anticipated for the remaining subparts.

Although there are no small entity impacts associated with these proposed revisions, in the development of Part 98, the EPA took several steps to reduce the impact on small entities. For example, the EPA determined appropriate thresholds that reduced the number of small businesses reporting. In addition, the EPA conducted several meetings with industry associations to discuss regulatory options and the corresponding burden on industry, such as recordkeeping and reporting. The proposed rule amendments are minor technical corrections, clarifying, and other amendments that will not impose any new requirement on small entities that are not currently required by the regulation of Part 98. We have therefore concluded that this action will have no net regulatory burden for all directly

regulated small entities. The EPA continues to conduct significant outreach on the GHGRP and maintains an “open door” policy for stakeholders to help inform the EPA’s understanding of key issues for the industries. We continue to be interested in the potential impacts of the proposed rule amendments on small entities and welcome comments on issues related to such impacts.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate of \$100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments.

The action implements mandate(s) specifically and explicitly set forth in CAA section 114(a)(1) without the exercise of any policy discretion by the EPA.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action does not have tribal implications as specified in Executive Order 13175. The proposed rule amendments would not result in any changes to the requirements that are not currently required for 40 CFR part 98. Thus, Executive Order 13175 does not apply to this action. Consistent with the EPA Policy on Consultation and Coordination with Indian Tribes, the EPA consulted with tribal officials during the development of the rules for Part 98. A summary of that consultation is provided in sections VIII.E and VIII.F of the preamble to the October 30, 2009 final GHG reporting rule.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of “covered regulatory action” in section 2–202 of the Executive Order. This action is not subject to Executive Order 13045

because it does not concern an environmental health risk or safety risk.

H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

This action is not a “significant energy action” because it is not likely to have a significant adverse effect on the supply, distribution or use of energy. Part 98 relates to monitoring, reporting, and recordkeeping and does not impact energy supply, distribution, or use. This final rule amends monitoring, calculation, and reporting requirements for the GHGRP. In addition, the EPA is proposing confidentiality determinations for new and revised data elements proposed in this rulemaking and for certain existing data elements for which a confidentiality determination has not previously been proposed, or where the EPA has determined that the current determination is no longer appropriate. These proposed amendments and confidentiality determinations do not make any changes to the existing monitoring, calculation, and reporting requirements under Part 98 that affect the supply, distribution, or use of energy.

I. National Technology Transfer and Advancement Act

This rulemaking does not involve technical standards.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

The EPA believes the human health or environmental risk addressed by this action will not have potential disproportionately high and adverse human health or environmental effects on minority, low-income or indigenous populations because it does not affect the level of protection provided to human health or the environment because it is a rule addressing information collection and reporting procedures.

List of Subjects in 40 CFR Part 98

Environmental protection, Administrative practice and procedure, Greenhouse gases, Incorporation by reference, Reporting and recordkeeping requirements, Suppliers.

Dated: December 21, 2015.

Gina McCarthy,
Administrator.

For the reasons stated in the preamble, the Environmental Protection Agency proposes to amend title 40, chapter I, of the Code of Federal Regulations as follows:

³³ U.S. EPA. Economic Impact Analysis for the Mandatory reporting of Greenhouse Gas Emissions: Subparts T, FF, TT, and II. See Docket Id. No. EPA–HQ–OAR–2008–0508–2313. June 2010.

PART 98—MANDATORY GREENHOUSE GAS REPORTING

■ 1. The authority citation for part 98 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

Subpart A—General Provision

■ 2. Section 98.2 is amended by:

- a. Revising paragraph (a)(1);
- b. Revising paragraph (i)(1) through (3); and
- c. Adding paragraphs (i)(4) through (6).

The revisions and additions read as follows:

§ 98.2 Who must report?

(a) * * *

(1) *A facility that contains any source category that is listed in Table A–3 of this subpart.* For these facilities, the annual GHG report must cover stationary fuel combustion sources (subpart C of this part), miscellaneous use of carbonates (subpart U of this part), and all applicable source categories listed in Table A–3 and Table A–4 of this subpart.

* * * * *

(i) * * *

(1) If reported emissions are less than 25,000 metric tons CO₂e per year for five consecutive years, then the owner or operator may discontinue complying with this part provided that the owner or operator submits a notification to the Administrator that announces the cessation of reporting and explains the reasons for the reduction in emissions. The notification shall be submitted no later than March 31 of the year immediately following the fifth consecutive year of emissions less than 25,000 tons CO₂e per year. The owner or operator must maintain the corresponding records required under § 98.3(g) for each of the five consecutive years prior to notification of discontinuation of reporting and retain such records for three years following the year that reporting was discontinued. The owner or operator must resume reporting if annual emissions in any future calendar year increase to 25,000 metric tons CO₂e per year or more.

(2) If reported emissions are less than 15,000 metric tons CO₂e per year for three consecutive years, then the owner or operator may discontinue complying with this part provided that the owner or operator submits a notification to the Administrator that announces the cessation of reporting and explains the reasons for the reduction in emissions. The notification shall be submitted no later than March 31 of the year

immediately following the third consecutive year of emissions less than 15,000 tons CO₂e per year. The owner or operator must maintain the corresponding records required under § 98.3(g) for each of the three consecutive years and retain such records for three years prior to notification of discontinuation of reporting following the year that reporting was discontinued. The owner or operator must resume reporting if annual emissions in any future calendar year increase to 25,000 metric tons CO₂e per year or more.

(3) If the operations of a facility or supplier are changed such that all applicable processes and operations subject to paragraphs (a)(1) through (4) of this section cease to operate, then the owner or operator may discontinue complying with this part for the reporting years following the year in which cessation of such operations occurs, provided that the owner or operator submits a notification to the Administrator that announces the cessation of reporting and certifies to the closure of all applicable processes and operations no later than March 31 of the year following such changes. If one or more processes or operations subject to paragraphs (a)(1) through (4) of this section at a facility or supplier cease to operate, but not all applicable processes or operations cease to operate, then the owner or operator is exempt from reporting for any such processes or operations in the reporting years following the reporting year in which cessation of the process or operation occurs, provided that the owner or operator submits a notification to the Administrator that announces the cessation of reporting for the process or operation no later than March 31 of the year following such changes. This paragraph (i)(3) does not apply to seasonal or other temporary cessation of operations. This paragraph (i)(3) does not apply to facilities with municipal solid waste landfills or industrial waste landfills, or to underground coal mines except those with abandoned status as determined by the U.S. Mine Safety & Health Administration. The owner or operator must resume reporting for any future calendar year during which any of the GHG-emitting processes or operations resume operation.

(4) The provisions of paragraphs (i)(1) and (2) of this section apply to suppliers subject to subparts LL through QQ of this part by substituting the term “quantity of GHG supplied” for “emissions.” For suppliers, the provisions of paragraphs (i)(1) and (2) of this section apply individually to each importer and exporter and individually

to each petroleum refinery, fractionator of natural gas liquids, local natural gas distribution company, and producer of CO₂, N₂O, or fluorinated greenhouse gases (e.g., a supplier of industrial greenhouse gases might qualify to discontinue reporting as an exporter of industrial greenhouse gases but still be required to report as an importer; or a company might qualify to discontinue reporting as a supplier of industrial greenhouse gases under subpart OO of this part but still be required to report as a supplier of carbon dioxide under subpart PP of this part).

(5) If the operations of a facility or supplier are changed such that a process or operation no longer meets the “Definition of Source Category” as specified in an applicable subpart, then the owner or operator may discontinue complying with any such subpart for the reporting years following the year in which change occurs, provided that the owner or operator submits a notification to the Administrator that announces the cessation of reporting for the process or operation no later than March 31 of the year following such changes. The owner or operator must resume complying with this part for the process or operation starting in any future calendar year during which the process or operation meets the “Definition of Source Category” as specified in an applicable subpart.

(6) If an entire facility or supplier is merged into another facility or supplier that is already reporting GHG data under this part, then the owner or operator may discontinue complying with this part for the facility or supplier, provided that the owner or operator submits a notification to the Administrator that announces the discontinuation of reporting and the e-GGRT identification number of the reconstituted facility no later than March 31 of the year following such changes.

* * * * *

■ 3. Section 98.3 is amended by:

- a. Revising paragraph (c)(4)(iii) introductory text;
- b. Adding paragraph (c)(4)(iii)(G); and
- c. Revising paragraphs (c)(5)(ii), (c)(8), (d)(1)(i), and (h)(4).

The revisions and additions read as follows:

§ 98.3 What are the general monitoring, reporting, recordkeeping and verification requirements of this part?

* * * * *

(c) * * *

(4) * * *

(iii) Annual emissions from each applicable source category, expressed in metric tons of each applicable GHG

listed in paragraphs (c)(4)(iii)(A) through (F) of this section.

* * * * *

(G) For each reported fluorinated GHG and fluorinated heat transfer fluid, report the following identifying information:

(1) Chemical name. If the chemical is not listed in Table A–1 of this subpart, then use the method of naming organic chemical compounds as recommended by the International Union of Pure and Applied Chemistry (IUPAC).

(2) The CAS registry number assigned by the Chemical Abstracts Registry Service. If a CAS registry number is not assigned or is not associated with a single fluorinated GHG or fluorinated heat transfer fluid, then report an identification number assigned by EPA's Substance Registry Services.

(3) Linear chemical formula.

* * * * *

(5) * * *

(ii) Quantity of each GHG from each applicable supply category in Table A–5 to this subpart, expressed in metric tons of each GHG. For each reported fluorinated GHG, report the following identifying information:

(A) Chemical name. If the chemical is not listed in Table A–1 of this subpart, then use the method of naming organic chemical compounds as recommended by the International Union of Pure and Applied Chemistry (IUPAC).

(B) The CAS registry number assigned by the Chemical Abstracts Registry Service. If a CAS registry number is not assigned or is not associated with a single fluorinated GHG, then report an identification number assigned by EPA's Substance Registry Services.

(C) Linear chemical formula.

* * * * *

(8) Each parameter for which a missing data procedure was used according to the procedures of an applicable subpart and the total number of hours in the year that a missing data procedure was used for each parameter. Parameters include not only reported data elements, but any data element required for monitoring and calculating emissions.

* * * * *

(d) * * *

(1) * * *

(i) Monitoring methods currently used by the facility that do not meet the specifications of a relevant subpart.

* * * * *

(h) * * *

(4) Notwithstanding paragraphs (h)(1) and (2) of this section, upon request by the owner or operator, the Administrator may provide reasonable

extensions of the 45-day period for submission of the revised report or information under paragraphs (h)(1) and (2) of this section. If the Administrator receives a request for extension of the 45-day period, by email to an address prescribed by the Administrator prior to the expiration of the 45-day period, the extension request is deemed to be automatically granted for 30 days. The Administrator may grant an additional extension beyond the automatic 30-day extension if the owner or operator submits a request for an additional extension and the request is received by the Administrator prior to the expiration of the automatic 30-day extension, provided the request demonstrates that it is not practicable to submit a revised report or information under paragraphs (h)(1) and (2) of this section within 75 days. The Administrator will approve the extension request if the request demonstrates to the Administrator's satisfaction that it is not practicable to collect and process the data needed to resolve potential reporting errors identified pursuant to paragraphs (h)(1) or (2) of this section within 75 days.

* * * * *

■ 4. Section 98.4 is amended by adding paragraph (i)(6) to read as follows:

§ 98.4 Authorization and responsibilities of the designated representative.

* * * * *

(i) * * *

(6) A list of the subparts that the owners and operators anticipate will be included in the annual GHG report. The list of potentially applicable subparts is required only for an initial certificate of representation that is submitted after [date of publication of the final rule in the **Federal Register**] (*i.e.*, for a facility or supplier that previously was not registered under this part). The list of subparts is not required for a revised COR.

* * * * *

■ 5. Section 98.6 is amended by revising the definition for “Gas collection system or landfill gas collection system”, adding a definition for “Reporting year” in alphabetical order, and revising the definition for “Ventilation hole or shaft” to read as follows:

§ 98.6 Definitions.

* * * * *

Gas collection system or landfill gas collection system means a system of pipes used to collect landfill gas from different locations in the landfill by means of a fan or similar mechanical draft equipment (forced convection) to a single location for treatment (thermal destruction) or use. Landfill gas

collection systems may also include knock-out or separator drums and/or a compressor. A single landfill may have multiple gas collection systems. Landfill gas collection systems do not include “passive” systems, whereby landfill gas flows naturally (without forced convection) to the surface of the landfill where an opening or pipe (vent) is installed to allow for the flow of landfill gas to the atmosphere or to a remote flare installed to combust landfill gas that is passively emitted from the vent. Landfill gas collection systems also do not include “active venting” systems, whereby landfill gas is conveyed to the surface of the landfill using forced convection, but the landfill gas is never recovered or thermally destroyed prior to release to the atmosphere.

* * * * *

Reporting year means the calendar year during which the GHG data are required to be collected for purposes of the annual GHG report. For example, reporting year 2014 is January 1, 2014 through December 31, 2014, and the annual report for reporting year 2014 is submitted to EPA on March 31, 2015.

* * * * *

Ventilation hole or shaft means a vent hole, shaft, mine portal, adit or other mine entrance or exits employed at an underground coal mine to serve as the outlet or conduit to move air from the ventilation system out of the mine.

* * * * *

■ 6. Section 98.7 is amended by revising paragraphs (e)(33) and (l)(1) to read as follows:

§ 98.7 What standardized methods are incorporated by reference into this part?

* * * * *

(e) * * *

(33) ASTM D6866–12 Standard Test Methods for Determining the Biobased Content of Solid, Liquid, and Gaseous Samples Using Radiocarbon Analysis, IBR approved for §§ 98.34(d), 98.34(e), and 98.36(e).

* * * * *

(l) * * *

(1) Coal Mine Safety and Health General Inspection Procedures Handbook, Handbook Number: PH13–V–1, February 2013, IBR approved for § 98.324(b).

* * * * *

■ 7. Table A–3 to Subpart A of Part 98 is amended by revising the entries “Source Categories Applicable in 2010 and Future Years” and “Additional Source Categories Applicable in 2011 and Future Years” to read as follows:

TABLE A-3 TO SUBPART A OF PART 98—SOURCE CATEGORY LIST FOR § 98.2(a)(1)

Source Categories ^a Applicable in Reporting Year 2010 and Future Years

* * * * *

Additional Source Categories ^a Applicable in Reporting Year 2011 and Future Years

* * * * *

^a Source categories are defined in each applicable subpart.

■ 8. Table A-4 to Subpart A of Part 98 is amended by revising the entries “Source Categories Applicable in 2010 and Future Years” and “Additional Source Categories Applicable in 2011 and Future Years” to read as follows:

TABLE A-4 TO SUBPART A—SOURCE CATEGORY LIST FOR § 98.2(a)(2)

Source Categories ^a Applicable in Reporting Year 2010 and Future Years

* * * * *

Additional Source Categories ^a Applicable in Reporting Year 2011 and Future Years

* * * * *

^a Source categories are defined in each applicable subpart.

■ 9. Table A-5 to Subpart A of Part 98 is amended by:

■ a. Revising the entry “Supplier Categories Applicable in 2010 and Future Years”;

■ b. Revising the entries associated with “Industrial greenhouse gas suppliers (subpart OO)”;

■ c. Revising the entry “Additional Supplier Categories Applicable in 2011 and Future Years.”

The revisions read as follows:

TABLE A-5 TO SUBPART A—SUPPLIER CATEGORY LIST FOR § 98.2(a)(4)

Supplier Categories ^a Applicable in Reporting Year 2010 and Future Years

* * * * *

Industrial greenhouse gas suppliers (subpart OO):

- (A) All producers of industrial greenhouse gases and fluorinated heat transfer fluids.
- (B) Importers of industrial greenhouse gases and fluorinated heat transfer fluids with annual bulk imports of N₂O, fluorinated GHG, fluorinated heat transfer fluids, and CO₂ that in combination are equivalent to 25,000 metric tons CO₂e or more.
- (C) Exporters of industrial greenhouse gases with annual bulk exports of N₂O, fluorinated GHG, fluorinated heat transfer fluids, and CO₂ that in combination are equivalent to 25,000 metric tons CO₂e or more.
- (D) Facilities that destroy 25,000 mtCO₂e or more of fluorinated GHGs or fluorinated heat transfer fluids annually.

* * * * *

Additional Supplier Categories Applicable ^a in Reporting Year 2011 and Future Years

* * * * *

^a Suppliers are defined in each applicable subpart.

Subpart C—General Stationary Fuel Combustion Sources

■ 10. Section 98.33 is amended by revising parameters “(HHV)_i,” “(Fuel)_i,” and “n” of Equation C-2b in paragraph (a)(2)(ii)(A) and revising paragraphs (a)(5)(i)(C), (a)(5)(ii)(C), and (a)(5)(iii)(C) to read as follows:

§ 98.33 Calculating GHG emissions.

* * * * *

(a) * * *

(2) * * *

(ii) * * *

(A) * * *

* * * * *

(HHV)_i = Measured high heat value of the fuel, for sample period “i” (which may be the arithmetic average of multiple determinations), or, if applicable, an appropriate substitute data value (mmBtu per mass or volume).

(Fuel)_i = Mass or volume of the fuel combusted during the sample period “i,” (e.g., monthly, quarterly, semi-annually, or by lot) from company records (express mass in short tons for solid fuel, volume in standard cubic feet (e.g., for gaseous fuel, and volume in gallons for liquid fuel).

n = Number of sample periods in the year.

* * * * *

(5) * * *

(i) * * *

(C) Divide the cumulative annual CO₂ mass emissions value by 1.1023 to convert it to metric tons.

* * * * *

(ii) * * *

(C) Divide the cumulative annual CO₂ mass emissions value by 1.1023 to convert it to metric tons.

(iii) * * *

(C) Divide the cumulative annual CO₂ mass emissions value by 1.1023 to convert it to metric tons.

* * * * *

■ 11. Section 98.34 is amended by revising paragraphs (d) and (e) to read as follows:

§ 98.34 Monitoring and QA/QC requirements.

* * * * *

(d) Except as otherwise provided in § 98.33(b)(1)(vi) and (vii), when municipal solid waste (MSW) is either the primary fuel combusted in a unit or the only fuel with a biogenic component combusted in the unit, determine the biogenic portion of the CO₂ emissions using ASTM D6866–12 Standard Test Methods for Determining the Biobased Content of Solid, Liquid, and Gaseous Samples Using Radiocarbon Analysis (incorporated by reference, see § 98.7) and ASTM D7459–08 Standard Practice for Collection of Integrated Samples for the Speciation of Biomass (Biogenic) and Fossil-Derived Carbon Dioxide Emitted from Stationary Emissions Sources (incorporated by reference, see § 98.7). Perform the ASTM D7459–08 sampling and the ASTM D6866–12 analysis at least once in every calendar quarter in which MSW is combusted in the unit. Collect each gas sample during normal unit operating conditions for at least 24 total (not necessarily consecutive) hours, or longer if the facility deems it necessary to obtain a representative sample. Notwithstanding this requirement, if the types of fuels combusted and their relative proportions are consistent throughout the year, the minimum required sampling time may be reduced to 8 hours if at least two 8-hour samples and one 24-hour sample are collected under normal operating conditions, and arithmetic average of the biogenic fraction of the flue gas from the 8-hour samples (expressed as a decimal) is within ±5 percent of the biogenic fraction from the 24-hour test. There must be no overlapping of the 8-hour and 24-hour test periods. Document the results of the demonstration in the unit's monitoring plan. If the types of fuels and their relative proportions are not consistent throughout the year, an optional sampling approach that facilities may wish to consider to obtain a more representative sample is to collect an integrated sample by extracting a small amount of flue gas (e.g., 1 to 5 cc) in each unit operating hour during the quarter. Separate the total annual CO₂ emissions into the biogenic and non-biogenic fractions using the average proportion of biogenic emissions of all samples analyzed during the reporting year. Express the results as a decimal fraction (e.g., 0.30, if 30 percent of the CO₂ is biogenic). When MSW is the primary fuel for multiple units at the facility, and the

units are fed from a common fuel source, testing at only one of the units is sufficient.

(e) For other units that combust combinations of biomass fuel(s) (or heterogeneous fuels that have a biomass component, e.g., tires) and fossil (or other non-biogenic) fuel(s), in any proportions, ASTM D6866–12 (incorporated by reference, see § 98.7) and ASTM D7459–08 (incorporated by reference, see § 98.7) may be used to determine the biogenic portion of the CO₂ emissions in every calendar quarter in which biomass and non-biogenic fuels are co-fired in the unit. Follow the procedures in paragraph (d) of this section. If the primary fuel for multiple units at the facility consists of tires, and the units are fed from a common fuel source, testing at only one of the units is sufficient.

* * * * *

■ 12. Section 98.36 is amended by adding paragraphs (c)(1)(iii) and (c)(3)(ii) and revising paragraphs (e)(2)(i), (e)(2)(x) introductory text, and (e)(2)(xi) to read as follows:

§ 98.36 Data reporting requirements.

* * * * *

(c) * * *

(1) * * *

(iii) Cumulative maximum rated heat input capacity of the group (mmBtu/hr). The cumulative maximum rated heat input capacity shall be determined as the sum of the maximum rated heat input capacities for all units in the group, excluding units less than 10 (mmBtu/hr).

* * * * *

(3) * * *

(ii) Cumulative maximum rated heat input capacity of the units served by the common pipe (mmBtu/hr). The cumulative maximum rated heat input capacity shall be determined as the sum of the maximum rated heat input capacities for all units served by the common pipe, excluding units less than 10 (mmBtu/hr).

* * * * *

(e) * * *

(2) * * *

(i) For the Tier 1 Calculation Methodology, report:

(A) The total quantity of each type of fuel combusted in the unit or group of aggregated units (as applicable) during the reporting year, in short tons for solid fuels, gallons for liquid fuels and standard cubic feet for gaseous fuels, or, if applicable, therms or mmBtu for natural gas.

(B) If applicable, the moisture content used to calculate the wood and wood residuals wet basis HHV for use in Equations C–1 and C–8, in percent.

* * * * *

(x) When ASTM methods D7459–08 (incorporated by reference, see § 98.7) and D6866–12 (incorporated by reference, see § 98.7) are used to determine the biogenic portion of the annual CO₂ emissions from MSW combustion, as described in § 98.34(d), report:

* * * * *

(xi) When ASTM methods D7459–08 (incorporated by reference, see § 98.7) and D6866–12 (incorporated by reference, see § 98.7) are used in accordance with § 98.34(e) to determine the biogenic portion of the annual CO₂ emissions from a unit that co-fires biogenic fuels (or partly-biogenic fuels, including tires if you are electing to report biogenic CO₂ emissions from tire combustion) and non-biogenic fuels, you shall report the results of each quarterly sample analysis, expressed as a decimal fraction (e.g., if the biogenic fraction of the CO₂ emissions is 30 percent, report 0.30).

* * * * *

■ 13. Section 98.37 is amended by revising paragraph (a) and adding paragraph (b)(37) to read as follows:

§ 98.37 Records that must be retained.

* * * * *

(a) The applicable records specified in §§ 98.34(f), 98.35(b), and 98.36(e).

* * * * *

(b) * * *

(37) Moisture content used to calculate the wood and wood residuals wet basis HHV (percent), if applicable (Equations C–1 and C–8).

■ 14. Table C–1 to Subpart C of Part 98 is amended by:

■ a. Removing the entries “Petroleum Coke” under “Petroleum products”, “Petroleum Coke” under “Other fuels—solid”, and “Propane Gas” under “Other fuels—gaseous”;

■ b. Removing the heading “Petroleum products” in the “Fuel type” column and adding in its place the heading “Petroleum products—liquid”; and

■ c. Adding heading “Petroleum products—solid” and its entry “Petroleum Coke”, and heading “Petroleum products—gaseous”, and its entry “Propane Gas” after the entry “Crude Oil”.

The revisions, and additions read as follows:

TABLE C–1 TO SUBPART C OF PART 98—DEFAULT CO₂ EMISSION FACTORS AND HIGH HEAT VALUES FOR VARIOUS TYPES OF FUEL

Fuel type			Default high heat value		Default CO ₂ emission factor	
*	*	*	*	*	*	*
Petroleum products—liquid			mmBtu/gallon		kg CO ₂ /mmBtu	
*	*	*	*	*	*	*
Petroleum products—solid			mmBtu/short ton		kg CO ₂ /mmBtu	
Petroleum Coke			30.00		102.41	
Petroleum products—gaseous			mmBtu/scf		kg CO ₂ /mmBtu	
Propane Gas			2.516×10^{-3}		61.46	
*	*	*	*	*	*	*

* * * * *

■ 15. Table C–2 to Subpart C of Part 98 is amended by:

■ a. Removing the entry “Petroleum (All fuel types in Table C–1)” and adding in

its place the entry “Petroleum Products (All fuel types in Table C–1)”;

■ b. Removing the entry “Municipal Solid Waste” and adding in its place the entry “Other Fuels—Solid”;

■ c. Removing the entry “Tires”.

The additions read as follows:

TABLE C–2 TO SUBPART C OF PART 98—DEFAULT CH₄ AND N₂O EMISSION FACTORS FOR VARIOUS TYPES OF FUEL

Fuel type			Default CH ₄ emission factor (kg CH ₄ /mmBtu)		Default N ₂ O emission factor (kg N ₂ O/mmBtu)	
*	*	*	*	*	*	*
Petroleum Products (All fuel types in Table C–1)			3.0×10^{-03}		6.0×10^{-04}	
*	*	*	*	*	*	*
Other Fuels—Solid			3.2×10^{-02}		4.2×10^{-03}	
*	*	*	*	*	*	*

* * * * *

Subpart E—Adipic Acid Production

■ 16. Section 98.53 is amended by revising paragraph (a)(2) to read as follows:

§ 98.53 Calculating GHG emissions.

(a) * * *

(2) Request Administrator approval for an alternative method of determining N₂O emissions according to paragraphs (a)(2)(i) through (iv) of this section.

(i) If you received Administrator approval for an alternative method of determining N₂O emissions in the previous reporting year and your methodology is unchanged, your alternative method is automatically approved for the next reporting year.

(ii) You must notify the EPA of your use of a previously approved alternative method in your annual report.

(iii) Otherwise, you must submit the request within 45 days following promulgation of this subpart or within the first 30 days of each subsequent reporting year.

(iv) If the Administrator does not approve your requested alternative method within 150 days of the end of the reporting year, you must determine the N₂O emissions for the current reporting period using the procedures specified in paragraph (a)(1) of this section.

* * * * *

■ 17. Section 98.56 is amended by revising paragraph (f) to read as follows:

§ 98.56 Data reporting requirements.

* * * * *

(f) Types of abatement technologies used and date of installation for each (if applicable).

* * * * *

Subpart F—Aluminum Production

■ 18. Section 98.65 is amended by revising paragraph (a) introductory text and Equation F–8 to read as follows:

§ 98.65 Procedures for estimating missing data.

* * * * *

(a) Where anode or paste consumption data are missing, CO₂ emissions can be estimated from aluminum production by using Equation F–9 of this section.

$$\text{ECO}_2 = \text{EF}_p \times \text{MP}_p + \text{EF}_s \times \text{MP}_s \quad (\text{Eq. F-9})$$

* * * *

■ 19. Section 98.66 is amended by adding paragraph (c)(2) and revising paragraph (c)(3) to read as follows:

§ 98.66 Data reporting requirements.

* * * *

(c) * * *

(2) Anode effect minutes per cell-day (AE-mins/cell-day), anode effect frequency (AE/cell-day), anode effect duration (minutes). (Or anode effect overvoltage factor ((kg CF₄/metric ton Al)/(mV/cell day)), potline overvoltage (mV/cell day), current efficiency (%).)

(3) Smelter-specific slope coefficients (or overvoltage emission factors) and the last date when the smelter-specific slope coefficients (or overvoltage emission factors) were measured.

* * * *

Subpart G—Ammonia Manufacturing

■ 20. Section 98.74 is amended by adding paragraph (f) to read as follows:

§ 98.74 Monitoring and QA/QC requirements.

* * * *

(f) You may use company records or an engineering estimate to determine the annual ammonia production and the annual methanol production.

* * * *

■ 21. Section 98.76 is amended by:

■ a. Revising paragraph (a) introductory text;

■ b. Adding paragraph (a)(3); and

■ c. Adding paragraphs (b)(2) and (7), and revising paragraph (b)(15).

The revisions and additions read as follows:

§ 98.76 Data reporting requirements.

* * * *

(a) If a CEMS is used to measure CO₂ emissions, then you must report the relevant information required under § 98.36 for the Tier 4 Calculation Methodology and the information in paragraphs (a)(1) through (3) of this section:

* * * *

(3) Annual ammonia production (metric tons, sum of all process units reported within subpart G of this part).

(b) * * *

(2) Annual quantity of each type of feedstock consumed for ammonia

manufacturing (scf of feedstock or gallons of feedstock or kg of feedstock).

* * * *

(7) Annual average carbon content of each type of feedstock consumed.

* * * *

(15) Annual methanol production for each process unit (metric tons), regardless of whether the methanol is subsequently destroyed, vented, or sold as product.

Subpart I—Electronics Manufacturing

■ 22. Section 98.93 is amended by:

■ a. Revising paragraph (a)(1) introductory text;

■ b. Revising parameters “N_{il}” and “F_{il}” of Equation I–12 in paragraph (d);

■ c. Revising paragraphs (i)(1)(ii) and (i)(1)(iv);

■ d. Revising Equation I–17 in paragraph (i)(3)(ii);

■ e. Revising parameter “d_{if}” of Equation I–19 in paragraph (i)(3)(ii);

■ f. Revising parameter “d_{kf}” of Equation I–20 in paragraph (i)(3)(iv);

■ g. Revising parameter “d_{if}” of Equation I–21 in paragraph (i)(3)(v);

■ h. Revising parameter “d_{kf}” of Equation I–22 in paragraph (i)(3)(vi); and

■ i. Revising paragraph (i)(3)(viii) and paragraph (i)(4) introductory text.

The revisions read as follows:

§ 98.93 Calculating GHG emissions.

(a) * * *

(1) If you manufacture semiconductors, you must adhere to the procedures in paragraphs (a)(1)(i) through (iii) of this section. You must calculate annual emissions of each input gas and of each by-product gas using Equations I–6 and I–7 of this subpart, respectively. If your fab uses less than 50 kg of a fluorinated GHG in one reporting year, you may calculate emissions as equal to your fab’s annual consumption for that specific gas as calculated in Equation I–11 of this subpart, plus any by-product emissions of that gas calculated under paragraph (a) of this section.

* * * *

(d) * * *

* * * *

N_{il} = Number of containers of size and type l used at the fab and returned to the gas distributor containing the standard heel of input gas i.

F_{il} = Full capacity of containers of size and type l containing input gas i (kg).

* * * *

(i) * * *

(1) * * *

(ii) You must use representative data from the previous reporting year to estimate the consumption of input gas i as calculated in Equation I–13 of this subpart and the fraction of input gas i and by-product gas k destroyed in abatement systems for each stack system as calculated by Equations I–24A and I–24B of this subpart. If you were not required to submit an annual report under subpart I for the previous reporting year and data from the previous reporting year are not available, you may estimate the consumption of input gas i and the fraction of input gas i destroyed in abatement systems based on representative operating data from a period of at least 30 days in the current reporting year. When calculating the consumption of input gas i using Equation I–13 of this subpart, the term “f_{ij}” is replaced with the ratio of the number of tools using input gas i that are vented to the stack system for which you are calculating the preliminary estimate to the total number of tools in the fab using input gas i, expressed as a decimal fraction. You may use this approach to determining f_{ij} only for this preliminary estimate.

* * * *

(iv) If you anticipate an increase or decrease in annual consumption or emissions of any fluorinated GHG, or the number of tools connected to abatement systems greater than 10 percent for the current reporting year compared to the previous reporting year, you must account for the anticipated change in your preliminary estimate. You may account for such a change using a quantifiable metric (*e.g.*, the ratio of the number of tools that are expected to be vented to the stack system in the current year as compared to the previous reporting year, ratio of the expected number of wafer starts in the current reporting year as compared to the previous reporting year), engineering judgment, or other industry standard practice.

* * * *

(3) * * *

(ii) * * *

$$E_{is} = MW_i * Q_s * \frac{1}{SV} * \frac{1}{10^3} * \sum_{m=1}^N \frac{X_{ism}}{10^9} * \Delta t_m \quad (\text{Eq. I-17})$$

(iii) *

d_{if} = Fraction of fluorinated GHG input gas i destroyed or removed in abatement systems connected to process tools in fab f, as calculated in Equation I-24A of this subpart (expressed as decimal fraction). If the stack system does not have abatement systems on the tools vented to the stack system, the value of this parameter is zero.

(iv) *

d_{kf} = Fraction of fluorinated GHG by-product gas k destroyed or removed in abatement systems connected to process tools

in fab f, as calculated in Equation I-24B of this subpart (expressed as decimal fraction).

(v) *

d_{if} = Fraction of fluorinated GHG input gas i destroyed or removed in abatement systems connected to process tools in fab f that are included in the stack testing option, as calculated in Equation I-24A of this subpart (expressed as decimal fraction).

(vi) *

dk_f = Fraction of fluorinated GHG by-product k destroyed or removed in abatement

systems connected to process tools in fab f that are included in the stack testing option, as calculated in Equation I-24B of this subpart (expressed as decimal fraction).

(viii) When using the stack testing option described in paragraph (i) of this section, you must calculate the weighted-average fraction of each fluorinated input gas i and each fluorinated by-product gas k destroyed or removed in abatement systems for each fab f, as applicable, by using Equation I-24A (for input gases) and Equation I-24B (for by-product gases) of this subpart.

$$d_{if} = \frac{\sum_j [C_{ijf} \times (1 - U_{ij})] \times DRE_{ij}}{\sum_j [C_{ijf} \times (1 - U_{ij})]} \quad (\text{Eq. I-24A})$$

$$d_{kf} = \frac{\sum_j (C_{ijf} \times B_{ijk} \times DRE_{jk})}{\sum_j (C_{ijf} \times B_{ijk})} \quad (\text{Eq. I-24B})$$

Where:

d_{if} = The average weighted fraction of fluorinated GHG input gas i destroyed or removed in abatement systems in fab f (expressed as a decimal fraction).

d_{kf} = The average weighted fraction of fluorinated GHG by-product gas k destroyed or removed in abatement systems in fab f (expressed as a decimal fraction).

C_{ijf} = The amount of fluorinated GHG input gas i consumed for process type j fed into abatement systems in fab f as calculated using Equation I-13 of this subpart (kg).

$(1 - U_{ij})$ = The default emission factor for input gas i used in process type j, from applicable Table I-3 to I-7 of this subpart.

B_{ijk} = The default by-product gas formation rate factor for by-product gas k from input gas i used in process type j, from applicable Table I-3 to I-7 of this subpart.

DRE_{ij} = Destruction or removal efficiency for fluorinated GHG input gas i in abatement systems connected to process tools where process type j is used (expressed as a decimal fraction) determined according to § 98.94(f).

DRE_{jk} = Destruction or removal efficiency for fluorinated GHG by-product gas k in abatement systems connected to process tools where input gas i is used in process type j (expressed as a decimal fraction) determined according to § 98.94(f).

f = fab.

i = Fluorinated GHG input gas.

j = Process type.

(4) *Method to calculate emissions from stack systems that are not tested.*

You must calculate annual fab-level emissions of each fluorinated GHG input gas and by-product gas for those fluorinated GHG listed in paragraphs (i)(4)(i) and (ii) of this section using default utilization and by-product formation rates as shown in Tables I-11, I-12, I-13, I-14, or I-15 of this subpart, as applicable, and by using Equations I-8, I-9, and I-13 of this subpart to fulfill the requirements of this paragraph, you must use, in place of the term C_{ij} in each equation, the total consumption of each fluorinated GHG meeting the criteria in paragraph (i)(4)(i) of this section or that is used in tools vented to the stack systems that meet the criteria in paragraph (i)(4)(ii) of this section. You must use, in place of the term a_{ij} , the fraction of fluorinated GHG meeting the criteria in paragraph (i)(4)(i) of this section used in tools with abatement systems or that is used in tools with abatement systems that are vented to the stack systems that meet the criteria in paragraph (i)(4)(ii) of this section. You also must use the results of Equations I-24A and I-24B of this subpart in place of the terms d_{ij} in Equation I-8 of this subpart and d_{jk} in Equation I-9 of this subpart, respectively, and use the results of

Equation I-23 of this subpart in place of the results of Equation I-15 of this subpart for the term UT_{ij} .

■ 23. Section 98.94 is amended by revising paragraph (f) introductory text and paragraph (j)(5)(ii) introductory text to read as follows:

§ 98.94 Monitoring and QA/QC requirements.

(f) If your fab employs abatement systems and you elect to reflect emission reductions due to these systems, or if your fab employs abatement systems designed for fluorinated GHG abatement and you elect to calculate fluorinated GHG emissions using the stack test method under § 98.93(i), you must comply with the requirements of paragraphs (f)(1) through (3) of this section. If you use an average of properly measured destruction or removal efficiencies for a gas and process sub-type or process type combination, as applicable, in your emission calculations under § 98.93(a), (b), and/or (i), you must also adhere to procedures in paragraph (f)(4) of this section.

(j) *

(5) * * *

(ii) *Criteria to test less frequently.*

After the first 3 years of annual testing, you may calculate the relative standard deviation of the emission factors for each fluorinated GHG included in the test and use that analysis to determine the frequency of any future testing. As an alternative, you may conduct all three tests in less than 3 calendar years for purposes of this paragraph (j)(5)(ii), but this does not relieve you of the obligation to conduct subsequent annual testing if you do not meet the criteria to test less frequently. If the criteria specified in paragraphs (j)(5)(ii)(A) and (B) of this section are met, you may use the arithmetic average of the three emission factors for each fluorinated GHG and fluorinated GHG by-product for the current year and the next 4 years with no further testing unless your fab operations are changed in a way that triggers the re-test criteria in paragraph (j)(8) of this section. In the fifth year following the last stack test included in the previous average, you must test each of the stack systems for which testing is required and repeat the relative standard deviation analysis using the results of the most recent three tests (i.e., the new test and the two previous tests conducted prior to the 4 year period). If the criteria specified in paragraphs (j)(5)(ii)(A) and (B) of this section are not met, you must use the emission factors developed from the most recent testing and continue annual testing. You may conduct more than one test in the same year, but each set of emissions testing for a stack system must be separated by a period of at least 2 months. You may repeat the relative standard deviation analysis using the most recent three tests, including those tests conducted prior to the 4 year

period, to determine if you are exempt from testing for the next 4 years.

* * * * *

- 24. Section 98.96 is amended by:
 - a. Revising paragraphs (c)(2), (d), and (e);
 - b. Revising parameters “dif” and “dkf” of Equation I–28 in paragraph (r)(2); and
 - c. Revising paragraph (y)(2)(iv).
- The revisions read as follows:

§ 98.96 Data reporting requirements.

* * * * *

(c) * * *

(2) When you use the procedures specified in § 98.93(a), each fluorinated GHG emitted from each process type or process sub-type as calculated in Equations I–8 and I–9 of this subpart, as applicable.

* * * * *

(d) The method of emissions calculation used in § 98.93 for each fab.

(e) Annual production in terms of substrate surface area (e.g., silicon, PV-cell, glass) for each fab, including specification of the substrate.

* * * * *

(r) * * *

(2) * * *

* * * * *

d_{if} = Fraction of fluorinated GHG i destroyed or removed in abatement systems connected to process tools in fab f , as calculated from Equation I–24A of this subpart, which you used to calculate total emissions according to the procedures in § 98.93(i)(3) (expressed as a decimal fraction).

* * * * *

d_{kf} = Fraction of fluorinated GHG by-product k destroyed or removed in abatement systems connected to process tools in fab f , as calculated from Equation I–24B of this subpart, which you used to calculate total emissions according to the procedures in § 98.93(i)(3) (expressed as a decimal fraction).

* * * * *

(y) * * *

(2) * * *

(iv) It must provide any utilization and by-product formation rates and/or destruction or removal efficiency data that have been collected in the previous 3 years that support the changes in semiconductor manufacturing processes described in the report. For any utilization, by-product formation rate, and/or destruction or removal efficiency data submitted, the report must describe, where available: methods used for the measurements, wafer size, film type being manufactured, substrate type, the linewidth or technology node, process type, process subtype for chamber clean processes, the input gases used and measured, the utilization rates measured, and the by-product formation rates measured.

* * * * *

- 25. Section 98.97 is amended by revising paragraphs (d)(5) introductory text and (d)(7) to read as follows:

§ 98.97 Records that must be retained.

* * * * *

(d) * * *

(5) In addition to the inventory specified in § 98.96(p), the information in paragraphs (d)(5)(i) through (iii) of this section:

* * * * *

(7) Records of all inputs and results of calculations made to determine the average weighted fraction of each gas destroyed or removed in the abatement systems for each stack system using Equations I–24A and I–24B of this subpart, if applicable. The inputs should include an indication of whether each value for destruction or removal efficiency is a default value or a measured site-specific value.

* * * * *

- 26. Table I–3 of subpart I is amended to read as follows:

TABLE I–3 TO SUBPART I OF PART 98—DEFAULT EMISSION FACTORS ($1-U_{ij}$) FOR GAS UTILIZATION RATES (U_{ij}) AND BY-PRODUCT FORMATION RATES (B_{ijk}) FOR SEMICONDUCTOR MANUFACTURING FOR 150MM AND 200 MM WAFER SIZES

Process type/sub-type	Process gas i												
	CF ₄	C ₂ F ₆	CHF ₃	CH ₂ F ₂	C ₂ HF ₅	CH ₃ F	C ₃ F ₈	C ₄ F ₈	NF ₃	SF ₆	C ₄ F ₆	C ₅ F ₈	C ₄ F ₈ O
ETCHING/WAFER CLEANING													
1–U _i	0.81	0.72	0.51	0.13	0.064	0.70	NA	0.14	0.19	0.55	0.17	0.072	NA
BCF ₄	NA	0.10	0.085	0.079	0.077	NA	NA	0.11	0.0040	0.13	0.13	NA	NA
BC ₂ F ₆	0.046	NA	0.030	0.025	0.024	0.0034	NA	0.037	0.025	0.11	0.11	0.014	NA
BC ₄ F ₆	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC ₄ F ₈	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC ₃ F ₈	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BCF ₈	0.0012	NA	0.0012	NA	NA	NA	NA	0.0086	NA	NA	NA	NA	NA
BCH ₃ F ₃	0.10	0.047	NA	0.049	NA	NA	NA	0.040	NA	0.0012	0.066	0.0039	NA
CHAMBER CLEANING													
In situ plasma cleaning:													
1–U _i	0.92	0.55	NA	NA	NA	NA	0.40	0.10	0.18	NA	NA	NA	0.14

TABLE I-3 TO SUBPART I OF PART 98—DEFAULT EMISSION FACTORS (1-U_{ij}) FOR GAS UTILIZATION RATES (U_{ij}) AND BY-PRODUCT FORMATION RATES (B_{ijk}) FOR SEMICONDUCTOR MANUFACTURING FOR 150MM AND 200 MM WAFER SIZES—Continued

Process type/sub-type	Process gas i												
	CF ₄	C ₂ F ₆	CHF ₃	CH ₂ F ₂	C ₂ HF ₅	CH ₃ F	C ₃ F ₈	C ₄ F ₈	NF ₃	SF ₆	C ₄ F ₆	C ₅ F ₈	C ₄ F ₈ O
BCF ₄	NA	0.19	NA	NA	NA	NA	0.20	0.11	0.050	NA	NA	NA	0.13
BCF ₆	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.045
BC ₃ F ₈	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Remote plasma cleaning:													
1-U _i	NA	NA	NA	NA	NA	NA	NA	NA	0.017	NA	NA	NA	NA
BCF ₄	NA	NA	NA	NA	NA	NA	NA	NA	0.015	NA	NA	NA	NA
BCF ₆	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC ₃ F ₈	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
In situ thermal cleaning:													
1-U _i	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BCF ₄	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC ₂ F ₆	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC ₃ F ₈	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes: NA = Not applicable; i.e., there are no applicable default emission factor measurements for this gas. This does not necessarily imply that a particular gas is not used in or emitted from a particular process sub-type or process type.

Subpart N—Glass Production

■ 27. Section 98.144 is amended by revising paragraphs (b), (c), and (d) to read as follows:

§ 98.144 Monitoring and QA/QC requirements.

* * * * *

(b) Unless you use the default value of 1.0, you must measure carbonate-based mineral mass fractions at least annually to verify the mass fraction data provided by the supplier of the raw material; such measurements shall be based on sampling and chemical analysis using consensus standards that specify X-ray fluorescence. For measurements made in years prior to the emissions reporting year 2014, you may also use ASTM D3682-01 (Reapproved 2006) Standard Test Method for Major and Minor Elements in Combustion Residues from Coal Utilization Processes (incorporated by reference, *see* § 98.7) or ASTM D6349-09 Standard Test Method for Determination of Major and Minor Elements in Coal, Coke, and Solid Residues from Combustion of Coal and Coke by Inductively Coupled Plasma—Atomic Emission Spectrometry (incorporated by reference, *see* § 98.7).

(c) Unless you use the default value of 1.0, you must determine the annual average mass fraction for the carbonate-based mineral in each carbonate-based raw material by calculating an arithmetic average of the monthly data obtained from raw material suppliers or sampling and chemical analysis.

(d) Unless you use the default value of 1.0, you must determine on an annual basis the calcination fraction for each carbonate consumed based on sampling

and chemical analysis using an industry consensus standard. If performed, this chemical analysis must be conducted using an x-ray fluorescence test or other enhanced testing method published by an industry consensus standards organization (*e.g.*, ASTM, ASME, API, etc.).

■ 28. Section 98.146 is amended by revising paragraphs (b)(5) introductory text and (b)(7) to read as follows:

§ 98.146 Data reporting requirements.

* * * * *

(b) * * *

(5) Results of all tests, if applicable, used to verify the carbonate-based mineral mass fraction for each carbonate-based raw material charged to a continuous glass melting furnace, as specified in paragraphs (b)(5)(i) through (iii) of this section.

* * * * *

(7) Method used to determine decimal fraction of calcination, unless you used the default value of 1.0.

* * * * *

■ 29. Section 98.147 is amended by revising paragraphs (b)(3), (b)(4) introductory text, (d)(2), and (d)(3) to read as follows:

§ 98.147 Records that must be retained.

* * * * *

(b) * * *

(3) Data on carbonate-based mineral mass fractions provided by the raw material supplier for all raw materials consumed annually and included in calculating process emissions in Equation N-1 of this subpart, if applicable.

(4) Results of all tests, if applicable, used to verify the carbonate-based

mineral mass fraction for each carbonate-based raw material charged to a continuous glass melting furnace, including the data specified in paragraphs (b)(4)(i) through (v) of this section.

* * * * *

(d) * * *

(2) Annual amount of each carbonate-based raw material charged to each continuous glass melting furnace (tons) (Equation N-1 of this subpart).

(3) Decimal fraction of calcination achieved for each carbonate-based raw material for each continuous glass melting furnace (specify the default value, if used, or the value determined according to § 98.144) (percentage, expressed as a decimal) (Equation N-1 of this subpart).

Subpart O—HCFC-22 Production and HFC-23 Destruction

■ 30. Section 98.156 is amended by revising paragraphs (a) introductory text and (d) to read as follows:

§ 98.156 Data reporting requirements.

(a) In addition to the information required by § 98.3(c), the HCFC-22 production facility shall report the following information for each HCFC-22 production process:

* * * * *

(d) If the HFC-23 concentration measured pursuant to § 98.154(l) is greater than that measured during the performance test that is the basis for the destruction efficiency (DE), the facility shall report the method used to calculate the revised destruction efficiency, specifying whether

§ 98.154(l)(1) or (2) has been used for the calculation.

* * * * *

Subpart P—Hydrogen Production

■ 31. Section 98.163 is amended by revising parameter “CO₂” of Equation P–3 in paragraph (b)(3) to read as follows:

§ 98.163 Calculating GHG emissions.

* * * * *

(b) * * *

(3) * * *

* * * * *

CO₂ = Annual CO₂ emissions from fuel and feedstock consumption (metric tons/yr).

* * * * *

■ 32. Section 98.164 is amended by revising paragraph (b)(1) to read as follows:

§ 98.164 Monitoring and QA/QC requirements.

* * * * *

(b) * * *

(1) Calibrate all oil and gas flow meters that are used to measure liquid and gaseous fuel and feedstock volumes (except for gas billing meters) according to the monitoring and QA/QC requirements for the Tier 3 methodology in § 98.34(b)(1). Perform oil tank drop measurements (if used to quantify liquid fuel or feedstock consumption) according to § 98.34(b)(2). Calibrate all solids weighing equipment according to the procedures in § 98.3(i).

* * * * *

■ 33. Section 98.166 is amended by revising paragraphs (b)(4), (d), and (e) to read as follows:

§ 98.166 Data reporting requirements.

* * * * *

(b) * * *

(4) Annual quantity of ammonia intentionally produced as a desired product, if applicable (metric tons).

* * * * *

(d) Annual quantity of carbon other than CO₂ collected and transferred off site in either gas, liquid, or solid forms (kg carbon), excluding methanol.

(e) Annual quantity of methanol intentionally produced as a desired product, if applicable, (metric tons) for each process unit.

Subpart Q—Iron and Steel Production

■ 34. Section 98.173 is amended by revising Equation Q–5 in paragraph (b)(1)(v) to read as follows:

§ 98.173 Calculating GHG emissions.

* * * * *

(b) * * *

(1) * * *

(v) * * *

$$CO_2 = \frac{44}{12} * \left[\frac{(Iron) * (C_{Iron}) + (Scrap) * (C_{Scrap}) + (Flux) * (C_{Flux}) + /Electrode * (C_{Electrode}) + (Carbon)}{* (C_{Carbon}) - (Steel) * (C_{Steel}) + (F_g) * (C_{gf}) * \frac{MW}{MVC} * 0.001 - (Slag) * (C_{Slag}) - (R) * (C_R)} \right] \quad (\text{Eq. Q-5})$$

* * * * *

■ 35. Section 98.176 is amended by revising Equation Q–10 in paragraph (e)(6)(ii), Equation Q–11 in paragraph (e)(6)(iii), Equation Q–12 in paragraph

(e)(6)(iv), and the parameter “n” of Equation Q–12 in paragraph (e)(6)(iv) to read as follows:

§ 98.176 Data reporting requirements.

* * * * *

(e) * * *

(6) * * *

(ii) * * *

$$NFI = \sum_{i=1}^n \left(O + Iron + Scrap + Flux + Carbon + Coal + Feed + Electrode + Steel_{in} + Ore + Other \right) \quad (\text{Eq. Q-10})$$

* * * * *

(iii) * * *

$$Products = \sum_{i=1}^n (P + R + Steel_{out} + Slag + Coke + Sinter + Iron + NM) \quad (\text{Eq. Q-11})$$

* * * * *

(iv) * * *

$$CF_{avg} = \frac{\sum_{i=1}^n (F_{g,i} * \frac{MW_i}{MVC} * C_{gf,i} * 0.001 + F_{l,i} * C_{lf,i} * 0.001 + F_{s,i} * C_{sf})}{Fuel} \quad (\text{Eq. Q-12})$$

* * * * *

n = Number of gaseous, liquid, and solid fuel inputs to each process unit as used in Equation Q–9 of this subpart.

* * * * *

Subpart S—Lime Manufacturing

■ 36. Section 98.196 is amended by revising paragraph (b) introductory text

and adding paragraphs (b)(19) through (21) to read as follows:

§ 98.196 Data reporting requirements.

* * * * *

(b) If a CEMS is not used to measure CO₂ emissions, then you must report the information listed in paragraphs (b)(1) through (21) of this section.

* * * * *

(19) Annual emission factors for each lime product type produced.

(20) Annual emission factors for each calcined byproduct/waste by lime type that is sold.

(21) Annual average results of chemical composition analysis of each type of lime product produced and calcined byproduct/waste sold.

Subpart U—Miscellaneous Uses of Carbonate

■ 37. Section 98.216 is amended by revising paragraph (e) introductory text to read as follows:

§ 98.216 Data reporting requirements.

* * * * *

(e) If you followed the calculation method of § 98.213(a), you must report the information in paragraphs (e)(1) through (3) of this section.

* * * * *

Subpart V—Nitric Acid Production

■ 38. Section 98.220 is revised to read as follows:

§ 98.220 Definition of source category.

A nitric acid production facility uses one or more trains to produce nitric acid. A nitric acid train produces nitric acid through the catalytic oxidation of ammonia.

■ 39. Section 98.223 is amended by revising paragraph (a)(2) to read as follows:

§ 98.223 Calculating GHG emissions.

(a) * * *

(2) Request Administrator approval for an alternative method of determining N₂O emissions according to paragraphs (a)(2)(i) through (iv) of this section.

(i) If you received Administrator approval for an alternative method of determining N₂O emissions in the previous reporting year and your methodology is unchanged, your alternative method is automatically approved for the next reporting year.

(ii) You must notify the EPA of your use of a previously approved alternative method in your annual report.

(iii) Otherwise, if you have not received Administrator approval for an alternative method of determining N₂O emissions in a prior reporting year or your methodology has changed, you must submit the request within the first 30 days of each subsequent reporting year.

(iv) If the Administrator does not approve your requested alternative method within 150 days of the end of the reporting year, you must determine the N₂O emissions for the current reporting period using the procedures specified in paragraph (a)(1) of this section.

* * * * *

■ 40. Section 98.226 is amended by revising paragraph (h) to read as follows:

§ 98.226 Data reporting requirements.

* * * * *

(h) Abatement technologies used (if applicable) and date of installation of abatement technology.

* * * * *

Subpart X—Petrochemical Production

■ 41. Section 98.240 is amended by revising paragraph (a) to read as follows:

§ 98.240 Definition of the source category.

(a) The petrochemical production source category consists of processes as described in paragraphs (a)(1) through (3) of this section.

(1) The petrochemical production source category consists of all processes that produce acrylonitrile, carbon black, ethylene, ethylene dichloride, ethylene oxide, or methanol, except as specified in paragraphs (b) through (g) of this section.

(2) The petrochemical production source category includes processes that produce the petrochemical as an intermediate in the on-site production of other chemicals as well as processes that produce the petrochemical as an end product for sale or shipment off site.

(3) When ethylene dichloride and vinyl chloride monomer are produced in an integrated process, you may consider the entire integrated process to be the petrochemical process for the purpose of complying with the mass balance option in § 98.243(c). If you elect to consider the integrated process to be the petrochemical process, then the mass balance must be performed over the entire integrated process.

* * * * *

■ 42. Section 98.243 is amended by revising paragraphs (c)(3), (c)(4) introductory text, and (c)(4)(i) to read as follows:

§ 98.243 Calculating GHG emissions.

* * * * *

(c) * * *

(3) Collect a sample of each feedstock and product at least once per month and determine the molecular weight (for gaseous materials when the quantity is measured in scf) and carbon content of each sample according to the procedures of § 98.244(b)(4). If multiple valid molecular weight or carbon content measurements are made during the monthly measurement period, average them arithmetically. However, if a particular liquid or solid feedstock is delivered in lots, and if multiple deliveries of the same feedstock are received from the same supply source in a given calendar month, only one representative sample is required. Alternatively, you may use the results of analyses conducted by a feedstock

supplier, or product customer, provided the sampling and analysis is conducted at least once per month using any of the procedures specified in § 98.244(b)(4).

(4) If you determine that the monthly average concentration of a specific compound in a feedstock or product is greater than 99.5 percent by volume or mass, then as an alternative to the sampling and analysis specified in paragraph (c)(3) of this section, you may determine molecular weight and carbon content in accordance with paragraphs (c)(4)(i) through (iii) of this section.

(i) Calculate the molecular weight and carbon content assuming 100 percent of that feedstock or product is the specific compound.

* * * * *

■ 43. Section 98.246 is amended by:

■ a. Revising paragraphs (a)(5), (a)(6)(ii), and (a)(6)(iii);

■ b. Adding paragraphs (a)(14) and (15); and

■ c. Revising paragraphs (b)(2), (3), and (8).

The revisions and additions read as follows:

§ 98.246 Data reporting requirements.

* * * * *

(a) * * *

(5) Annual quantity of each type of petrochemical produced from each process unit (metric tons). If your petrochemical process is an integrated ethylene dichloride and vinyl chloride monomer process, report either the measured ethylene dichloride production (metric tons) or both the measured quantity of vinyl chloride monomer production (metric tons) and an estimate of the ethylene dichloride production (metric tons).

(6) * * *

(ii) Description of each type of measurement device (*e.g.*, flow meter, weighing device) used to determine volume or mass in accordance with § 98.244(b)(1) through (3).

(iii) Identification of each method (*i.e.*, method number, title, or other description) used to determine volume or mass in accordance with § 98.244(b)(1) through (3).

* * * * *

(14) Annual average of the measurements of the carbon content of each feedstock and product.

(i) For feedstocks and products that are gaseous or solid, report this quantity in kg carbon per kg of feedstock or product.

(ii) For liquid feedstocks and products, report this quantity either in units of kg carbon per kg of feedstock or production, or kg C per gallon of feedstock or product.

(15) For each gaseous feedstock and product, the annual average of the measurements of molecular weight in units of kg per kg mole.

(b) * * *

(2) For CEMS used on stacks that include emissions from stationary combustion units that burn any amount of off-gas from the petrochemical process, report the relevant information required under § 98.36(c)(2) and (e)(2)(vi) for the Tier 4 calculation methodology. Section 98.36(c)(2)(ii), (ix) and (x) does not apply for the purposes of this subpart.

(3) For CEMS used on stacks that do not include emissions from stationary combustion units, report the information required under § 98.36(b)(6), (b)(7), (b)(9)(i), (b)(9)(ii) and (e)(2)(vi).

* * * * *

(8) Annual quantity of each type of petrochemical produced from each process unit (metric tons). If your petrochemical process is an integrated ethylene dichloride and vinyl chloride monomer process, report either the measured ethylene dichloride production (metric tons) or both the measured quantity of vinyl chloride monomer production (metric tons) and an estimate of the ethylene dichloride product (metric tons).

* * * * *

■ 44. Section 98.247 is amended by revising paragraph (a) to read as follows:

§ 98.247 Records that must be retained.

* * * * *

(a) If you comply with the CEMS measurement methodology in § 98.243(b), then you must retain under this subpart the records required for the Tier 4 Calculation Methodology in § 98.37, records of the procedures used to develop estimates of the fraction of total emissions attributable to petrochemical processing and combustion of petrochemical process off-gas as required in § 98.246(b), and records of any annual average HHV calculations.

* * * * *

■ 45. Section 98.248 is amended by revising the definition for “Product” to read as follows:

§ 98.248 Definitions.

* * * * *

Product means each of the following carbon-containing outputs from a process: the petrochemical, recovered byproducts, and liquid organic wastes that are not combusted onsite. Product does not include process vent emissions, fugitive emissions, or wastewater.

Subpart Y—Petroleum Refineries

■ 46. Section 98.253 is amended by:

■ a. Revising paragraphs (b) introductory text, (b)(1)(iii)(B), (h)(1) introductory text, and (h)(2) introductory text;

■ b. Revising parameters “0.98” of Equations Y–16a and Y–16b and “0.02” of Equation Y–17 in paragraph (h)(2); and

■ c. Revising paragraph (i) and paragraph (j) introductory text.

The revisions read as follows:

§ 98.253 Calculating GHG emissions.

* * * * *

(b) For flares, calculate GHG emissions according to the requirements in paragraphs (b)(1) through (3) of this section. All gas discharged through the flare stack must be considered for the flare GHG emissions calculations with the exception of gas used for the flare pilots, which may be excluded.

(1) * * *

(iii) * * *

(B) For periods of normal operation, use the average higher heating value measured for the fuel gas used as flare sweep or purge gas for the higher heating value of the flare gas. If higher heating value of the fuel gas is not measured, the higher heating value of the flare gas under normal operations may be estimated from historic data or engineering calculations.

* * * * *

(h) * * *

(1) For uncontrolled asphalt blowing operations or asphalt blowing operations controlled either by vapor scrubbing or by another non-combustion

control device, calculate CO₂ and CH₄ emissions using Equations Y–14 and Y–15 of this section, respectively.

* * * * *

(2) For asphalt blowing operations controlled by either a thermal oxidizer, a flare, or other vapor combustion control device, calculate CO₂ using either Equation Y–16a or Equation Y–16b of this section and calculate CH₄ emissions using Equation Y–17 of this section, provided these emissions are not already included in the flare emissions calculated in paragraph (b) of this section or in the stationary combustion unit emissions required under subpart C of this part (General Stationary Fuel Combustion Sources).

* * * * *

(Eq. Y–16a) * * *

* * * * *

0.98 = Assumed combustion efficiency of the control device.

* * * * *

(Eq. Y–16b) * * *

* * * * *

0.98 = Assumed combustion efficiency of the control device.

* * * * *

(Eq. Y–17) * * *

* * * * *

0.02 = Fraction of methane uncombusted in the controlled stream based on assumed 98% combustion efficiency.

* * * * *

(i) For each delayed coking unit, calculate the CH₄ emissions from delayed decoking operations (venting, draining, deheading, and coke-cutting) according to the requirements in paragraphs (i)(1) through (5) of this section.

(1) Determine the typical dry mass of coke produced per cycle from company records of the mass of coke produced by the delayed coking unit. Alternatively, you may estimate the typical dry mass of coke produced per cycle based on the delayed coking unit vessel (coke drum) dimensions and typical coke drum outage at the end of the coking cycle using Equation Y–18a of this section.

$$M_{\text{coke}} = \rho_{\text{bulk}} \times \left(\left(H_{\text{drum}} - H_{\text{outage}} \right) \times \frac{\pi \times D^2}{4} \right) \quad (\text{Eq. Y-18a})$$

Where:

M_{coke} = Typical dry mass of coke in the delayed coking unit vessel at the end of the coking cycle (metric tons/cycle).

ρ_{bulk} = Bulk coke bed density (metric tons per cubic feet; mt/ft³). Use the default value of 0.0191 mt/ft³.

H_{drum} = Internal height of delayed coking unit vessel (feet).

H_{outage} = Typical distance from the top of the delayed coking unit vessel to the top of the coke bed (i.e., coke drum outage) at the end of the coking cycle (feet) from

company records or engineering estimates.
D = Diameter of delayed coking unit vessel (feet).

(2) Determine the typical mass of water in the delayed coking unit vessel at the end of the cooling cycle prior to

venting to the atmosphere using Equation Y-18b of this section.

$$M_{\text{water}} = \rho_{\text{water}} \times \left((H_{\text{water}}) \times \frac{\pi \times D^2}{4} - \frac{M_{\text{coke}}}{\rho_{\text{particle}}} \right) \quad (\text{Eq. Y-18b})$$

Where:

M_{water} = Mass of water in the delayed coking unit vessel at the end of the cooling cycle just prior to atmospheric venting (metric tons/cycle).

ρ_{water} = Density of water at average temperature of the delayed coking unit vessel at the end of the cooling cycle just prior to atmospheric venting (metric tons per cubic foot; mt/ft³). Use the default value of 0.0270 mt/ft³.

H_{water} = Typical distance from the bottom of the coking unit vessel to the top of the

water level at the end of the cooling cycle just prior to atmospheric venting (feet) from company records or engineering estimates.

M_{coke} = Typical dry mass of coke in the delayed coking unit vessel at the end of the coking cycle (metric tons/cycle) as determined in paragraph (i)(1) of this section.

ρ_{particle} = Particle density of coke (metric tons per cubic foot; mt/ft³). Use the default value of 0.0382 mt/ft³.

D = Diameter of delayed coking unit vessel (feet).

(3) Determine the average temperature of the delayed coking unit vessel when the drum is first vented to the atmosphere using either Equation Y-18c or Y-18d of this section, as appropriate, based on the measurement system available.

$$T_{\text{initial}} = (T_{\text{overhead}} + T_{\text{bottom}}) / 2 \quad (\text{Eq. Y-18c})$$

Where:

T_{initial} = Average temperature of the delayed coking unit vessel when the drum is first vented to the atmosphere (°F).

T_{overhead} = Temperature of the delayed coking unit vessel overhead line measured as

near the coking unit vessel as practical just prior to venting to the atmosphere. If the temperature of the delayed coking unit vessel overhead line is less than 216 °F, use $T_{\text{overhead}} = 216$ °F.

T_{bottom} = Temperature of the delayed coking unit vessel near the bottom of the coke bed. If the temperature at the bottom of the coke bed is less than 212 °F, use $T_{\text{bottom}} = 212$ °F.

$$T_{\text{initial}} = -0.039 P_{\text{overhead}}^2 + 3.13 P_{\text{overhead}} + 220 \quad (\text{Eq. Y-18d})$$

Where:

T_{initial} = Average temperature of the delayed coking unit vessel when the drum is first vented to the atmosphere (°F).

P_{overhead} = Pressure of the delayed coking unit vessel just prior to opening the atmospheric vent (pounds per square inch gauge, psig).

(4) Determine the typical mass of steam generated and released per decoking cycle using Equation Y-18e of this section.

$$M_{\text{steam}} = \frac{(1 - f_{\text{ConvLoss}}) \times (M_{\text{water}} \times C_{p,\text{water}} + M_{\text{coke}} \times C_{p,\text{coke}}) \times (T_{\text{initial}} - T_{\text{final}})}{\Delta H_{\text{vap}}} \quad (\text{Eq. Y-18e})$$

Where:

M_{steam} = Mass of steam generated and released per decoking cycle (metric tons/cycle).

f_{ConvLoss} = fraction of total heat loss that is due to convective heat loss from the sides of the coke vessel (unitless). Use the default value of 0.10.

M_{water} = Mass of water in the delayed coking unit vessel at the end of the cooling cycle just prior to atmospheric venting (metric tons/cycle).

$C_{p,\text{water}}$ = Heat capacity of water (British thermal units per metric ton per degree

Fahrenheit; Btu/mt-°F). Use the default value of 2,205 Btu/mt-°F.

M_{coke} = Typical dry mass of coke in the delayed coking unit vessel at the end of the coking cycle (metric tons/cycle) as determined in paragraph (i)(1) of this section.

$C_{p,\text{coke}}$ = Heat capacity of petroleum coke (Btu/mt-°F). Use the default value of 584 Btu/mt-°F.

T_{initial} = Average temperature of the delayed coking unit vessel when the drum is first vented to the atmosphere (°F) as

determined in paragraph (i)(3) of this section.

T_{final} = Temperature of the delayed coking unit vessel when steam generation stops (°F). Use the default value of 212 °F.

ΔH_{vap} = Heat of vaporization of water (British thermal units per metric ton; Btu/mt). Use the default value of 2,116,000 Btu/mt.

(5) Calculate the CH₄ emissions from decoking operations at each delayed coking unit using Equation Y-18f of this section.

$$\text{CH}_4 = M_{\text{steam}} \times \text{EmF}_{\text{DCU}} \times N \times 0.001 \quad (\text{Eq. Y-18f})$$

Where:

CH₄ = Annual methane emissions from the delayed coking unit decoking operations (metric ton/year).

M_{steam} = Mass of steam generated and released per decoking cycle (metric tons/cycle) as determined in paragraph (i)(3) of this section.

EmF_{DCU} = Methane emission factor for delayed coking unit (kilograms CH₄ per metric ton of steam; kg CH₄/mt steam) from unit-specific measurement data. If you do not have unit-specific measurement data, use the default value of 7.9 kg CH₄/metric ton steam.

N = Cumulative number of decoking cycles (or coke-cutting cycles) for all delayed coking unit vessels associated with the delayed coking unit during the year.

0.001 = Conversion factor (metric ton/kg).

(j) For each process vent not covered in paragraphs (a) through (i) of this section that can reasonably be expected to contain greater than 2 percent by volume CO₂ or greater than 0.5 percent by volume of CH₄ or greater than 0.01 percent by volume (100 parts per million) of N₂O, calculate GHG emissions using Equation Y-19 of this section. You must also use Equation Y-19 of this section to calculate CH₄ emissions for catalytic reforming unit depressurization and purge vents when methane is used as the purge gas, and CO₂ and/or CH₄ emissions, as applicable, if you elected this method as an alternative to the methods in paragraphs (f), (h), or (k) of this section.

■ 47. Section 98.254 is amended by revising paragraph (j), redesignating paragraph (k) as paragraph (l), and adding new paragraph (k) to read as follows:

§ 98.254 Monitoring and QA/QC requirements.

* * * * *

(j) Determine the quantity of petroleum process streams using company records. These quantities include the quantity of coke produced per cycle, asphalt blown, quantity of crude oil plus the quantity of intermediate products received from off site, and the quantity of unstabilized crude oil received at the facility.

(k) Determine temperature or pressure of delayed coking unit vessel using process instrumentation operated, maintained, and calibrated according to the manufacturer's instructions.

* * * * *

■ 48. Section 98.256 is amended by revising paragraphs (e)(3) and (6), (h)(5)(ii)(A), and (k) to read as follows:

§ 98.256 Data reporting requirements.

* * * * *

(e) * * *

(3) A description of the flare service (general facility flare, unit flare, emergency only or back-up flare) and an indication of whether or not the flare is serviced by a flare gas recovery system.

* * * * *

(6) If you use Equation Y-1a in § 98.253, an indication of whether daily or weekly measurement periods are used, annual average carbon content of the flare gas (in kg carbon per kg flare gas), and, either the annual volume of flare gas combusted (in scf/year) and the annual average molecular weight (in kg/kg-mole), or, the annual mass of flare gas combusted (in kg/yr).

* * * * *

(h) * * *

(5) * * *

(ii) * * *

(A) The annual volume of recycled tail gas (in scf/year).

* * * * *

(k) For each delayed coking unit, the owner or operator shall report:

(1) The unit ID number (if applicable).

(2) Maximum rated throughput of the unit, in bbl/stream day.

(3) Annual quantity of coke produced in the unit during the reporting year, in metric tons.

(4) The calculated annual CH₄ emissions (in metric tons of CH₄) for the delayed coking unit.

(5) The total number of delayed coking vessels (or coke drums) associated with the delayed coking unit.

(6) The basis for the typical dry mass of coke in the delayed coking unit vessel at the end of the coking cycle (mass measurements from company records or calculated using Equation Y-18a of this subpart).

(7) An indication of the method used to estimate the average temperature of the coke bed, T_{initial} (overhead temperature and Equation Y-18c of this subpart or pressure correlation and Equation Y-18d of this subpart).

(8) An indication of whether a unit-specific methane emissions factor or the default methane emission factor was used for the delayed coking unit.

* * * * *

■ 49. Section 98.257 is amended by:

■ a. Revising paragraphs (b) introductory text and (b)(41) through (45);

■ b. Removing paragraph (b)(46)

■ c. Redesignating paragraphs (b)(47) through (67) as paragraphs (b)(53) through (73);

■ d. Adding new paragraphs (b)(46) through (52); and

■ e. Revising newly redesignated paragraph (b)(65).

The revisions and additions read as follows:

§ 98.257 Records that must be retained.

* * * * *

(b) *Verification software records.* You must keep a record of the file generated by the verification software specified in § 98.5(b) for the applicable data specified in paragraphs (b)(1) through (73) of this section. Retention of this file satisfies the recordkeeping requirement for the data in paragraphs (b)(1) through (73) of this section.

* * * * *

(41) Typical dry mass of coke in the delayed coking unit vessel at the end of the coking cycle (metric tons/cycle) from company records or calculated using Equation Y-18a of this subpart (Equations Y-18a, Y-18b and Y-18e in § 98.253) for each delayed coking unit.

(42) Internal height of delayed coking unit vessel (feet) (Equation Y-18a in § 98.253) for each delayed coking unit.

(43) Typical distance from the top of the delayed coking unit vessel to the top of the coke bed (*i.e.*, coke drum outage) at the end of the coking cycle (feet) from company records or engineering estimates (Equation Y-18a in § 98.253) for each delayed coking unit.

(44) Diameter of delayed coking unit vessel (feet) (Equations Y-18a and Y-18b in § 98.253) for each delayed coking unit.

(45) Mass of water in the delayed coking unit vessel at the end of the cooling cycle prior to atmospheric venting (metric ton/cycle) (Equations Y-18b and Y-18e in § 98.253) for each delayed coking unit.

(46) Typical distance from the bottom of the coking unit vessel to the top of the water level at the end of the cooling cycle just prior to atmospheric venting (feet) from company records or engineering estimates (Equation Y-18b in § 98.253) for each delayed coking unit.

(47) Mass of steam generated and released per decoking cycle (metric tons/cycle) (Equations Y-18e and Y-18f in § 98.253) for each delayed coking unit.

(48) Average temperature of the delayed coking unit vessel when the drum is first vented to the atmosphere (°F) (Equations Y-18c, Y-18d, and Y-18e in § 98.253) for each delayed coking unit.

(49) Temperature of the delayed coking unit vessel overhead line measured as near the coking unit vessel as practical just prior to venting the atmosphere (Equation Y-18c in § 98.253) for each delayed coking unit.

(50) Pressure of the delayed coking unit vessel just prior to opening the atmospheric vent (psig) (Equation Y-18d in § 98.253) for each delayed coking unit.

(51) Methane emission factor for delayed coking unit (kilograms CH₄ per metric ton of steam; kg CH₄/mt steam) (Equation Y–18f in § 98.253) for each delayed coking unit.

(52) Cumulative number of decoking cycles (or coke-cutting cycles) for all delayed coking unit vessels associated with the delayed coking unit during the year (Equation Y–18f in § 98.253) for each delayed coking unit.

* * * * *

(65) Specify whether the calculated or default loading factor L specified in § 98.253(n) is entered, for each liquid loaded to each vessel (methods specified in § 98.253(n)).

* * * * *

Subpart Z—Phosphoric Acid Production

■ 50. Section 98.266 is amended by revising paragraph (f)(3) to read as follows:

§ 98.266 Data reporting requirements.

* * * * *

(f) * * *

(3) Annual phosphoric acid production capacity (tons) for each wet-process phosphoric acid process line.

* * * * *

Subpart AA—Pulp and Paper Manufacturing

■ 51. Section 98.273 is amended by revising paragraphs (a)(1), (b)(1), and (c)(1) to read as follows:

§ 98.273 Calculating GHG emissions.

(a) * * *

(1) Calculate fossil fuel-based CO₂ emissions from direct measurement of fossil fuels consumed and default emissions factors according to the Tier 1 methodology for stationary combustion sources in § 98.33(a)(1). Tiers 2 or 3 from § 98.33(a)(2) or (3) may be used to calculate fossil fuel-based CO₂ emissions if the respective monitoring and QA/QC requirements described in § 98.34 are met.

* * * * *

(b) * * *

(1) Calculate fossil CO₂ emissions from fossil fuels from direct measurement of fossil fuels consumed and default emissions factors according to the Tier 1 Calculation Methodology for stationary combustion sources in § 98.33(a)(1). Tiers 2 or 3 from § 98.33(a)(2) or (3) may be used to calculate fossil fuel-based CO₂ emissions if the respective monitoring and QA/QC requirements described in § 98.34 are met.

* * * * *

(c) * * *

(1) Calculate CO₂ emissions from fossil fuel from direct measurement of fossil fuels consumed and default HHV

and default emissions factors, according to the Tier 1 Calculation Methodology for stationary combustion sources in § 98.33(a)(1). Tiers 2 or 3 from § 98.33(a)(2) or (3) may be used to calculate fossil fuel-based CO₂ emissions if the respective monitoring and QA/QC requirements described in § 98.34 are met.

* * * * *

■ 52. Section 98.275 is amended by revising paragraph (b) to read as follows:

§ 98.275 Procedures for estimating missing data.

* * * * *

(b) For missing measurements of the mass of spent liquor solids or spent pulping liquor flow rates, use the lesser value of either the maximum mass or fuel flow rate for the combustion unit, or the maximum mass or flow rate that the fuel meter can measure. Alternatively, records of the daily spent liquor solids firing rate obtained to comply with § 63.866(c)(1) of this chapter may be used, adjusting for the duration of the missing measurements, as appropriate.

* * * * *

■ 53. Table AA–2 to Subpart AA of Part 98 is amended by:

■ a. Revising the column headings for “Kraft lime kilns” and “Kraft calciners”;

■ b. Revising the entry for “Petroleum coke”; and

■ c. Revising the footnotes.

The revisions read as follows:

TABLE AA–2 TO SUBPART AA OF PART 98—KRAFT LIME KILN AND CALCINER EMISSIONS FACTORS FOR CH₄ AND N₂O

Fuel	Fossil fuel-based emissions factors (kg/mmBtu HHV)			
	Kraft rotary lime kilns		Kraft calciners ^a	
	CH ₄	N ₂ O	CH ₄	N ₂ O
* * * * *				
Petroleum coke	0.0027	0	^b NA	^b NA
* * * * *				

^a Includes, for example, fluidized bed calciners at kraft mills.

^b Emission factors for kraft calciners are not available.

Subpart CC—Soda Ash Manufacturing

■ 54. Section 98.294 is amended by revising paragraph (a)(2) to read as follows:

§ 98.294 Monitoring and QA/QC requirements.

* * * * *

(a) * * *

(2) Measure the mass of trona input to each soda ash manufacturing line on a

monthly basis using belt scales or methods used for accounting purposes.

* * * * *

■ 55. Section 98.296 is amended by revising paragraph (a)(1) and adding paragraph (b)(5) to read as follows:

§ 98.296 Data reporting requirements.

* * * * *

(a) * * *

(1) Annual consumption of trona or liquid alkaline feedstock at the facility level (tons).

* * * * *

(b) * * *

(5) Annual consumption of trona or liquid alkaline feedstock at the facility level (tons).

* * * * *

Subpart DD—Electrical Transmission and Distribution Equipment Use

■ 56. Section 98.306 is amended by revising paragraphs (a)(2) and (3) and adding paragraphs (a)(4), (a)(5), (m), and (n) to read as follows:

§ 98.306 Data reporting requirements.

(a) * * *
(2) New hermetically sealed-pressure switchgear during the year.

(3) New SF₆- or PFC-insulated equipment other than hermetically sealed-pressure switchgear during the year.

(4) Retired hermetically sealed-pressure switchgear during the year.

(5) Retired SF₆- or PFC-insulated equipment other than hermetically sealed-pressure switchgear during the year.

(m) State(s) or territory in which the facility lies and total miles of transmission and distribution lines located within each state or territory.

(n) The following numbers of pieces of equipment:

(1) New hermetically sealed-pressure switchgear during the year.

(2) New SF₆- or PFC-insulated equipment other than hermetically sealed-pressure switchgear during the year.

(3) Retired hermetically sealed-pressure switchgear during the year.

(4) Retired SF₆- or PFC-insulated equipment other than hermetically sealed-pressure switchgear during the year.

Subpart FF—Underground Coal Mines

■ 57. Section 98.323 is amended by:

■ a. Revising parameter “n” of Equation FF-1 in paragraph (a);

■ b. Revising paragraph (a)(1) introductory text and paragraph (a)(2);

■ c. Revising parameter “CH₄D” and “n” of Equation FF-3 in paragraph (b); and

■ d. Revising paragraph (b)(1) and paragraph (b)(2) introductory text.

The revisions and additions read as follows:

§ 98.323 Calculating GHG emissions.

(a) * * *
n = The number of days in the quarter where active ventilation of mining operations is taking place at the monitoring point. To obtain the number of days in the quarter, divide the total number of hours in the quarter where active ventilation is taking place by 24 hours per day.

(1) The quarterly periods are:

(2) Values of V, C, T, P, and, if applicable, (f_{H2O}), must be based on measurements taken at least once each quarter with no fewer than 6 weeks between measurements. If measurements are taken more frequently than once per quarter, then use the average value for all measurements taken that quarter. If continuous measurements are taken, then use the average value over the time period of continuous monitoring.

CH_{4D} = Weekly CH₄ liberated from the monitoring point (metric tons CH₄).

n = The number of days in the week that the system is operational at that measurement point. To obtain the number of days in the week, divide the total number of hours that the system is operational by 24 hours per day.

(1) Values for V, C, T, P, and, if applicable, (f_{H2O}), must be based on measurements taken at least once each calendar week with at least 3 days between measurements. If measurements are taken more frequently than once per week, then use the average value for all measurements taken that week. If continuous measurements are taken, then use the average values over the time period of continuous monitoring when the continuous monitoring equipment is properly functioning.

(2) Quarterly total CH₄ liberated from degasification systems for the mine must be determined as the sum of CH₄ liberated determined at each of the monitoring points in the mine, summed over the number of weeks in the quarter, as follows:

■ 58. Section 98.324 is amended by:

■ a. Revising paragraph (b)(1);

■ b. Removing and reserving paragraph (b)(2); and

■ c. Revising paragraph (h).

The revisions read as follows:

§ 98.324 Monitoring and QA/QC requirements.

(1) Collect quarterly or more frequent grab samples (with no fewer than 6 weeks between measurements) for methane concentration and make quarterly measurements of flow rate, temperature, pressure, and, if applicable, moisture content. The sampling and measurements must be made at the same locations as Mine Safety and Health Administration (MSHA) inspection samples are taken,

and should be taken when the mine is operating under normal conditions. You must follow MSHA sampling procedures as set forth in the MSHA Handbook entitled, Coal Mine Safety and Health General Inspection Procedures Handbook Number: PH13-V-1, February 2013 (incorporated by reference, see § 98.7). You must record the date of sampling, flow, temperature, pressure, and moisture measurements, the methane concentration (percent), the bottle number of samples collected, and the location of the measurement or collection.

(h) The owner or operator shall document the procedures used to ensure the accuracy of gas flow rate, gas composition, temperature, pressure, and moisture content measurements. These procedures include, but are not limited to, calibration of flow meters, and other measurement devices. The estimated accuracy of measurements and the technical basis for the estimated accuracy shall be recorded.

■ 59. Section 98.326 is amended by revising paragraphs (f) through (i), (o), (r)(2) and (r)(3), and adding paragraph (u) to read as follows:

§ 98.326 Data reporting requirements.

(f) Quarterly volumetric flow rate for each ventilation monitoring point and units of measure (scfm or acfm), date and location of each measurement, and method of measurement (quarterly sampling or continuous monitoring), used in Equation FF-1 of this subpart. Specify whether the volumetric flow rate measurement at each ventilation monitoring point is on dry basis or wet basis; or, if a flow meter is used, indicate whether or not the flow meter automatically corrects for moisture content.

(g) Quarterly CH₄ concentration for each ventilation monitoring point, dates and locations of each measurement, and method of measurement (sampling or continuous monitoring). Specify whether the CH₄ concentration measurement at each ventilation monitoring point is on dry basis or wet basis.

(h) Weekly volumetric flow rate used to calculate CH₄ liberated from degasification systems and units of measure (acfm or scfm), and method of measurement (sampling or continuous monitoring), used in Equation FF-3 of this subpart. Specify whether the volumetric flow rate measurement at each degasification monitoring point is on dry basis or wet basis; or, if a flow meter is used, indicate whether or not

the flow meter automatically corrects for moisture content.

(i) Quarterly CH₄ concentration (%) used to calculate CH₄ liberated from degasification systems, and if the data is based on CEMS or weekly sampling. Specify whether the CH₄ concentration measurement at each degasification monitoring point is on dry basis or wet basis.

* * * * *

(o) Temperature (°R), pressure (atm), moisture content (if applicable), and the moisture correction factor (if applicable) used in Equations FF-1 and FF-3 of this subpart; and the gaseous organic concentration correction factor, if Equation FF-9 of this subpart was required. Moisture content is required to be reported only if CH₄ concentration is measured on a wet basis and volumetric flow is measured on a dry basis, if CH₄ concentration is measured on a dry basis and volumetric flow is measured on a wet basis; or, if a flow meter is used, the flow meter does not automatically correct for moisture content.

* * * * *

(r) * * *

(2) Start date and close date of each well, shaft, and vent hole. If the well, shaft, or vent hole is operating through the end of the reporting year, December 31st of the reporting year shall be the close date for purposes of reporting.

(3) Number of days the well, shaft, or vent hole was in operation during the reporting year. To obtain the number of days in the reporting year, divide the total number of hours that the system was in operation by 24 hours per day.

* * * * *

(u) Annual coal production in short tons for the reporting year.

Subpart HH—Municipal Solid Waste Landfills

■ 60. Section 98.346 is amended by revising paragraphs (f), (i)(5), and (i)(7), and adding paragraph (i)(13) to read as follows:

§ 98.346 Data reporting requirements.

* * * * *

(f) The surface area of the landfill containing waste (in square meters), identification of the type(s) of cover material used (as either organic cover,

clay cover, sand cover, or other soil mixtures).

* * * * *

(i) * * *

(5) An indication of whether destruction occurs at the landfill facility, off-site, or both. If destruction occurs at the landfill facility, also report for each measurement location:

(i) The number of destruction devices associated with the measurement location.

(ii) The annual operating hours of the gas collection system associated with the measurement location,

(iii) For each destruction device associated with the measurement location, report:

(A) The destruction efficiency (decimal).

(B) The annual operating hours where active gas flow was sent to the destruction device.

* * * * *

(7) A description of the gas collection system (manufacturer, capacity, and number of wells), the surface area (square meters) and estimated waste depth (meters) for each area specified in Table HH-3 to this subpart, the estimated gas collection system efficiency for landfills with this gas collection system and an indication of whether the gas collection efficiency was determined on an area-weighted average basis (Option 1) or a volume-weighted average basis (Option 2), and an indication of whether passive vents and/or passive flares (vents or flares that are not considered part of the gas collection system as defined in § 98.6) are present at the landfill.

* * * * *

(13) Methane emissions for the landfill (*i.e.*, the subpart HH total methane emissions). Choose the methane emissions from either Equation HH-6 of this subpart or Equation HH-8 of this subpart that best represents the emissions from the landfill. If the quantity of recovered CH₄ from Equation HH-4 of this subpart is used as the value of G_{CH4} in Equation HH-6 of this subpart, use the methane emissions calculated using Equation HH-8 of this subpart as the methane emissions for the landfill.

■ 61. Section 98.348 is amended by adding definitions for “Active venting,” “Alternative final cover,” “Intermediate or interim cover,” and “Passive vent” in alphabetical order to read as follows:

§ 98.348 Definitions.

* * * * *

Active venting means a pipe or a system of pipes used with a fan or similar mechanical draft equipment (forced convection) used to actively assist the flow of landfill gas to the surface of the landfill where the landfill gas is discharged either directly to the atmosphere or to a non-combustion control device (such as a carbon absorber) and then to the atmosphere.

Alternative final cover means materials, other than soil, used at a landfill that meets final closure regulations of the competent federal, state, or local authority. Alternative final covers may include, but are not limited to, evapotranspiration covers, capillary barrier covers, asphalt covers, or concrete covers. The state, local, or other agency responsible for permitting the landfill determines whether an alternative final cover meets the applicable regulatory requirements and has been shown to adequately protect human health and the environment.

* * * * *

Intermediate or interim cover means the placement of material over waste in a landfill for a period of time prior to the disposal of additional waste and/or final closure as defined by state regulation, permit, guidance or written plan, or state accepted best management practice.

* * * * *

Passive vent means a pipe or a system of pipes that allows landfill gas to flow naturally, without the use of a fan or similar mechanical draft equipment, to the surface of the landfill where an opening or pipe (vent) allows for the free flow of landfill gas to the atmosphere or to a passive vent flare without diffusion through the top layer of surface soil.

* * * * *

■ 62. Table HH-3 to Subpart HH of Part 98 is amended by:

■ a. Revising the entry for “A5”;

■ b. Removing the entry “Area weighted average collection efficiency for landfills”; and

■ c. Adding heading “Weighted average collection efficiency for landfills” and entries for “Option 1” and “Option 2” after the entry for “A5”.

The revision and additions read as follows:

TABLE HH-3 TO SUBPART HH OF PART 98—LANDFILL GAS COLLECTION EFFICIENCIES

Description	Landfill gas collection efficiency
-------------	------------------------------------

TABLE HH-3 TO SUBPART HH OF PART 98—LANDFILL GAS COLLECTION EFFICIENCIES—Continued

Description	Landfill gas collection efficiency
A5: Area with a final soil cover of 3 feet or thicker of clay or alternative final cover (as approved by the relevant agency) and/or geomembrane cover system and active gas collection.	CE5: 95%.
Weighted average collection efficiency for landfills:	
Option 1: Area weighted average collection efficiency for landfills	$CE_{ave1} = (A2*CE2 + A3*CE3 + A4*CE4 + A5*CE5)/(A2 + A3 + A4 + A5).$
Option 2: Volume weighted average collection efficiency for landfills, where D2, D3, D4 and D5 are the waste depths for areas A2, A3, A4 and A5, respectively, as described in this table..	$CE_{ave1} = (A2*D2*CE2 + A3*D3*CE3 + A4*D4*CE4 + A5*D5*CE5)/(A2*D2 + A3*D3 + A4*D4 + A5*D5).$

■ 63. Table HH-4 to Subpart HH of Part 98 is amended by:
 ■ a. Revising the entries “C2” through “C7”;

■ b. Redesignating footnote “a” as footnote “b”; and
 ■ c. Adding new footnote “a”.

The revisions and additions read as follows:

TABLE HH-4 TO SUBPART HH OF PART 98—LANDFILL METHANE OXIDATION FRACTIONS

Under these conditions:	Use this landfill methane oxidation fraction:
C2: For landfills that have an alternative final cover (approved by the relevant agency) and/or a geomembrane (synthetic) cover with less than 12 inches of cover soil for greater than 50% of the landfill area containing waste	0.0
C3: For landfills that do not meet the conditions in C2 above and for which you elect not to determine methane flux, or for landfills with passive vents/passive flares that service greater than 50% of the landfill area containing waste, or for landfills with only passive vents/passive flares or active venting	0.10
C4: For landfills that do not meet the conditions in C2 above and that do not have intermediate or interim cover ^a for greater than 50% of the landfill area containing waste	0.10
C5: For landfills that have intermediate or interim cover ^a for greater than 50% of the landfill area containing waste and for which the methane flux rate ^b is less than 10 grams per square meter per day (g/m ² /d)	0.35
C6: For landfills that have intermediate or interim cover ^a for greater than 50% of the landfill area containing waste and for which the methane flux rate ^b is 10 to 70 g/m ² /d	0.25
C7: For landfills that have intermediate or interim cover ^a for greater than 50% of the landfill area containing waste and for which the methane flux rate ^b is greater than 70 g/m ² /d	0.10

^a Where a landfill is located in a state that does not have an intermediate or interim cover requirement, the landfill must have soil cover of 12 inches or greater in order to use an oxidation fraction of 0.25 or 0.35.

^b Methane flux rate (in grams per square meter per day; g/m²/d) is the mass flow rate of methane per unit area at the bottom of the surface soil prior to any oxidation and is calculated as follows:

For Equation HH-5 of this subpart, or for Equation TT-6 of subpart TT of this part,

$$MF = K \times G_{CH_4} / S_{Area}$$

For Equation HH-6 of this subpart,

$$MF = K \times \left(G_{CH_4} - \sum_{n=1}^N R_n \right) / S_{Area}$$

For Equations HH-7 of this subpart,

$$MF = K \times \left(\frac{1}{CE} \sum_{n=1}^N \left[\frac{R_n}{f_{R_{OC,n}}} \right] \right) / S_{Area}$$

For Equation HH-8 of this subpart,

$$MF = K \times \left(\frac{1}{CE} \left[\sum_{n=1}^N \left[\frac{R_n}{f_{R_{OC,n}}} \right] \right] - \sum_{n=1}^N R_n \right) / S_{Area}$$

Where:

MF = Methane flux rate from the landfill in the reporting year (grams per square meter per day, g/m²/d).

K = unit conversion factor = 10⁶/365 (g/metric ton per days/year) or 10⁶/366 for a leap year.

S_{Area} = The surface area of the landfill containing waste at the beginning of the reporting year (square meters, m²).

G_{CH₄} = Modeled methane generation rate in reporting year from Equation HH-1 of this subpart or Equation TT-1 of subpart TT of this part, as applicable, except for application with Equation HH-6 of this subpart (metric tons CH₄). For application with Equation HH-6 of this subpart, the greater of the modeled methane generation rate in reporting year from Equation HH-1 of this subpart or Equation TT-1 of this part, as applicable, and the quantity of recovered CH₄ from Equation HH-4 of this subpart (metric tons CH₄).

CE = Collection efficiency estimated at landfill, taking into account system coverage, operation, and cover system materials from Table HH-3 of this subpart. If area by soil cover type information is not available, use default value of 0.75 (CE4 in table HH-3 of this subpart) for all areas under active influence of the collection system.

N = Number of landfill gas measurement locations (associated with a destruction device or gas sent off-site). If a single monitoring location is used to monitor volumetric flow and CH₄ concentration of the recovered gas sent to one or multiple destruction devices, then N = 1.

R_n = Quantity of recovered CH₄ from Equation HH-4 of this subpart for the nth measurement location (metric tons).

f_{Rec,n} = Fraction of hours the recovery system associated with the nth measurement location was operating (annual operating hours/8760 hours per year or annual operating hours/8784 hours per year for a leap year).

Subpart II—Industrial Wastewater Treatment

■ 64. Section 98.356 is amended by revising paragraph (a) introductory text and adding paragraph (b)(6) to read as follows:

§ 98.356 Data reporting requirements.

* * * * *

(a) Identify the anaerobic processes used in the industrial wastewater treatment system to treat industrial wastewater and industrial wastewater treatment sludge, provide a unique identifier for each anaerobic process, indicate the average depth in meters of each anaerobic lagoon, and indicate whether biogas generated by each anaerobic process is recovered. Provide a description or diagram of the industrial wastewater treatment system, identifying the processes used, indicating how the processes are related

to each other, and providing a unique identifier for each anaerobic process. Each anaerobic processes must be identified as one of the following:

* * * * *

(b) * * *

(6) If the facility performs an ethanol production processing operation as defined in § 98.358, you must indicate if the facility uses a wet milling process or a dry milling process.

* * * * *

■ 65. Section 98.358 is amended by adding definitions for “Dry milling,” “Wet milling,” and “Weekly average” in alphabetical order to read as follows:

§ 98.358 Definitions.

* * * * *

Dry milling means the process in which shelled corn is milled by dry process, without an initial steeping step.

* * * * *

Wet milling means the process in which shelled corn is steeped in a dilute solution of sulfurous acid (sulfur dioxide dissolved in water) prior to further processing.

Weekly average means the sum of all values measured in a calendar week divided by the number of measurements.

Subpart LL—Suppliers of Coal-Based Liquid Fuels

■ 66. Section 98.382 is revised to read as follows:

§ 98.382 GHGs to report.

Suppliers of coal-based liquid fuels must report the CO₂ emissions that would result from the complete combustion or oxidation of fossil-fuel products (besides coal or crude oil) produced, used as feedstock, imported, or exported during the calendar year. Additionally, producers must report CO₂ emissions that would result from the complete combustion or oxidation of any biomass co-processed with fossil fuel-based feedstocks.

■ 67. Section 98.383 is revised to read as follows:

§ 98.383 Calculating GHG emissions.

Suppliers of coal-based liquid fuels must follow the calculation methods of § 98.393 as if they applied to the appropriate coal-to-liquid product supplier (*i.e.*, calculation methods for refiners apply to producers of coal-to-liquid products and calculation methods for importers and exporters of petroleum products apply to importers and exporters of coal-to-liquid products).

(a) In calculation methods in § 98.393 for petroleum products or petroleum-

based products, suppliers of coal-to-liquid products shall also include coal-to-liquid products.

(b) In calculation methods in § 98.393 for non-crude feedstocks or non-crude petroleum feedstocks, producers of coal-to-liquid products shall also include coal-to-liquid products that enter the facility to be further processed or otherwise used on site.

(c) In calculation methods in § 98.393 for petroleum feedstocks, suppliers of coal-to-liquid products shall also include coal and coal-to-liquid products that enter the facility to be further processed or otherwise used on site.

■ 68. Section 98.384 is revised to read as follows:

§ 98.384 Monitoring and QA/QC requirements.

Suppliers of coal-based liquid fuels must follow the monitoring and QA/QC requirements in § 98.394 as if they applied to the appropriate coal-to-liquid product supplier. Any monitoring and QA/QC requirement for petroleum products in § 98.394 also applies to coal-to-liquid products.

■ 69. Section 98.385 is revised to read as follows:

§ 98.385 Procedures for estimating missing data.

Suppliers of coal-based liquid fuels must follow the procedures for estimating missing data in § 98.395 as if they applied to the appropriate coal-to-liquid product supplier. Any procedure for estimating missing data for petroleum products in § 98.395 also applies to coal-to-liquid products.

■ 70. Section 98.386 is amended by:

■ a. Removing and reserving paragraphs (a)(4) and (8);

■ b. Revising paragraphs (a)(9) introductory text, (a)(10) introductory text, and (a)(11) introductory text;

■ c. Removing and reserving paragraph (a)(15);

■ d. Revising paragraph (a)(20);

■ e. Removing and reserving paragraph (b)(4);

■ f. Revising paragraphs (b)(5) introductory text and (b)(6) introductory text;

■ g. Removing and reserving paragraph (c)(4); and

■ h. Revising paragraphs (c)(5) introductory text and (c)(6) introductory text.

The revisions read as follows:

§ 98.386 Data reporting requirements.

* * * * *

(a) * * *

(9) For every feedstock reported in paragraph (a)(2) of this section for which Calculation Method 2 in

§ 98.393(f)(2) was used to determine an emissions factor, report:

* * * * *

(10) For every non-solid feedstock reported in paragraph (a)(2) of this section for which Calculation Method 2 in § 98.393(f)(2) was used to determine an emissions factor, report:

* * * * *

(11) For every product reported in paragraph (a)(6) of this section for which Calculation Method 2 in § 98.393(f)(2) was used to determine an emissions factor, report:

* * * * *

(20) Annual quantity of bulk NGLs in metric tons or barrels received for processing during the reporting year. Report only quantities of bulk NGLs not reported in paragraph (a)(2) of this section.

(b) * * *

(5) For each product reported in paragraph (b)(2) of this section for which Calculation Method 2 in § 98.393(f)(2) was used to determine an emissions factor, report:

* * * * *

(6) For each non-solid product reported in paragraph (b)(2) of this section for which Calculation Method 2 in § 98.393(f)(2) was used to determine an emissions factor, report:

* * * * *

(c) * * *

(5) For each product reported in paragraph (c)(2) of this section for which Calculation Method 2 in § 98.393(f)(2) was used to determine an emissions factor, report:

* * * * *

(6) For each non-solid product reported in paragraph (c)(2) of this section for which Calculation Method 2 in § 98.393(f)(2) was used to determine an emissions factor, report:

* * * * *

■ 71. Section 98.387 is revised to read as follows:

§ 98.387 Records that must be retained.

Suppliers of coal-based liquid fuels must retain records according to the requirements in § 98.397 as if they applied to the appropriate coal-to-liquid product supplier (e.g., retaining copies of all reports submitted to EPA under § 98.386 and records to support information contained in those reports). Any records for petroleum products that are required to be retained in § 98.397 are also required for coal-to-liquid products.

Subpart MM—Suppliers of Petroleum Products

§ 98.395 [Amended]

■ 72. Section 98.395 is amended by removing paragraph (c).

Subpart NN—Suppliers of Natural Gas and Natural Gas Liquids

■ 73. Section 98.401 is revised to read as follows:

§ 98.401 Reporting threshold.

Any supplier of natural gas and natural gas liquids that meets the requirements of § 98.2(a)(4) must report GHG emissions associated with the products they supply.

■ 74. Section 98.403 is amended by:

■ a. Revising paragraph (a)(1) introductory text;

■ b. Removing parameter “CO₂” of Equation NN–1 in paragraph (a)(1) and adding in its place a parameter for “CO_{2i}”;

■ c. Revising paragraph (a)(2) introductory text;

■ d. Removing parameter “CO₂” of Equation NN–2 in paragraph (a)(2) and adding in its place a parameter for “CO_{2i}”;

■ e. Removing parameter “CO₂” of Equation NN–3 in paragraph (b)(1) and adding in its place a parameter for “CO_{2j}”;

■ f. Revising parameter “Fuel” of Equation NN–3 in paragraph (b)(1);

■ g. Removing parameter “CO₂” of Equation NN–4 in paragraph (b)(2)(ii) and adding in its place a parameter for “CO_{2k}”;

■ g. Removing parameter “CO₂” of Equation NN–5a in paragraph (b)(3)(i) and adding in its place a parameter for “CO_{2i}”;

■ h. Revising parameter “EF” of Equation NN–5a in paragraph (b)(3)(i);

■ i. Removing parameter “CO₂” of Equation NN–5b in paragraph (b)(3)(ii) and adding in its place a parameter for “CO_{2n}”;

■ j. Revising the parameters of Equation NN–6 in paragraph (b)(4);

■ k. Removing parameter “CO₂” of Equation NN–7 in paragraph (c)(1)(ii) and adding in its place a parameter for “CO_{2m}”;

■ l. Revising parameter “Fuel_g” of Equation NN–7 in paragraph (c)(1)(ii); and

■ m. Revising the parameters of Equation NN–8 in paragraph (c)(2).

The revisions read as follows:

§ 98.403 Calculating GHG emissions.

(a) * * *

(1) *Calculation Methodology 1.* NGL fractionators shall estimate CO₂ emissions that would result from the

complete combustion or oxidation of the product(s) supplied using Equation NN–1 of this section. The annual volume of each NGL product supplied (Fuel_h) shall include any amount of that NGL supplied in a mixture or blend of two or more products listed in Tables NN–1 and NN–2 of this subpart. The annual volume of each NGL product supplied shall exclude any amount of that NGL contained in bulk NGLs exiting the facility not fractionated by the reporter (e.g., y-grade, o-grade, and other bulk NGLs). LDCs shall estimate CO₂ emissions that would result from the complete combustion or oxidation of the natural gas received at the city gate (including natural gas that is transported by, but not owned by, the reporter) using Equation NN–1 of this section. For each product, use the default value for higher heating value and CO₂ emission factor in Table NN–1 of this subpart. Alternatively, for each product, a reporter-specific higher heating value and CO₂ emission factor may be used, in place of one or both defaults provided they are developed using methods outlined in § 98.404. For each product, you must use the same volume unit throughout the equation.

* * * * *

CO_{2i} = Annual CO₂ mass emissions that would result from the combustion or oxidation of each product “h” for redelivery to all recipients (metric tons).

* * * * *

(2) *Calculation Methodology 2.* NGL fractionators shall estimate CO₂ emissions that would result from the complete combustion or oxidation of the product(s) supplied using Equation NN–2 of this section. The annual volume of each NGL product supplied (Fuel_h) shall include any amount of that NGL supplied in a mixture or blend of two or more products listed in Tables NN–1 and NN–2 of this subpart. The annual volume of each NGL product supplied shall exclude any amount of that NGL contained in bulk NGLs exiting the facility not fractionated by the reporter (e.g., y-grade, o-grade, and other bulk NGLs). LDCs shall estimate CO₂ emissions that would result from the complete combustion or oxidation of the natural gas received at the city gate (including natural gas that is transported by, but not owned by, the reporter) using Equation NN–2 of this section. For each product, use the default CO₂ emission factor found in Table NN–2 of this subpart.

Alternatively, for each product, a reporter-specific CO₂ emission factor may be used in place of the default factor, provided it is developed using methods outlined in § 98.404. For each

product, you must use the same volume unit throughout the equation.

* * * * *

CO_{2i} = Annual CO₂ mass emissions that would result from the combustion or oxidation of each product “h” (metric tons)

* * * * *

(b) * * *

(1) * * *

* * * * *

CO_{2j} = Annual CO₂ mass emissions that would result from the combustion or oxidation of natural gas for redelivery to transmission pipelines or other LDCs (metric tons).

Fuel = Total annual volume of natural gas supplied to downstream gas transmission pipelines and other local distribution companies (Mscf per year).

* * * * *

(2) * * *

(ii) * * *

* * * * *

CO_{2k} = Annual CO₂ mass emissions that would result from the combustion or oxidation of natural gas delivered to each large end-user k, as defined in paragraph (b)(2)(i) of this section (metric tons).

* * * * *

(3) * * *

(i) * * *

* * * * *

CO_{2l} = Annual CO₂ mass emissions that would result from the combustion or oxidation of the net change in natural gas stored on system by the LDC within the reporting year (metric tons).

* * * * *

EF = CO₂ emission factor for natural gas placed into/removed from storage (MT CO₂/M_{scf}).

(ii) * * *

* * * * *

CO_{2n} = Annual CO₂ mass emissions that would result from the combustion or oxidation of natural gas received that bypassed the city gate and is not otherwise accounted for by Equation NN-1 or NN-2 of this section (metric tons).

* * * * *

(4) * * *

* * * * *

CO₂ = Annual CO₂ mass emissions that would result from the combustion or oxidation of natural gas delivered to LDC end-users not covered in paragraph (b)(2) of this section (metric tons).

CO_{2i} = Annual CO₂ mass emissions that would result from the combustion or oxidation of natural gas received at the city gate as calculated in paragraph (a)(1) or (2) of this section (metric tons).

CO_{2j} = Annual CO₂ mass emissions that would result from the combustion or oxidation of natural gas delivered to transmission pipelines or other LDCs as calculated in paragraph (b)(1) of this section (metric tons).

CO_{2k} = Annual CO₂ mass emissions that would result from the combustion or

oxidation of natural gas delivered to each large end-user as calculated in paragraph (b)(2) of this section (metric tons).

CO_{2i} = Annual CO₂ mass emissions that would result from the combustion or oxidation of the net change in natural gas stored by the LDC within the reported year as calculated in paragraph (b)(3)(i) of this section (metric tons).

CO_{2n} = Annual CO₂ mass emissions that would result from the combustion or oxidation of natural gas that was received by the LDC directly from sources bypassing the city gate, and is not otherwise accounted for in Equation NN-1 or NN-2 of this section, as calculated in paragraph (b)(3)(ii) of this section (metric tons).

(c) * * *

(1) * * *

(ii) * * *

* * * * *

CO_{2m} = Annual CO₂ mass emissions that would result from the combustion or oxidation of each fractionated NGL product “g” received from other fractionators (metric tons).

Fuel_g = Total annual volume of each NGL product “g” received from other fractionators (bbls).

* * * * *

(2) * * *

* * * * *

CO₂ = Annual CO₂ mass emissions that would result from the combustion or oxidation of fractionated NGLs delivered to customers or on behalf of customers less the quantity received from other fractionators (metric tons).

CO_{2i} = Annual CO₂ mass emissions that would result from the combustion or oxidation of fractionated NGLs delivered to all customers or on behalf of customers as calculated in paragraph (a)(1) or (2) of this section (metric tons).

CO_{2m} = Annual CO₂ mass emissions that would result from the combustion or oxidation of fractionated NGLs received from other fractionators and calculated in paragraph (c)(1) of this section (metric tons).

■ 75. Section 98.404 is amended by revising paragraph (a)(1) introductory text and paragraphs (a)(3) and (4) to read as follows:

§ 98.404 Monitoring and QA/QC requirements.

(a) * * *

(1) NGL fractionators and LDCs shall determine the quantity of NGLs and natural gas using methods in common use in the industry for billing purposes as audited under existing Sarbanes Oxley regulation.

* * * * *

(3) NGL fractionators shall use measurement for NGLs at custody transfer meters or at such meters that are used to determine the NGL product slate delivered from the fractionation facility.

(4) If a NGL fractionator supplies a product that is a mixture or blend of two

or more products listed in Tables NN-1 and NN-2 of this subpart, the NGL fractionator shall report the quantities of the constituents of the mixtures or blends separately.

* * * * *

■ 76. Section 98.406 is amended by:

- a. Revising paragraphs (a)(1) and (2);
- b. Revising paragraphs (b)(1), (6), (12), and (13) introductory text; and
- c. Adding paragraph (b)(14).

The revisions read as follows:

§ 98.406 Data reporting requirements.

(a) * * *

(1) Annual quantity (in barrels) of each NGL product supplied (including fractionated NGL products received from other NGL fractionators) in the following product categories: Ethane, propane, normal butane, isobutane, and pentanes plus (Fuel_h in Equations NN-1 and NN-2 of this subpart).

(2) Annual quantity (in barrels) of each NGL product received from other NGL fractionators in the following product categories: Ethane, propane, normal butane, isobutane, and pentanes plus (Fuel_g in Equation NN-7 of this subpart).

* * * * *

(b) * * *

(1) Annual volume in Mscf of natural gas received by the LDC at its city gate stations for redelivery on the LDC's distribution system, including for use by the LDC (Fuel_h in Equations NN-1 and NN-2 of this subpart).

* * * * *

(6) Annual volume in Mscf of natural gas delivered to downstream gas transmission pipelines and other local distribution companies (Fuel in Equation NN-3 of this subpart).

* * * * *

(12) For each large end-user reported in paragraph (b)(7) of this section, report:

(i) The customer name, address, and meter number(s).

(ii) Whether the quantity of natural gas reported in paragraph (b)(7) of this section is the total quantity delivered to a large end-user's facility, or the quantity delivered to a specific meter located at the facility.

(iii) If known, report the EIA identification number of each LDC customer.

(13) The annual volume in Mscf of natural gas delivered by the LDC (including natural gas that is not owned by the LDC) to each of the following end-use categories. For definitions of these categories, refer to EIA Form 176 (Annual Report of Natural Gas and Supplemental Gas Supply & Disposition) and Instructions.

* * * * *

(14) The name of the U.S. state or territory covered in this report submission.

* * * *

■ 77. Table NN–2 to subpart NN of part 98 is amended by revising the title to the table and the heading of the third column to read as follows:

TABLE NN–2 TO SUBPART NN OF PART 98—DEFAULT FACTORS FOR CALCULATION METHODOLOGY 2 OF THIS SUBPART

Fuel	Unit	Default CO ₂ emission factor (MT CO ₂ /Unit) ¹
*	*	*

¹ Conditions for emission value presented in MT CO₂/bbl are 60 °F and saturation pressure.

Subpart OO—Suppliers of Industrial Greenhouse Gases

■ 78. Section 98.410 is amended by revising paragraph (a) and adding paragraphs (d) and (e) to read as follows:

§ 98.410 Definition of the source category.

(a) The industrial gas supplier source category consists of any facility that produces fluorinated GHGs, fluorinated HTFs, or nitrous oxide; any bulk importer of fluorinated GHGs, fluorinated HTFs, or nitrous oxide; any bulk exporter of fluorinated GHGs, fluorinated HTFs, or nitrous oxide; and any facility that destroys fluorinated GHGs or fluorinated HTFs.

* * * *

(d) To produce a fluorinated HTF means to manufacture, from any raw material or feedstock chemical, a fluorinated GHG used for temperature control, device testing, cleaning substrate surfaces and other parts, and soldering in processes including but not limited to certain types of electronics manufacturing production processes. Fluorinated heat transfer fluids do not include fluorinated GHGs used as lubricants or surfactants. For fluorinated heat transfer fluids under this subpart, the lower vapor pressure limit of 1 mm Hg in absolute at 25 °C in the definition of fluorinated greenhouse gas in § 98.6 shall not apply. Fluorinated heat transfer fluids include, but are not limited to, perfluoropolyethers, perfluoroalkanes, perfluoroethers, tertiary perfluoroamines, and perfluorocyclic ethers. Producing a fluorinated HTF does not include the reuse or recycling of a fluorinated HTF, the creation of intermediates, or the creation of fluorinated HTFs that are

released or destroyed at the production facility before the production measurement at § 98.414(a).

(e) For purposes of this subpart, to destroy fluorinated GHGs or fluorinated HTFs means to cause the expiration of a previously produced (as defined at § 98.410(b) and (d)) fluorinated GHG or fluorinated HTF to the destruction efficiency actually achieved. Such destruction does not result in a commercially useful end product. For purposes of this subpart, such destruction does not include HFC–23 destruction as defined at § 98.150 or the dissociation of fluorinated GHGs that occurs during electronics manufacturing as defined at § 98.90. For example, such destruction does not include the dissociation of fluorinated GHGs that occurs during etch or chamber cleaning processes or during use of abatement systems that treat the fluorinated GHGs vented from such processes at electronics manufacturing facilities.

■ 79. Section 98.412 is revised to read as follows:

§ 98.412 GHGs to report.

You must report the GHG emissions that would result from the release of the nitrous oxide and each fluorinated GHG or fluorinated HTF that you produce, import, export, transform, or destroy during the calendar year.

■ 80. Section 98.413 is amended by:

- a. Revising paragraph (a) introductory text;
- b. Revising the parameters of Equation OO–1 in paragraph (a);
- c. Revising paragraph (b) introductory text;
- d. Revising the parameters of Equation OO–2 in paragraph (b);
- e. Revising paragraph (c) introductory text;
- f. Revising parameters “T” and “ET” of Equation OO–3 in paragraph (c);
- g. Revising paragraph (d) introductory text; and
- h. Revising parameters “D” and “FD” of Equation OO–4 in paragraph (d).

The revisions read as follows:

§ 98.413 Calculating GHG emissions.

(a) Calculate the total mass of each fluorinated GHG, fluorinated HTF, or nitrous oxide produced annually, except for amounts that are captured solely to be shipped off site for destruction, by using Equation OO–1 of this section:

* * * *

P = Mass of fluorinated GHG, fluorinated HTF, or nitrous oxide produced annually.

P_p = Mass of fluorinated GHG, fluorinated HTF, or nitrous oxide produced over the period “p”.

(b) Calculate the total mass of each fluorinated GHG, fluorinated HTF, or

nitrous oxide produced over the period “p” by using Equation OO–2 of this section:

* * * *

P_p = Mass of fluorinated GHG, fluorinated HTF, or nitrous oxide produced over the period “p” (metric tons).

O_p = Mass of fluorinated GHG, fluorinated HTF, or nitrous oxide that is measured coming out of the production process over the period p (metric tons).

U_p = Mass of used fluorinated GHG, fluorinated HTF, or nitrous oxide that is added to the production process upstream of the output measurement over the period “p” (metric tons).

(c) Calculate the total mass of each fluorinated GHG, fluorinated HTF, or nitrous oxide transformed by using Equation OO–3 of this section:

* * * *

T = Mass of fluorinated GHG, fluorinated HTF, or nitrous oxide transformed annually (metric tons).

* * * *

E_T = The fraction of the fluorinated GHG, fluorinated HTF, or nitrous oxide fed into the transformation process that is transformed in the process (metric tons).

(d) Calculate the total mass of each fluorinated GHG or fluorinated HTF destroyed by using Equation OO–4 of this section:

* * * *

D = Mass of fluorinated GHG or fluorinated HTF destroyed annually (metric tons).

F_D = Mass of fluorinated GHG or fluorinated HTF fed into the destruction device annually (metric tons).

* * * *

■ 81. Section 98.414 is amended by revising paragraphs (a) through (i), (l), (n) introductory text, (n)(3) through (5), and (o) to read as follows:

§ 98.414 Monitoring and QA/QC requirements.

(a) The mass of fluorinated GHGs, fluorinated HTFs, or nitrous oxide coming out of the production process shall be measured using flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of one percent of full scale or better. If the measured mass includes more than one fluorinated GHG or fluorinated HTF, the concentrations of each of the fluorinated GHGs or fluorinated HTFs, other than low-concentration constituents, shall be measured as set forth in paragraph (n) of this section. For each fluorinated GHG or fluorinated HTF, the mean of the concentrations of that fluorinated GHG (mass fraction) measured under paragraph (n) of this section shall be multiplied by the mass measurement to obtain the mass of that fluorinated GHG or fluorinated HTF coming out of the production process.

(b) The mass of any used fluorinated GHGs, fluorinated HTFs, or used nitrous oxide added back into the production process upstream of the output measurement in paragraph (a) of this section shall be measured using flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of one percent of full scale or better. If the mass in paragraph (a) of this section is measured by weighing containers that include returned heels as well as newly produced fluorinated GHGs or fluorinated HTFs, the returned heels shall be considered used fluorinated GHGs or fluorinated HTFs for purposes of this paragraph (b) of this section and § 98.413(b).

(c) The mass of fluorinated GHGs, fluorinated HTFs, or nitrous oxide fed into the transformation process shall be measured using flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of one percent of full scale or better.

(d) The fraction of the fluorinated GHGs, fluorinated HTFs, or nitrous oxide fed into the transformation process that is actually transformed shall be estimated considering yield calculations or quantities of unreacted fluorinated GHGs, fluorinated HTFs, or nitrous oxide permanently removed from the process and recovered, destroyed, or emitted.

(e) The mass of fluorinated GHGs, fluorinated HTFs, or nitrous oxide sent to another facility for transformation shall be measured using flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of one percent of full scale or better.

(f) The mass of fluorinated GHGs or fluorinated HTFs sent to another facility for destruction shall be measured using flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of one percent of full scale or better. If the measured mass includes more than trace concentrations of materials other than the fluorinated GHG or fluorinated HTF, the concentration of the fluorinated GHG or fluorinated HTF shall be estimated considering current or previous representative concentration measurements and other relevant process information. This concentration (mass fraction) shall be multiplied by the mass measurement to obtain the mass of the fluorinated GHG or fluorinated HTF sent to another facility for destruction.

(g) You must estimate the share of the mass of fluorinated GHGs or fluorinated

HTFs in paragraph (f) of this section that is comprised of fluorinated GHGs or fluorinated HTFs that are not included in the mass produced in § 98.413(a) because they are removed from the production process as by-products or other wastes.

(h) You must measure the mass of each fluorinated GHG or fluorinated HTF that is fed into the destruction device and that was previously produced as defined at § 98.410(b). Such fluorinated GHGs or fluorinated HTFs include but are not limited to quantities that are shipped to the facility by another facility for destruction and quantities that are returned to the facility for reclamation but are found to be irretrievably contaminated and are therefore destroyed. You must use flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of one percent of full scale or better. If the measured mass includes more than trace concentrations of materials other than the fluorinated GHG or fluorinated HTF being destroyed, you must estimate the concentrations of the fluorinated GHG or fluorinated HTF being destroyed considering current or previous representative concentration measurements and other relevant process information. You must multiply this concentration (mass fraction) by the mass measurement to obtain the mass of the fluorinated GHG or fluorinated HTF fed into the destruction device.

(i) Very small quantities of fluorinated GHGs or fluorinated HTFs that are difficult to measure because they are entrained in other media such as destroyed filters and destroyed sample containers are exempt from paragraphs (f) and (h) of this section.

(j) In their estimates of the mass of fluorinated GHGs or fluorinated HTFs destroyed, facilities that destroy fluorinated GHGs or fluorinated HTFs shall account for any temporary reductions in the destruction efficiency that result from any startups, shutdowns, or malfunctions of the destruction device, including departures from the operating conditions defined in state or local permitting requirements and/or oxidizer manufacturer specifications.

(k) If the mass coming out of the production process includes more than one fluorinated GHG or fluorinated HTF, you shall measure the concentrations of all of the fluorinated GHGs or fluorinated HTFs, other than

low-concentration constituents, as follows:

* * * * *

(3) *Frequency of measurement.* Perform the measurements at least once by February 15, 2011 if the fluorinated GHG product is being produced on December 17, 2010. Perform the measurements within 60 days of commencing production of any fluorinated GHG product that was not being produced on December 17, 2010. For fluorinated HTF products, perform the measurements at least once by February 15, 2017, if the fluorinated HTF product is being produced on January 1, 2017. Repeat the measurements if an operational or process change occurs that could change the identities or significantly change the concentrations of the fluorinated GHG or fluorinated HTF constituents of the fluorinated GHG or fluorinated HTF product. Complete the repeat measurements within 60 days of the operational or process change.

(4) *Measure all product grades.* Where a fluorinated GHG or fluorinated HTF is produced at more than one purity level (e.g., pharmaceutical grade and refrigerant grade), perform the measurements for each purity level.

(5) *Number of samples.* Analyze a minimum of three samples of the fluorinated GHGs or fluorinated HTF product that have been drawn under conditions that are representative of the process producing the fluorinated GHGs or fluorinated HTF product. If the relative standard deviation of the measured concentrations of any of the fluorinated GHGs or fluorinated HTF constituents (other than low-concentration constituents) is greater than or equal to 15 percent, draw and analyze enough additional samples to achieve a total of at least six samples of the fluorinated GHG or fluorinated HTF product.

(o) All analytical equipment used to determine the concentration of fluorinated GHGs or fluorinated HTFs, including but not limited to gas chromatographs and associated detectors, IR, FTIR and NMR devices, shall be calibrated at a frequency needed to support the type of analysis specified in the site GHG Monitoring Plan as required under §§ 98.414(n) and 98.3(g)(5) of this part. Quality assurance samples at the concentrations of concern shall be used for the calibration. Such quality assurance samples shall consist of or be prepared from certified standards of the analytes of concern where available; if not available, calibration shall be performed

by a method specified in the GHG Monitoring Plan.

* * * * *

■ 82. Section 98.416 is amended by:

■ a. Revising paragraph (a);

■ b. Revising paragraphs (b)

introductory text, (b)(3), and (b)(6);

■ c. Revising paragraphs (c)

introductory text, (c)(1) through (6), and

(c)(8) through (10);

■ d. Revising paragraphs (d)

introductory text, (d)(1), and (d)(4)

through (6); and

■ e. Adding paragraphs (i) and (j).

The revisions and additions read as follows:

§ 98.416 Data reporting requirements.

* * * * *

(a) Each fluorinated GHG, fluorinated HTF, or nitrous oxide production facility shall report the following information:

(1) Mass in metric tons of each fluorinated GHG, fluorinated HTF, or nitrous oxide produced at that facility by process, except for amounts that are captured solely to be shipped off site for destruction.

(2) Mass in metric tons of each fluorinated GHG, fluorinated HTF, or nitrous oxide transformed at that facility, by process.

(3) Mass in metric tons of each fluorinated GHG or fluorinated HTF that is destroyed at that facility and that was previously produced as defined at § 98.410(b). Quantities to be reported under paragraph (a)(3) of this section include but are not limited to quantities that are shipped to the facility by another facility for destruction and quantities that are returned to the facility for reclamation but are found to be irretrievably contaminated and are therefore destroyed.

(4) [Reserved]

(5) Total mass in metric tons of each fluorinated GHG, fluorinated HTF, or nitrous oxide sent to another facility for transformation.

(6) Total mass in metric tons of each fluorinated GHG or fluorinated HTF sent to another facility for destruction, except fluorinated GHGs and fluorinated HTFs that are not included in the mass produced in § 98.413(a) because they are removed from the production process as by-products or other wastes. Quantities to be reported under paragraph (a)(6) of this section could include, for example, fluorinated GHGs that are returned to the facility for reclamation but are found to be irretrievably contaminated and are therefore sent to another facility for destruction.

(7) Total mass in metric tons of each fluorinated GHG or fluorinated HTF that

is sent to another facility for destruction and that is not included in the mass produced in § 98.413(a) because it is removed from the production process as a byproduct or other waste.

(8)–(9) [Reserved]

(10) Mass in metric tons of any fluorinated GHG, fluorinated HTF, or nitrous oxide fed into the transformation process, by process.

(11) Mass in metric tons of each fluorinated GHG or fluorinated HTF that is fed into the destruction device and that was previously produced as defined at § 98.410(b). Quantities to be reported under paragraph (a)(11) of this section include but are not limited to quantities that are shipped to the facility by another facility for destruction and quantities that are returned to the facility for reclamation but are found to be irretrievably contaminated and are therefore destroyed.

(12) Mass in metric tons of each fluorinated GHG, fluorinated HTF, or nitrous oxide that is measured coming out of the production process, by process.

(13) Mass in metric tons of each used fluorinated GHGs, fluorinated HTFs, or nitrous oxide added back into the production process (e.g., for reclamation), including returned heels in containers that are weighed to measure the mass in § 98.414(a), by process.

(14) Names and addresses of facilities to which any nitrous oxide, fluorinated GHGs, or fluorinated HTFs were sent for transformation, and the quantities (metric tons) of nitrous oxide and of each fluorinated GHG or fluorinated HTF that were sent to each for transformation.

(15) Names and addresses of facilities to which any fluorinated GHGs or fluorinated HTFs were sent for destruction, and the quantities (metric tons) of each fluorinated GHG or fluorinated HTF that were sent to each for destruction.

(16) Where missing data have been estimated pursuant to § 98.415, the reason the data were missing, the length of time the data were missing, the method used to estimate the missing data, and the estimates of those data.

(b) By March 31, 2017 or within 60 days of commencing fluorinated GHG or fluorinated HTF destruction, whichever is later, any facility that destroys fluorinated GHGs or fluorinated HTFs shall submit a one-time report containing the information in paragraphs (b)(1) through (6) of this section for each destruction process. Facilities that previously submitted a one-time report under this paragraph are exempt from this requirement unless

they meet the conditions in paragraph (b)(6) of this section.

* * * * *

(3) Methods used to record the mass of fluorinated GHG or fluorinated HTF destroyed.

* * * * *

(6) If any process changes affect unit destruction efficiency or the methods used to record mass of fluorinated GHG or fluorinated HTF destroyed, then a revised report must be submitted to reflect the changes. The revised report must be submitted to EPA within 60 days of the change.

(c) Each bulk importer of fluorinated GHGs, fluorinated HTFs, or nitrous oxide shall submit an annual report that summarizes its imports at the corporate level, except for shipments including less than twenty-five kilograms of fluorinated GHGs, fluorinated HTFs, or nitrous oxide, transshipments, and heels that meet the conditions set forth at § 98.417(e). The report shall contain the following information for each import:

(1) Total mass in metric tons of nitrous oxide and each fluorinated GHG or fluorinated HTF imported in bulk, including each fluorinated GHG or fluorinated HTF constituent of the fluorinated GHG or fluorinated HTF product that makes up between 0.5 percent and 100 percent of the product by mass.

(2) Total mass in metric tons of nitrous oxide and each fluorinated GHG or fluorinated HTF imported in bulk and sold or transferred to persons other than the importer for use in processes resulting in the transformation or destruction of the chemical.

(3) Date on which the fluorinated GHGs, fluorinated HTFs, or nitrous oxide were imported.

(4) Port of entry through which the fluorinated GHGs, fluorinated HTFs, or nitrous oxide passed.

(5) Country from which the imported fluorinated GHGs, fluorinated HTFs, or nitrous oxide were imported.

(6) Commodity code of the fluorinated GHGs, fluorinated HTFs, or nitrous oxide shipped.

* * * * *

(8) Total mass in metric tons of each fluorinated GHG or fluorinated HTF destroyed by the importer.

(9) If applicable, the names and addresses of the persons and facilities to which the nitrous oxide, fluorinated GHGs, or fluorinated HTFs were sold or transferred for transformation, and the quantities (metric tons) of nitrous oxide and of each fluorinated GHG or fluorinated HTF that were sold or transferred to each facility for transformation.

(10) If applicable, the names and addresses of the persons and facilities to which the fluorinated GHGs or fluorinated HTFs were sold or transferred for destruction, and the quantities (metric tons) of each fluorinated GHG or fluorinated HTF that were sold or transferred to each facility for destruction.

(d) Each bulk exporter of fluorinated GHGs, fluorinated HTFs, or nitrous oxide shall submit an annual report that summarizes its exports at the corporate level, except for shipments including less than twenty-five kilograms of fluorinated GHGs, fluorinated HTFs, or nitrous oxide, transshipments, and heels. The report shall contain the following information for each export:

(1) Total mass in metric tons of nitrous oxide and each fluorinated GHG or fluorinated HTF exported in bulk.

* * * * *

(4) Commodity code of the fluorinated GHGs, fluorinated HTFs, or nitrous oxide shipped.

(5) Date on which, and the port from which, the fluorinated GHGs, fluorinated HTFs, or nitrous oxide were exported from the United States or its territories.

(6) Country to which the fluorinated GHGs, fluorinated HTFs, or nitrous oxide were exported.

* * * * *

(i) Each facility that destroys fluorinated GHGs or fluorinated HTFs but does not otherwise report under this section shall report the mass in metric tons of each fluorinated GHG or fluorinated HTF that is destroyed at that facility and that was previously produced as defined at § 98.410(b) or (d), as applicable. Quantities to be reported under this paragraph include but are not limited to quantities that are shipped to the facility by another facility for destruction and quantities that are returned to the facility for reclamation but are found to be

irretrievably contaminated and are therefore destroyed.

(j) By March 31, 2017, all fluorinated HTF production facilities shall submit a one-time report that includes the concentration of each fluorinated HTF or fluorinated GHG constituent in each fluorinated HTF product as measured under § 98.414(n). If the facility commences production of a fluorinated HTF product that was not included in the initial report or performs a repeat measurement under § 98.414(n) that shows that the identities or concentrations of the fluorinated HTF or fluorinated GHG constituents of a fluorinated HTF product have changed, then the new or changed concentrations, as well as the date of the change, must be provided in a revised report. The revised report must be submitted to EPA by the March 31st that immediately follows the new or repeat measurement under § 98.414(n).

■ 83. Section 98.418 is amended by revising the definition of “Low-concentration constituent” to read as follows:

§ 98.418 Definitions.

* * * * *

Low-concentration constituent means, for purposes of fluorinated GHG or fluorinated HTF production and export, a fluorinated GHG or fluorinated HTF constituent of a fluorinated GHG or fluorinated HTF product that occurs in the product in concentrations below 0.1 percent by mass. For purposes of fluorinated GHG or fluorinated HTF import, low-concentration constituent means a fluorinated GHG or fluorinated HTF constituent of a fluorinated GHG or fluorinated HTF product that occurs in the product in concentrations below 0.5 percent by mass. Low-concentration constituents do not include fluorinated GHGs or fluorinated HTFs that are deliberately combined with the product (e.g., to affect the performance characteristics of the product).

Subpart PP—Suppliers of Carbon Dioxide

■ 84. Section 98.425 is amended by revising paragraph (b) introductory text to read as follows:

§ 98.425 Procedures for estimating missing data.

* * * * *

(b) Whenever the quality assurance procedures in § 98.424(b) cannot be followed to determine concentration of the CO₂ stream, the most appropriate of the following missing data procedures shall be followed:

* * * * *

Subpart RR—Geologic Sequestration of Carbon Dioxide

■ 85. Section 98.446 is amended by adding paragraph (g) to read as follows:

§ 98.446 Data reporting requirements.

* * * * *

(g) Whether the CO₂ stream is being injected into subsurface geologic formations to enhance the recovery of oil or natural gas.

Subpart TT—Industrial Waste Landfills

■ 86. Table TT–1 to Subpart TT of Part 98 is amended by:

■ a. Removing the entry “Pulp and Paper (other than industrial sludge)”;

■ b. Adding a heading entry for “Pulp and Paper Industry:”, and subordinate entries for “Boiler Ash”, “Wastewater Sludge”, “Kraft Recovery Wastes”, and “Other Pulp and Paper Wastes (not otherwise listed)” to follow the entry for “Food Processing (other than industrial sludge)”;

■ c. Revising the entry “Industrial Sludge” and footnote a; and

■ d. Adding footnote “b”.

The revisions and additions read as follows:

TABLE TT–1 TO SUBPART TT OF PART 98—DEFAULT DOC AND DECAY RATE VALUES FOR INDUSTRIAL WASTE LANDFILLS

Industry/Waste Type	DOC (weight fraction, wet basis)	k [dry climate ^a] (yr ^{−1})	k [moderate climate ^a] (yr ^{−1})	k [wet climate ^a] (yr ^{−1})
* * * * *				
Pulp and Paper Industry:				
Boiler Ash	0.06	0.02	0.03	0.04
Wastewater Sludge	0.12	0.02	0.04	0.06
Kraft Recovery Wastes ^b	0.025	0.02	0.03	0.04
Other Pulp and Paper Wastes (not otherwise listed)	0.20	0.02	0.03	0.04
* * * * *				
Industrial Sludge (other than pulp and paper industry sludge)	0.09	0.02	0.04	0.06

TABLE TT–1 TO SUBPART TT OF PART 98—DEFAULT DOC AND DECAY RATE VALUES FOR INDUSTRIAL WASTE LANDFILLS—Continued

Industry/Waste Type				
	DOC (weight fraction, wet basis)	k [dry climate ^a] (yr ⁻¹)	k [moderate climate ^a] (yr ⁻¹)	k [wet climate ^a] (yr ⁻¹)
*	*	*	*	*

^a The applicable climate classification is determined based on the annual rainfall plus the recirculated leachate application rate. Recirculated leachate application rate (in inches/year) is the total volume of leachate recirculated from company records or engineering estimates and applied to the landfill divided by the area of the portion of the landfill containing waste [with appropriate unit conversions]. Dry climate = precipitation plus recirculated leachate less than 20 inches/year; Moderate climate = precipitation plus recirculated leachate from 20 to 40 inches/year (inclusive); Wet climate = precipitation plus recirculated leachate greater than 40 inches/year. Alternatively, landfills that use leachate recirculation can elect to use the k value for wet climate rather than calculating the recirculated leachate rate.

^b Kraft Recovery Wastes include green liquor dregs, slaker grits, and lime mud, which may also be referred to collectively as causticizing or recausticizing wastes.

Subpart UU—Injection of Carbon Dioxide

■ 87. Section 98.474 is amended by revising paragraph (c)(2) to read as follows:

§ 98.474 Monitoring and QA/QC requirements.

* * * * *

(c) * * *

(2) You must convert all measured volumes of CO₂ to the following standard industry temperature and pressure conditions for use in Equation

UU–2 of this subpart: Standard cubic meters at a temperature of 60 degrees Fahrenheit and at an absolute pressure of 1 atmosphere.

* * * * *

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Part V

Department of Energy

10 CFR Parts 429 and 430

Energy Conservation Program for Consumer Products: Test Procedures for Residential Furnaces and Boilers; Final Rule

DEPARTMENT OF ENERGY

10 CFR Parts 429 and 430

[Docket No. EERE-2012-BT-TP-0024]

RIN 1904-AC79

Energy Conservation Program for Consumer Products: Test Procedures for Residential Furnaces and Boilers

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Final rule.

SUMMARY: The U.S. Department of Energy (DOE) amends its test procedure for residential furnaces and boilers established under the Energy Policy and Conservation Act. This rulemaking will fulfill DOE's obligation to review its test procedures for covered products at least once every seven years. The revisions include: Clarifying the components included in the burner electrical power input term (PE); adopting a method for determining whether a minimum draft factor can be applied, and how the conditions are to be verified; allowing optional measurement of condensate collection during establishment of steady state; updating references to the applicable installation and operating manual and providing clarifications when the installation and operation (I&O) manual does not specify test setup; clarifying the testing of units intended to be installed without a return duct; adopting a provision clarifying the testing of multi-position units; revising the required reporting precision for annual fuel utilization efficiency (AFUE); and adopting a verification method for determining whether a boiler incorporates an automatic means for adjusting water temperature and whether this design requirement functions as required.

DATES: The effective date of this rule is February 16, 2016. The final rule changes will be mandatory for representations made on or after July 13, 2016. The incorporation by reference of certain material listed in this rule is approved by the Director of the Federal Register as of February 16, 2016.

ADDRESSES: The docket, which includes Federal Register notices, public meeting attendee lists and transcripts, comments, and other supporting documents/materials, is available for review at www.regulations.gov. All documents in the docket are listed in the www.regulations.gov index. However, not all documents listed in the index may be publicly available, such as information that is exempt from public disclosure.

A link to the docket Web page can be found at: <http://www.regulations.gov/#!docketDetail;D=EERE-2012-BT-TP-0024>. This Web page contains a link to the docket for this final rule on the www.regulations.gov site. The www.regulations.gov Web page contains simple instructions on how to access all documents, including public comments, in the docket.

For further information on how to review the docket, contact Ms. Brenda Edwards at (202) 586-2945 or by email: Brenda.Edwards@ee.doe.gov.

FOR FURTHER INFORMATION CONTACT: Ms. Ashley Armstrong, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, EE-5B, 1000 Independence Avenue SW., Washington, DC 20585-0121. Telephone: (202) 586-6590. Email: Ashley.Armstrong@ee.doe.gov.

Mr. Pete Cochran, U.S. Department of Energy, Office of the General Counsel, GC-33, 1000 Independence Avenue SW., Washington, DC 20585-0121. Telephone: (202) 586-9496. Email: peter.cochran@hq.doe.gov.

SUPPLEMENTARY INFORMATION: This final rule incorporates by reference into part 430 the following industry standard: ASTM D2156-09 (Reapproved 2013) ("ASTM D2156R13"), *Standard Test Method for Smoke Density in Flue Gases from Burning Distillate Fuels*, approved October 1, 2013.

Copies of ASTM D2156R13 can be obtained from ASTM, American Society of Testing and Materials, ASTM Headquarters, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, (877) 909-2786 or (610) 832-9585, or by going to <http://www.astm.org>. See section IV.M for further discussion of this standard.

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I. Authority and Background

Title III, Part B¹ of the Energy Policy and Conservation Act of 1975 ("EPCA" or "the Act"), Public Law 94-163 (42 U.S.C. 6291-6309, as codified) sets forth a variety of provisions designed to improve energy efficiency and established the Energy Conservation Program for Consumer Products Other Than Automobiles.² These products include residential furnaces and boilers, the subject of this notice.³

Under EPCA, DOE's energy conservation program generally consists of four parts: (1) Testing; (2) labeling; (3) Federal energy conservation standards; and (4) certification and enforcement procedures. The testing requirements consist of test procedures that manufacturers of covered products must

¹ For editorial reasons, Part B was codified as Part A in the U.S. Code.

² All references to EPCA in this document refer to the statute as amended through the Energy Efficiency Improvement Act of 2015, Public Law 114-11 (Apr. 30, 2015).

³ Under 42 U.S.C. 6292(a)(5), the statute establishes "furnaces" as covered products, and 42 U.S.C. 6291(23) defines furnaces as inclusive of boilers.

use as the basis for: (1) Certifying to DOE that their products comply with the applicable energy conservation standards adopted pursuant to EPCA, and (2) making other representations about the efficiency of those products. (42 U.S.C. 6293(c); 42 U.S.C. 6295(s)) Similarly, DOE must use these test procedures to determine whether the products comply with any relevant standards promulgated under EPCA. (42 U.S.C. 6295(s))

EPCA sets forth the criteria and procedures that DOE must follow when prescribing or amending test procedures for covered products. EPCA provides, in relevant part, that any test procedures prescribed or amended under this section shall be reasonably designed to produce test results which measure energy efficiency, energy use, or estimated annual operating cost of a covered product during a representative average use cycle or period of use, and shall not be unduly burdensome to conduct. (42 U.S.C. 6293(b)(3))

In addition, if DOE determines that a test procedure amendment is warranted, it must publish proposed test procedures and offer the public an opportunity to present oral and written comments on them. (42 U.S.C. 6293(b)(2)) Finally, in any rulemaking to amend a test procedure, DOE must determine to what extent, if any, the proposed test procedure would alter the product's measured energy efficiency as determined under the existing test procedure. (42 U.S.C. 6293(e)(1))

EISA 2007 amended EPCA to require that, at least once every 7 years, DOE must review test procedures for all covered products and either amend the test procedures (if the Secretary determines that amended test procedures would more accurately or fully comply with the requirements of 42 U.S.C. 6293(b)(3)) or publish a notice in the **Federal Register** of any determination not to amend a test procedure. (42 U.S.C. 6293(b)(1)(A)) Under this requirement, DOE must review the test procedure for residential furnaces and boilers not later than December 19, 2014 (*i.e.*, 7 years after the publication of EISA 2007 on December 19, 2007).

DOE's current energy conservation standards for residential furnaces and boilers are expressed as minimum annual fuel utilization efficiency (AFUE). AFUE is an annualized fuel efficiency metric that accounts for fuel consumption in active, standby, and off modes. The following discussion provides a brief history of the rulemakings underlying the existing test procedure for residential furnaces and boilers.

The existing DOE test procedure for determining the AFUE of residential furnaces and boilers is located at 10 CFR part 430, subpart B, appendix N, *Uniform Test Method for Measuring the Energy Consumption of Furnaces and Boilers*. The existing DOE test procedure for residential furnaces and boilers was established by a final rule published in the **Federal Register** on May 12, 1997, and it incorporates by reference the American National Standards Institute/American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ANSI/ASHRAE) Standard 103–1993, *Method of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers* (ASHRAE 103–1993). 62 FR 26140, 26157 (incorporated by reference at 10 CFR 430.3(f)(10)). On October 14, 1997, DOE published an interim final rule in the **Federal Register** to revise a provision concerning the insulation of the flue collector box in order to ensure the updated test procedure would not affect the measured AFUE of existing furnaces and boilers. 62 FR 53508. This interim final rule was adopted without change in a final rule published in the **Federal Register** on February 24, 1998. 63 FR 9390.

On October 20, 2010, DOE amended its test procedure for furnaces and boilers to establish a method for measuring the electrical energy use in standby mode and off mode for gas-fired and oil-fired furnaces and boilers, as required by EISA 2007. 75 FR 64621. These test procedure amendments incorporated by reference, and were based primarily on, provisions of the International Electrotechnical Commission (IEC) Standard 62301 (First Edition), *Household electrical appliances—Measurement of standby power*. On December 31, 2012, DOE published a final rule (December 2012 final rule) in the **Federal Register** that updated the incorporation by reference of the standby mode and off mode test procedure provisions to refer to the latest edition of IEC Standard 62301 (Second Edition). 77 FR 76831. On July 10, 2013, DOE published a final rule (July 2013 final rule) in the **Federal Register** that amended its test procedure for residential furnaces and boilers by adopting needed equations that allow manufacturers the option to omit the heat-up and cool-down tests and still generate a valid AFUE measurement. 78 FR 41265. On August 30, 2013, DOE published a correction to the July 2013 final rule that corrected errors in the redesignations of affected subsections within section 10 of appendix N. 78 FR 53625.

On January 4, 2013, DOE initiated this rulemaking to examine all aspects of the DOE test procedure by publishing a request for information (RFI) (January 2013 RFI) in the **Federal Register**. 78 FR 675. On March 11, 2015, DOE published a notice of proposed rulemaking (NOPR) (March 2015 NOPR) in the **Federal Register** to amend the test procedure for residential furnaces and boilers. 80 FR 12876. In the March 2015 NOPR, DOE proposed to amend the residential furnaces and boilers test procedure by incorporating by reference ANSI/ASHRAE Standard 103–2007 (ASHRAE 103–2007) in place of ASHRAE 103–1993, which currently is referenced in the existing test procedure. In addition, the March 2015 NOPR proposed to adopt modifications that would establish revised test procedures for two-stage and modulating products, as well as for boilers with long post-purge times that would not otherwise be included in the incorporation by reference of ASHRAE 103–2007.

DOE also proposed to amend the test procedure to: (1) Allow the measurement of condensate during the establishment of steady-state rather than require an additional 30 minutes of testing after steady-state conditions are established; (2) revise annual electricity consumption equations to account for additional electrical components; (3) revise test procedure references to “manufacturer recommendations” or “manufacturer’s instructions” that do not explicitly identify the source of the recommendations or instructions; (4) include a test protocol for determining the functionality of the automatic means for adjusting water temperature; (5) include a test method to indicate the absence or presence of air flow to determine whether the minimum default draft factor may be used; (6) revise the required reporting precision for AFUE; (7) specify testing requirements for units that are installed without a return duct; and (8) specify testing requirements for units with multi-position configurations. 80 FR 12876.

II. Summary of the Final Rule

The final rule amends the existing DOE test procedure for residential furnaces and boilers to improve the consistency and accuracy of test results generated using the DOE test procedure and to reduce test burden. In particular, these modifications include: (1) Clarifying the definition of the electrical power term PE; (2) adopting a smoke stick test for determining use of minimum default draft factors; (3) allowing for the measurement of condensate under steady-state

conditions; (4) referencing the manufacturer's installation and operation (I&O) manual and providing clarifications when the I&O manual does not specify test setup; (5) specifying ductwork requirements for units that are installed without a return duct; (6) specifying testing requirements for units with multi-position configurations; and (7) revising the AFUE reporting precision. DOE has also revised the definitions of several terms in the test procedure and added an enforcement provision to provide a method of test for DOE to determine compliance with the automatic means design requirement mandated by EISA 2007.

DOE has withdrawn or modified all test procedure amendment proposals in the March 2015 NOPR for which stakeholders expressed concern regarding the effect of the proposed amendments on the measured energy efficiency of residential furnaces and boilers when compared to the current test procedure. In particular, as discussed in section III.C, DOE has withdrawn its proposal to incorporate by reference ASHRAE 103–2007.

III. Discussion

The following sections discuss the products within the scope of this rulemaking, the test procedure amendments, other test procedure considerations, test burden, measured energy use, and changes to certification and enforcement provisions.

In response to the March 2015 NOPR, the following twelve interested parties submitted written comments: The American Gas Association (AGA); the Air-Conditioning, Heating and Refrigeration Institute (AHRI); Burnham Holdings, Inc. (Burnham); Carrier Corporation (Carrier); John Cockerill (Cockerill); Goodman Global, Inc. (Goodman); Lennox Industries Inc. (Lennox); Lochinvar, LLC (Lochinvar); Rheem Manufacturing Company (Rheem); Ingersoll Rand Residential Solutions (Ingersoll Rand); Laclede Group; and Weil-McLain. Interested parties provided comments on a range of issues, including those DOE identified in the March 2015 NOPR, as well as issues related to the proposed test procedure changes. The issues on which DOE received comments, as well as DOE's responses to those comments and the resulting changes to the test procedure proposals presented in the NOPR, are discussed in the subsequent sections. A parenthetical reference at the end of a comment quotation or

paraphrase provides the location of the item in the public record.⁴

A. Products Within Scope of the Final Rule

The test procedure amendments apply to products that meet the definitions for residential furnaces and boilers (see DOE's regulations at 10 CFR 430.2). A "furnace" is defined as a product that: (1) Utilizes only single-phase electric current, or single-phase electric current or direct current (DC) in conjunction with natural gas, propane, or home heating oil; (2) is designed to be the principal heating source for the living space of a residence; (3) is not contained within the same cabinet with a central air conditioner whose rated cooling capacity is above 65,000 Btu per hour; (4) is an electric central furnace, electric boiler, forced-air central furnace, gravity central furnace, or low pressure steam or hot water boiler; and (5) has a heat input rate of less than 300,000 Btu per hour for electric boilers and low pressure steam or hot water boilers and less than 225,000 Btu per hour for forced-air central furnaces, gravity central furnaces, and electric central furnaces.⁵

The individual products within the scope of this test procedure and the definition of each (see DOE's regulations at 10 CFR 430.2) are listed below:

(1) Electric boiler means an electrically powered furnace designed to supply low pressure steam or hot water for space heating application. A low pressure steam boiler operates at or below 15 pounds per square inch gauge (psig) steam pressure; a hot water boiler operates at or below 160 psig water pressure and 250 °F water temperature.

(2) Electric central furnace means a furnace that is designed to supply heat through a system of ducts with air as the heating medium, in which heat generated by one or more electric resistance heating elements is circulated by means of a fan or blower.

(3) Forced-air central furnace means a furnace that burns gas or oil and is designed to supply heat through a system of ducts with air as the heating medium. The heat generated by

combustion of gas or oil is transferred to the air within a casing by conduction through heat exchange surfaces and is circulated through the duct system by means of a fan or blower.

(4) Gravity central furnace means a gas-fueled furnace which depends primarily on natural convection for circulation of heated air and which is designed to be used in conjunction with a system of ducts.

(5) Low pressure steam or hot water boiler is an electric, gas, or oil-burning furnace designed to supply low pressure steam or hot water for space heating applications. A low pressure steam boiler operates at or below 15 psig steam pressure; a hot water boiler operates at or below 160 psig water pressure and 250 °F water temperature.

(6) Mobile home furnace means a direct vent furnace that is designed for use only in mobile homes.

(7) Outdoor furnace or boiler is a furnace or boiler normally intended for installation out-of-doors or in an unheated space (such as an attic or a crawl space).

(8) Weatherized warm air furnace or boiler means a furnace or boiler designed for installation outdoors, approved for resistance to wind, rain, and snow, and supplied with its own venting system.

B. General Comments

Stakeholders submitted general comments regarding the test procedure and parallel energy conservation standards rulemaking timeline and the availability of data related to this proceeding. DOE discusses and responds to these comments in the following subsections.

1. Statutory Deadline

As noted in section I, EISA 2007 requires that DOE must review test procedures for all covered products and amend the test procedures or publish a notice in the **Federal Register** of any determination not to amend test procedures at least once every seven years. (42 U.S.C. 6293(b)(1)(A)).

AHRI asserted that the start date for the obligation to review efficiency test procedures at least once every seven years has been reset by the July 2013 Final Rule. And, therefore, by its estimation, DOE has approximately five more years to review and amend, as needed, the test procedures for residential furnaces and boilers. AHRI added that this would be ample time to manage DOE's rulemaking activities such that proposed revisions to efficiency standards and test procedures are not considered concurrently. (AHRI, No. 36 at p. 2)

⁴ The parenthetical reference provides a reference for information located in the docket of DOE's rulemaking to amend the test procedures for residential furnaces and boilers. (Docket No. EERE-2012-BT-TP-0024, which is maintained at <http://www.regulations.gov/#/docketDetail;D=EERE-2012-BT-TP-0024>). The references are arranged as follows: (commenter name, comment docket ID number, page of that document).

⁵ The definition of "furnace" currently in the CFR at 10 CFR 430.2 mistakenly repeats the terms "gravity central furnaces, and electric central furnaces" at the end of the definition. In this final rule, DOE is correcting this error to remove the duplicative language.

DOE notes that the July 2013 Final Rule was limited in scope and only intended to remedy a specific concern articulated by stakeholders. Specifically, the July 2013 Final Rule adopted needed equations to allow manufacturers the option to omit the heat up and cool down tests and still generate a valid AFUE measurement for certain condensing products. 78 FR 41265, 41266. DOE considers the seven year look back provision to include a comprehensive review of the entire test procedure. (42 U.S.C. 6293(b)(1)(A)) DOE did not conduct a comprehensive review for the July 2013 Final Rule. Furthermore, DOE stated in the July 2013 Final Rule that it was initiating a separate rulemaking that was broader in scope to examine all aspects of the DOE test procedure for residential furnaces and boilers. 78 FR 41265, 41266. Therefore, DOE maintains that the July 2013 final rule did not meet the requirements outlined in 42 U.S.C. 6293(b)(1)(A). In contrast, DOE has conducted a comprehensive review as part of the current rulemaking, which satisfies the requirements of 42 U.S.C. 6293(b)(1)(A).

2. Simultaneous Changes in Test Procedure and Standards

Several stakeholders cited legal and practical concerns regarding the timing of proposed revisions to the test procedures and standards for residential furnaces and boilers. Stakeholders requested that DOE delay any further work on the rulemakings to amend efficiency standards for these products until after the finalization of the test procedure. (AHRI, No. 36 at p. 1; Weil-McLain, No. 31 at p. 2; Ingersoll Rand, No. 37 at p. 5)

AHRI stated that it believes the non-final status of the test procedure inhibits stakeholders' fair evaluation of the standard. AHRI stressed the importance of having a known efficiency test procedure. AHRI noted that when a test procedure is in flux, manufacturers must spend resources collecting potentially unusable data which undermines their ability to provide input on the proposed efficiency standards. Similarly, AHRI added that when a test procedure is not finalized, a manufacturer has no way of determining whether the test procedure will affect its ability to comply with a proposed revised standard. AHRI noted that DOE is required to give stakeholders the opportunity to provide meaningful comments and asserted that the joint proposal of test procedures and standards diminishes that opportunity (see 42 U.S.C. 6295(p)(2), 6306(a)). (AHRI, No. 36 at p. 1)

In response to AHRI, DOE does not believe that the timing of the test procedure and standards rulemakings has negatively impacted stakeholders' ability to provide meaningful comment on this test procedure rulemaking. DOE allowed four months for public comment on the test procedure NOPR. Additionally, DOE's original proposal included an update to the latest industry standard (*i.e.*, ASHARE 103–2007), which was developed by a consensus-based ASHRAE process, and was released in 2007. DOE believes that industry was involved in developing that standard and had experience with the changes in the 2007 version of ASHRAE Standard 103. Lastly, stakeholders provided detailed, insightful comments on all aspects of the proposal, including submitting select test data in response to DOE's proposal, which shows that industry was able to carefully consider the proposed method and how it compared to the current Federal method of test. In addition, DOE has taken AHRI's concerns regarding the potential impact of test procedure changes on measured energy use into account in its determinations of which test procedure proposals to finalize in this rulemaking.

AHRI and Goodman stated that by publishing the March 2015 NOPR within weeks of the proposed efficiency standard, DOE has failed to abide by the procedures located at 10 CFR part 430, subpart C, appendix A (7)(b). (AHRI, No. 36 at p. 2; Goodman, No. 33 at p. 2) AHRI stated that the Administrative Procedure Act (APA) requires agencies to abide by their policies and procedures, especially where those rules have a substantive effect. AHRI asserted that the non-final test procedure has the substantive effect of increasing costs to stakeholders and diminishing their ability to comment on the efficiency standards. (AHRI, No. 36 at p. 2; Weil-McLain, No. 31 at p. 7)

In response to the comments from AHRI and Goodman asserting that DOE has failed to abide by its procedures at 10 CFR 430, subpart C, appendix A (7)(b), DOE notes that appendix A establishes procedures, interpretations, and policies to guide DOE in the consideration and promulgation of new or revised appliance efficiency standards under EPCA. (See section 1 of 10 CFR part 430, subpart C, appendix A) Those procedures are a general guide to the steps DOE typically follows in promulgating energy conservation standards. The guidance recognizes that DOE can and will, on occasion, deviate from the typical process. Accordingly, DOE has concluded that there is no basis to either: (1) Delay the final rules

adopting standards for residential furnaces and boilers; or (2) suspend the test procedure rulemaking until the standards rulemaking has been completed.

Ingersoll Rand and Goodman stated their concern that two-stage, condensing furnaces that would meet the March 12, 2015 furnace proposed rule of 92-percent AFUE under the current test procedure would not meet the 92-percent AFUE standard under the proposed DOE test procedure. Ingersoll Rand noted that the two test procedures were assumed to be identical in the March 12, 2015 residential furnace standard NOPR technical support document. (Ingersoll Rand, No. 37 at p. 2; Goodman, No. 33 at p. 1) Similarly, Weil-McLain suggested that the uncertainty caused by the simultaneous test procedure rulemaking amplifies venting issues present in the residential boiler standards NOPR. (Weil-McLain, No. 31 at p. 3)

In response to Ingersoll Rand and Goodman, as discussed in section III.C, DOE declines to adopt the latest industry standard of ASHRAE 103–2007, which is the only amendment proposed in the March 2015 NOPR that manufacturers claimed could alter the AFUE for two-stage and modulating condensing products. In response to Weil-McLain, DOE notes that none of the proposed test procedure provisions that had the potential to result in a change in measured AFUE are adopted in this test procedure final rule, as discussed in section III.G.

3. Lack of Data Availability

In response the March 2015 NOPR, interested parties submitted comments regarding lack of data availability. For example, the March 2015 NOPR included several references to a testing report. 80 FR 12876, 12878. Burnham stated that in spite of requests from commenters, the testing report was not available in the public docket as of July 8, 2015. Burnham added that the lack of access to the testing report has made it impossible to properly review the impact of ambient conditions on AFUE during the public comment period. Burnham requested that the comment period be extended to allow comment on this document which should be disclosed immediately. (Burnham, No. 35 at p. 7)

DOE made the test results available during the test procedure public meeting.⁶ The slide deck presented at

⁶ Test results included in the slide deck for the public meeting include those for proposed changes related to AFUE determination for two-stage/

the public meeting was posted to the docket on March 26, 2015, along with the transcript of the public meeting. (Public Meeting Presentation Slides, No. 21) Therefore, stakeholders were presented with an opportunity to review and discuss the data with the Department at the public meeting and to review the results during the comment period, which was open until July 10, 2015.

C. Proposed Incorporation by Reference of ASHRAE Standard 103–2007

In the March 2015 NOPR, DOE proposed amendments to reduce variability, eliminate ambiguity, and address discrepancies between the test procedure and actual field conditions, and DOE requested comment on its proposals. 80 FR 12876, 12902. One of these proposals was to update its incorporation by reference of the industry test standard ASHRAE 103–1993 to ASHRAE 103–2007.

DOE received several comments in response to its proposal to update the incorporation by reference in the DOE test procedure to ASHRAE 103–2007. Lochinvar and AGA responded to the NOPR in favor of adopting ASHRAE 103–2007 provided that DOE make adequate allowances for the resulting test burden and the impact that the change would have on existing efficiency claims. (Lochinvar, No. 29 at p. 1; AGA, No. 27 at p. 4) Similarly, Burnham stated that they are not opposed to the update provided test burden is reduced. (Burnham, No. 35 at p. 3)

Ingersoll Rand and Rheem stated their support only for certain provisions of ASHRAE 103–2007. Specifically, Ingersoll Rand supported requiring only reduced fire testing (and not high-fire testing) when the calculated balance point temperature is less than or equal to five degrees. (Ingersoll Rand, No. 37 at p. 4) Rheem stated their support for the elimination of table 8 and the average design heating requirements in ASHRAE 103–1993. (Rheem, No. 30 at p. 2)

Lennox and Weil-McLain suggested DOE not update to ASHRAE 103–2007 at this time. (Lennox, No. 32 at p. 2; Weil-McLain, No. 31 at p. 7) AHRI and Weil-McLain suggested that DOE wait to modify the test procedure until ASHRAE 103–2016 is issued. (AHRI, No. 36 at p. 8; Weil-McLain, No. 31 at

p. 7) Carrier suggested that DOE not update to ASHRAE 103–2007, but change the AFUE metric for forced-air furnaces to be based on the steady-state operation, as discussed in section III.E.4. (Carrier, No. 34 at p. 2)

Several commenters suggested that the updating to ASHRAE 103–2007 would result in more significant changes to AFUE ratings than suggested by DOE in the March 2015 NOPR. (Burnham, No. 35 at p. 3; Lennox, No. 32 at p. 2; AGA, No. 27 at p. 4; AHRI, No. 36 at p. 4; Ingersoll Rand, No. 37 at p. 2) Of these commenters, only AHRI provided test data, which indicated small changes in AFUE as a result of changes to the cyclical condensate test for modulating condensing boilers. (AHRI, No. 36 at p. 17)

Burnham and Ingersoll Rand suggested that the impact to AFUE resulting from the changes in cycle times is still uncertain. Therefore, it is not possible to conclude that the effect of this proposed change to the procedure is insignificant. (Burnham, No. 35 at p. 3; Ingersoll Rand, No. 37 at p. 2) Ingersoll Rand noted that as a result of adopting ASHRAE 103–2007, two-stage and modulating non-condensing furnaces will have a higher AFUE rating, and condensing furnaces will have lower AFUE ratings. Ingersoll Rand noted that the changes in AFUE are higher than the uncertainty of the test procedure reported by DOE and therefore this change to the test procedure cannot be considered *de minimis*. Ingersoll Rand also noted that the test results are limited and have high variability. Ingersoll Rand suggested that the change not be adopted until the variability is better understood. (Ingersoll Rand, No. 37 at p. 2) AGA suggested that the Department substantially increase the amount of testing using the modified test procedure to ensure that the resulting efficiency rating for both furnaces and boilers are accurate and repeatable. (AGA, No. 27 at p. 4)

Similarly, Ingersoll Rand suggested the calculation to account for post purge times longer than three minutes not be adopted without test data indicating the adjustment to AFUE that would result from this update. Ingersoll Rand stated that without test data they cannot determine if the new readings would be representative of a unit's performance. (Ingersoll Rand, No. 37 at p. 4)

In response to the March 2015 NOPR, Ingersoll Rand requested that DOE not adopt the proposed changes to the calculation of annual auxiliary electrical energy consumption (E_{AE}) caused by the update to ASHRAE 103–2007. Ingersoll Rand stated that the calculation of E_{AE}

proposed in the March 2015 NOPR changes the value of E_{AE} substantially from –8.5 percent to +13.5 percent. Ingersoll Rand noted that this change, along with the proposal to include the electrical consumption of additional components is significant enough that all current furnaces would have to be retested and recertified. Ingersoll Rand requested that DOE reconsider its finding that the amended test procedure would have a “*de minimis* impact on the products’ measured energy use” and instead find that the proposed test procedure amendment has a significant impact on measured electricity consumption. (Ingersoll Rand, No. 37 at p. 5)

Several commenters stated that the changes to AFUE caused by updating to ASHRAE 103–2007 would lead to additional testing burden. (Burnham, No. 35 at p. 3; Lennox, No. 32 at p. 2; AHRI, No. 36 at p. 4) AHRI stated that the change to use calculated values for t_{ON} and t_{OFF} will at a minimum require retesting for any step-modulating models at the reduced input rate and for many two stage models at both the maximum and reduced input rates. (AHRI, No. 36 at p. 4)

Given this expected test burden, Lochinvar argued that if DOE is to adopt ASHRAE 103–2007, DOE must declare in writing that products certified according to ASHRAE 103–1993 that were on the market prior to updating the test procedure are not required to be retested and recertified unless the design is changed in a way that affects efficiency. Lochinvar suggested that future audit tests of pre-existing products could still be conducted according to ASHRAE 103–2007 but that manufacturers should not be required to do new tests on existing models for certification reporting to DOE's Compliance Certification Management System (CCMS). (Lochinvar, No. 29 at p. 1)

Burnham also commented that their efforts to explore the impact of adoption of ASHRAE 103–2007 have been hampered by the lack of generally available, National Institute of Standards and Technology (NIST) validated software tools for calculating AFUE (and intermediate values) based on ASHRAE 103–2007. Burnham argued that the lack of software is a significant departure from past practice during comparable rulemakings. Burnham also asserted that this constituted a lack of transparency that would violate basic administrative law precepts and would be arbitrary and capricious. (Burnham, No. 35 at p. 3)

After considering these comments, DOE agrees that further evaluation is

modulating products, measurement of condensate under steady state conditions, electric consumption of components, and verification test for automatic means for adjusting the water temperature in boilers. DOE did not provide test results for ambient conditions or other testing for which no changes were proposed in the NOPR.

needed to determine the impact of adopting ASHRAE 103–2007 on the AFUE ratings of residential furnace and boiler models currently distributed in commerce. As a result, DOE does not adopt ASHRAE 103–2007 in this final rule. Instead, DOE retains the reference in the existing test procedure to ASHRAE 103–1993, both related to AFUE and E_{AE} . However, DOE believes ASHRAE 103–2007 better accounts for the operation of two-stage and modulating equipment and may further evaluate adoption of ASHRAE 103–2007, or a successor standard, in future rulemakings. In addition to retaining the reference to ASHRAE 103–1993, DOE revises the list of excluded ASHRAE 103–1993 sections to reflect test procedure amendments (as discussed in section III.D) and to more accurately identify the excluded sections.

DOE does not agree with Burnham's assertion that the lack of an automated software program implementing the equations presented in DOE's proposal hampered stakeholder's ability to comment on the practicability and the impact of the adoption of ASHRAE 103–2007. DOE does not endorse specific calculations tools commonly developed by industry or third-party test laboratories that automate the equations provided in DOE's regulations. Furthermore, DOE does not need to provide software for interested parties to be able to perform the calculations in proposed test procedure amendments and believes the simplified equations provided in the proposed rule can be easily implemented through a desktop-software calculation tool such as a commonly available spreadsheet application. Lastly, DOE disagrees with Burnham's assertion that the proposed rule was not sufficiently clear to provide an opportunity for interested parties to understand the proposal and provide meaningful comment because each of the equations utilized was presented in the regulatory text within the proposed rule in a step-by-step fashion.

D. Test Procedure Amendments

In response to the March 2015 NOPR, DOE received input on a variety of test procedure issues beyond incorporation of ASHRAE 103–2007, including: (1) Electrical power of additional components; (2) smoke stick test for determining use of minimum default draft factors; (3) measurement of condensate under steady-state conditions; (4) I&O manual reference and proposed clarifications when the I&O manual does not specify test setup; (5) specifying ductwork requirements for units that are installed without a return duct; (6) specifying testing

requirements for units with multi-position configurations; (7) AFUE reporting precision; (8) room ambient temperature and humidity ranges; (9) full-fuel-cycle (FFC) energy metrics in the AFUE test; (10) oversize factor values; (11) alternative methods for furnace and boiler efficiency determination; and (12) test method for combination appliances. DOE amends the test procedure for residential furnaces and boilers regarding issues (1)–(7), which are addressed in further detail below. Issues (8)–(12), for which DOE does not amend the test procedure in this final rule, are discussed in section III.E. DOE also received comments on the verification test for automatic means for adjusting water temperature, which are discussed in section III.H.1.

1. Electrical Power of Components

In the January 2013 RFI and March 2015 NOPR, DOE noted that the specific method of electrical measurement prescribed in the existing DOE test procedure does not explicitly capture the electrical power associated with all auxiliary components. The method identifies PE as the electrical power used to operate the burner but only explicitly mentions measurements of the power supplied to the power burner motor, the ignition device, and the circulation water pump, but does not explicitly identify other devices that use power during the active mode, such as the gas valve, safety and operating controls, and a secondary pump for boilers (*i.e.*, boiler pump) used to maintain a minimum flow rate through the boiler heat exchanger, which is most typically associated with condensing boiler designs. 78 FR 675, 678; 80 FR 12876, 12882. In response to the January 2013 RFI, several stakeholders, including Lennox, Rheem, and AHRI, stated that manufacturers already measure all electrical power associated with the additional components DOE listed in the January 2013 RFI. (Lennox, No. 6 at p. 3; Rheem, No. 12 at p. 10; AHRI, No. 13 at p. 6) Therefore, to clarify which components are included in the power measurements, in the March 2015 NOPR DOE proposed to add two new terms to the calculations of the average annual auxiliary electrical energy consumption (E_{AE}) to capture the electrical power of the boiler pump (BE_s) and the gas valve and controls (E_o), if present. DOE requested comment on these proposed amendments. 80 FR 12876, 12902.

AHRI expressed the view that the proposed changes over-complicate this issue and that the proposed measurements will change the

measurement of E_{AE} . AHRI stated that the typical gas burner will not operate unless both the ignition system and gas control (*e.g.*, automatic valves) are energized, which DOE acknowledges by including the power of the energized electric ignition device in the definition of PE. AHRI stated that the definition of PE should be clarified to include all electrical energy consumption that relates to the functions of igniting and operating the burner during the on cycle. (AHRI, No. 36 at p. 5)

Burnham supported DOE's proposal to measure all electrical consumption associated with operating the burner (PE), which should include the power consumption of any additional pump which is needed to provide adequate flow through the boiler itself without also providing significant flow through the heating system. (Burnham, No. 35 at p. 4)

Lochinvar stated that, in its experience, all electrical power consumption measurements made during an AFUE test are made at the power supply connection to the boiler and account for all auxiliary components. (Lochinvar, No. 29 at p. 2) Lochinvar stated that while the proposed change in the measurement of electrical consumption seems unnecessary, it does not object to the revision.

After reviewing the comments on the March 2015 NOPR, DOE agrees with the alternative approach suggested by AHRI to make explicit that all of the electrical energy provided to the burner is captured in the E_{AE} measurement. Rather than including the additional terms in the equation for E_{AE} as proposed in the NOPR, DOE clarifies the definition of PE to include all of the electrical power that relates to burner operation, including energizing the ignition system, controls, gas valve or oil control valve, and draft inducer, if applicable.⁷ In addition, DOE agrees with Burnham that the electrical power of the boiler pump, if present, should be accounted for in the electrical measurements for boilers. Therefore, DOE further amends the definition of PE for boilers to include the electrical power of the boiler pump. In cases where the boiler pump power might not be captured in the electrical power measurement because it is not operating at that time, DOE will require the nameplate power to be added to PE, and if nameplate power is not available, then manufacturers must include a

⁷ The existing DOE test procedure states in section 10.4.1 that PE is the "burner electrical power input at full load steady-state operation, including electrical ignition device if energized, as defined in 9.1.2.2 of ASHRAE 103–1993."

default value of 0.13 kW. This is the same as the current default value for a circulating water pump, and DOE understands that the power of the boiler pump is similar to that of a typical circulating water pump. DOE revises sections 8.1, 8.2, and 10.4 of appendix N to subpart B of 10 CFR part 430 to reflect the clarification of the definition of PE.

The revised section 2 of appendix N defines the individual components that are measured as part of PE:

- Control means a device used to regulate the operation of a piece of equipment and the supply of fuel, electricity, air, or water.
- Draft inducer means a fan incorporated in the furnace or boiler that either draws or forces air into the combustion chamber.
- Gas valve means an automatic or semi-automatic device consisting essentially of a valve and operator that controls the gas supply to the burner(s) during normal operation of an appliance. The operator may be actuated by application of gas pressure on a flexible diaphragm, by electrical means, by mechanical means or by other means.
- Oil control valve means an automatically or manually operated device consisting of an oil valve for controlling the fuel supply to a burner to regulate burner input.
- Boiler pump means a pump installed on a boiler that maintains adequate water flow through the boiler heat exchanger and that is separate from the circulating water pump.

Although these definitions were not explicitly proposed in the NOPR, they provide additional clarity about the definition of PE, consistent with the proposal in the NOPR to improve the regulatory text to reflect that PE includes the electrical power of all auxiliary components.

Carrier noted that DOE in the past had held to the policy of not making changes that will negatively impact present ratings. The electrically-efficient furnaces ratio, known as “e”, will increase with the additional requirement, making some products lose their ENERGY STAR® qualification. Carrier stated that including additional electrical components along with the blower electrical consumption is equivalent to changing the ENERGY STAR qualifying standard without justifying the value. (Carrier, No. 34 at p. 4)

In response to Carrier’s concerns, DOE notes that the definition of PE has always been the electrical energy input to the burner and that the amendments adopted in this rule merely make explicit additional components that are

commonly incorporated into burners. Further, as noted in many other stakeholder comments, most manufacturers already measure the electrical power of all the auxiliary components that are listed in the revised definition of PE. Therefore, clarifying the additional components in the definition of PE will not affect ENERGY STAR ratings for most furnaces. Furthermore, the clarification of the definition of PE ensures more accurate and consistent reporting of energy consumption in the residential furnaces and boilers market.

Weil-McLain stated that the new electrical testing requirements would not allow the manufacturer to interpolate results from tests because the electrical load will not scale in the same manner as other aspects of a boiler. This means hundreds of new tests will need to be run, imposing substantial cost and burden. (Weil-McLain, No. 31 at p. 6)

In response to Weil-McLain’s comment, DOE notes that only cast iron sectional boilers may be certified based on linear interpolation, as specified in 10 CFR 429.18(b)(3). As stated previously, the amendment of the definition of PE will not impose additional burden because it does not change the definition but merely clarifies the components included in measurement of PE. In addition, DOE’s understanding is that cast iron sectional boilers are typically non-condensing models that do not have boiler pumps.

Burnham recommended that DOE provide regulatory provisions to ensure that electrical consumption is measured with the controls normally shipped with the boiler. Such provisions are required because in many cases it is impossible to perform the AFUE test using controls having an automatic means of adjusting water temperature, making replacement of the standard controls during the AFUE test mandatory. (Burnham, No. 35 at p. 4) DOE notes that the electrical power measurement during the steady-state test does not account for electrical power outside of normal steady-state operation. Therefore, any controls operation outside of the steady-state test, such as automatic means for adjusting water temperature, are not included in the electrical power measurement.

2. Smoke Stick Test for Determining Use of Minimum Default Off-Cycle and Power Burner Draft Factors

In the March 2015 NOPR, DOE proposed to leave the default draft factor values for furnaces and boilers unchanged from the existing text procedure. 80 FR 12876, 12885. DOE

did not receive any comments on this issue, and does not amend the default draft factor values for this final rule.

In addition, to determine if a unit has no measureable airflow through the heat exchanger such that manufacturers may use the minimum default draft factors, DOE proposed in the March 2015 NOPR to incorporate a test based on the use of a smoke stick to establish the absence of flow through the heat exchanger. DOE requested input on whether, in addition to the proposed smoke stick test, other options exist for indicating the absence of flow through the heat exchanger. 80 FR 12876, 12902.

Lochinvar stated that it appreciates and supports the DOE’s affirmation of the use of smoke for visual determination of no-flow conditions in the vent. (Lochinvar, No. 29 at p. 4) Similarly, Rheem stated that although the proposed procedure is not quantitative, it is more definitive than “absolutely no chance of airflow through the combustion chamber and heat exchanger when the burner is off.” (Rheem, No. 30 at p. 3)

Ingersoll Rand and Carrier stated that the proposed procedure requires a detailed definition of the “smoke stick device” and test method to be created and made available. (Ingersoll Rand, No. 37 at p. 5; Carrier, No. 34 at p. 5) Ingersoll Rand stated that the test method and materials to be used need to be explicitly documented to ensure that all test labs generate repeatable and reproducible test results. (Ingersoll Rand, No. 37 at p. 5) Carrier also requested additional information as to where smoke sticks can be obtained commercially. (Carrier, No. 34 at p. 5)

DOE agrees with Rheem that the test procedure is not quantitative; however, the purpose of the test is to provide a visual assessment of no airflow, not a quantitative measure of airflow. Regarding the Ingersoll Rand and Carrier request to provide a detailed definition of the smoke stick device, DOE notes that smoke sticks are commercially available and routinely used for visualization purposes, and DOE does not endorse a specific type of smoke stick device. In addition, DOE believes that the exact amount of smoke produced by the smoke stick is not essential to the reproducibility of the results.

Ingersoll Rand expressed concern about air flow in the lab and if manufacturers can fix their venting such that air does not flow through it. (Ingersoll Rand, Public Meeting Transcript, No. 23 at p. 117) Similarly, Carrier requested DOE to add clarification to the procedure to ensure that the smoke stick is not affected by

the ventilation system when used. Carrier also expressed concern about the use of a smoke-generating device in a lab area that is not appropriately ventilated. (Carrier, No. 34 at p. 5)

In response to Ingersoll Rand, DOE already specified that all air currents and drafts be minimized for the smoke stick test in the March 2015 NOPR. For this final rule, DOE explicitly states that ventilation should be turned off if the test area is mechanically ventilated, and to minimize air currents if there is no mechanical ventilation. To address Carrier's safety concerns, DOE clarifies that the smoke produced by the smoke stick must be non-toxic to the test personnel. DOE is confident that the smoke stick test as proposed in the NOPR and modified based on the clarifications recommended by stakeholders will ensure repeatable and reproducible test results. Therefore, DOE adopts the modified optional smoke stick test to determine the absence of flow through the heat exchanger.

In the March 2015 NOPR, DOE also proposed to include revisions to the requirements of sections 8.8.3 and 9.10 of ASHRAE 103–2007 to accommodate the use of the smoke stick test, and, to reduce redundancy, to eliminate use of the term “absolutely” from “absolutely no chance of airflow” in sections 8.8.3 and 9.7.4 of ASHRAE 103–2007. 80 FR 12876, 12902. DOE received no comment on these proposals. Even though DOE has decided not to adopt ASHRAE 103–2007 and instead retain reference to ASHRAE 103–1993, the relevant sections do not differ between the two versions. Therefore, DOE is adding sections 7.10 and 8.10 to appendix N and revising sections 10.2 and 10.3 of appendix N to accommodate the use of the smoke stick test and is eliminating the use of the term “absolutely” from “absolutely no chance of airflow” in sections 8.8.3 and 9.7.4 of ASHRAE 103–1993 (included as sections 7.10 and 8.9 of appendix N) for determining the use of the minimum default draft factors.

3. Condensate Collection During the Establishment of Steady State Conditions

In the March 2015 NOPR, DOE proposed to allow for the condensate mass to be measured during the establishment of steady-state conditions, rather than after steady-state has been achieved. 80 FR 12876, 12881. Section 9.2 of ASHRAE 103–1993 requires that the measurement of condensate shall be conducted during the 30-minute period after steady-state conditions have been established. For the March 2015 NOPR,

DOE investigated the difference in condensate mass collected and the rate of condensate production during the two separate periods (*i.e.*, during the establishment of steady-state conditions and after steady-state conditions have been reached) and determined that there is no significant difference in the mass of condensate collected or the rate of condensate production during the two separate timeframes.

In response to the March 2015 NOPR, Lennox, Lochinvar and AHRI stated their support for the allowance to measure condensate during the establishment of steady-state conditions. (Lochinvar, No. 29 at p. 2; Lennox, No. 32 at p. 3; AHRI, No. 36 at p.5; Ingersoll Rand, No. 37 at p. 5) However, Lennox, AHRI and Ingersoll Rand each noted that to avoid an unintended consequence of causing manufacturers to retest existing models, this change should be clearly identified as an option to the current procedure. (Lennox, No. 32 at p. 3; Lennox, No. 32 at p. 3; AHRI, No. 36 at p.5; Ingersoll Rand, No. 37 at p. 5) Carrier also agreed that the condensate collection can be done during the steady state period, so long as clarification is added to prevent testing with dry heat exchangers. (Carrier, No. 34 at p. 4)

On the other hand, Rheem did not support allowing the measurement of condensate during the establishment of steady state conditions. (Rheem, No. 30 at p.1) Rheem argued that condensate measurements have a significant impact on the final calculated AFUE value and that additional variation in the condensate measurement procedure will add variation to the test procedure. Rheem believes that the time spent to establish steady-state conditions is worthwhile and should not be eliminated. (Rheem, No. 30 at p.1)

DOE understands commenters' concerns regarding the test burden associated with the need to retest existing models to the new test procedure. Therefore, DOE has made the ability to measure condensate during the establishment of steady-state conditions an option, not a requirement. This change is incorporated in section 8.4 of appendix N.

In response to Rheem, DOE notes that test data indicate a similar rate of condensate mass production in both the establishment of steady-state, and measurement of condensate test intervals. Therefore, DOE does not expect any impact on AFUE to result from the allowance of this optional procedure.

4. Installation and Operation Manual Reference

The existing DOE test procedure language, which refers in some locations to “manufacturer recommendations” or “manufacturer instructions”, can lead to the use of ad hoc instructions derived solely for testing purposes. To clarify the test procedure language, DOE proposed in the March 2015 NOPR that testing recommendations should be drawn from each product's I&O manual. DOE also provided alternate instructions if the I&O manual did not contain the necessary testing recommendations. 80 FR 12876, 12883. Lastly, in the March 2015 NOPR, DOE proposed to require manufacturers to request a test procedure waiver from DOE when the DOE test procedure provisions and I&O manuals are not sufficient for testing a furnace or boiler. *Id.* These proposals, comments received, and responses are discussed in the following sub-sections.

a. Reference to I&O Manual

DOE did not receive any comments objecting to reference the manufacturer's I&O manuals instead of “manufacturer's instructions” or “manufacturer's recommendations.” Therefore, DOE replaces all references to “manufacturer's instructions” or “manufacturer's recommendations” in ASHRAE 103–1993 with “I&O manual” in appendix N.⁸ However, in response to the March 2015 NOPR, Burnham suggested revising the definition of I&O manual in section 2.7 because many oil boilers do not carry a safety listing as a packaged unit; rather, they are comprised of separately listed components. (Burnham, No. 35 at p. 5) DOE agrees with Burnham that some boilers do not carry safety listings as packaged units and thus excludes the reference to the product's safety listing in the adopted definition of I&O manual in section 2 of appendix N.

b. Proposed Specific Instructions for Adjusting Combustion Airflow

In the NOPR, DOE proposed specific instructions for adjusting combustion airflow to achieve an excess air ratio, flue O₂ percentage, or flue CO₂ percentage to within the middle 30th percentile of the acceptable range specified in the I&O manual. AHRI stated that the specification of “the 30th percentile of the acceptable range” is confusing. The 30th percentile is a

⁸ DOE replaced references in sections 7.1, 7.2.2.2, 7.2.2.5, 7.2.3.1, 7.8, 8.2.1.3, 8.3.3.1, 8.4.1.1, 8.4.1.1.2, 8.4.1.2, 8.4.2.1.4, 8.4.2.1.6, 8.7.2, and 9.5.1.1 of ASHRAE 103–1993 with sections 6.1, 6.2, 6.3, 6.4, 6.5, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.9, and 8.5 of appendix N, respectively.

single value so it is not clear what is meant by “the middle of the 30th percentile.” (AHRI, No. 36 at p. 3) Ingersoll Rand stated that the proposed burner adjustments are more restrictive than both the current test procedure and the specifications found in ASHRAE Standard 103–2007. (Ingersoll Rand, No. 37 at p. 6) Burnham stated that while it supports DOE’s effort to more closely tie air fuel ratio used during the test with what can be expected in the field, DOE needs to recognize that the industry practice has been to use the CO₂ at the top end of the range (or in some cases even higher) in the I&O manual. (Burnham, No. 35 at p. 4) Lochinvar objected to the proposed changes, stating that forcing boiler manufacturers to test at the maximum input rate and the middle air-fuel ratio is not typical of field installations, is inconsistent with past rating methods, and will force manufacturers to rerate boilers based on this test procedure change. Lochinvar suggested adopting language from section 5.3 of AHRI Standard 1500, which uses the CO₂ at the top of the manufacturer’s specified range, to provide improved clarity and specificity regarding the air-fuel adjustment and to be more consistent with current industry practice, with much less potential to force manufacturers to retest and rerate existing products.⁹ (Lochinvar, No. 29 at pp. 2–3)

Lennox, AHRI, and Burnham noted that the proposed adjustment of the CO₂ percentage on gas- and oil-fired boilers would significantly affect AFUE. (Lennox, No. 32 at p. 3; AHRI, No. 36 at pp. 3–4; Burnham, No. 35 at pp. 2, 4) AHRI stated that the results of the testing of three residential boilers that it conducted at Intertek Testing Laboratories indicate that the proposed revised burner setup requirements change AFUE by 0.3 percent for each 1 percent difference in the CO₂ values. (AHRI, No. 36 at pp. 3–4) Burnham stated that based on test data that it provided, for an oil-fired hot water boiler with an 11.5 to 12.5 percent CO₂ adjustment range in the I&O manual, DOE’s proposed adjustment would reduce AFUE by as much as 1.0 percent compared to the rating under the existing test procedure. (Burnham, No. 35 at p. 2) Burnham stated that the proposed change to the requirements for adjusting CO₂ will have a significant impact on the existing ratings for many boilers, and that DOE needs to take this into account when evaluating the burden imposed by this rule, as well as

promulgating the parallel residential boiler standards rulemaking currently underway. (Burnham, No. 35 at p. 4)

Carrier, Ingersoll Rand, and Rheem stated that most modern furnaces do not have the capability to make combustion air adjustments because the practice of including primary air shutters is no longer widely used on modern gas furnaces with fan-assisted or power burners. (Carrier, No. 34 at pp. 3–4; Ingersoll Rand, No. 37 at p. 6; Rheem No. 30 at p. 3) AHRI and Burnham also stated that for many gas furnaces and boilers that use atmospheric burners or other equipment with no means of adjusting CO₂ in the field, these adjustments to the excess air ratio cannot be made. (AHRI, No. 36 at p. 3, Burnham, No. 35 at p. 4) Carrier, Ingersoll Rand, and Burnham stated that DOE needs to exclude from these requirements burners that have no capability to make combustion air adjustments. (Carrier, No. 34 at pp. 3–4; Ingersoll Rand, No. 37 at p. 6; Burnham, No. 35 at p. 4)

Burnham stated that some type of tolerance is needed for adjusting CO₂ when the I&O manual provides only a single or maximum value, as opposed to a range. To address this issue, Burnham suggested adopting the language in section 5.3 of AHRI Standard 1500, which essentially sets a fixed tolerance of ± 0.1 percent and uses the CO₂ at the top, as opposed to the middle, of the manufacturer’s specified range.¹⁰ (Burnham, No. 35 at p. 4)

After reviewing stakeholders’ comments on the specific instructions for adjusting combustion airflow, DOE concurs that further study is needed to determine the impact on AFUE of the CO₂ percentage proposed in the March 2015 NOPR and the AHRI 1500 requirements suggested by certain stakeholders. As such, for this final rule, DOE does not adopt the specific instructions for adjusting combustion airflow to achieve an excess air ratio, flue O₂ percentage, or flue CO₂ percentage to within the middle 30th percentile of the acceptable range specified in the I&O manual. Instead, in sections 7.3 and 7.5 of appendix N, DOE retains the instructions in accordance with ASHRAE 103–1993 section 8.4.1.1 for gas burners to set the primary air shutters to give a good flame with no deposit of carbon during the test procedure, and section 8.4.1.2 for oil burners to give a CO₂ reading as specified in the I&O manual and an hourly Btu input within $\pm 2\%$ of the

normal hourly Btu input rating as specified in the I&O manual. DOE understands from stakeholder comments that the instructions in the existing test procedure to adjust the primary air shutters for gas units are not applicable to many modern furnaces and boilers. However, DOE has determined that further investigation is required before amending these test procedure requirements.

c. Waiver Process for Additional Test Instructions

In response to DOE’s proposal that manufacturers request a test procedure waiver from DOE when the DOE test procedure provisions and I&O manuals are not sufficient for testing a furnace or boiler, Burnham stated that the proposed waiver process is unduly burdensome, given the use of increasingly complex control and burner systems. To reduce the frequency with which waivers are required, Burnham suggested that DOE adopt a repository for “special test instructions” similar to that which DOE currently has in place for commercial boilers. (Burnham, No. 35 at p. 5) Lennox and AHRI similarly stated that if DOE is concerned about the situation where the manufacturer does not provide any recommended settings in the I&O manual, DOE should allow manufacturer to provide information on unit setup for testing as part of the certification report as is done for commercial and industrial equipment. (Lennox, No. 32 at p. 3; AHRI, No. 36 at pp. 4, 6)

In response to stakeholders’ comments, DOE notes that manufacturers have control over what information is specified in the I&O manual. Furthermore, the test procedure provides defaults for most requirements that are based on the I&O manual. As such, DOE believes the instructions given in the test procedure and I&O manuals should be sufficient for testing in most cases. Therefore, DOE is not amending its certification provisions to permit manufacturers to report test-specific instructions as supplemental information in cases where the I&O manual does not provide instructions, and is implementing the requirement to request a waiver in section 6.1.a of appendix N. DOE also notes that the waiver procedure provides a feedback loop by which DOE learns of issues manufacturers are encountering with the test procedure and yields amendments to the test procedure through rulemaking to address those issues.

⁹ AHRI Standard 1500 is available at <http://ahrinet.org/site/686/Standards/HVACR-Industry-Standards/Search-Standards>.

¹⁰ AHRI Standard 1500 is available at <http://ahrinet.org/site/686/Standards/HVACR-Industry-Standards/Search-Standards>.

5. Duct Work for Units That Are Installed Without a Return Duct

In the March 2015 NOPR, DOE proposed to add a provision in the test procedure clarifying that the return (inlet) duct is not required during testing for units that, according to the I&O manual, are intended to be installed without a return duct. 80 FR 12876, 12902–12903.

In response, Rheem, Carrier, and Ingersoll Rand agreed that a unit that is intended to be installed without a return duct should be tested without a return duct. (Rheem, No. 30 at p. 3; Carrier, No. 34 at p. 6; Ingersoll Rand, No. 37 at p. 5) In addition, Carrier recommended that DOE adopt figure 2 in exhibit 1 of Carrier's comment, which clarifies the use of a return duct for gas furnaces. (Carrier, No. 34 at p. 6)

DOE agrees with stakeholders and adopts the amendment clarifying that units intended to be installed without a return duct are not required to use the return (inlet) duct during testing. After reviewing the figure provided by Carrier, DOE believes that the language is sufficient and an additional figure is unnecessary.

6. Testing Requirements for Multi-Position Configurations

In the March 2015 NOPR, DOE proposed to require that multi-position furnaces be tested using the least-efficient position.¹¹ DOE also proposed to explicitly allow manufacturers to test multi-position furnaces in other configurations and report the AFUE ratings for each position. 80 FR 12876, 12886.

In response, AHRI stated that they believe that manufacturers already test in the least-efficient configuration. (AHRI, Public Meeting Transcript, No. 23 at p. 123)

Carrier stated that in the past, it has tested and displayed the AFUE by orientation of installation; however, it no longer does so because the multiple ratings by position did not give customers any benefit. Because the setup requirements of the DOE test procedure already cause furnaces to operate at the lowest efficiency, thus making AFUE ratings conservative for the average installation, Carrier recommended that DOE drop the requirement to test in all positions and simplify the testing to be in the most commonly installed position of the furnace. If DOE were to require testing in all positions, Carrier proposed an

alternative to allow single rating that is weighted based on percent of applications by configuration and installation location to reduce sample testing burden and not confuse consumers with excess information. (Carrier, No. 34 at pp. 6–8)

Lennox disagreed with the testing requirements in multiple configurations because of the increased test burden and lack of improved test accuracy. (Lennox, No. 32 at pp. 3–4)

In response to Carrier's and Lennox's concerns about increased test burden if required to test in all configurations, DOE clarifies that in the March 2015 NOPR, DOE did not propose to require manufacturers to test in all positions, but rather to require testing only in the least efficient configuration while explicitly allowing manufacturers to test in multiple configurations if they wish. DOE notes that, as stated by AHRI, it is already common industry practice to test in the least efficient configuration; accordingly, DOE anticipates that there will be no additional test burden from the clarification to require testing in the least efficient configuration. Regarding Carrier's suggestion to test in the dominant installed position, DOE believes that testing in the least efficient position will provide ratings that are more comparable between different models because the dominant position may not be the least efficient configuration and may vary among models and among manufacturers. DOE believes that Carrier's suggestion of a weighted rating is not practicable because DOE is not requiring manufacturers to test in all configurations, only the least efficient one. Therefore, in section 6.1.b of appendix N and in 10 CFR 429.18, DOE amends its regulations to require testing and rating only in the least efficient configuration, while still allowing manufacturers the ability to test and rate in multiple configurations. In addition, DOE includes a definition for multi-position furnace in section 2 of appendix N.

In the March 2015 NOPR, DOE also proposed to allow testing of units configured for multiple position installations to use the blower access door as an option instead of one of the inlet openings. 80 FR 12876, 12886 (March 11, 2015). In response, Rheem stated that a furnace should not be tested in a configuration that is prohibited by the installation manual. For example, Rheem stated that its furnace installation manuals allow only bottom and side returns. A rear return and a return in place of the blower access door are not allowed. (Rheem, No. 30 at p. 4) Ingersoll Rand stated that

testing of multi-position units using the blower access door may not be feasible option for some furnaces, and the manufacturer should state whether this is an acceptable test method for the furnace model. (Ingersoll Rand, No. 37 at p. 6)

DOE agrees with Rheem and Ingersoll Rand that units should not be required to be tested using the blower access door if not allowed in the I&O manual or if not feasible. In an effort to ensure consistent and appropriate testing, DOE withdraws its proposal that would have explicitly allowed the use of the blower access door for testing of multi-position furnaces and boilers that are not shipped with an open inlet.

7. AFUE Reporting Precision

DOE's existing furnaces and boilers test procedure specifies that the AFUE rating be rounded to the nearest whole percentage point. 10 CFR 430.23(n)(2). In the March 2015 NOPR, DOE sought comment on its proposal to report AFUE to the nearest tenth of a percentage point. 80 FR 12876, 12902.

AHRI, Lochinvar, Lennox, and Burnham support reporting of AFUE to the nearest tenth of a percentage point and noted that it reflects the current practice. (AHRI, No. 36 at p. 6; Lochinvar, No. 29 at p. 4; Lennox, No. 32 at p. 3; Burnham, No. 35 at p. 6) However, Burnham does not agree with the proposal to round to the nearest 0.1 percent, stating that it would be a direct violation of 10 CFR 429.18(a)(2)(i)(B) requiring any representative value of AFUE for which consumers would favor higher values to be less than or equal to the lower of the mean of the sample or the lower 97.5 percent confidence limit (LCL) of the true mean divided by 0.95. Burnham stated that rounding up would allow the representative value to potentially be higher than allowed by calculation mentioned. Burnham urged DOE to prescribe the current industry practice of truncating to 0.1 percent. (Burnham, No. 35 at pp. 6–7)

In contrast, Rheem stated that rating furnaces to the nearest tenth of a percentage point will give consumers the impression that one furnace is more efficient than another, while in actuality, the test procedure tolerances do not result in the proposed level of precision that should be required to support reporting AFUE to the nearest tenth of a percentage point. (Rheem, No. 30 at p. 3)

Ingersoll Rand stated that while DOE's CCMS can accommodate reporting AFUE to this level, any manufacturer that reports AFUE to the whole percentage point will have to submit new certification reports and

¹¹ A multi-position furnace is a furnace that can be installed in more than one airflow configuration (e.g., upflow or horizontal; downflow or horizontal; and upflow, downflow or horizontal).

relabel products. Ingersoll Rand stated that having to submit new certification reports and relabel products will cause an administrative burden and cost to manufacturers that was not addressed in the March 2015 NOPR. Ingersoll Rand requested that DOE consider setting the effective date of this requirement to coincide with the effective date of any amended energy conservation standard adopted under the March 12, 2015 energy conservation standards NOPR for residential furnaces. (Ingersoll Rand, No. 37 at p. 6)

AHRI stated that it reports to the nearest tenth to DOE for furnaces but not for boilers due to Environmental Protection Agency (EPA) and ENERGY STAR requirements. (AHRI, Public Meeting Transcript, No. 19 at p. 89) Burnham urged DOE to work with the EPA to simultaneously update the ENERGY STAR requirement of rounding to the nearest whole percentage point to avoid conflicting values on the DOE and ENERGY STAR Web sites. (Burnham, No. 35 at p. 7)

DOE understands that reporting AFUE values to the nearest tenth of a percentage point is currently industry practice. Based on 10 CFR 429.18(a)(2)(i)(B), DOE agrees with Burnham that AFUE should be truncated to the tenth of a percentage point. In response to Rheem's comment about the test procedure tolerances, DOE notes that in response to the January 2013 RFI, Rheem stated that this level of precision has been demonstrated to be statistically possible. (Rheem, No. 12 at p. 9). DOE also observes that Rheem, as well as many other manufacturers, reports AFUE to the tenth of a percentage point in DOE's Compliance Certification Database and the AHRI directory for some models. In response to Ingersoll Rand's comments, DOE notes that AHRI's certification directories for both furnaces and boilers as well as DOE's Compliance Certification Database already allow manufacturers to report AFUE to the nearest tenth of a percentage point. Therefore, DOE anticipates this clarification will not require changing the reported efficiency in manufacturer literature, nor will it cause significant manufacturer burden. Furthermore, in response to AHRI and Burnham, DOE notes that EPA must use the method of test, sampling plan, and representation requirements adopted by DOE. DOE will work with EPA to make sure the language in its specification is harmonized with federal regulations. Accordingly, DOE updates the existing requirement for residential furnaces and boilers in 10 CFR 430.23(n)(2) to truncate AFUE to the tenth of a

percentage point. DOE also clarifies in 10 CFR 429.18 that the represented value of AFUE based on the tested sample must be truncated to the tenth of a percentage point.

8. Definitions and Other Changes

In this final rule, DOE revises the term "seasonal off switch" to "off switch" and revises the definitions of "off mode" and "standby mode" in section 2 of appendix N to reflect the updated definitions found in the second edition of IEC 62301, which was incorporated by reference in the December 2012 final rule. DOE also revises sections 8.1, 8.2, and 8.4 of the existing appendix N (sections 8.3, 8.5, and 8.7 of the amended appendix N) to clarify and improve the test instructions. DOE also revises sections 10.4, 10.5, 10.6, 10.7.3, 10.9, 10.9.1, and 10.11 of appendix N to improve grammar and consistency in formatting throughout the test procedure, and to include missing variable definitions. In addition, DOE incorporates the previously excluded section 9.7.1 of ASHRAE 103–1993 to include instructions on the setup of the tracer gas test. DOE updates the definition of "isolated combustion system" in section 2.5 of the existing appendix N (2.8 of the amended appendix N) to reflect the updated definition in ASHRAE 103–2007. Finally, DOE modifies section 8.3 of the existing appendix N (8.6 of the amended appendix N) to clarify that the referenced time delay is the blower delay t^* . DOE did not receive comment on any of these revisions where proposed in the NOPR.

E. Other Test Procedure Considerations

1. Room Ambient Air Temperature and Humidity Ranges

In the March 2015 NOPR, DOE proposed not to change the test procedure regarding room ambient temperature and humidity conditions, neither by mathematical correction nor by limiting the existing ambient condition range, and requested input on this approach. 80 FR 12876, 12889.

Lochinvar and Lennox stated their support for DOE's proposal not to further restrict the ambient conditions due to the additional test burden it would cause. (Lochinvar, No. 29 at p. 4; Lennox, No. 32 at p. 4) Rheem stated that they believe that the ambient conditions range requires further study. Rheem noted that the room ambient air temperature and humidity ranges were developed based on 30-year-old laboratory conditions and that laboratory conditions may be more carefully controlled today compared to

the long past. (Rheem, No. 30 at p. 1) AHRI noted that the new edition of ASHRAE–103–2016 will be issued for public review and one of the proposed amendments is to include changes to the definition of room ambient air operating conditions. (AHRI, No. 36 at p. 5)

Burnham stated that they disagree with DOE's assertion in the March 2015 NOPR that relative humidity (RH) has a minimal impact on the AFUE of condensing boilers and stated that the issue should be revisited. Burnham provided test data of a condensing boiler which shows a swing in AFUE of approximately 1.3 percent when the RH was changed from approximately 30 percent to 70 percent. Burnham stated that they expect the variation in AFUE as a function of RH to be at least as large for boilers as it is for furnaces. Burnham noted that the flue temperature of boilers is closely linked to the return water temperature during the test (120 °F), which is close to the typical dew point of natural gas flue products. Changes in RH may therefore have a large impact on where the temperature of the flue products falls below the dew point as they pass through the heat exchanger. Burnham stated that if ambient conditions have a significant impact on AFUE, DOE should tighten the tolerance for RH to conditions likely to be seen in the field, even if this results in an increased burden for manufacturers in the form of requiring conditioned lab facilities. (Burnham, No. 35 at p. 7)

DOE agrees with Rheem and Burnham that the impact of ambient conditions on AFUE warrants further study. However, at this time DOE does not have adequate data to justify the testing burden associated with the narrowing of ambient conditions. Therefore, DOE maintains the ambient conditions specified in the current test procedure.

2. Full-Fuel-Cycle Energy Metrics

In the March 2015 NOPR, DOE stated that the test procedure rulemaking was not the appropriate vehicle for deriving an FFC energy descriptor for furnaces (and other products). Specifically, DOE noted that if a secondary FFC energy descriptor were included as part of the furnace and boiler test procedure, DOE would need to update the test procedure annually. DOE indicated its intent to estimate FFC energy savings in future energy conservation standards rulemakings for furnaces, and to take those savings into account in proposing and selecting amended standards. 80 FR 12876, 12896.

In response to the NOPR, AGA expressed their disagreement with

DOE's position, stating that the test procedure develops the energy efficiency rating for the product and is specifically the correct vehicle to be used for determining the FFC energy descriptor. AGA added that all that is needed is a mathematical adjustment to the site-based energy descriptor now determined by the test procedure. AGA requested that the Department reconsider its decision not to include provisions for an FFC energy descriptor and incorporate one in the test procedures for residential boilers and furnaces. (AGA, No. 27 at p. 3)

DOE maintains its position outlined in the NOPR that it does not believe that a mathematical adjustment to the test procedure to account for FFC is appropriate. As noted in the March 2015 NOPR, the mathematical adjustment to the site-based energy descriptor relies on information that is updated annually. If DOE were to include such an adjustment to the test procedure, DOE would be required to update the test procedure annually.

3. Oversize Factor Value

In the March 2015 NOPR, DOE proposed to maintain the existing oversize factor of 0.7 and sought comment on the appropriateness of this strategy.¹² 80 FR 12876, 12891.

Rheem stated that replacement furnaces are more likely to be oversized than a new construction furnace because the unit may not be resized when it is replaced with a more efficient unit. Rheem also noted that it is more likely for a furnace to be oversized in a climate with high variation in outdoor temperature, or if it is installed in an area with high airflow requirements for the cooling load. (Rheem, No. 30 at p. 4)

DOE agrees with Rheem that a variety of factors, including construction type and climate, may influence the magnitude of oversizing that occurs in a given installation. DOE did not receive any data supporting a change to the existing oversize factor of 0.7. DOE has determined the existing value of 0.7 continues to be representative of the oversized factor applicable to the average U.S. household and therefore maintains that value.

¹² The "oversize factor" accounts for the national average oversizing of equipment that occurs when a heating product is sized to satisfy more than the heating load of the household. This is typically done to size the equipment so that it is able to satisfy the days in which the house heating requirements might be exceeded and/or to take into account uncertainties regarding house heating load. For example, a 0.7 oversize factor is equivalent to 170-percent oversizing of the heating equipment (*i.e.*, 70 percent greater input capacity than is required).

4. Alternative Methods for Furnace/Boiler Efficiency Determination

In response to the March 2015 NOPR, Carrier questioned the need for a test method as precise as ASHRAE 103 due to the advances that have been made in reducing cyclical losses. Carrier noted that the difference between steady state efficiency and cyclical AFUE is less than 1 percent across all model types. Carrier suggested that DOE change the AFUE metric for forced-air furnaces to be based on the steady-state operation. (Carrier, No. 34 at p. 2) Carrier stated that this would simplify the test procedure and relieve significant burden from manufacturers. Carrier stated that the lab setup of gas furnaces during AFUE testing—including vent length, isolated combustion system (ICS) installation, off cycle times, and blower off delay time—rarely replicates the actual installation of condensing gas furnaces. (Carrier, No. 34 at p. 2)

DOE agrees that there have been significant advances in the minimization of cyclical losses since the inception of the AFUE metric. However, including cyclical losses, which are captured in the AFUE metric, still provides market differentiation for models that would yield the same steady-state values. Furthermore, DOE believes that the inclusion of cyclical losses in the AFUE metric has contributed to the increases in efficiency noted by Carrier. For these reasons, DOE declines to limit the calculation of AFUE to steady-state operation. DOE would be willing to work with industry to investigate this further to see if moving to a steady-state methodology has merit and meets the requirements of the statute.

5. Test Method for Combination Appliance

In the March 2015 NOPR, DOE discussed the possibility of creating a test procedure for determining the efficiency of combination products. Ultimately DOE did not propose to amend the test procedure to include a method of test for combination appliances choosing not to complicate the test procedure rulemaking. 80 FR 12876, 12894.

In response to the NOPR, Ingersoll Rand believes that EPCA anticipated products being capable of serving more than one function and expects DOE to set separate energy efficiency metrics for each major function. Ingersoll Rand noted that EPCA authorizes DOE to "set more than 1 energy conservation standard for each major function." (42 U.S.C. 6295(o)(5)) Ingersoll Rand suggested that establishing a

combination metric and setting a standard for a combination unit is contrary to EPCA. (Ingersoll Rand, No. 37 at p. 6)

DOE did not propose a combination metric in the NOPR, and does not amend the test procedure to include such a metric in this final rule.

F. Test Burden

EPCA requires that the test procedures DOE prescribes or amends be reasonably designed to produce test results that measure the energy efficiency, energy use, water use (in the case of showerheads, faucets, water closets, and urinals) or estimated annual operating cost of a covered product during a representative average use cycle or period of use. These procedures must also not be unduly burdensome to conduct. (42 U.S.C. 6293(b)(3))

In response to the March 2015 NOPR, Ingersoll Rand stated that the testing and reporting burden from the proposals would be far greater than the average 20 hours per response that DOE estimates. (Ingersoll Rand, No. 37 at p. 9) Weil-McLain expressed concerns that the cost of the proposed test is grossly underestimated and that cost analysis for all of the testing is fundamentally flawed and incomplete. Weil-McLain stated that a more appropriate estimate for the cost to re-test all models in DOE's example of average small boiler business with 70 basic models would be more than twenty times the estimate shown for various reasons, such as the cost of set up for each test, test re-runs if parameters are not met, test recording, and analysis time. In addition, Weil-McLain stated that: (1) Only the incremental cost related to the changes in procedure have been captured when in all likelihood all products will have to be retested through the entire test procedure; (2) at least two tests per model are required for data submittal; (3) initial certification and annual audits require an additional witness test by a third-party lab; (4) engineering, facility, or other charges were not captured; (5) third-party test agency fees were not considered; and (6) the time required to test the number of models for the manufacturer and third-party test agency capacity were not considered. Weil-McLain also stated that retesting and re-rating would take substantially longer than 180 days. (Weil-McLain, No. 31 at pp. 6–7) Ingersoll Rand stated that to retest all of its current models will require more than six months of lab time with a cost of over \$400,000. (Ingersoll Rand, No. 37 at p. 9)

Weil-McLain questioned why DOE would impose the burden of conducting all of the new tests on manufacturers

when DOE stated that the results from using new test procedures will not change when compared to current procedure. (Weil-McLain, No. 31 at p. 2)

Several stakeholders requested more time to conduct re-testing after the issuance of the final rule. Weil-McLain stated that the process of conducting all the tests, analyzing information, and conducting re-certification through the certified labs for hundreds of models cannot be completed within 180 days of when the final rule is issued. (Weil-McLain, No. 31 at p. 7) Similarly, Burnham expressed concern that it has found it impossible to thoroughly evaluate the impact of this NOPR, as it asserted that DOE provided only a short amount of time and inadequate information and resources during the rulemaking process. (Burnham, No. 35 at p. 8) Goodman stated that the industry needs at least 6 months to assess the impact of the new test procedure on existing basic models. (Goodman, No. 33 at p. 2)

Ingersoll Rand argued that the fact that many of the current models may be removed from the market as a result of the separate energy conservation standards rulemakings, Fan Energy Rating (FER) standard effective in 2019 and AFUE proposed standard effective in 2021, makes this retesting effort even more burdensome, unnecessary and wasteful. (Ingersoll Rand, No. 37 at p. 9) Carrier also stated that recent rulemakings, such as the standby power ruling and the recent legislation for furnace fans, have increased the test burden for gas furnace compliance compared to when the complicated AFUE procedure was formulated and first implemented. (Carrier, No. 34 at p. 3)

The many comments from manufacturers regarding re-testing of all models currently in distribution were responding to DOE's proposals to incorporate by reference ASHRAE 103–2007 and adjust the CO₂ percentage. Under the amended test procedure, DOE is not incorporating by reference ASHRAE 103–2007 or adjusting of the CO₂ percentage, and so manufacturers will not need to re-test their entire model line-up, thereby alleviating the concerns expressed by manufacturers. DOE has assessed the test burden of the revisions to the test procedure it is adopting in this final rule, and has concluded that manufacturers will experience no additional burden when performing the AFUE test.

DOE believes that the clarification of the electrical power term PE will not add any additional burden on manufacturers, since this is what has been required under the existing test

procedure. In terms of the boiler pump, DOE included a default value in case manufacturers are not currently capturing this component, which will minimize test burden.

Many manufacturers currently perform the tracer gas test to determine whether the minimum default draft factor of 0.05 may be used. DOE expects that, when establishing the absence of flow through the heat exchanger, the use of the smoke stick test will reduce the test burden to manufacturers by eliminating, in some cases, the need for the tracer gas test.

The optional provision allowing for the measurement of condensate during the establishment of steady-state conditions will provide manufacturers of condensing furnaces and boilers time and labor savings.

The inclusion of references to the I&O manual will provide additional guidance and clarity to the test procedure. It does not impose additional test burden since the information is already available in the manufacturers' literature.

The amendment of the duct work setup for units that are installed without a return duct and the requirement to test multi-position units in the least efficient position only clarify the testing requirements. The duct work setup change reflect current industry practice and does not introduce new testing requirements. With respect to the multi-position unit testing, most manufacturers indicated that the change reflects their understanding and current practice. DOE notes that, although the test method did not describe the position for testing as the "least efficient position," in practice, if following the existing method for setup, manufacturers should have tested the least efficient position or all testing configurations. DOE also notes that AHRI commented that this reflects the common practice of its members, which is to test in the least efficient position. (AHRI, Public Meeting Transcript, No. 23 at p. 123) Therefore, DOE expects that there would be no additional test burden associated with these revisions.

The requirement to report AFUE to be truncated to the tenth of a percentage point and the requirement to report whether a boiler uses a burner delay automatic means control strategy will not introduce any additional test burden because they do not require retesting; however, they may impose a cost on either boiler manufacturers or manufacturers who do not currently report AFUE to a tenth of a percentage point, who must submit new certification reports and relabel their

products. DOE discusses this burden in section IV.B.

For these reasons, DOE concludes that the amended test procedure will not be unduly burdensome to conduct.

G. Measured Energy Use

When DOE modifies test procedures, it must determine to what extent, if any, the new test procedure would alter the measured energy efficiency or energy use of any covered product. (42 U.S.C. 6293(e)(1)) In the NOPR, DOE stated that the one amendment that might alter the AFUE of covered products is the incorporation by reference of ASHRAE 103–2007. 80 FR 12876, 12897.

As discussed in section III.C, based on stakeholder comments, DOE has declined to incorporate by reference ASHRAE 103–2007 in this final rule. Therefore, the amended test procedure will not alter measured AFUE ratings.

As discussed in section III.D.1, certain stakeholders commented that the proposed revision in the NOPR regarding the method for determining the electrical power consumption would change the power measurements. In response to comments, for the Final Rule, DOE decided not to change the method for calculating the electrical consumption and only clarified the definition of the PE term. This clarification will not alter measured AFUE ratings.

As discussed in section III.D.3, certain stakeholders expressed concern that allowing the measurement of condensate during the establishment of steady state conditions would have an impact on the final calculated AFUE value. In response to comments, DOE clarified for the final rule that this is an option rather than a requirement. DOE has found through its testing as shown in the test data presented at the NOPR public meeting indicating both options produce a similar rate of condensate mass production and therefore would have a *de minimis* impact on measured AFUE ratings.

As discussed in section III.D.4.b, certain stakeholders expressed concern that the proposed adjustment of the CO₂ percentage on gas- and oil-fired boilers would significantly affect AFUE. In response to comments, DOE has declined to adopt this proposal for the final rule.

DOE received no comment regarding the impact of measured energy use on the remaining test procedure amendments, including the smoke stick test, duct work for units that are installed without a return duct, and testing requirements for multi-position configurations. The smoke stick test serves to verify a condition and does not

impact ratings. The requirements for units installed without a return duct and for multi-position configurations only clarify the testing requirements, and therefore will not impact measured energy use or efficiency.

For these reasons, DOE has determined that none of the adopted test procedure amendments would alter the projected measured energy efficiency or energy use of the covered products that are the subject of this rulemaking.

H. Certification and Enforcement

1. Verification Test for Automatic Means for Adjusting the Water Temperature in Boilers

In 2008, DOE published a technical amendment to the 2007 energy conservation standards final rule for residential furnaces and boilers that added design requirements for boilers consistent with the provisions of EISA 2007, including mandating, starting September 1, 2012, that all gas, oil, and electric hot water boilers (excluding those equipped with a tankless domestic water heating coil) be equipped with automatic means for adjusting the boiler water temperature (“automatic means”) to ensure that an incremental change in inferred heat load produces a corresponding incremental change in the temperature of water supplied (codified at 42 U.S.C. 6295(f)(3)).¹³ 73 FR 43611 (July 28, 2008). EISA 2007 further specifies that for single-stage hot water boilers, the automatic means requirement may be satisfied by incorporating controls that allow the burner or heating element to fire only when the automatic means has determined that the inferred heat load cannot be met by the residual heat of the water in the system. When there is no inferred heat load, the automatic means limits the temperature of the water in the boiler to not more than 140 °F.

The existing DOE residential furnace and boiler test procedure does not include any method of test for determining compliance with these design requirements. In the March 2015 NOPR, DOE proposed the introduction of a new test method for the verification of the automatic means for adjusting the water temperature in boilers. DOE proposed the use of two test methods—one for single-stage boilers and one for two-stage/modulating boilers—for verification of the functionality of the automatic means for adjusting the water

temperature supplied by a boiler. The proposed test methods were based on draft testing methodologies provided by Natural Resources Canada (NRCAN), as well as the California mechanical codes section for non-residential boilers.¹⁴ The two separate tests were developed to accommodate various boiler control strategies, including outdoor reset, inferred load, and thermal pre-purge (i.e., burner delay).¹⁵ The proposed test methods, as would be specified in 10 CFR 429.134, would be intended for use by DOE for assessment and enforcement testing to determine if a given basic model complies with the applicable design requirements. Therefore, boiler manufacturers would not be required to conduct this testing. 80 FR 12876, 12902.

Several stakeholders commented on the lack of compliance criteria for the automatic means test. Burnham asserted that it is legally unacceptable for DOE to not specify any objective criteria for demonstrating compliance and that DOE does not have authority to unilaterally create criteria to determine compliance with the automatic means test without notice and comment. (Burnham, No. 35 at p. 6) Weil-McLain stated that it is not clear what this required test criteria or procedure would be, but that, once defined, this test will require more time and resources to complete. Weil-McLain also asserted that the new requirement is arbitrary and capricious because it is so indefinite. (Weil-McLain, No. 31 p. 8)

DOE’s automatic means design requirement does not specify how a manufacturer must implement the automatic means and does not provide compliance criteria for the automatic means testing. DOE interprets the design requirement established by EISA 2007 as intending to allow manufacturers flexibility when designing control strategies to meet the design requirement. DOE believes that the requirement of an incremental change in inferred heat load that produces a corresponding incremental change in the temperature of water supplied is a sufficient metric for evaluation of the functionality of an automatic means for adjusting water temperature. DOE designed the tests, as noted in the March 2015 NOPR, to confirm whether the boiler supply water temperature responds to a change in inferred heat

load without specifying to what degree the temperature must change or for how long that change is present because such detail is not required for meeting the design requirement. DOE also designed the test methods to accommodate technological advancements in controls and designs. For these reasons, DOE does not agree with Burnham and Weil-McLain that establishing further criteria or thresholds is required beyond the general requirements set forth in the 2008 technical amendment to the furnace and boiler final rule.

Lochinvar stated that while it supports the use of automatic means as an effective method of energy conservation, it opposes testing controls for compliance for the following reasons: (1) The lack of compliance threshold; (2) no guarantee of repeatability or consistency in test method or results; (3) difficulty in reasonably measuring the effectiveness of different designs; (4) test method may be biased for or against certain control methods; and (5) a published simulation-type test will lead to manufacturers designing automatic means for the test compliance.

(Lochinvar, No. 29 at p. 3) AHRI stated that the criterion to confirm the functioning of the means is too vague to be meaningful, and that DOE should not finalize this proposed procedure and not pursue further the concept of adding a test to verify the functioning of the automatic means. (AHRI, No. 36 at p. 6)

Several stakeholders commented on technical issues regarding the proposed test method. Lochinvar and Burnham stated that single-stage products may use options other than “thermal purge.” (Lochinvar, No. 29 at p. 3; Burnham, No. 35 at p. 6) Lochinvar stated that if DOE chooses to require automatic means testing, single-stage boilers must be allowed to comply by meeting either the proposed test method in § 429.134(e)(1) or (e)(2). (Lochinvar, No. 29 at p. 3)

Lochinvar also stated that DOE incorrectly states that the automatic means will change the heat output of a boiler in response to the inferred heat load. Responding to DOE’s proposal in the March 31, 2015 notice of proposed rulemaking for energy conservation standards for boilers (“March 2015 ECS Boiler NOPR”), Lochinvar asserted that the automatic means would change the temperature of the water supplied, not necessarily the heat output. (Lochinvar, No. 29 at p. 4)

Burnham argued that the water temperatures specified are too low to necessarily cause a burner delay. Also responding to the March 2015 ECS Boiler NOPR, Burnham suggested that the proposed 10 CFR

¹³ The automatic means requirement excludes boilers that are manufactured to operate without any need for electricity. EISA 2007 also prohibited constant-burning pilot lights for gas-fired hot water boilers and gas-fired steam boilers. 73 FR 43611, 43613 (July 28, 2008).

¹⁴ California Energy Commission, “Reference Appendices for the 2008 Building Energy Efficiency Standards for Residential and Non-residential Buildings”, p. 332, (Available at: <http://www.energy.ca.gov/2008publications/CEC-400-2008-004/CEC-400-2008-004-CMF.PDF>) (Last accessed January 16, 2015).

¹⁵ See the March 2015 NOPR for further description of the different control strategies.

429.134(e)(1)(iii)(C) seems to imply that a delay will always be present.

However, Burnham asserted that EISA only requires that the automatic means delay ignition above 140 °F until it has determined that the inferred heat load cannot be met by the residual heat in the boiler. (Burnham, No. 35 at p. 6)

Burnham stated that the proposed 10 CFR 429.134(e)(2)(ii)(B)(1) specifies that the supply water temperature be maintained at “the lowest supply water temperature (± 4 °F),” which may not be possible if the boiler’s minimum input is greater than the corresponding load, resulting in burner cycling. Burnham stated that a similar problem is possible in the proposed 10 CFR 429.134(e)(2)(ii)(C)(2), where a “boost function” (a control strategy commonly used that shifts the y-intercept of the reset curve upward during extended calls for heat) might make it impossible to hold the required ± 3 °F tolerance for the boiler supply water temperature. (Burnham, No. 35 at p. 6)

Burnham stated that some of the control strategies currently in use require multiple burner cycles to determine the inferred heat load, which does not seem to be taken into account by DOE’s proposed verification method. (Burnham, No. 35 at p. 6)

DOE makes several changes to the proposed verification of automatic means tests to address the technical comments received from Lochinvar and Burnham. DOE revised the two tests for the verification of automatic means presented in the NOPR such that the test previously identified as the two-stage/modulating boilers test will apply to all boilers, with the exception of single-stage boilers that employ a burner delay control strategy. The test for all boiler products monitors water temperature settings from the inferential load controller and/or monitors supply water temperature to determine whether the supply water temperature changes in response to changes in the inferred load. This test method allows for establishing the necessary conditions that may lead to a change in inferred load, for example, a change in outdoor air temperature, a change in thermostat patterns, and/or a change in boiler cycling.

DOE is adopting the test previously identified as the single-stage boilers test as the test method for single-stage boilers that employ a burner delay control strategy to fulfill the automatic means design requirement as specified in 42 U.S.C. 6295(f)(3)(B)(ii). The test for single-stage boilers that employ a burner delay control strategy captures the delayed burner reaction following a call

for heating when residual heat is present within the boiler.

DOE agrees with Burnham and Lochinvar’s comments that help to clarify the test method and allow for accommodating variations in the control strategies. Therefore, DOE adopts revisions that include removing the minimum supply water temperature tolerance requirement to allow variations in temperature when burner cycling occurs; increasing the inlet water temperature from 120 °F (± 2 °F) to 140 °F (± 2 °F) for the test method for single-stage boilers that employ a burner delay control strategy so that it is high enough to cause burner delay; and making terminology related to inlet water consistent throughout the test method. However, DOE disagrees with Burnham’s comment that the tolerance range for determining a stabilized supply water temperature could not be met under a specific control strategy, such as the boost mode where an extended call for heating occurs until the heat demand is satisfied. In such a case, DOE’s test method would be implemented when either the heat demand is satisfied or the high boiler water temperature limit is reached.

As discussed in the March 2015 NOPR, DOE also adds a definition for “controlling parameter.” DOE has placed this definition in 10 CFR 430.2 rather than appendix N as it applies to DOE enforcement regulations rather than manufacturer testing. Controlling parameter is defined as a measurable quantity for a residential boiler (such as temperature or usage pattern) used for inferring heating load, which would then result in incremental changes in supply water temperature.

2. Compliance Dates for the Amended Test Procedure

This document amends 10 CFR 429.18, 10 CFR 429.134, 10 CFR 430.2, 10 CFR 430.3, 10 CFR 430.23, and 10 CFR part 430, subpart B, appendix N. When DOE modifies test procedures, it must determine to what extent, if any, the new test procedure would alter the measured energy efficiency or energy use of any covered product. (42 U.S.C. 6293(e)(1)) For the reasons described previously, DOE has determined that none of the test procedure amendments would alter the measured energy efficiency or energy use of the covered products that are the subject of this rulemaking. The changes made to appendix N through this final rule, as listed in section III.D, clarify the manner in which the test is conducted, or otherwise represent minor changes or additions to the test or reporting requirements that do not affect

measured energy use. Therefore, these amendments become effective 30 days after publication of this final rule in the **Federal Register**. Pursuant to 42 U.S.C. 6293(c)(2), 180 days after DOE prescribes or establishes a new or amended test procedure, manufacturers must make representations of energy efficiency, including certifications of compliance, using that new or amended test procedure.

IV. Procedural Issues and Regulatory Review

A. Review Under Executive Order 12866

The Office of Management and Budget (OMB) has determined that test procedure rulemakings do not constitute “significant regulatory actions” under section 3(f) of Executive Order 12866, “Regulatory Planning and Review,” 58 FR 51735 (Oct. 4, 1993). Accordingly, this action was not subject to review under the Executive Order by the Office of Information and Regulatory Affairs (OIRA) in OMB.

B. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Fairness Act of 1996) requires preparation of an initial regulatory flexibility analysis (IRFA) for any rule that by law must be proposed for public comment, unless the agency certifies that the rule, if promulgated, will not have a significant economic impact on a substantial number of small entities. As required by Executive Order 13272, “Proper Consideration of Small Entities in Agency Rulemaking,” 67 FR 53461 (August 16, 2002), DOE published procedures and policies on February 19, 2003, to ensure that the potential impacts of its rules on small entities are properly considered during the DOE rulemaking process. 68 FR 7990. DOE has made its procedures and policies available on the Office of the General Counsel’s Web site: <http://energy.gov/gc/office-general-counsel>.

DOE reviewed this final rule under the provisions of the Regulatory Flexibility Act and the procedures and policies published on February 19, 2003. 68 FR 7990. This final rule amends DOE’s test procedure by providing clarifications regarding relevant test procedure provisions and revising the definitions of some terms. DOE has concluded that this final rule will not have a significant impact on a substantial number of small entities. The factual basis for this certification is as follows:

The Small Business Administration (SBA) considers a business entity to be a small business if, together with its affiliates, it employs less than a threshold number of workers specified in 13 CFR part 121. These size standards and codes are established by the North American Industry Classification System (NAICS) and are available at http://www.sba.gov/sites/default/files/files/Size_Standards_Table.pdf. Residential boiler manufacturing is classified under NAICS 333414, "Heating Equipment (Except Warm Air Furnaces) Manufacturing," for which the maximum size threshold is 500 employees or fewer. Residential furnace manufacturing is classified under NAICS 333415, "Air-conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing" for which the maximum size threshold is 750 employees or fewer. To estimate the number of companies that could be small business manufacturers of products covered by this rulemaking, DOE conducted a market survey using available public information to identify potential small manufacturers. DOE's research involved reviewing several industry trade association membership directories (e.g., AHRI¹⁶), SBA databases,¹⁷ individual company Web sites, and marketing research tools (e.g., Hoovers¹⁸ reports) to create a list of all domestic small business manufacturers of residential furnaces and boilers covered by this rulemaking.

After DOE identified manufacturers of residential furnaces and consumer boilers, DOE then consulted publically-available data and contacted companies, as necessary, to determine if they both meet the SBA's definition of a "small business" manufacturer and have their manufacturing facilities located within the United States. DOE screened out companies that did not offer products covered by this rulemaking, did not meet the definition of a "small business," or are foreign-owned and operated. Based on this analysis, DOE identified 9 small businesses that manufacture residential furnaces and 9 small businesses that manufacture residential boilers (two of which also manufacture residential furnaces), for a total of 16 small businesses potentially impacted by this rulemaking.

This document amends DOE's test procedure by incorporating several

changes that modify the existing test procedure or reporting requirements for furnaces and boilers. This includes the following changes that could potentially impact manufacturers: (1) Clarified definition of electrical power term PE; (2) a smoke stick method for determining whether the minimum default draft factor may be used; (3) a provision to allow for the measurement of condensate under steady-state conditions; (4) reference to manufacturers' I&O manuals; (5) specification of ductwork for units that are installed without a return duct; (6) specification of testing requirements for multi-position units; (7) revised reporting precision for AFUE to the nearest tenth of a percentage point; and (8) requirement to report the use of a burner delay automatic means control strategy in certification reports. The estimated costs of testing/rating and potential impact to manufacturer burden resulting from use of the amended test procedure are discussed subsequently. The estimated costs and potential impacts apply to all manufacturers, including the manufacturers identified as small businesses.

DOE believes that explicitly listing the components encompassed in the definition of PE does not change the definition of the electrical power term PE but rather only clarifies it, and will not impose any additional test burden.

The adoption of the smoke stick method for determining whether the minimum default draft factor may be used is intended to reduce the test burden to manufacturers. DOE estimated that the smoke stick method for determining the minimum default draft factor would reduce the overall duration of the test by about 15 minutes for units designed to have no flow through the heat exchanger. However, DOE does not have sufficient information to support estimating the fraction of units that have been designed such that there is no flow through the heat exchanger. Therefore, DOE has not included the cost savings associated with the smoke stick.

The addition of the optional provision to allow for the measurement of condensate prior to the establishment of steady state conditions will result in a lowering of test burden for manufacturers of condensing furnaces and boilers. Manufacturers of condensing furnaces and boilers will benefit from the time and labor savings attributed to the measurement of condensate during the establishment of steady-state conditions. However, DOE does not have sufficient information to support estimating the fraction of units

that would be tested under the optional provision. Therefore, DOE has not included the cost savings associated with the optional provision to allow for the measurement of condensate prior to the establishment of steady state conditions.

The clarification of duct work requirements for units that are installed without a return duct and clarification of the test requirements for multi-position units do not present any additional test burden to manufacturers, as the two amendments do not change the existing testing requirements or conflict with current industry practice.

Revision of AFUE reporting precision and the requirement to report the use of a burner delay automatic means control strategy in the certification report do not present any additional test burden to manufacturers, as the two amendments do not change testing requirements. However, both amendments may require some manufacturers to submit new certification reports and relabel their products. DOE estimates that for affected parties, submitting new certification reports and relabeling products will take 30 minutes per unit. At an assumed cost of \$40 per hour, the cost to recertify and relabel is \$20 per unit.

To determine the potential cost of the test procedure amendments on small furnace and boiler manufacturers, DOE estimated the cost of recertifying and relabeling per basic model and the savings from the optional provision to measure condensate during the establishment of steady state conditions, as described above. DOE estimated that on average, each furnace small business would have 51 basic models, and each boiler small business would have 70 basic models. Based on residential furnace and boiler model data, DOE assumed that approximately 70 percent of all furnace and 60 percent of all boiler manufacturers will need to recertify and relabel due to the revision of the AFUE reporting precision. Based on residential boiler model data, DOE assumed that about 75 percent of boilers are single-stage boilers; furthermore, DOE assumed that about two-thirds of single-stage boilers employ a burner delay automatic means control strategy. Thus, DOE assumed that half of all boiler models will employ a burner delay automatic means control strategy. The additional recertification and relabeling cost associated with the test procedure amendments was multiplied by the estimated fraction of affected basic models produced by a small manufacturer. DOE has estimated a total added cost from the test procedure amendments of \$714 per furnace

¹⁶ For more information on the boiler and furnace directories, see <http://www.ahridirectory.org/ahridirectory/pages/home.aspx>.

¹⁷ For more information see: http://dsbs.sba.gov/dsbs/search/dsp_dsbs.cfm.

¹⁸ For more information see: <http://www.hoovers.com/>.

manufacturer and a total added cost of about \$1,120 per boiler manufacturer for manufacturers that currently do not report AFUE to the nearest tenth of a percentage point or for manufacturers of single-stage boilers that employ a burner delay automatic means control strategy.

For the reasons stated previously, DOE certifies that this rule will not have a significant economic impact on a substantial number of small entities.

C. Review Under the Paperwork Reduction Act of 1995

Manufacturers of residential furnaces and boilers must certify to DOE that their products comply with all applicable energy conservation standards. In certifying compliance with applicable performance standards, manufacturers must test their products according to the DOE test procedures for residential furnaces and boilers, including any amendments adopted for those test procedures. Manufacturers must also ensure their products comply with applicable design standards. DOE has established regulations for the certification and recordkeeping requirements for all covered consumer products and commercial equipment, including residential furnaces and boilers. *See generally* 10 CFR part 429. The collection-of-information requirement for certification and recordkeeping is subject to review and approval by OMB under the Paperwork Reduction Act (PRA). This requirement has been approved by OMB under OMB control number 1910-1400. Public reporting burden for the certification is estimated to average 30 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA, unless that collection of information displays a currently valid OMB Control Number.

D. Review Under the National Environmental Policy Act of 1969

In this final rule, DOE amends its test procedure for residential furnaces and boilers. DOE has determined that this rule falls into a class of actions that are categorically excluded from review under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*) and DOE's implementing regulations at 10 CFR part 1021. Specifically, this rule amends an

existing rule without affecting the amount, quality or distribution of energy usage, and, therefore, will not result in any environmental impacts. Thus, this rulemaking is covered by Categorical Exclusion A5 under 10 CFR part 1021, subpart D, which applies to any rulemaking that interprets or amends an existing rule without changing the environmental effect of that rule. Accordingly, neither an environmental assessment nor an environmental impact statement is required.

E. Review Under Executive Order 13132

Executive Order 13132, "Federalism," 64 FR 43255 (August 10, 1999) imposes certain requirements on agencies formulating and implementing policies or regulations that preempt State law or that have Federalism implications. The Executive Order requires agencies to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion of the States, and to carefully assess the necessity for such actions. The Executive Order also requires agencies to have an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have Federalism implications. On March 14, 2000, DOE published a statement of policy describing the intergovernmental consultation process it will follow in the development of such regulations. 65 FR 13735. DOE examined this final rule and determined that it will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. EPCA governs and prescribes Federal preemption of State regulations as to energy conservation for the products that are the subject of this final rule. States can petition DOE for exemption from such preemption to the extent, and based on criteria, set forth in EPCA. (42 U.S.C. 6297(d)) No further action is required by Executive Order 13132.

F. Review Under Executive Order 12988

Regarding the review of existing regulations and the promulgation of new regulations, section 3(a) of Executive Order 12988, "Civil Justice Reform," 61 FR 4729 (Feb. 7, 1996), imposes on Federal agencies the general duty to adhere to the following requirements: (1) Eliminate drafting errors and ambiguity; (2) write regulations to minimize litigation; (3) provide a clear legal standard for affected conduct rather than a general

standard; and (4) promote simplification and burden reduction. Section 3(b) of Executive Order 12988 specifically requires that Executive agencies make every reasonable effort to ensure that the regulation: (1) Clearly specifies the preemptive effect, if any; (2) clearly specifies any effect on existing Federal law or regulation; (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction; (4) specifies the retroactive effect, if any; (5) adequately defines key terms; and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of Executive Order 12988 requires Executive agencies to review regulations in light of applicable standards in sections 3(a) and 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE has completed the required review and determined that, to the extent permitted by law, this final rule meets the relevant standards of Executive Order 12988.

G. Review under the Unfunded Mandates Reform Act of 1995

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA) requires each Federal agency to assess the effects of Federal regulatory actions on State, local, and Tribal governments and the private sector. Public Law 104-4, sec. 201 (codified at 2 U.S.C. 1531). For a regulatory action resulting in a rule that may cause the expenditure by State, local, and Tribal governments, in the aggregate, or by the private sector of \$100 million or more in any one year (adjusted annually for inflation), section 202 of UMRA requires a Federal agency to publish a written statement that estimates the resulting costs, benefits, and other effects on the national economy. (2 U.S.C. 1532(a), (b)) The UMRA also requires a Federal agency to develop an effective process to permit timely input by elected officers of State, local, and Tribal governments on a proposed "significant intergovernmental mandate," and requires an agency plan for giving notice and opportunity for timely input to potentially affected small governments before establishing any requirements that might significantly or uniquely affect small governments. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820. (This policy is also available at <http://energy.gov/gc/office-general-counsel>). DOE examined this final rule according to UMRA and its statement of policy and determined that the rule

contains neither an intergovernmental mandate, nor a mandate that may result in the expenditure of \$100 million or more in any year, so these requirements do not apply.

H. Review Under the Treasury and General Government Appropriations Act, 1999

Section 654 of the Treasury and General Government Appropriations Act, 1999 (Pub. L. 105–277) requires Federal agencies to issue a Family Policymaking Assessment for any rule that may affect family well-being. This rule will not have any impact on the autonomy or integrity of the family as an institution. Accordingly, DOE has concluded that it is not necessary to prepare a Family Policymaking Assessment.

I. Review Under Executive Order 12630

Pursuant to Executive Order 12630, “Governmental Actions and Interference with Constitutionally Protected Property Rights,” 53 FR 8859 (March 18, 1988), DOE has determined that this regulation will not result in any takings that might require compensation under the Fifth Amendment to the U.S. Constitution.

J. Review Under Treasury and General Government Appropriations Act, 2001

Section 515 of the Treasury and General Government Appropriations Act, 2001 (44 U.S.C. 3516 note) provides for agencies to review most disseminations of information to the public under guidelines established by each agency pursuant to general guidelines issued by OMB. OMB’s guidelines were published at 67 FR 8452 (Feb. 22, 2002), and DOE’s guidelines were published at 67 FR 62446 (Oct. 7, 2002). DOE has reviewed this final rule under the OMB and DOE guidelines and has concluded that it is consistent with applicable policies in those guidelines.

K. Review Under Executive Order 13211

Executive Order 13211, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,” 66 FR 28355 (May 22, 2001), requires Federal agencies to prepare and submit to OMB, a Statement of Energy Effects for any significant energy action. A “significant energy action” is defined as any action by an agency that promulgated or is expected to lead to promulgation of a final rule, and that: (1) Is a significant regulatory action under Executive Order 12866, or any successor order; and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy; or (3) is designated by the

Administrator of OIRA as a significant energy action. For any significant energy action, the agency must give a detailed statement of any adverse effects on energy supply, distribution, or use if the regulation is implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use.

This regulatory action is not a significant regulatory action under Executive Order 12866. Moreover, it would not have a significant adverse effect on the supply, distribution, or use of energy, nor has it been designated as a significant energy action by the Administrator of OIRA. Therefore, it is not a significant energy action, and, accordingly, DOE has not prepared a Statement of Energy Effects.

L. Review Under Section 32 of the Federal Energy Administration Act of 1974

Under section 301 of the Department of Energy Organization Act (Pub. L. 95–91; 42 U.S.C. 7101), DOE must comply with section 32 of the Federal Energy Administration Act of 1974, as amended by the Federal Energy Administration Authorization Act of 1977 (Pub. L. 95–70). (15 U.S.C. 788; FEAA) Section 32 essentially provides in relevant part that, where a proposed rule authorizes or requires use of commercial standards, the notice of proposed rulemaking must inform the public of the use and background of such standards. In addition, section 32(c) requires DOE to consult with the Attorney General and the Chairman of the Federal Trade Commission (FTC) concerning the impact of the commercial or industry standards on competition.

This final rule incorporates testing methods contained in the following commercial standard: ASTM D2156–09 (Reapproved 2013). While this test procedure is not exclusively based on this standard, the DOE test procedure adopts several provisions from this standard without amendment. DOE has evaluated this standard and is unable to conclude whether it fully complies with the requirements of section 32(b) of the FEAA (*i.e.*, that it was developed in a manner that fully provides for public participation, comment, and review). DOE has consulted with the Attorney General and the Chairwoman of the FTC concerning the impact of these test procedures on competition and has received no comments objecting to their use.

M. Description of Materials Incorporated by Reference

In this final rule, DOE incorporates by reference the ASTM test standard

“Standard Test Method for Smoke Density in Flue Gases from Burning Distillate Fuels,” ASTM D2156–09 (Reapproved 2013). ASTM D2156 is an industry accepted test procedure that establishes uniform test methods for the evaluation of smoke density in the flue gases from burning distillate fuels. The test procedure established in this final rule references ASTM D2156 in its entirety, which includes terminology, methods of testing, materials, apparatus, procedures, reporting, and precision and bias, to determine the allowable smoke in the flue of oil furnaces and boilers. ASTM D2156–09 is available on ASTM’s Web site at <http://www.astm.org/Standards/D2156.htm>.

N. Congressional Notification

As required by 5 U.S.C. 801, DOE will report to Congress on the promulgation of this rule prior to its effective date. The report will state that it has been determined that the rule is not a “major rule” as defined by 5 U.S.C. 804(2).

V. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this final rule.

List of Subjects

10 CFR Part 429

Confidential business information, Energy conservation, Household appliances, Imports, Reporting and recordkeeping requirements.

10 CFR Part 430

Administrative practice and procedure, Confidential business information, Energy conservation, Household appliances, Imports, Incorporation by reference, Intergovernmental relations, Small businesses.

Issued in Washington, DC, on December 29, 2015.

Kathleen B. Hogan,

Deputy Assistant Secretary for Energy Efficiency, Energy Efficiency and Renewable Energy.

For the reasons stated in the preamble, DOE amends parts 429 and 430 of chapter II, subchapter D of title 10, Code of Federal Regulations, as set forth below:

PART 429—CERTIFICATION, COMPLIANCE, AND ENFORCEMENT FOR CONSUMER PRODUCTS AND COMMERCIAL AND INDUSTRIAL EQUIPMENT

■ 1. The authority citation for part 429 continues to read as follows:

Authority: 42 U.S.C. 6291–6317.

■ 2. Amend § 429.18 by adding paragraphs (a)(2)(vii) and (b)(4) to read as follows:

§ 429.18 Residential furnaces.

(a) * * *

(2) * * *

(vii) *Reported values.* The represented value of annual fuel utilization efficiency must be truncated to the one-tenth of a percentage point.

(b) * * *

(4) For multi-position furnaces, the annual fuel utilization efficiency (AFUE) reported for each basic model must be based on testing in the least efficient configuration. Manufacturers may also report and make representations of additional AFUE values based on testing in other configurations.

■ 3. Amend § 429.134 by adding paragraph (h) to read as follows:

§ 429.134 Product-specific enforcement provisions

* * * * *

(h) *Residential boilers—test protocols for functional verification of automatic means for adjusting water temperature.* These tests are intended to verify the functionality of the design requirement that a boiler has an automatic means for adjusting water temperature for single-stage, two-stage, and modulating boilers. These test methods are intended to permit the functional testing of a range of control strategies used to fulfill this design requirement. Section 2, *Definitions*, and paragraph 6.1.a of appendix N to subpart B of part 430 of this chapter apply for the purposes of this paragraph (h).

(1) *Test protocol for all products other than single-stage products employing burner delay.* This test is intended to verify whether an automatic means for adjusting water temperature other than burner delay produces an incremental change in water supply temperature in response to an incremental change in inferred heat load.

(i) *Boiler setup—(A) Boiler installation.* Boiler installation in the test room shall be in accordance with the setup and apparatus requirements of section 6 of appendix N to subpart B of 10 CFR part 430.

(B) *Establishing flow rate and temperature rise.* Start the boiler without enabling the means for adjusting water temperature. Establish a water flow rate that allows for a water temperature rise of greater than or equal to 20 °F at maximum input rate.

(C) *Temperature stabilization.* Temperature stabilization is deemed to be obtained when the boiler supply water temperature does not vary by

more than ± 3 °F over a period of five minutes.

(D) *Adjust the inferential load controller.* (1) Adjust the boiler controls (in accordance with the I&O manual) to the default setting that allows for activation of the means for adjusting water temperature. For boiler controls that do not allow for control adjustment during active mode operation, terminate call for heat and adjust the inferential load controller in accordance with the I&O manual and then reinitiate call for heat.

(2) If the means for adjusting water temperature uses outdoor temperature reset, the maximum outdoor temperature setting (if equipped) should be set to a temperature high enough that the boiler operates continuously during the duration of this test (*i.e.*, if the conditions in paragraph (h)(1)(ii)(A) of this section equal room ambient temperature, then the maximum outdoor temperature should be set at a temperature greater than the ambient air temperature during the test).

(ii) *Establish low inferred load conditions at minimum boiler supply water temperature—(A) Establish low inferred load conditions.* (1) Establish the inferred load conditions (simulated using a controlling parameter, such as outdoor temperature, thermostat patterns, or boiler cycling) so that the supply water temperature is maintained at the minimum supply water temperature prescribed by the boiler manufacturer's temperature reset control strategy found in the I&O manual.

(2) The minimum supply water temperature of the default temperature reset curve is usually provided in the I&O manual. If there is no recommended minimum supply water temperature, set the minimum supply water temperature equal to 20 °F less than the high supply water temperature specified in paragraph (h)(1)(iii)(A) of this section.

(B) *Supply water temperature stabilization at low inferred load.* (1) Maintain the call for heat until the boiler supply water temperature has stabilized. Temperature stabilization is deemed to be obtained when the boiler supply water temperature does not vary by more than ± 3 °F over a period of five minutes. The duration of time required to stabilize the supply water, following the procedure in paragraph (h)(1)(ii)(A) of this section, is dependent on the reset strategy and may vary from model to model.

(2) Record the boiler supply water temperature while the temperature is stabilized.

(iii) *Establish high inferred load conditions at maximum boiler supply*

water temperature—(A) Establish high inferred load conditions. Establish the inferred load conditions so that the supply water temperature is set to the maximum allowable supply water temperature as prescribed in the I&O manual, or if there is no recommendation, set to a temperature greater than 170 °F.

(B) *Supply water temperature stabilization at high inferred load.* (1) Maintain the call for heat until the boiler supply water temperature has stabilized. Temperature stabilization is deemed to be obtained when the boiler supply water temperature does not vary by more than ± 3 °F over a period of five minutes. The duration of time required to stabilize the supply water, following the procedure in paragraph (h)(1)(iii)(A) of this section, is dependent on the reset strategy and may vary from model to model.

(2) Record the boiler supply water temperature while the temperature is stabilized.

(3) Terminate the call for heat.

(iv) [Reserved]

(2) *Test protocol for single-stage products employing burner delay.* This test will be used in place of paragraph (h)(1) of this section for products manufacturers have certified to DOE under § 429.18(b)(3) as employing a burner delay automatic means strategy. This test verifies whether the automatic means in single-stage boiler products establishes a burner delay upon a call for heat until the means has determined that the inferred heat load cannot be met by the residual heat of the water in the system.

(i) *Boiler setup—(A) Boiler installation.* Boiler installation in the test room shall be in accordance with the setup and apparatus requirements by section 6.0 of appendix N to subpart B of 10 CFR part 430.

(B) *Activation of controls.* Adjust the boiler controls in accordance with the I&O manual at the default setting that allows for activation of the means for adjusting water temperature.

(C) *Adjustment of water flow and temperature.* The flow and temperature of inlet water to the boiler shall be capable of being adjusted manually.

(ii) *Boiler heat-up—(A) Boiler start-up.* Power up the boiler and initiate a call for heat.

(B) *Adjustment of firing rate.* Adjust the boiler's firing rate to within $\pm 5\%$ of its maximum rated input.

(C) *Establishing flow rate and temperature rise.* Adjust the water flow through the boiler to achieve a ΔT of 20 °F (± 2 °F) or greater with an inlet water temperature equal to 140 °F (± 2 °F).

(D) *Terminate the call for heating.* Terminate the call for heat, stop the flow of water through the boiler, and record the time at termination.

(iii) *Verify burner delay—(A) Reinitiate call for heat.* Within three (3) minutes of termination (paragraph (h)(2)(ii)(D) of this section) and without adjusting the inlet water flow rate or temperature as specified in paragraph (h)(2)(ii)(C) of this section, reinitiate the call for heat and water flow and record the time.

(B) *Verify burner ignition.* At 15-second intervals, record time and supply water temperature until the main burner ignites.

(C) *Terminate the call for heat.*

(iv) [Reserved]

PART 430—ENERGY CONSERVATION PROGRAM FOR CONSUMER PRODUCTS

■ 4. The authority citation for part 430 continues to read as follows:

Authority: 42 U.S.C. 6291–6309; 28 U.S.C. 2461 note.

■ 5. Amend § 430.2 by adding in alphabetical order a definition of “Controlling parameter” and revising the definition of “Furnace” to read as follows:

§ 430.2 Definitions.

* * * * *

Controlling parameter means a measurable quantity or an algorithm (such as temperature or usage pattern) used for inferring heating load to a residential boiler, which would then result in incremental changes in boiler supply water temperature.

* * * * *

Furnace means a product which utilizes only single-phase electric current, or single-phase electric current or DC current in conjunction with natural gas, propane, or home heating oil, and which—

(1) Is designed to be the principal heating source for the living space of a residence;

(2) Is not contained within the same cabinet with a central air conditioner whose rated cooling capacity is above 65,000 Btu per hour;

(3) Is an electric central furnace, electric boiler, forced-air central furnace, gravity central furnace, or low-pressure steam or hot water boiler; and

(4) Has a heat input rate of less than 300,000 Btu per hour for electric boilers and low-pressure steam or hot water boilers and less than 225,000 Btu per hour for forced-air central furnaces, gravity central furnaces, and electric central furnaces.

* * * * *

■ 6. Amend § 430.3 by revising paragraph (g)(11) and adding paragraph (j)(2) to read as follows:

§ 430.3 Materials incorporated by reference.

* * * * *

(g) * * *
(11) ANSI/ASHRAE Standard 103–1993, (“ASHRAE 103–1993”), Methods of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers, (with Errata of October 24, 1996), except for sections 7.1, 7.2.2.2, 7.2.2.5, 7.2.3.1, 7.8, 8.2.1.3, 8.3.3.1, 8.4.1.1, 8.4.1.1.2, 8.4.1.2, 8.4.2.1.4, 8.4.2.1.6, 8.6.1.1, 8.7.2, 8.8.3, 9.1.2.2.1, 9.1.2.2.2, 9.5.1.1, 9.5.1.2.1, 9.5.1.2.2, 9.5.2.1, 9.7.1, 9.7.4, 9.7.6, 9.10, 11.5.11.1, 11.5.11.2 and appendices B and C, approved October 4, 1993, IBR approved for § 430.23 and appendix N to subpart B.

* * * * *

(j) * * *
(2) ASTM D2156–09 (Reapproved 2013) (“ASTM D2156R13”), Standard Test Method for Smoke Density in Flue Gases from Burning Distillate Fuels, approved October 1, 2013, IBR approved for appendix N to subpart B.

* * * * *

■ 7. Amend § 430.23 by revising paragraph (n)(2) to read as follows:

§ 430.23 Test procedures for the measurement of energy and water consumption.

* * * * *

(n) * * *
(2) The annual fuel utilization efficiency for furnaces, expressed in percent, is the ratio of the annual fuel output of useful energy delivered to the heated space to the annual fuel energy input to the furnace determined according to section 10.1 of appendix N of this subpart for gas and oil furnaces and determined in accordance with section 11.1 of the American National Standards Institute/American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ANSI/ASHRAE) Standard 103–1993 (incorporated by reference, see § 430.3) for electric furnaces. Truncate the annual fuel utilization efficiency to one-tenth of a percentage point.

* * * * *

■ 8. Revise appendix N to subpart B to read as follows:

Appendix N to Subpart B of Part 430—Uniform Test Method for Measuring the Energy Consumption of Furnaces and Boilers

Note: Prior to July 13, 2016, representations with respect to the energy use or efficiency of residential furnaces and

boilers, including compliance certifications, must be based on testing conducted in accordance with either this appendix as it now appears or appendix N as it appeared at 10 CFR part 430, subpart B revised as of January 1, 2016.

After July 13, 2016, representations with respect to energy use or efficiency of residential furnaces and boilers, including compliance certifications, must be based on testing conducted in accordance with this appendix.

1.0 *Scope.* The scope of this appendix is as specified in section 2 of ASHRAE 103–1993 (incorporated by reference, see § 430.3).

For purposes of this appendix, the Department of Energy incorporates by reference several industry standards, either in whole or in part, as listed in § 430.3. In cases where there is a conflict, the language of the test procedure in this appendix takes precedence over the incorporated standards.

2.0 *Definitions.* Definitions include those specified in section 3 of ASHRAE 103–1993 (incorporated by reference, see § 430.3) and the following additional and modified definitions.

2.1 *Active mode* means the condition in which the furnace or boiler is connected to the power source, and at least one of the burner, electric resistance elements, or any electrical auxiliaries such as blowers or pumps, are activated.

2.2 *Boiler pump* means a pump installed on a boiler and that is separate from the circulating water pump.

2.3 *Control* means a device used to regulate the operation of a piece of equipment and the supply of fuel, electricity, air, or water.

2.4 *Draft inducer* means a fan incorporated in the furnace or boiler that either draws or forces air into the combustion chamber.

2.5 *Gas valve* means an automatic or semi-automatic device consisting essentially of a valve and operator that controls the gas supply to the burner(s) during normal operation of an appliance. The operator may be actuated by application of gas pressure on a flexible diaphragm, by electrical means, by mechanical means or by other means.

2.6 *Installation and operation (I&O) manual* means instructions for installing, commissioning, and operating the furnace or boiler, which are supplied with the product when shipped by the manufacturer.

2.7 *Isolated combustion system* means a system where a unit is installed within the structure, but isolated from the heated space. A portion of the jacket heat from the unit is lost, and air for ventilation, combustion and draft control comes from outside the heated space.

2.8 *Multi-position furnace* means a furnace that can be installed in more than one airflow configuration (*i.e.*, upflow or horizontal; downflow or horizontal; upflow or downflow; and upflow, or downflow, or horizontal).

2.9 *Off mode* means a mode in which the furnace or boiler is connected to a mains power source and is not providing any active mode or standby mode function, and where the mode may persist for an indefinite time. The existence of an off switch in off position

(a disconnected circuit) is included within the classification of off mode.

2.10 *Off switch* means the switch on the furnace or boiler that, when activated, results in a measurable change in energy consumption between the standby and off modes.

2.11 *Oil control valve* means an automatically or manually operated device consisting of an oil valve for controlling the fuel supply to a burner to regulate burner input.

2.12 *Standby mode* means any mode in which the furnace or boiler is connected to a mains power source and offers one or more of the following space heating functions that may persist:

a. To facilitate the activation of other modes (including activation or deactivation of active mode) by remote switch (including thermostat or remote control), internal or external sensors, or timer;

b. Continuous functions, including information or status displays or sensor based functions.

2.13 *Thermal stack damper* means a type of stack damper that relies exclusively upon the changes in temperature in the stack gases to open or close the damper.

3.0 *Classifications*. Classifications are as specified in section 4 of ASHRAE 103–1993 (incorporated by reference, see § 430.3).

4.0 *Requirements*. Requirements are as specified in section 5 of ASHRAE 103–1993 (incorporated by reference, see § 430.3).

5.0 *Instruments*. Instruments must be as specified in section 6 of ASHRAE 103–1993 (incorporated by reference, see § 430.3).

6.0 *Apparatus*. The apparatus used in conjunction with the furnace or boiler during the testing must be as specified in section 7 of ASHRAE 103–1993 (incorporated by reference, see § 430.3) except for sections 7.1, 7.2.2.2, 7.2.2.5, 7.2.3.1, and 7.8; and as specified in sections 6.1 through 6.5 of this appendix.

6.1 General.

a. Install the furnace or boiler in the test room in accordance with the I&O manual, as defined in section 2.6 of this appendix, except that if provisions within this appendix are specified, then the provisions herein drafted and prescribed by DOE govern. If the I&O manual and any additional provisions of this appendix are not sufficient for testing a furnace or boiler, the manufacturer must request a waiver from the test procedure pursuant to 10 CFR 430.27.

b. If the I&O manual indicates the unit should not be installed with a return duct, then the return (inlet) duct specified in section 7.2.1 of ASHRAE 103–1993 (incorporated by reference, see § 430.3) is not required.

c. Test multi-position furnaces in the least efficient configuration. Testing of multi-position furnaces in other configurations is permitted if energy use or efficiency is represented pursuant to the requirements in 10 CFR part 429.

d. The apparatuses described in section 6 of this appendix are used in conjunction with the furnace or boiler during testing. Each piece of apparatus shall conform to material and construction specifications listed in this appendix and in ASHRAE 103–1993

(incorporated by reference, see § 430.3), and the reference standards cited in this appendix and in ASHRAE 103–1993.

e. Test rooms containing equipment must have suitable facilities for providing the utilities (including but not limited to environmental controls, sufficient fluid source(s), applicable measurement equipment, and any other technology or tools) necessary for performance of the test and must be able to maintain conditions within the limits specified in section 6 of this appendix.

6.2 Forced-air central furnaces (direct vent and direct exhaust).

a. Units not equipped with a draft hood or draft diverter must be provided with the minimum-length vent configuration recommended in the I&O manual or a 5-ft flue pipe if there is no recommendation provided in the I&O manual (see Figure 4 of ASHRAE 103–1993 (incorporated by reference, see § 430.3)). For a direct exhaust system, insulate the minimum-length vent configuration or the 5-ft flue pipe with insulation having an R-value not less than 7 and an outer layer of aluminum foil. For a direct vent system, see section 7.5 of ASHRAE 103–1993 for insulation requirements.

b. For units with power burners, cover the flue collection box with insulation having an R-value of not less than 7 and an outer layer of aluminum foil before the cool-down and heat-up tests described in sections 9.5 and 9.6 of ASHRAE 103–1993 (incorporated by reference, see § 430.3), respectively. However, do not apply the insulation for the jacket loss test (if conducted) described in section 8.6 of ASHRAE 103–1993 or the steady-state test described in section 9.1 of ASHRAE 103–1993.

c. For power-vented units, insulate the shroud surrounding the blower impeller with insulation having an R-value of not less than 7 and an outer layer of aluminum foil before the cool-down and heat-up tests described in sections 9.5 and 9.6, respectively, of ASHRAE 103–1993 (incorporated by reference, see § 430.3). Do not apply the insulation for the jacket loss test (if conducted) described in section 8.6 of ASHRAE 103–1993 or the steady-state test described in section 9.1 of ASHRAE 103–1993. Do not insulate the blower motor or block the airflow openings that facilitate the cooling of the combustion blower motor or bearings.

6.3 *Downflow furnaces*. Install an internal section of vent pipe the same size as the flue collar for connecting the flue collar to the top of the unit, if not supplied by the manufacturer. Do not insulate the internal vent pipe during the jacket loss test (if conducted) described in section 8.6 of ASHRAE 103–1993 (incorporated by reference, see § 430.3) or the steady-state test described in section 9.1 of ASHRAE 103–1993. Do not insulate the internal vent pipe before the cool-down and heat-up tests described in sections 9.5 and 9.6, respectively, of ASHRAE 103–1993. If the vent pipe is surrounded by a metal jacket, do not insulate the metal jacket. Install a 5-ft test stack of the same cross-sectional area or perimeter as the vent pipe above the top of

the furnace. Tape or seal around the junction connecting the vent pipe and the 5-ft test stack. Insulate the 5-ft test stack with insulation having an R-value not less than 7 and an outer layer of aluminum foil. (See Figure 3–E of ASHRAE 103–1993.)

6.4 Units with draft hoods or draft diverters.

Install the stack damper in accordance with the I&O manual. Install 5 feet of stack above the damper.

a. For units with an integral draft diverter, cover the 5-ft stack with insulation having an R-value of not less than 7 and an outer layer of aluminum foil.

b. For units with draft hoods, insulate the flue pipe between the outlet of the furnace and the draft hood with insulation having an R-value of not less than 7 and an outer layer of aluminum foil.

c. For units with integral draft diverters that are mounted in an exposed position (not inside the overall unit cabinet), cover the diverter boxes (excluding any openings through which draft relief air flows) before the beginning of any test (including jacket loss test) with insulation having an R-value of not less than 7 and an outer layer of aluminum foil.

d. For units equipped with integral draft diverters that are enclosed within the overall unit cabinet, insulate the draft diverter box with insulation as described in section 6.4.c before the cool-down and heat-up tests described in sections 9.5 and 9.6, respectively, of ASHRAE 103–1993 (incorporated by reference, see § 430.3). Do not apply the insulation for the jacket loss test (if conducted) described in section 8.6 of ASHRAE 103–1993 or the steady-state test described in section 9.1 of ASHRAE 103–1993.

6.5 Condensate collection.

Attach condensate drain lines to the unit as specified in the I&O manual. Maintain a continuous downward slope of drain lines from the unit. Additional precautions (such as eliminating any line configuration or position that would otherwise restrict or block the flow of condensate or checking to ensure a proper connection with condensate drain spout that allows for unobstructed flow) must be taken to facilitate uninterrupted flow of condensate during the test. Collection containers must be glass or polished stainless steel to facilitate removal of interior deposits. The collection container must have a vent opening to the atmosphere.

7.0 *Testing conditions*. The testing conditions must be as specified in section 8 of ASHRAE 103–1993 (incorporated by reference, see § 430.3), except for section 8.2.1.3, 8.3.3.1, 8.4.1.1, 8.4.1.2, 8.4.2.1.2, 8.4.2.1.4, 8.4.2.1.6, 8.6.1.1, 8.7.2, and 8.8.3; and as specified in sections 7.1 to 7.10 of this appendix, respectively.

7.1 *Fuel supply, gas*. In conducting the tests specified herein, gases with characteristics as shown in Table 1 of ASHRAE 103–1993 (incorporated by reference, see § 430.3) shall be used. Maintain the gas supply, ahead of all controls for a furnace, at a test pressure between the normal and increased values shown in Table 1 of ASHRAE 103–1993. Maintain the regulator outlet pressure at a level approximating that recommended in the I&O

manual, as defined in section 2.6 of this appendix, or, in the absence of such recommendation, to the nominal regulator settings used when the product is shipped by the manufacturer. Use a gas having a specific gravity as shown in Table 1 of ASHRAE 103–1993 and with a higher heating value within $\pm 5\%$ of the higher heating value shown in Table 1 of ASHRAE 103–1993. Determine the actual higher heating value in Btu per standard cubic foot for the gas to be used in the test within an error no greater than 1%.

7.2 Installation of piping. Install piping equipment in accordance with the I&O manual. In the absence of such specification, install piping in accordance with section 8.3.1.1 of ASHRAE 103–1993 (incorporated by reference, see § 430.3).

7.3 Gas burner. Adjust the burners of gas-fired furnaces and boilers to their maximum Btu input ratings at the normal test pressure specified by section 7.1 of this appendix. Correct the burner input rate to reflect gas characteristics at a temperature of 60 °F and atmospheric pressure of 30 in of Hg and adjust down to within ± 2 percent of the hourly Btu nameplate input rating specified by the manufacturer as measured during the steady-state performance test in section 8 of this appendix. Set the primary air shutters in accordance with the I&O manual to give a good flame at this condition. If, however, the setting results in the deposit of carbon on the burners during any test specified herein, the tester shall adjust the shutters and burners until no more carbon is deposited and shall perform the tests again with the new settings (see Figure 9 of ASHRAE 103–1993 (incorporated by reference, see § 430.3)). After the steady-state performance test has been started, do not make additional adjustments to the burners during the required series of performance tests specified in section 9 of ASHRAE 103–1993. If a vent-limiting means is provided on a gas pressure regulator, keep it in place during all tests.

7.4 Modulating gas burner adjustment at reduced input rate. For gas-fired furnaces and boilers equipped with modulating-type controls, adjust the controls to operate the unit at the nameplate minimum input rate. If the modulating control is of a non-automatic type, adjust the control to the setting recommended in the I&O manual. In the absence of such recommendation, the midpoint setting of the non-automatic control shall be used as the setting for determining the reduced fuel input rate. Start the furnace or boiler by turning the safety control valve to the “ON” position. For boilers, use a supply water temperature that will allow for continuous operation without shutoff by the control. If necessary to achieve such continuous operation, supply water may be increased above 120 °F; in such cases, gradually increase the supply water temperature to determine what minimum supply water temperature, with a 20 °F temperature rise across the boiler, will be needed to adjust for the minimum input rate at the reduced input rate control setting. Monitor regulated gas pressure out of the modulating control valve (or entering the burner) to determine when no further reduction of gas pressure results. The flow rate of water through the boiler shall be adjusted to achieve a 20 °F temperature rise.

7.5 Oil burner. Adjust the burners of oil-fired furnaces or boilers to give a CO₂ reading specified in the I&O manual and an hourly Btu input during the steady-state performance test described in section 8 of this appendix. Ensure the hourly BTU input is within $\pm 2\%$ of the normal hourly Btu input rating as specified in the I&O manual. Smoke in the flue may not exceed a No. 1 smoke during the steady-state performance test as measured by the procedure in ASTM D2156R13 (incorporated by reference, see § 430.3). Maintain the average draft over the fire and in the flue during the steady-state performance test at the value specified in the I&O manual. Do not allow draft fluctuations exceeding 0.005 in. water. Do not make additional adjustments to the burner during the required series of performance tests. The instruments and measuring apparatus for this test are described in section 6 of this appendix and shown in Figure 8 of ASHRAE 103–1993 (incorporated by reference, see § 430.3).

7.6 Adjust air throughputs to achieve a temperature rise that is the higher of a and b, below, unless c applies. A tolerance of ± 2 °F is permitted.

- a. 15 °F less than the nameplate maximum temperature rise or
- b. 15 °F higher than the minimum temperature rise specified in the I&O manual.
- c. A furnace with a non-adjustable air temperature rise range and an automatically controlled airflow that does not permit a temperature rise range of 30°F or more must be tested at the midpoint of the rise range.

7.7 Establish the temperature rise specified in section 7.6 of this appendix by adjusting the circulating airflow. This adjustment must be accomplished by symmetrically restricting the outlet air duct and varying blower speed selection to obtain the desired temperature rise and minimum external static pressure, as specified in Table 4 of ASHRAE 103–1993 (incorporated by reference, see § 430.3). If the required temperature rise cannot be obtained at the minimum specified external static pressure by adjusting blower speed selection and duct outlet restriction, then the following applies.

- a. If the resultant temperature rise is less than the required temperature rise, vary the blower speed by gradually adjusting the blower voltage so as to maintain the minimum external static pressure listed in Table 4 of ASHRAE 103–1993 (incorporated by reference, see § 430.3). The airflow restrictions shall then remain unchanged. If static pressure must be varied to prevent unstable blower operation, then increase the static pressure until blower operation is stabilized, except that the static pressure must not exceed the maximum external static pressure as specified by the manufacturer in the I&O manual.
- b. If the resultant temperature rise is greater than the required temperature rise, then the unit can be tested at a higher temperature rise value, but one not greater than nameplate maximum temperature rise. In order not to exceed the maximum temperature rise, the speed of a direct-driven blower may be increased by increasing the circulating air blower motor voltage.

7.8 Measurement of jacket surface temperature. Divide the jacket of the furnace

or boiler into 6-inch squares when practical, and otherwise into 36-square-inch regions comprising 4 inch by 9 inch or 3 inch by 12 inch sections, and determine the surface temperature at the center of each square or section with a surface thermocouple. Record the surface temperature of the 36-square-inch areas in groups where the temperature differential of the 36-square-inch areas is less than 10 °F for temperature up to 100 °F above room temperature, and less than 20 °F for temperatures more than 100 °F above room temperature. For forced-air central furnaces, the circulating air blower compartment is considered as part of the duct system, and no surface temperature measurement of the blower compartment needs to be recorded for the purpose of this test. For downflow furnaces, measure all cabinet surface temperatures of the heat exchanger and combustion section, including the bottom around the outlet duct and the burner door, using the 36-square-inch thermocouple grid. The cabinet surface temperatures around the blower section do not need to be measured (See Figure 3–E of ASHRAE 103–1993 (incorporated by reference, see § 430.3)).

7.9 Installation of vent system. Keep the vent or air intake system supplied by the manufacturer in place during all tests. Test units intended for installation with a variety of vent pipe lengths with the minimum vent length as specified in the I&O manual, or a 5-ft. flue pipe if there are no recommendations in the I&O manual. Do not connect a furnace or boiler employing a direct vent system to a chimney or induced-draft source. Vent combustion products solely by using the venting incorporated in the furnace or boiler and the vent or air intake system supplied by the manufacturer. For units that are not designed to significantly preheat the incoming air, see section 7.5 of this appendix and Figure 4a or 4b of ASHRAE 103–1993 (incorporated by reference, see § 430.3). For units that do significantly preheat the incoming air, see Figure 4c or 4d of ASHRAE 103–1993.

7.10 Additional optional method of testing for determining D_F and D_F for furnaces and boilers. On units whose design is such that there is no measurable airflow through the combustion chamber and heat exchanger when the burner(s) is (are) off as determined by the optional test procedure in section 7.10.1 of this appendix, D_F and D_F may be set equal to 0.05.

7.10.1 Optional test method for indicating the absence of flow through the heat exchanger. Manufacturers may use the following test protocol to determine whether air flows through the combustion chamber and heat exchanger when the burner(s) is (are) off. The minimum default draft factor (as allowed per sections 8.8.3 and 9.10 of ASHRAE 103–1993 (incorporated by reference, see § 430.3)) may be used only for units determined pursuant to this protocol to have no airflow through the combustion chamber and heat exchanger.

7.10.1.1 Test apparatus. Use a smoke stick that produces smoke that is easily visible and has a density less than or approximately equal to air. Use a smoke stick that produces smoke that is non-toxic to the test personnel and produces gas that is

unreactive with the environment in the test chamber.

7.10.1.2 *Test conditions.* Minimize all air currents and drafts in the test chamber, including turning off ventilation if the test chamber is mechanically ventilated. Wait at least two minutes following the termination of the furnace or boiler on-cycle before beginning the optional test method for indicating the absence of flow through the heat exchanger.

7.10.1.3 *Location of the test apparatus.* After all air currents and drafts in the test chamber have been eliminated or minimized, position the smoke stick based on the following equipment configuration: (a) For horizontal combustion air intakes, approximately 4 inches from the vertical plane at the termination of the intake vent and 4 inches below the bottom edge of the combustion air intake; or (b) for vertical combustion air intakes, approximately 4 inches horizontal from vent perimeter at the termination of the intake vent and 4 inches down (parallel to the vertical axis of the vent). In the instance where the boiler combustion air intake is closer than 4 inches to the floor, place the smoke device directly on the floor without impeding the flow of smoke.

7.10.1.4 *Duration of test.* Establish the presence of smoke from the smoke stick and then monitor the direction of the smoke flow for no less than 30 seconds.

7.10.1.5 *Test results.* During visual assessment, determine whether there is any draw of smoke into the combustion air intake vent.

If absolutely no smoke is drawn into the combustion air intake, the furnace or boiler meets the requirements to allow use of the minimum default draft factor pursuant to section 8.8.3 and/or section 9.10 of ASHRAE 103–1993 (incorporated by reference, see § 430.3).

If there is any smoke drawn into the intake, proceed with the methods of testing as prescribed in section 8.8 of ASHRAE 103–1993.

8.0 *Test procedure.* Conduct testing and measurements as specified in section 9 of ASHRAE 103–1993 (incorporated by reference, see § 430.3) except for sections 9.1.2.2.1, 9.1.2.2.2, 9.5.1.1.1, 9.5.1.2.1, 9.5.1.2.2, 9.5.2.1, 9.7.4, and 9.10; and as specified in sections 8.1 through 8.11 of this appendix. Section 8.4 of this appendix may be used in lieu of section 9.2 of ASHRAE 103–1993.

8.1 *Fuel input.* For gas units, measure and record the steady-state gas input rate in Btu/hr, including pilot gas, corrected to standard conditions of 60 °F and 30 in. Hg. Use measured values of gas temperature and pressure at the meter and barometric pressure to correct the metered gas flow rate to the above standard conditions. For oil units, measure and record the steady-state fuel input rate.

8.2 *Electrical input.* For furnaces and boilers, during the steady-state test, perform a single measurement of all of the electrical power involved in burner operation (PE), including energizing the ignition system, controls, gas valve or oil control valve, and draft inducer, if applicable. For boilers, the

measurement of PE must include the boiler pump if so equipped. If the boiler pump does not operate during the measurement of PE, add the boiler pump nameplate power to the measurement of PE. If the boiler pump nameplate power is not available, use 0.13 kW.

For furnaces, during the steady-state test, perform a single measurement of the electrical power to the circulating air blower (BE). For hot water boilers, use the circulating water pump nameplate power for BE, or if the pump nameplate power is not available, use 0.13 kW.

8.3 *Input to interrupted ignition device.* For burners equipped with an interrupted ignition device, record the nameplate electric power used by the ignition device, PE_{IG} , or record that $PE_{IG} = 0.4$ kW if no nameplate power input is provided. Record the nameplate ignition device on-time interval, t_{IG} , or, if the nameplate does not provide the ignition device on-time interval, measure the on-time interval with a stopwatch at the beginning of the test, starting when the burner is turned on. Set $t_{IG} = 0$ and $PE_{IG} = 0$ if the device on-time interval is less than or equal to 5 seconds after the burner is on.

8.4 *Optional test procedures for condensing furnaces and boilers, measurement of condensate during the establishment of steady-state conditions.* For units with step-modulating or two-stage controls, conduct the test at both the maximum and reduced inputs. In lieu of collecting the condensate immediately after the steady state conditions have been reached as required by section 9.2 of ASHRAE 103–1993 (incorporated by reference, see § 430.3), condensate may be collected during the establishment of steady state conditions as defined by section 9.1.2.1 of ASHRAE 103–1993. Perform condensate collection for at least 30 minutes. Measure condensate mass immediately at the end of the collection period to prevent evaporation loss from the sample. Record fuel input for the 30-minute condensate collection test period. Observe and record fuel higher heating value (HHV), temperature, and pressures necessary for determining fuel energy input ($Q_{c,ss}$). Measure the fuel quantity and HHV with errors no greater than 1%. The humidity for the room air shall at no time exceed 80%. Determine the mass of condensate for the establishment of steady state conditions ($M_{c,ss}$) in pounds by subtracting the tare container weight from the total container and condensate weight measured at the end of the 30-minute condensate collection test period.

8.5 *Cool-down test for gas- and oil-fueled gravity and forced-air central furnaces without stack dampers.* Turn off the main burner after completing steady-state testing, and measure the flue gas temperature by means of the thermocouple grid described in section 7.6 of ASHRAE 103–1993 (incorporated by reference, see § 430.3) at 1.5 minutes ($T_{F,OFF}(t_3)$) and 9 minutes ($T_{F,OFF}(t_4)$) after shutting off the burner. When taking these temperature readings, the integral draft diverter must remain blocked and insulated, and the stack restriction must remain in place. On atmospheric systems with an integral draft diverter or draft hood and equipped with either an electromechanical

inlet damper or an electromechanical flue damper that closes within 10 seconds after the burner shuts off to restrict the flow through the heat exchanger in the off-cycle, bypass or adjust the control for the electromechanical damper so that the damper remains open during the cool-down test.

For furnaces that employ post-purge, measure the length of the post-purge period with a stopwatch. Record the time from burner “OFF” to combustion blower “OFF” (electrically de-energized) as t_p . If the measured t_p is less than or equal to 30 seconds, set t_p at 0 and conduct the cool-down test as if there is no post-purge. If t_p is prescribed by the I&O manual or measured to be greater than 180 seconds, stop the combustion blower at 180 seconds and use that value for t_p . Measure the flue gas temperature by means of the thermocouple grid described in section 7.6 of ASHRAE 103–1993 at the end of the post-purge period, $t_p(T_{F,OFF}(t_p))$, and at the time $(1.5 + t_p)$ minutes ($T_{F,OFF}(t_3)$) and $(9.0 + t_p)$ minutes ($T_{F,OFF}(t_4)$) after the main burner shuts off.

8.6 *Cool-down test for gas- and oil-fueled gravity and forced-air central furnaces without stack dampers and with adjustable fan control.* For a furnace with adjustable fan control, measure the time delay between burner shutdown and blower shutdown, t^+ . This time delay, t^+ , will be 3.0 minutes for non-condensing furnaces or 1.5 minutes for condensing furnaces or until the supply air temperature drops to a value of 40 °F above the inlet air temperature, whichever results in the longest fan on-time. For a furnace without adjustable fan control or with the type of adjustable fan control whose range of adjustment does not allow for the time delay, t^+ , specified above, bypass the fan control and manually control the fan to allow for the appropriate delay time as specified in section 9.5.1.2 of ASHRAE 103–1993 (incorporated by reference, see § 430.3). For a furnace that employs a single motor to drive both the power burner and the indoor air circulating blower, the power burner and indoor air circulating blower must be stopped at the same time.

8.7 *Cool-down test for gas- and oil-fueled boilers without stack dampers.* After steady-state testing has been completed, turn the main burner(s) “OFF” and measure the flue gas temperature at 3.75 minutes (temperature designated as $T_{F,OFF}(t_3)$) and 22.5 minutes (temperature designated as $T_{F,OFF}(t_4)$) after the burner shut-off using the thermocouple grid described in section 7.6 of ASHRAE 103–1993 (incorporated by reference, see § 430.3).

a. During this off-period, for units that do not have pump delay after shut-off, do not allow any water to circulate through the hot water boilers.

b. For units that have pump delay on shut-off, except those having pump controls sensing water temperature, the unit control must stop the pump. Measure and record the time between burner shut-off and pump shut-off (t^+) to the nearest second.

c. For units having pump delay controls that sense water temperature, operate the pump for 15 minutes and record t^+ as 15 minutes. While the pump is operating, maintain the inlet water temperature and

flow rate at the same values as used during the steady-state test, as specified in sections 9.1 and 8.4.2.3 of ASHRAE 103–1993 (incorporated by reference, see § 430.3).

d. For boilers that employ post-purge, measure the length of the post-purge period with a stopwatch. Record the time from burner “OFF” to combustion blower “OFF” (electrically de-energized) as t_P . If t_P is prescribed by the I&O manual or measured to be greater than 180 seconds, stop the combustion blower at 180 seconds and use that value for t_P . Measure the flue gas temperature by means of the thermocouple grid described in section 7.6 of ASHRAE 103–1993 at the end of the post-purge period t_P ($T_{F,OFF}(t_P)$) and at $(3.75 + t_P)$ minutes ($T_{F,OFF}(t_3)$) and $(22.5 + t_P)$ minutes ($T_{F,OFF}(t_4)$) after the main burner shuts off. If the measured t_P is less than or equal to 30 seconds, record t_P as 0 and conduct the cool-down test as if there is no post-purge.

8.8 *Direct measurement of off-cycle losses testing method.* [Reserved.]

8.9 *Calculation options.* The rate of the flue gas mass flow through the furnace and the factors D_P , D_F , and D_S are calculated by the equations in sections 11.6.1, 11.6.2, 11.6.3, 11.6.4, 11.7.1, and 11.7.2 of ASHRAE 103–1993 (incorporated by reference, see § 430.3). On units whose design is such that there is no measurable airflow through the combustion chamber and heat exchanger when the burner(s) is (are) off (as determined by the optional test procedure in section 7.10 of this appendix), D_F and D_P may be set equal to 0.05.

8.10 *Optional test procedures for condensing furnaces and boilers that have no off-period flue losses.* For units that have applied the test method in section 7.10 of this appendix to determine that no measurable airflow exists through the combustion chamber and heat exchanger during the burner off-period and having post-purge periods of less than 5 seconds, the cool-down and heat-up tests specified in sections 9.5 and 9.6 of ASHRAE 103–1993 (incorporated by reference, see § 430.3) may be omitted. In lieu of conducting the cool-down and heat-up tests, the tester may use the losses determined during the steady-state test described in section 9.1 of ASHRAE 103–1993 when calculating heating seasonal efficiency, Eff_{YHS} .

8.11 *Measurement of electrical standby and off mode power.*

8.11.1 *Standby power measurement.* With all electrical auxiliaries of the furnace or boiler not activated, measure the standby power ($P_{W,SB}$) in accordance with the procedures in IEC 62301 (incorporated by reference, see § 430.3), except that section 8.5, *Room Ambient Temperature*, of ASHRAE 103–1993 (incorporated by reference, see § 430.3) and the voltage

provision of section 8.2.1.4, *Electrical Supply*, of ASHRAE 103–1993 shall apply in lieu of the corresponding provisions of IEC 62301 at section 4.2, *Test room*, and the voltage specification of section 4.3, *Power supply*. Frequency shall be 60Hz. Clarifying further, IEC 62301 section 4.4, *Power measurement instruments*, and section 5, *Measurements*, apply in lieu of ASHRAE 103–1993 section 6.10, *Energy Flow Rate*. Measure the wattage so that all possible standby mode wattage for the entire appliance is recorded, not just the standby mode wattage of a single auxiliary. Round the recorded standby power ($P_{W,SB}$) to the second decimal place, except for loads greater than or equal to 10W, which must be recorded to at least three significant figures.

8.11.2 *Off mode power measurement.* If the unit is equipped with an off switch or there is an expected difference between off mode power and standby mode power, measure off mode power ($P_{W,OFF}$) in accordance with the standby power procedures in IEC 62301 (incorporated by reference, see § 430.3), except that section 8.5, *Room Ambient Temperature*, of ASHRAE 103–1993 (incorporated by reference, see § 430.3) and the voltage provision of section 8.2.1.4, *Electrical Supply*, of ASHRAE 103–1993 shall apply in lieu of the corresponding provisions of IEC 62301 at section 4.2, *Test room*, and the voltage specification of section 4.3, *Power supply*. Frequency shall be 60Hz. Clarifying further, IEC 62301 section 4.4, *Power measurement instruments*, and section 5, *Measurements*, apply for this measurement in lieu of ASHRAE 103–1993 section 6.10, *Energy Flow Rate*. Measure the wattage so that all possible off mode wattage for the entire appliance is recorded, not just the off mode wattage of a single auxiliary. If there is no expected difference in off mode power and standby mode power, let $P_{W,OFF} = P_{W,SB}$, in which case no separate measurement of off mode power is necessary. Round the recorded off mode power ($P_{W,OFF}$) to the second decimal place, except for loads greater than or equal to 10W, in which case round the recorded value to at least three significant figures.

9.0 *Nomenclature.* Nomenclature includes the nomenclature specified in section 10 of ASHRAE 103–1993 (incorporated by reference, see § 430.3) and the following additional variables:

Eff_{motor} = Efficiency of power burner motor
 PE_{IG} = Electrical power to the interrupted ignition device, kW
 $R_{T,a} = R_{T,F}$ if flue gas is measured
 $= R_{T,S}$ if stack gas is measured
 $R_{T,F}$ = Ratio of combustion air mass flow rate to stoichiometric air mass flow rate

$R_{T,S}$ = Ratio of the sum of combustion air and relief air mass flow rate to stoichiometric air mass flow rate

t_{IG} = Electrical interrupted ignition device on-time, min.

$T_{a,SS,X} = T_{F,SS,X}$ if flue gas temperature is measured, °F

$= T_{S,SS,X}$ if stack gas temperature is measured, °F

y_{IG} = Ratio of electrical interrupted ignition device on-time to average burner on-time

y_P = Ratio of power burner combustion blower on-time to average burner on-time

E_{SO} = Average annual electric standby mode and off mode energy consumption, in kilowatt-hours

$P_{W,OFF}$ = Furnace or boiler off mode power, in watts

$P_{W,SB}$ = Furnace or boiler standby mode power, in watts

10.0 *Calculation of derived results from test measurements.* Perform calculations as specified in section 11 of ASHRAE 103–1993 (incorporated by reference, see § 430.3), except for sections 11.5.11.1, 11.5.11.2, and appendices B and C; and as specified in sections 10.1 through 10.11 and Figure 1 of this appendix.

10.1 *Annual fuel utilization efficiency.* The annual fuel utilization efficiency (AFUE) is as defined in sections 11.2.12 (non-condensing systems), 11.3.12 (condensing systems), 11.4.12 (non-condensing modulating systems) and 11.5.12 (condensing modulating systems) of ASHRAE 103–1993 (incorporated by reference, see § 430.3), except for the definition for the term Eff_{YHS} in the defining equation for AFUE. Eff_{YHS} is defined as:

Eff_{YHS} = heating seasonal efficiency as defined in sections 11.2.11 (non-condensing systems), 11.3.11 (condensing systems), 11.4.11 (non-condensing modulating systems) and 11.5.11 (condensing modulating systems) of ASHRAE 103–1993, except that for condensing modulating systems sections 11.5.11.1 and 11.5.11.2 are replaced by sections 10.2 and 10.3 of this appendix. Eff_{YHS} is based on the assumptions that all weatherized warm air furnaces or boilers are located outdoors, that non-weatherized warm air furnaces are installed as isolated combustion systems, and that non-weatherized boilers are installed indoors.

10.2 *Part-load efficiency at reduced fuel input rate.* If the option in section 8.10 of this appendix is not employed, calculate the part-load efficiency at the reduced fuel input rate, $Eff_{YU,R}$, for condensing furnaces and boilers equipped with either step-modulating or two-stage controls, expressed as a percent and defined as:

$$Eff_{YU,H} = 100 - L_{L,A} + L_G - L_C - C_J L_J - \left[\frac{t_{ON}}{t_{ON} + \left(\frac{Q_P}{Q_{IN}} \right) t_{OFF}} \right] (L_{S,ON} + L_{S,OFF} + L_{I,ON} + L_{I,OFF})$$

If the option in section 8.10 of this appendix is employed, calculate $Effy_{U,R}$ as follows:

$$Effy_{U,H} = 100 - L_{L,A} + L_G - L_C - C_J L_J - \left[\frac{t_{ON}}{t_{ON} + \left(\frac{Q_P}{Q_{IN}} \right) t_{OFF}} \right] (C_S)(L_{S,SS})$$

Where:

$L_{L,A}$ = value as defined in section 11.2.7 of ASHRAE 103–1993 (incorporated by reference, see § 430.3)
 L_G = value as defined in section 11.3.11.1 of ASHRAE 103–1993, at reduced input rate,
 L_C = value as defined in section 11.3.11.2 of ASHRAE 103–1993 at reduced input rate,
 L_J = value as defined in section 11.4.8.1.1 of ASHRAE 103–1993 at maximum input rate,
 t_{ON} = value as defined in section 11.4.9.11 of ASHRAE 103–1993,
 Q_P = pilot fuel input rate determined in accordance with section 9.2 of ASHRAE 103–1993 in Btu/h,
 Q_{IN} = value as defined in section 11.4.8.1.1 of ASHRAE 103–1993,
 t_{OFF} = value as defined in section 11.4.9.12 of ASHRAE 103–1993 at reduced input rate,

$L_{S,ON}$ = value as defined in section 11.4.10.5 of ASHRAE 103–1993 at reduced input rate,
 $L_{S,OFF}$ = value as defined in section 11.4.10.6 of ASHRAE 103–1993 at reduced input rate,
 $L_{I,ON}$ = value as defined in section 11.4.10.7 of ASHRAE 103–1993 at reduced input rate,
 $L_{I,OFF}$ = value as defined in section 11.4.10.8 of ASHRAE 103–1993 at reduced input rate,
 C_J = jacket loss factor and equal to:
 = 0.0 for furnaces or boilers intended to be installed indoors
 = 1.7 for furnaces intended to be installed as isolated combustion systems
 = 2.4 for boilers (other than finned-tube boilers) intended to be installed as isolated combustion systems
 = 3.3 for furnaces intended to be installed outdoors

= 4.7 for boilers (other than finned-tube boilers) intended to be installed outdoors
 = 1.0 for finned-tube boilers intended to be installed outdoors
 = 0.5 for finned-tube boilers intended to be installed in isolated combustion system applications
 $L_{S,SS}$ = value as defined in section 11.4.6 of ASHRAE 103–1993 at reduced input rate,
 C_S = value as defined in section 11.3.10.1 of ASHRAE 103–1993 at reduced input rate.

10.3 Part-Load Efficiency at Maximum Fuel Input Rate. If the option in section 8.10 of this appendix is not employed, calculate the part-load efficiency at maximum fuel input rate, $Effy_{U,H}$, for condensing furnaces and boilers equipped with two-stage controls, expressed as a percent and defined as:

$$Effy_{U,R} = 100 - L_{L,A} + L_G - L_C - C_J L_J - \left[\frac{t_{ON}}{t_{ON} + \left(\frac{Q_P}{Q_{IN}} \right) t_{OFF}} \right] (L_{S,ON} + L_{S,OFF} + L_{I,ON} + L_{I,OFF})$$

If the option in section 8.10 of this appendix is employed, calculate $Effy_{U,H}$ as follows:

$$Effy_{U,R} = 100 - L_{L,A} + L_G - L_C - C_J L_J - \left[\frac{t_{ON}}{t_{ON} + \left(\frac{Q_P}{Q_{IN}} \right) t_{OFF}} \right] (C_S)(L_{S,SS})$$

Where:

$L_{L,A}$ = value as defined in section 11.2.7 of ASHRAE 103–1993 (incorporated by reference, see § 430.3),
 L_G = value as defined in section 11.3.11.1 of ASHRAE 103–1 at maximum input rate,
 L_C = value as defined in section 11.3.11.2 of ASHRAE 103–1993 at maximum input rate,
 L_J = value as defined in section 11.4.8.1.1 of ASHRAE 103–1993 at maximum input rate,
 t_{ON} = value as defined in section 11.4.9.11 of ASHRAE 103–1993,
 Q_P = pilot fuel input rate determined in accordance with section 9.2 of ASHRAE 103–1993 in Btu/h,

Q_{IN} = value as defined in section 11.4.8.1.1 of ASHRAE 103–1993,
 t_{OFF} = value as defined in section 11.4.9.12 of ASHRAE 103–1993 at maximum input rate,
 $L_{S,ON}$ = value as defined in section 11.4.10.5 of ASHRAE 103–1993 at maximum input rate,
 $L_{S,OFF}$ = value as defined in section 11.4.10.6 of ASHRAE 103–1993 at maximum input rate,
 $L_{I,ON}$ = value as defined in section 11.4.10.7 of ASHRAE 103–1993 at maximum input rate,
 $L_{I,OFF}$ = value as defined in section 11.4.10.8 of ASHRAE 103–1993 at maximum input rate,

C_J = value as defined in section 10.2 of this appendix,
 $L_{S,SS}$ = value as defined in section 11.4.6 of ASHRAE 103–1993 at maximum input rate,
 C_S = value as defined in section 11.4.10.1 of ASHRAE 103–1993 at maximum input rate.

10.4 National average burner operating hours, average annual fuel energy consumption, and average annual auxiliary electrical energy consumption for gas or oil furnaces and boilers.

10.4.1 National average number of burner operating hours. For furnaces and boilers equipped with single-stage controls, the national average number of burner operating hours is defined as:

$BOH_{SS} = 2,080 (0.77) (A) DHR - 2,080 (B)$

Where:

2,080 = national average heating load hours
0.77 = adjustment factor to adjust the calculated design heating requirement and heating load hours to the actual heating load experienced by the heating system

$A = 100,000 / [341,300 (y_P PE + y_{IG} PE_{IG} + y BE) + (Q_{IN} - Q_P) Eff_{yHS}]$, for forced draft unit, indoors
 $= 100,000 / [341,300 (y_P PE_{Eff_{motor}} + y_{IG} PE_{IG} + y BE) + (Q_{IN} - Q_P) Eff_{yHS}]$, for forced draft unit, isolated combustion system,
 $= 100,000 / [341,300 (y_P PE (1 - Eff_{motor}) + y_{IG} PE_{IG} + y BE) + (Q_{IN} - Q_P) Eff_{yHS}]$, for induced draft unit, indoors, and
 $= 100,000 / [341,300 (y_{IG} PE_{IG} + y BE) + (Q_{IN} - Q_P) Eff_{yHS}]$, for induced draft unit, isolated combustion system.

DHR = typical design heating requirements as listed in Table 8 (in kBtu/h) of ASHRAE 103–1993 (incorporated by reference, see § 430.3), using the proper value of Q_{OUT} defined in 11.2.8.1 of ASHRAE 103–1993.

$B = 2 Q_P (Eff_{yHS}) (A) / 100,000$

Where:

Eff_{motor} = nameplate power burner motor efficiency provided by the manufacturer, = 0.50, an assumed default power burner efficiency if not provided by the manufacturer.

100,000 = factor that accounts for percent and kBtu

y_P = ratio of induced or forced draft blower on-time to average burner on-time, as follows:

- 1 for units without post-purge;
- $1 + (t_P / 3.87)$ for single stage furnaces with post purge;
- $1 + (t_P / 10)$ for two-stage and step modulating furnaces with post purge;
- $1 + (t_P / 9.68)$ for single stage boilers with post purge; or
- $1 + (t_P / 15)$ for two stage and step modulating boilers with post purge.

PE = all electrical power related to burner operation at full load steady-state operation, including electrical ignition device if energized, controls, gas valve or oil control valve, draft inducer, and boiler pump, as determined in section 8.2 of this appendix.

y_{IG} = ratio of burner interrupted ignition device on-time to average burner on-time, as follows:

- 0 for burners not equipped with interrupted ignition device;
- $(t_{IG} / 3.87)$ for single-stage furnaces or boilers;
- $(t_{IG} / 10)$ for two-stage and step modulating furnaces;
- $(t_{IG} / 9.68)$ for single stage boilers; or
- $(t_{IG} / 15)$ for two stage and step modulating boilers.

PE_{IG} = electrical input rate to the interrupted ignition device on burner (if employed), as defined in section 8.3 of this appendix

y = ratio of blower or pump on-time to average burner on-time, as follows:

- 1 for furnaces without fan delay or boilers without a pump delay;
- $1 + (t^+ - t^-) / 3.87$ for single-stage furnaces with fan delay;

$1 + (t^+ - t^-) / 10$ for two-stage and step modulating furnaces with fan delay;
 $1 + (t^+ / 9.68)$ for single-stage boilers with pump delay;

$1 + (t^+ / 1.5)$ for two-stage and step modulating boilers with pump delay.
 BE = circulating air fan or water pump electrical energy input rate at full-load steady-state operation as defined in section 8.2 of this appendix.

t_P = post-purge time as defined in section 8.5 (furnace) or section 8.7 (boiler) of this appendix

= 0 if t_P is equal to or less than 30 second

t_{IG} = on-time of the burner interrupted ignition device, as defined in section 8.3 of this appendix

Q_{IN} = as defined in section 11.2.8.1 of ASHRAE 103–1993

Q_P = as defined in section 11.2.11 of ASHRAE 103–1993

Eff_{yHS} = as defined in section 11.2.11 (non-condensing systems) or section 11.3.11.3 (condensing systems) of ASHRAE 103–1993, percent, and calculated on the basis of:

- isolated combustion system installation, for non-weatherized warm air furnaces;
- indoor installation, for non-weatherized boilers; or
- outdoor installation, for furnaces and boilers that are weatherized.

2 = ratio of the average length of the heating season in hours to the average heating load hours

t^+ = delay time between burner shutoff and the blower or pump shutoff measured as defined in section 9.5.1.2 of ASHRAE 103–1993 (furnace) or section 8.7 of this appendix (boiler).

t^- = as defined in section 9.6.1 of ASHRAE 103–1993

10.4.1.1 For furnaces and boilers equipped with two stage or step modulating controls the average annual energy used during the heating season, E_M , is defined as:

$$E_M = (Q_{IN} - Q_P) BOH_{SS} + (8,760 - 4,600) Q_P$$

Where:

Q_{IN} = as defined in 11.4.8.1.1 of ASHRAE 103–1993 (incorporated by reference, see § 430.3)

Q_P = as defined in 11.4.12 of ASHRAE 103–1993

BOH_{SS} = as defined in section 10.4.1 of this appendix, in which the weighted Eff_{yHS} as defined in 11.4.11.3 or 11.5.11.3 of ASHRAE 103–1993 is used for calculating the values of A and B, the term DHR is based on the value of Q_{OUT} defined in 11.4.8.1.1 or 11.5.8.1.1 of ASHRAE 103–1993, and the term $(y_P PE + y_{IG} PE_{IG} + y BE)$ in the factor A is increased by the factor R, which is defined as:

- R = 2.3 for two stage controls
- = 2.3 for step modulating controls when the ratio of minimum-to-maximum output is greater than or equal to 0.5
- = 3.0 for step modulating controls when the ratio of minimum-to-maximum output is less than 0.5

$A = 100,000 / [341,300 (y_P PE + y_{IG} PE_{IG} + y BE) R + (Q_{IN} - Q_P) Eff_{yHS}]$, for forced draft unit, indoors

= $100,000 / [341,300 (y_P PE_{Eff_{motor}} + y_{IG} PE_{IG} + y BE) R + (Q_{IN} - Q_P) Eff_{yHS}]$, for forced draft unit, isolated combustion system,

= $100,000 / [341,300 (y_P PE (1 - Eff_{motor}) + y_{IG} PE_{IG} + y BE) R + (Q_{IN} - Q_P) Eff_{yHS}]$, for induced draft unit, indoors, and
 = $100,000 / [341,300 (y_{IG} PE_{IG} + y BE) R + (Q_{IN} - Q_P) Eff_{yHS}]$, for induced draft unit, isolated combustion system.

Where:

Eff_{motor} = nameplate power burner motor efficiency provided by the manufacturer, = 0.50, an assumed default power burner efficiency if not provided by the manufacturer.

Eff_{yHS} = as defined in 11.4.11.3 or 11.5.11.3 of ASHRAE 103–1993, and calculated on the basis of:

- isolated combustion system installation, for non-weatherized warm air furnaces;
- indoor installation, for non-weatherized boilers; or
- outdoor installation, for furnaces and boilers that are weatherized.

8,760 = total number of hours per year

4,600 = as defined in 11.4.12 of ASHRAE 103–1993

10.4.1.2 For furnaces and boilers equipped with two-stage or step-modulating controls, the national average number of burner operating hours at the reduced operating mode (BOH_R) is defined as:

$$BOH_R = X_R E_M / Q_{IN,R}$$

Where:

X_R = as defined in 11.4.8.7 of ASHRAE 103–1993 (incorporated by reference, see § 430.3)

E_M = as defined in section 10.4.1.1 of this appendix

$Q_{IN,R}$ = as defined in 11.4.8.1.2 of ASHRAE 103–1993

10.4.1.3 For furnaces and boilers equipped with two-stage controls, the national average number of burner operating hours at the maximum operating mode (BOH_H) is defined as:

$$BOH_H = X_H E_M / Q_{IN}$$

Where:

X_H = as defined in 11.4.8.6 of ASHRAE 103–1993 (incorporated by reference, see § 430.3)

E_M = as defined in section 10.4.1.1 of this appendix

Q_{IN} = as defined in section 11.4.8.1.1 of ASHRAE 103–1993

10.4.1.4 For furnaces and boilers equipped with step-modulating controls, the national average number of burner operating hours at the modulating operating mode (BOH_M) is defined as:

$$BOH_M = X_H E_M / Q_{IN,M}$$

Where:

X_H = as defined in 11.4.8.6 of ASHRAE 103–1993 (incorporated by reference, see § 430.3)

E_M = as defined in section 10.4.1.1 of this appendix

$Q_{IN,M} = Q_{OUT,M} / (Eff_{ySS,M} / 100)$

$Q_{OUT,M}$ = as defined in 11.4.8.10 or 11.5.8.10 of ASHRAE 103–1993, as appropriate

$Eff_{ySS,M}$ = as defined in 11.4.8.8 or 11.5.8.8 of ASHRAE 103–1993, as appropriate, in percent

100 = factor that accounts for percent

10.4.2 *Average annual fuel energy consumption for gas or oil fueled furnaces or boilers.* For furnaces or boilers equipped with single-stage controls, the average annual fuel energy consumption (E_F) is expressed in Btu per year and defined as:

$$E_F = BOH_{SS} (Q_{IN} - Q_P) + 8,760 Q_P$$

Where:

BOH_{SS} = as defined in section 10.4.1 of this appendix

Q_{IN} = as defined in section 11.2.8.1 of ASHRAE 103–1993 (incorporated by reference, see § 430.3)

Q_P = as defined in section 11.2.11 of ASHRAE 103–1993

8,760 = as defined in section 10.4.1.1 of this appendix

10.4.2.1 For furnaces or boilers equipped with either two-stage or step modulating controls, E_F is defined as:

$$E_F = E_M + 4,600 Q_P$$

Where:

E_M = as defined in section 10.4.1.1 of this appendix

4,600 = as defined in section 11.4.12 of ASHRAE 103–1993

Q_P = as defined in section 11.2.11 of ASHRAE 103–1993

10.4.3 *Average annual auxiliary electrical energy consumption for gas or oil-fueled furnaces or boilers.* For furnaces and boilers equipped with single-stage controls, the average annual auxiliary electrical consumption (E_{AE}) is expressed in kilowatt-hours and defined as:

$$E_{AE} = BOH_{SS} (y_P PE + y_{IG} PE_{IG} + y BE) + E_{SO}$$

Where:

BOH_{SS} = as defined in section 10.4.1 of this appendix

y_P = as defined in section 10.4.1 of this appendix

PE = as defined in section 10.4.1 of this appendix

y_{IG} = as defined in section 10.4.1 of this appendix

PE_{IG} = as defined in section 10.4.1 of this appendix

y = as defined in section 10.4.1 of this appendix

BE = as defined in section 10.4.1 of this appendix

E_{SO} = as defined in section 10.11 of this appendix

10.4.3.1 For furnaces or boilers equipped with two-stage controls, E_{AE} is defined as:

$$E_{AE} = BOH_R (y_P PE_R + y_{IG} PE_{IG} + y BE_R) + BOH_H (y_P PE_H + y_{IG} PE_{IG} + y BE_H) + E_{SO}$$

Where:

BOH_R = as defined in section 10.4.1.2 of this appendix

y_P = as defined in section 10.4.1 of this appendix

PE_R = as defined in section 8.2 of this appendix and measured at the reduced fuel input rate

y_{IG} = as defined in section 10.4.1 of this appendix

PE_{IG} = as defined in section 10.4.1 of this appendix

y = as defined in section 10.4.1 of this appendix

BE_R = as defined in section 8.2 of this appendix and measured at the reduced fuel input rate

BOH_H = as defined in section 10.4.1.3 of this appendix

PE_H = as defined in section 8.2 of this appendix and measured at the maximum fuel input rate

BE_H = as defined in section 8.2 of this appendix and measured at the maximum fuel input rate

E_{SO} = as defined in section 10.11 of this appendix

10.4.3.2 For furnaces or boilers equipped with step-modulating controls, E_{AE} is defined as:

$$E_{AE} = BOH_R (y_P PE_R + y_{IG} PE_{IG} + y BE_R) + BOH_M (y_P PE_H + y_{IG} PE_{IG} + y BE_H) + E_{SO}$$

Where:

BOH_R = as defined in section 10.4.1.2 of this appendix

y_P = as defined in section 10.4.1 of this appendix

PE_R = as defined in section 8.2 of this appendix and measured at the reduced fuel input rate

y_{IG} = as defined in section 10.4.1 of this appendix

PE_{IG} = as defined in section 10.4.1 of this appendix

y = as defined in section 10.4.1 of this appendix

BE_R = as defined in section 8.2 of this appendix and measured at the reduced fuel input rate

BOH_M = as defined in 10.4.1.4 of this appendix

PE_H = as defined in section 8.2 of this appendix and measured at the maximum fuel input rate

BE_H = as defined in section 8.2 of this appendix and measured at the maximum fuel input rate

E_{SO} = as defined in section 10.11 of this appendix

10.5 *Average annual electric energy consumption for electric furnaces or boilers.* For electric furnaces and boilers, the average annual electrical energy consumption (E_E) is expressed in kilowatt-hours and defined as:

$$E_E = 100 (2,080) (0.77) DHR (3.412 AFUE) + E_{SO}$$

Where:

100 = to express a percent as a decimal

2,080 = as defined in section 10.4.1 of this appendix

0.77 = as defined in section 10.4.1 of this appendix

DHR = as defined in section 10.4.1 of this appendix

3.412 = conversion factor from watt-hours to Btu

AFUE = as defined in section 11.1 of ASHRAE 103–1993 (incorporated by reference, see § 430.3), in percent, and calculated on the basis of:

isolated combustion system installation, for non-weatherized warm air furnaces;

indoor installation, for non-weatherized boilers; or

outdoor installation, for furnaces and boilers that are weatherized.

E_{SO} = as defined in section 10.11 of this appendix.

10.6 *Energy factor.*

10.6.1 *Energy factor for gas or oil furnaces and boilers.* Calculate the energy factor, EF, for gas or oil furnaces and boilers defined as, in percent:

$$EF = (E_F - 4,600 (Q_P)) (Eff_{yHS}) / (E_F + 3,412 (E_{AE}))$$

Where:

E_F = average annual fuel consumption as defined in section 10.4.2 of this appendix

4,600 = as defined in section 11.4.12 of ASHRAE 103–1993 (incorporated by reference, see § 430.3)

Q_P = pilot fuel input rate determined in accordance with section 9.2 of ASHRAE 103–1993 in Btu/h

Eff_{yHS} = annual fuel utilization efficiency as defined in sections 11.2.11, 11.3.11, 11.4.11 or 11.5.11 of ASHRAE 103–1993, in percent, and calculated on the basis of:

isolated combustion system installation, for non-weatherized warm air furnaces;

indoor installation, for non-weatherized boilers; or

outdoor installation, for furnaces and boilers that are weatherized.

3,412 = conversion factor from kW to Btu/h

E_{AE} = as defined in section 10.4.3 of this appendix

10.6.2 *Energy factor for electric furnaces and boilers.* The energy factor, EF, for electric furnaces and boilers is defined as:

$$EF = AFUE$$

Where:

AFUE = annual fuel utilization efficiency as defined in section 10.4.3 of this appendix, in percent

10.7 *Average annual energy consumption for furnaces and boilers located in a different geographic region of the United States and in buildings with different design heating requirements.*

10.7.1 *Average annual fuel energy consumption for gas or oil-fueled furnaces and boilers located in a different geographic region of the United States and in buildings with different design heating requirements.*

For gas or oil-fueled furnaces and boilers, the average annual fuel energy consumption for a specific geographic region and a specific typical design heating requirement (E_{FR}) is expressed in Btu per year and defined as:

$$E_{FR} = (E_F - 8,760 Q_P) (HLH / 2,080) + 8,760 Q_P$$

Where:

E_F = as defined in section 10.4.2 of this appendix

8,760 = as defined in section 10.4.1.1 of this appendix

Q_P = as defined in section 11.2.11 of ASHRAE 103–1993 (incorporated by reference, see § 430.3)

HLH = heating load hours for a specific geographic region determined from the heating load hour map in Figure 1 of this appendix

2,080 = as defined in section 10.4.1 of this appendix

10.7.2 *Average annual auxiliary electrical energy consumption for gas or oil-fueled furnaces and boilers located in a different geographic region of the United States and in*

buildings with different design heating requirements. For gas or oil-fueled furnaces and boilers, the average annual auxiliary electrical energy consumption for a specific geographic region and a specific typical design heating requirement (E_{AER}) is expressed in kilowatt-hours and defined as:

$$E_{AER} = (E_{AE} - E_{SO}) (HLH/2080) + E_{SOR}$$

Where:

E_{AE} = as defined in section 10.4.3 of this appendix

E_{SO} = as defined in section 10.11 of this appendix

HLH = as defined in section 10.7.1 of this appendix

2,080 = as defined in section 10.4.1 of this appendix

E_{SOR} = as defined in section 10.7.3 of this appendix.

10.7.3 *Average annual electric energy consumption for electric furnaces and boilers located in a different geographic region of the United States and in buildings with different design heating requirements.* For electric furnaces and boilers, the average annual electric energy consumption for a specific geographic region and a specific typical design heating requirement (E_{ER}) is expressed in kilowatt-hours and defined as:

$$E_{ER} = 100 (0.77) DHR HLH / (3.412 AFUE) + E_{SOR}$$

Where:

100 = as defined in section 10.4.3 of this appendix

0.77 = as defined in section 10.4.1 of this appendix

DHR = as defined in section 10.4.1 of this appendix

HLH = as defined in section 10.7.1 of this appendix

3.412 = as defined in section 10.4.3 of this appendix

AFUE = as defined in section 10.4.3 of this appendix

E_{SOR} = E_{SO} as defined in section 10.11 of this appendix, except that in the equation for E_{SO} , the term BOH is multiplied by the expression (HLH/2080) to get the appropriate regional accounting of standby mode and off mode loss.

10.8 *Annual energy consumption for mobile home furnaces*

10.8.1 *National average number of burner operating hours for mobile home furnaces (BOH_{SS}).* BOH_{SS} is the same as in section

10.4.1 of this appendix, except that the value of $E_{FF_{YHS}}$ in the calculation of the burner operating hours, BOH_{SS} , is calculated on the basis of a direct vent unit with system number 9 or 10.

10.8.2 *Average annual fuel energy for mobile home furnaces (E_F).* E_F is same as in section 10.4.2 of this appendix except that the burner operating hours, BOH_{SS} , is calculated as specified in section 10.8.1 of this appendix.

10.8.3 *Average annual auxiliary electrical energy consumption for mobile home furnaces (E_{AE}).* E_{AE} is the same as in section 10.4.3 of this appendix, except that the burner operating hours, BOH_{SS} , is calculated as specified in section 10.8.1 of this appendix.

10.9 *Calculation of sales weighted average annual energy consumption for mobile home furnaces.* To reflect the distribution of mobile homes to geographical regions with average HLH_{MHF} values different from 2,080, adjust the annual fossil fuel and auxiliary electrical energy consumption values for mobile home furnaces using the following adjustment calculations.

10.9.1 For mobile home furnaces, the sales weighted average annual fossil fuel energy consumption is expressed in Btu per year and defined as:

$$E_{F,MHF} = (E_F - 8,760 Q_P) HLH_{MHF} / 2,080 + 8,760 Q_P$$

Where:

E_F = as defined in section 10.8.2 of this appendix

8,760 = as defined in section 10.4.1.1 of this appendix

Q_P = as defined in section 10.2 of this appendix

HLH_{MHF} = 1880, sales weighted average heating load hours for mobile home furnaces

2,080 = as defined in section 10.4.1 of this appendix

10.9.2 For mobile home furnaces, the sales-weighted-average annual auxiliary electrical energy consumption is expressed in kilowatt-hours and defined as:

$$E_{AE,MHF} = E_{AE} HLH_{MHF} / 2,080$$

Where:

E_{AE} = as defined in section 10.8.3 of this appendix

HLH_{MHF} = as defined in section 10.9.1 of this appendix

2,080 = as defined in section 10.4.1 of this appendix

10.10 *Direct determination of off-cycle losses for furnaces and boilers equipped with thermal stack dampers.* [Reserved.]

10.11 *Average annual electrical standby mode and off mode energy consumption.* Calculate the annual electrical standby mode and off mode energy consumption (E_{SO}) in kilowatt-hours, defined as:

$$E_{SO} = (P_{W,SB} (4160 - BOH) + 4600 P_{W,OFF}) / K$$

Where:

$P_{W,SB}$ = furnace or boiler standby mode power, in watts, as measured in section 8.11.1 of this appendix

4,160 = average heating season hours per year

BOH = total burner operating hours as calculated in section 10.4 of this appendix for gas or oil-fueled furnaces or boilers. Where for gas or oil-fueled furnaces and boilers equipped with single-stage controls, BOH = BOH_{SS} ; for gas or oil-fueled furnaces and boilers equipped with two-stage controls, BOH = ($BOH_R + BOH_H$); and for gas or oil-fueled furnaces and boilers equipped with step-modulating controls, BOH = ($BOH_R + BOH_M$). For electric furnaces and boilers, BOH = $100(2080)(0.77)DHR / (E_{in} 3.412(AFUE))$

4,600 = as defined in section 11.4.12 of ASHRAE 103–1993 (incorporated by reference, see § 430.3)

$P_{W,OFF}$ = furnace or boiler off mode power, in watts, as measured in section 8.11.2 of this appendix

K = 0.001 kWh/Wh, conversion factor from watt-hours to kilowatt-hours

Where:

100 = to express a percent as a decimal

2,080 = as defined in section 10.4.1 of this appendix

0.77 = as defined in section 10.4.1 of this appendix

DHR = as defined in section 10.4.1 of this appendix

E_{in} = steady-state electric rated power, in kilowatts, from section 9.3 of ASHRAE 103–1993

3.412 = as defined in section 10.4.3 of this appendix

AFUE = as defined in section 11.1 of ASHRAE 103–1993 in percent

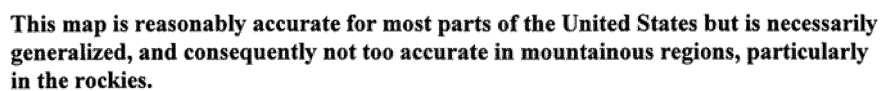


FIGURE 1- HEATING LOAD HOURS (HLH) FOR THE UNITED STATES



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Part VI

Department of Justice

Bureau of Alcohol, Tobacco, Firearms, and Explosives

27 CFR Part 479

Machineguns, Destructive Devices and Certain Other Firearms; Background Checks for Responsible Persons of a Trust or Legal Entity With Respect To Making or Transferring a Firearm; Final Rule

DEPARTMENT OF JUSTICE

Bureau of Alcohol, Tobacco, Firearms, and Explosives

27 CFR Part 479

[Docket No. ATF 41F; AG Order No. 3608–2016]

RIN 1140–AA43

Machineguns, Destructive Devices and Certain Other Firearms; Background Checks for Responsible Persons of a Trust or Legal Entity With Respect To Making or Transferring a Firearm**AGENCY:** Bureau of Alcohol, Tobacco, Firearms, and Explosives, Department of Justice.**ACTION:** Final rule.

SUMMARY: The Department of Justice is amending the regulations of the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) regarding the making or transferring of a firearm under the National Firearms Act (NFA). This final rule defines the term “responsible person,” as used in reference to a trust, partnership, association, company, or corporation; requires responsible persons of such trusts or legal entities to complete a specified form and to submit photographs and fingerprints when the trust or legal entity files an application to make an NFA firearm or is listed as the transferee on an application to transfer an NFA firearm; requires that a copy of all applications to make or transfer a firearm, and the specified form for responsible persons, as applicable, be forwarded to the chief law enforcement officer (CLEO) of the locality in which the applicant/transferee or responsible person is located; and eliminates the requirement for a certification signed by the CLEO. These provisions provide a public safety benefit as they ensure that responsible persons undergo background checks. In addition, this final rule adds a new section to ATF’s regulations to address the possession and transfer of firearms registered to a decedent. The new section clarifies that the executor, administrator, personal representative, or other person authorized under State law to dispose of property in an estate may possess a firearm registered to a decedent during the term of probate without such possession being treated as a “transfer” under the NFA. It also specifies that the transfer of the firearm to any beneficiary of the estate may be made on a tax-exempt basis.

DATES: This rule is effective July 13, 2016.**FOR FURTHER INFORMATION CONTACT:**

Brenda Raffath Friend, Office of Regulatory Affairs, Enforcement Programs and Services, Bureau of Alcohol, Tobacco, Firearms, and Explosives, U.S. Department of Justice, 99 New York Avenue NE., Washington, DC 20226; telephone: (202) 648–7070.

SUPPLEMENTARY INFORMATION:

- I. Executive Summary
 - A. Purpose of the Regulatory Action
 - B. Summary of the Major Provisions of This Rule
 - C. Costs and Benefits
- II. Background
 - A. Application To Make a Firearm
 - B. Application for Transfer of a Firearm
 - C. Transfer Tax Exemption Available
- III. Notice of Proposed Rulemaking
 - A. Petition
 - B. Amendment of 27 CFR 479.11
 - C. Amendment of 27 CFR 479.62 and 479.63
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I. Executive Summary**A. Purpose of the Regulatory Action**

The current regulations at 27 CFR 479.63 and 479.85, which require fingerprints, photographs, and a law enforcement certification for individual applicants to make or transfer National Firearms Act (NFA) firearms, do not apply to trusts or legal entities. On September 9, 2013, the Department of Justice (“the Department” or DOJ) published in the **Federal Register** a notice of proposed rulemaking titled “Machine Guns, Destructive Devices and Certain Other Firearms; Background Checks for Responsible Persons of a Corporation, Trust or Other Legal Entity

with Respect to Making or Transferring a Firearm,” 78 FR 55014 (ATF 41P). The proposed rulemaking amended the regulations in §§ 479.11, 479.62–479.63, 479.84–479.85, and 479.90. The proposed regulations responded to a petition for rulemaking, dated December 3, 2009, filed on behalf of the National Firearms Act Trade and Collectors Association (NFATCA). The petitioner requested that the Department amend §§ 479.63 and 479.85, as well as corresponding Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) Forms 1 and 4. 78 FR at 55016–55017. The proposed regulations were intended to conform the identification and background check requirements applicable to certain trusts and legal entities to those that apply to individuals.

The goal of this final rule is to ensure that the identification and background check requirements apply equally to individuals, trusts, and legal entities. To lessen potential compliance burdens for the public and law enforcement, DOJ has revised the final rule to eliminate the requirement for a certification signed by a chief law enforcement officer (CLEO) and instead require CLEO notification. DOJ has also clarified that the term “responsible person” for a trust or legal entity includes those persons who have the power and authority to direct the management and policies of the trust or legal entity to receive, possess, ship, transport, deliver, transfer, or otherwise dispose of a firearm for, or on behalf of, the trust or entity. In the case of a trust, those with the power or authority to direct the management and policies of the trust include any person who has the capability to exercise such power and possesses, directly or indirectly, the power or authority under any trust instrument, or under State law, to receive, possess, ship, transport, deliver, transfer, or otherwise dispose of a firearm for or on behalf of the trust.

B. Summary of the Major Provisions of This Rule

With respect to trusts, partnerships, associations, companies, or corporations, this final rule defines the term “responsible person” as an individual in the organization that has the power and authority to direct the management and policies of the entity insofar as they pertain to firearms. This final rule requires that each responsible person complete a specified form and submit photographs and fingerprints when the trust or legal entity either files an application to make an NFA firearm, or is listed as the transferee on an application to transfer an NFA firearm.

The Department has also reassessed the need for CLEO certification and is implementing a new approach that focuses on notifying CLEOs. The final rule only requires that the applicant maker or transferee, including each responsible person for a trust or legal entity, provide a notice to the appropriate State or local official that an application is being submitted to ATF. An “appropriate State or local official” is the local chief of police, county sheriff, head of the State police, or State or local district attorney or prosecutor of the locality in which the applicant, transferee, or responsible person is located. In addition, this final rule requires responsible persons of a trust or legal entity to submit fingerprint cards and other identifying information to ATF and undergo a background check. It also adds a new section to ATF’s regulations to address the possession and transfer of firearms registered to a decedent. The new section clarifies that the executor, administrator, personal representative, or other person authorized under State law to dispose of property in an estate may possess a firearm registered to a decedent during the term of probate without such possession being treated as a “transfer” under the NFA. It also specifies that the transfer of the firearm to any beneficiary of the estate may be made on a tax-exempt basis.

C. Costs and Benefits

This rule requires that trusts and legal entities (e.g., partnerships, companies, associations, and corporations) applying to make or receive an NFA firearm submit information for each of their responsible persons to ATF to allow ATF to verify that such persons are not prohibited from possessing or receiving firearms. ATF estimates a total additional cost of \$29.4 million annually for trusts and legal entities to gather, procure, and submit such information to ATF and for ATF to process the information and conduct background checks on responsible persons. These provisions have public safety benefits because they will enable ATF to better ensure that the approximately 231,658 responsible persons within trusts and legal entities—an estimate based on the number of NFA applications processed by trusts or legal entities in calendar year 2014 multiplied by an average of two responsible persons per trust or legal entity—applying to make or receive NFA firearms each year are not prohibited from possessing or receiving such firearms.

This final rule also requires that all those who apply to make or receive an

NFA firearm, as well as all responsible persons for each trust or legal entity applicant or transferee, notify their local CLEO that an application has been filed with ATF before the applicant or transferee is permitted to make or receive an NFA firearm. Current regulations require individuals, but not trusts or legal entities, to obtain CLEO certification before making or receiving an NFA firearm. ATF estimates that the total cost of the CLEO notification requirement will be approximately \$5.8 million annually (\$0.5 million for individuals; \$5.3 million for legal entities). The current cost of CLEO certification for individuals is approximately \$2.26 million annually. Consequently, the final rule’s estimated net cost increase is approximately \$3.6 million annually. This increase, however, primarily involves costs to responsible persons for trusts and legal entities that had not previously been required to register, and will be offset by cost savings to individuals. ATF estimates the change in the final rule to a notice requirement will save individuals approximately \$1.8 million annually. This rule is not an “economically significant” rulemaking under Executive Order 12866.

II. Background

The Attorney General is responsible for enforcing the provisions of the NFA, 26 U.S.C. Chapter 53.¹ The Attorney General has delegated that responsibility to the Director of ATF (Director), subject to the direction of the Attorney General and the Deputy Attorney General. 28 CFR 0.130(a). ATF has promulgated regulations that implement the provisions of the NFA set forth in 27 CFR part 479, which contains procedural and substantive requirements relating to the importation, making, exportation, transfer, taxing, identification, registration of, and the dealing in machineguns, destructive devices, and certain other firearms.

A. Application To Make a Firearm

Section 5822 of the NFA, 26 U.S.C. 5822, provides that no person shall make a firearm unless the person has: (1) Filed with the Attorney General a written application, in duplicate, to make and register the firearm; (2) paid any tax payable on the making and

evidenced such payment by affixing the proper stamp to the original application form; (3) identified the firearm to be made in the application form in such manner as prescribed by regulation; (4) identified the applicant in the application form, in such manner as prescribed by regulation, except that, if such person is an individual, the identification must include the individual’s fingerprints and photograph; and (5) obtained the approval of the Attorney General to make and register the firearm and shows such approval on the application form. Applications shall be denied if the making or possession of the firearm would place the person making the firearm in violation of law. For purposes of title 26, United States Code, the term “person” means “an individual, a trust, estate, partnership, association, company or corporation.” 26 U.S.C. 7701(a)(1).

Regulations implementing section 5822 are set forth in 27 CFR part 479, subpart E. Section 479.62 provides, in pertinent part, that no person may make a firearm unless the person has filed with the Director a written application on ATF Form 1 (5320.1), *Application to Make and Register a Firearm*, in duplicate, and has received the approval of the Director to make the firearm. Approval of the application will effectuate registration of the firearm to the applicant. The application must identify the firearm to be made by serial number and other specified markings and information. In addition, the applicant must be identified on the form by name and address and, if other than an individual (e.g., a trust or legal entity), by the name and address of the principal officer or authorized representative of the trust or legal entity, as well as the employer identification number of the trust or legal entity, if applicable. If an individual, the identification must also include certain information prescribed in § 479.63.

Section 479.63 states that if the applicant is an individual, such person must securely attach to each copy of the Form 1, in the space provided on the form, a 2 x 2-inch photograph of the applicant taken within 1 year prior to the date of the application. The regulation also provides that a completed Federal Bureau of Investigation (FBI) Form FD-258 (Fingerprint Card), containing the fingerprints of the applicant, must be submitted in duplicate with the application.

In addition, § 479.63 provides that the law enforcement certification located on Form 1 must be completed and signed by the local chief of police or county

¹ Provisions of the NFA discussed below refer to the “Secretary” rather than the “Attorney General”; however, the relevant functions of the Secretary of the Treasury have been transferred to the Department of Justice, under the general authority of the Attorney General. 26 U.S.C. 7801(a)(2); 28 U.S.C. 599A(c)(1). For ease of reference, we will substitute “Attorney General” for “Secretary” when discussing these statutes.

sheriff, the head of the State police, the State or local district attorney or prosecutor, or such other person whose certification may be acceptable to the Director. The certifying official must state, *inter alia*, that the certifying official has no information indicating that possession of the firearm by the maker would be in violation of State or local law or that the maker will use the firearm for other than lawful purposes. The certifying official must have jurisdiction over the area within which the maker resides. The purpose of this requirement is to ensure that the official will have access to criminal records concerning the maker, and knowledge of the State and local laws governing the transfer, receipt, and possession of the firearm by the maker.

Under the current regulations, the requirements for fingerprints, photographs, and law enforcement certification specified in § 479.63 are not applicable to an applicant who is not an individual, *e.g.*, a trust or legal entity.

Section 479.64 sets forth the procedure for approval of an application to make a firearm. As specified, the Form 1 application must be forwarded, in duplicate, by the maker of the firearm to the Director, in accordance with the instructions on the form. If the application is approved, the Director will return the original to the maker of the firearm and retain the duplicate. Upon receipt of the approved application, the maker is authorized to make the firearm described therein. The maker of the firearm may not, under any circumstances, make the firearm until the application has been forwarded to the Director and has been approved and returned by the Director with the NFA stamp affixed. If the application is disapproved, the original Form 1 and the remittance submitted by the applicant for the purchase of the stamp will be returned to the applicant with the reason for disapproval stated on the form.

B. Application for Transfer of a Firearm

Section 5812(a) of the NFA, 26 U.S.C. 5812(a), which applies to applications to transfer a firearm, is substantively similar to NFA section 5822 (described above in section II.A of this final rule). Regulations implementing section 5812 are set forth in 27 CFR part 479, subpart F. In general, § 479.84 provides that no firearm may be transferred in the United States unless an application, ATF Form 4 (5320.4), *Application for Tax Paid Transfer and Registration of Firearm*, has been filed in duplicate with, and approved by, the Director. The Form 4 application must be filed by the

transferor and must identify the firearm to be transferred by type, serial number, and other specified markings and information. The application must identify the transferor by name and address and must include the transferor's Federal firearms license, if any, and special (occupational) tax stamp, if applicable. If the transferor is other than an individual, the title or status of the person executing the application must be provided. The application must identify the transferee by name and address and, if the transferee is an individual not qualified as a manufacturer, importer, or dealer under part 479, the person must be further identified in the manner prescribed in § 479.85.

Section 479.85 states that if the transferee is an individual, such person must securely attach to each copy of the Form 4, in the space provided on the form, a 2 x 2-inch photograph of the transferee taken within 1 year prior to the date of the application. The transferee must also attach to the application two properly completed FBI Forms FD-258 (Fingerprint Card). In addition, a certification by the local chief of police, county sheriff, head of the State police, State or local district attorney or prosecutor, or such other person whose certification may in a particular case be acceptable to the Director, must be completed on each copy of the Form 4. The certifying official must state, *inter alia*, that the certifying official has no information indicating that the receipt or possession of the firearm would place the transferee in violation of State or local law or that the transferee will use the firearm for other than lawful purposes. The certifying official must have jurisdiction over the area within which the transferee resides. The purpose of this requirement is to ensure that the official will have access to criminal records concerning the transferee, and knowledge of the State and local laws governing the transfer, receipt, and possession of the firearm by the transferee.

Under the current regulations, the requirements for fingerprints, photographs, and law enforcement certification specified in § 479.85 do not apply to individuals qualified as a manufacturer, importer, dealer, or Special (Occupational) Taxpayer (SOT) under part 479; nor do they apply to a transferee who is not an individual, *e.g.*, a trust or legal entity.

C. Transfer Tax Exemption Available

Section 5852(e) of the NFA, 26 U.S.C. 5852(e), provides that an unserviceable firearm may be transferred as a curio or

ornament without payment of the transfer tax imposed by section 5811, under such requirements as the Attorney General may by regulations prescribe.

Section 5853(a) of the NFA, 26 U.S.C. 5853(a), provides that a firearm may be transferred without the payment of the transfer tax imposed by section 5811 to any State, possession of the United States, any political subdivision thereof, or any official police organization of such a government entity engaged in criminal investigations.

Regulations implementing sections 5852(e) and 5853(a) are set forth in 27 CFR 479.90 and 479.91. These sections provide, in pertinent part, that the exemption from the transfer tax for the transfer of an unserviceable firearm as a curio or ornament or for a transfer to or from certain government entities may be obtained by the transferor of the firearm by filing with the Director an application, ATF Form 5 (5320.5), *Application for Tax Exempt Transfer and Registration of Firearm*, in duplicate. The application must: (1) Show the name and address of the transferor and of the transferee; (2) identify the Federal firearms license and special (occupational) tax stamp, if any, of the transferor and of the transferee; (3) show the name and address of the manufacturer and the importer of the firearm, if known; (4) show the type, model, overall length (if applicable), length of barrel, caliber, gauge or size, serial number, and other marks of identification of the firearm; and (5) contain a statement by the transferor that the transferor is entitled to the exemption because either the transferor or the transferee is a governmental entity coming within the purview of § 479.90(a) or the firearm is unserviceable and is being transferred as a curio or ornament. In the case of the transfer of a firearm by a governmental entity to a transferee who is an individual who is not qualified as a manufacturer, importer, dealer, or SOT under part 479, the transferee must be further identified in the manner prescribed in § 479.85.

III. Notice of Proposed Rulemaking

On September 9, 2013, ATF published in the **Federal Register** a notice of proposed rulemaking (NPRM) titled "Machine Guns, Destructive Devices and Certain Other Firearms; Background Checks for Responsible Persons of a Corporation, Trust or Other Legal Entity with Respect to Making or Transferring a Firearm," 78 FR 55014 (ATF 41P), amending the regulations in §§ 479.11, 479.62–479.63; 479.84–479.85; and 479.90.

A. Petition

The proposed regulations were in response to a petition for rulemaking, dated December 3, 2009, filed on behalf of the National Firearms Act Trade and Collectors Association (NFATCA). The petitioner requested that the Department amend §§ 479.63 and 479.85, as well as corresponding ATF Forms 1 and 4. 78 FR at 55016–55017. The petition requested amendments as numbered and discussed below.

1. Request To Amend §§ 479.63 and 479.85

The NFATCA expressed concern that persons who are prohibited by law from possessing or receiving firearms may acquire NFA firearms without undergoing a background check by establishing a trust or legal entity such as a corporation or partnership. It contended that the number of applications to acquire NFA firearms via a trust or corporation, partnership, and other legal entity had increased significantly over the years, increasing the potential for NFA firearms to be accessible to those prohibited by law from having them. Therefore, for cases in which a trust, corporation, partnership, or other legal entity applies to make or receive an NFA firearm, the petitioner requested amendments to §§ 479.63 and 479.85 requiring photographs and fingerprint cards for individuals who are responsible for directing the management and policies of the entity so that a background check of those individuals may be conducted.

The proposed rule set forth ATF's finding that the number of Forms 1, 4, and 5 it received from legal entities that are neither individuals nor Federal Firearms Licensees (FFLs) increased from approximately 840 in 2000 to 12,600 in 2009 and to 40,700 in 2012, resulting in a substantial increase in the number of individuals who have access to NFA firearms but who have not undergone a background check in connection with obtaining that access. The proposed rule stated that the Department agreed with the concerns underlying petitioner's requests, and believed that responsible persons for a trust or legal entity should not be excluded from background checks and other requirements of the regulations that seek to ensure that prohibited persons do not gain access to NFA firearms. The proposed rule also discussed an application ATF had recently denied after recognizing that the trust name and firearm were the same as those on a prohibited individual's recently denied application. The proposed rule noted

that the application might have been approved if the trust name had been different from that of the prior transferee or if the application had included a different firearm.

2. Request To Amend Certification of Citizenship

When filing an ATF Form 1, 4, or 5, the applicant also must submit ATF Form 5330.20, *Certification of Compliance with 18 U.S.C. 922(g)(5)(B)*. Under section 922(g)(5)(B) of the Gun Control Act, it is generally unlawful for an alien admitted to the United States under a nonimmigrant visa to ship or transport in interstate or foreign commerce, or possess in or affecting commerce, any firearm or ammunition, or to receive any firearm or ammunition that has been shipped or transported in interstate or foreign commerce. Section 922(y)(2) provides for certain exceptions. If an alien who was admitted under a nonimmigrant visa falls within one of the specified exceptions, or has obtained a waiver from the Attorney General pursuant to 18 U.S.C. 922(y)(3), appropriate documentation must be provided on Form 5330.20.

The proposed rule accommodated the petitioner's request that the information required on Form 5330.20 be incorporated into the requirements of 27 CFR 479.63 and 479.85 and the corresponding forms. According to the petitioner, "[e]limination of the ATF Form 5330.20 by adding a citizenship statement to the transfer [and making] forms would reduce human effort for both the public and ATF while reducing funds expenditures for printing, copying, and handling the form."

The proposed rule stated that the Department supports the elimination of unnecessary forms and is committed to reducing the paperwork burden for individuals and businesses. Accordingly, the Department proposed amending 27 CFR 479.62 and 479.84 and the corresponding forms to incorporate information currently required in Form 5330.20.

3. Request To Revise Instructions on Forms 1, 4, and 5

The proposed rule also accommodated the petitioner's request that the instructions on applications to make or transfer a firearm be revised so that they are consistent with those on ATF Form 7 (5310.12), *Application for Federal Firearms License*. This request appeared to be referring to the Form 7 instruction regarding the submission of photographs and fingerprint cards for responsible persons (e.g., in the case of a corporation, partnership, or

association, any individual possessing, directly or indirectly, the power to direct or cause the direction of the management, policies, and practices of the legal entity, insofar as they pertain to firearms).

The proposed rule stated that the Department agreed that proposed changes to the regulations would require modifications to corresponding Forms 1, 4, and 5, including changes to the instructions on the forms, and proposed to go forward with those changes.

4. Law Enforcement Certification

Finally, the proposed rule accepted in part petitioner's request that the law enforcement certification requirement be eliminated and that ATF "adopt a CLEO [chief law enforcement officer] process that will include a full NICS [National Instant Criminal Background Check System] check for principal officers of a trust or corporation receiving such firearms for the trust or corporation." The petitioner articulated several reasons in support of its request. In addition, the petitioner stated that "[s]ome CLEOs express a concern of perceived liability; that signing an NFA transfer application will link them to any inappropriate use of the firearm." See 78 FR at 55016–55017 for full discussion.

The Department agreed in principle with some of petitioner's assertions (for example, that ATF independently verifies whether receipt or possession of an NFA firearm would place the applicant or transferee in violation of State or local law). *Id.* However, ATF did not propose to eliminate the CLEO certification requirement. Rather, ATF proposed extending the CLEO certification requirement to responsible persons of a trust or legal entity, but also proposed amending the language of the certification to omit the requirement that the certifying official state that the certifying official has no information that the applicant or transferee will use the firearm for other than lawful purposes.

B. Amendment of 27 CFR 479.11

In addition to the issues raised in NFATCA's 2009 petition, the Department proposed amending 27 CFR 479.11 to add a definition for the term "responsible person." The proposed term included specific definitions in the case of a trust, partnership, association, company (including a Limited Liability Company (LLC)), or corporation. Depending on the context, the proposed term included any individual, including any grantor, trustee, beneficiary, partner, member, officer, director, board

member, owner, shareholder, or manager who possesses, directly or indirectly, the power or authority under any trust instrument, contract, agreement, article, certificate, bylaw, or instrument, or under State law, to receive, possess, ship, transport, deliver, transfer, or otherwise dispose of a firearm for, or on behalf of, the trust or entity.

To ensure that responsible persons, as so defined, were subject to penalties under 26 U.S.C. 5871 for committing unlawful acts under the NFA (*see* 26 U.S.C. 5861) to the same extent as are the trusts or legal entities with which they are associated, the Department also proposed amending the definition of “person” in 27 CFR 479.11 to clarify that a “person” is a partnership, company, association, trust, or corporation, including each responsible person associated with such an entity; an estate; or an individual.

Although the definition of “person” in § 479.11 includes the word “estate,” ATF traditionally has treated estates differently from business entities. Therefore, the Department did not propose defining the term “responsible person” to include estates. The Department explained that estates are temporary legal entities created to dispose of property previously possessed by a decedent with the estate’s term typically defined by the law of the State in which the decedent resided, whereas partnerships, trusts, associations, companies, and corporations are formed for a specific purpose and remain in existence until action is taken to dissolve them. The Department further explained that, historically, ATF has treated the transfer of a registered NFA firearm held by an estate differently from other transfers under the NFA. ATF has allowed the executor—or other person authorized under State law to dispose of property in an estate—to convey firearms registered to the decedent without being treated as a voluntary transfer under the NFA. ATF has also allowed such transfers to be made on a tax-exempt basis when an ATF Form 5 is submitted and approved in accordance with 27 CFR 479.90. When the transfer of the firearm is to persons who are not lawful heirs, however, the executor is required to file an ATF Form 4 and to pay any transfer tax in accordance with 27 CFR 479.84.

C. Amendment of 27 CFR 479.62 and 479.63

With respect to an application to make a firearm, the Department proposed several amendments to 27 CFR 479.62 (“Application to make”)

and 479.63 (“Identification of applicant”).

Amendments to § 479.62 proposed to:

1. Provide that if the applicant is a partnership, company, association, trust, or corporation, all information on the Form 1 application must be furnished for each responsible person of the applicant;
2. Specify that if the applicant is a partnership, company, association, trust, or corporation, each responsible person must comply with the identification requirements prescribed in the proposed § 479.63(b); and
3. Require the applicant (including, if other than an individual, any responsible person), if an alien admitted under a nonimmigrant visa, to provide applicable documentation demonstrating that the applicant falls within an exception to 18 U.S.C. 922(g)(5)(B) or has obtained a waiver of that provision.

Amendments to § 479.63, where the applicant is an individual, proposed to maintain the CLEO certification but omit the requirement for a statement about the use of a firearm for other than lawful purposes. This section proposed to require, instead, that the certification state that the official is satisfied that the fingerprints and photograph accompanying the application are those of the applicant and that the official has no information indicating that possession of the firearm by the maker would be in violation of State or local law.

The Department stated that the CLEO’s certification that the CLEO “is satisfied that the fingerprints and photograph accompanying the application are those of the applicant,” is an existing requirement for an individual applicant (*see* 27 CFR 479.63); however, this certification was not reflected on the current form. ATF proposed to modify the Form 1 to include this certification for individuals and include the same certification on Form 5320.23 for responsible persons within a trust or legal entity.

Additionally, amendments to § 479.63, where the applicant is a partnership, company, association, trust, or corporation, proposed to:

1. Provide that the applicant must be identified on the Form 1 application by the name and exact location of the place of business, including the name of the county in which the business is located or, in the case of a trust, the address where the firearm is located. In the case of two or more locations, the address shown must be the principal place of business (or principal office, in the case of a corporation) or, in the case of a

trust, the principal address at which the firearm is located;

2. Require the applicant to attach to the application:

- Documentation evidencing the existence and validity of the entity, which includes complete and unredacted copies of partnership agreements, articles of incorporation, corporate registration, declarations of trust, with any trust schedules, attachments, exhibits, and enclosures; however, if the entity had an application approved as a maker or transferee within the preceding 24 months, and there had been no change to the documentation previously provided, the entity may provide a certification that the information has not changed since the prior approval and must identify the application for which the documentation had been submitted by form number, serial number, and date approved;

- A completed ATF Form 5320.23 for each responsible person. Form 5320.23 would require certain identifying information for each responsible person, including each responsible person’s full name, position, Social Security number (optional), home address, date and place of birth, and country of citizenship;

- In accordance with the instructions provided on Form 5320.23, a 2 x 2-inch photograph of each responsible person, clearly showing a full front view of the features of the responsible person with head bare, with the distance from the top of the head to the point of the chin approximately 1¼ inches, and which must have been taken within 1 year prior to the date of the application;

- Two properly completed FBI Forms FD-258 (Fingerprint Card) for each responsible person. The fingerprints must be clear for accurate classification and should be taken by someone properly equipped to take them; and

- In accordance with the instructions provided on Form 5320.23, a certification for each responsible person completed by the local chief of police, sheriff of the county, head of the State police, State or local district attorney or prosecutor, or such other person whose certification may in a particular case be acceptable to the Director. The certification for each responsible person must be completed by the CLEO who has jurisdiction over the area in which the responsible person resides. The certification must state that the official is satisfied that the fingerprints and photograph accompanying the application are those of the responsible person and that the certifying official has no information indicating that possession of the firearm by the

responsible person would be in violation of State or local law.

ATF also sought public comments regarding the feasibility of asking CLEOs to certify that they are satisfied that the photographs and fingerprints match those of the responsible person and whether changes were needed to this proposal.

D. Amendment of 27 CFR 479.84 and 479.85

With respect to an application to transfer a firearm, the Department proposed several amendments to 27 CFR 479.84 (“Application to transfer”) and 479.85 (“Identification of transferee”).

Amendments to § 479.84 proposed to provide that:

1. The Form 4 application, in duplicate, must be filed by the transferor. If the transferee is a partnership, company, association, trust, or corporation, all information on the Form 4 application must be furnished for each responsible person of the transferee; and

2. The type of firearm being transferred must be noted on the Form 4. If the firearm is other than one classified as “any other weapon,” the applicant must submit a remittance in the amount of \$200 with the application in accordance with the instructions on the form. If the firearm is classified as “any other weapon,” the applicant must submit a remittance in the amount of \$5.

Where the transferee is an individual, the proposed amendments to § 479.85 retained the certification requirement but eliminated the requirement for a CLEO statement about the use of a firearm for other than lawful purposes. In addition, the proposal required the certification to state that the official is satisfied that the fingerprints and photograph accompanying the application are those of the applicant and that the certifying official has no information indicating that receipt or possession of the firearm by the transferee would be in violation of State or local law.

The Department stated that the CLEO’s certification that the CLEO “is satisfied that the fingerprints and photograph accompanying the application are those of the applicant,” if an individual applicant, is an existing requirement (*see* 27 CFR 479.85) but was not reflected on the current Forms 4 and 5. The Department proposed having ATF amend Forms 4 and 5 to include certification to that effect by the CLEO for individuals, and include the same certification on Form 5320.23 for responsible persons of a legal entity.

Amendments to § 479.85, where the transferee is a partnership, company, association, trust, or corporation, proposed to:

1. Provide that the transferee must be identified on the Form 4 application by the name and exact location of the place of business, including the name of the county in which the business is located or, in the case of a trust, the address where the firearm is to be located. In the case of two or more locations, the address shown must be the principal place of business (or principal office, in the case of a corporation) or, in the case of a trust, the principal address at which the firearm is to be located;

2. Require the transferee to attach to the application:

- Documentation evidencing the existence and validity of the entity, which includes complete and unredacted copies of partnership agreements, articles of incorporation, corporate registration, declarations of trust, with any trust schedules, attachments, exhibits, and enclosures; however, if the entity has had an application approved as a maker or transferee within the preceding 24 months, and there had been no change to the documentation previously provided, including the responsible person information, the entity may provide a certification that the information has not changed since the prior approval and must identify the application for which the documentation had been submitted by form number, serial number, and date approved;

- A completed ATF Form 5320.23 for each responsible person. Form 5320.23 would require certain identifying information, including the responsible person’s full name, position, Social Security number (optional), home address, date and place of birth, and country of citizenship;

- In accordance with the instructions provided on Form 5320.23, a 2 x 2-inch photograph of each responsible person, clearly showing a full front view of the features of the responsible person with head bare, with the distance from the top of the head to the point of the chin approximately 1¼ inches, and which must have been taken within 1 year prior to the date of the application;

- Two properly completed FBI Forms FD-258 (Fingerprint Card) for each responsible person. The fingerprints must be clear for accurate classification and should be taken by someone properly equipped to take them; and

- In accordance with the instructions provided on Form 5320.23, a certification for each responsible person completed by the local chief of police,

sheriff of the county, head of the State police, State or local district attorney or prosecutor, or such other person whose certification may in a particular case be acceptable to the Director. The certification for each responsible person must be completed by the CLEO who has jurisdiction over the area in which the responsible person resides. The certification must state that the official is satisfied that the fingerprints and photograph accompanying the application are those of the responsible person and that the certifying official has no information indicating that receipt or possession of the firearm by the responsible person would be in violation of State or local law.

ATF also sought public comments concerning the feasibility of asking CLEOs to certify that they are satisfied that the photographs and fingerprints match those of the responsible person, or whether changes were needed to this proposal.

E. Amendment of 27 CFR 479.90

Section 5853(a) of the NFA, 26 U.S.C. 5853(a), provides that a firearm may be transferred to any State, possession of the United States, any political subdivision thereof, or any official police organization of such a government entity engaged in criminal investigations, without the payment of the transfer tax. Regulations implementing section 5853(a) are set forth in 27 CFR 479.90. That section provides, in pertinent part, that the transfer tax exemption may be obtained by the transferor of the firearm by filing with the Director an application on ATF Form 5 (5320.5), *Application for Tax Exempt Transfer and Registration of Firearm*, in duplicate. The application must provide certain information, including the name and address of the transferor and the transferee. In the case of a transfer of a firearm by a governmental entity to a transferee who is an individual not qualified as a manufacturer, importer, or dealer under 27 CFR part 479, the transferee must be further identified in the manner prescribed in § 479.85.

The Department proposed amending § 479.90(b) to remove the word “natural.” Removing the word “natural” leaves the term “person,” which was defined in proposed § 479.11 to include a partnership, company, association, trust, or corporation (including each responsible person of such entity), an estate, or an individual. Under this proposal, each transferee (including all responsible persons) would be subject to the requirements prescribed in proposed § 479.85 when a governmental entity transfers a firearm to a partnership,

company, association, trust, or corporation that is not qualified as a manufacturer, importer, dealer, or SOT under part 479.

F. Addition of 27 CFR 479.90a, Estates

The Department also proposed adding a new section to part 479 to address the possession and transfer of firearms registered to a decedent.² The proposed new section provided that the executor, administrator, personal representative, or other person authorized under State law to dispose of property in an estate (collectively “executor”) may lawfully possess the decedent’s NFA firearm during the term of probate without such possession being treated as a transfer from the decedent. The proposed section also sought to clarify that the executor may transfer firearms held by the estate on a tax-free basis when the transfer is to a beneficiary of the estate; however, when the transfer is to persons who are not lawful heirs, the executor must pay the appropriate transfer tax.

G. Transfer of Unserviceable Firearm

Section 479.91 provides that an unserviceable firearm, defined in § 479.11 as a firearm that is incapable of discharging a shot by means of an explosive and incapable of being readily restored to a firing condition, may be transferred as a curio or ornament without payment of the transfer tax. This section also provides that the procedures set forth in § 479.90 must be followed for the transfer of an unserviceable firearm, with the exception that a statement must be entered on the application that the transferor is entitled to the exemption because the firearm is unserviceable and is being transferred as a curio or ornament. The Department proposed no changes to this section. However, the Department noted that § 479.91 references the procedures in § 479.90, which in turn references § 479.85, thereby providing notice that changes to § 479.85 would apply to transfers governed by § 479.91.

H. Miscellaneous

In the proposed rule, ATF recognized that the composition of the responsible persons associated with a trust, partnership, association, company, or corporation may change over time. As a result, ATF stated that it was

considering a requirement that new responsible persons submit Form 5320.23 within 30 days of such a change. ATF sought comments on this option and solicited recommendations for other approaches.

The comment period for the proposed rule closed on December 9, 2013.

IV. Analysis of Comments and Department Responses for Proposed Rule ATF 41P

In response to the proposed rule, ATF received over 9,500 comments. Comments were submitted by citizens; individuals associated with trusts, corporations, and other legal entities; individuals associated with estates; FFLs; SOTs; silencer manufacturers; nonprofit and other organizations; trade associations; lawyers; collectors; hunters; and others.

Several commenters supported the entire proposed rule, while the majority opposed the entire proposed rule. The majority of commenters also opposed the proposed expansion of the CLEO certification requirement and the new definition for a “responsible person” for a trust or legal entity. Some of the commenters who opposed the proposed expansion of the CLEO certification requirement and the new “responsible person” definition, however, supported other portions of the proposed rule. The commenters’ support and opposition, along with specific concerns and suggestions, are discussed below.

A. Comments Supporting the Rule

1. General Support for the Entire Rule **Comments Received**

More than a dozen commenters stated that they supported the proposed rule in its entirety. This support was based on a variety of reasons, including that: (1) The current regulations create a “loophole,” through which prohibited persons can use a trust to circumvent the background check and CLEO certification requirements; (2) the benefit of ensuring felons and others could no longer circumvent background checks by submitting applications as representatives of a corporation or trust outweighed the “small inconvenience” the proposed rule would involve; (3) the current system of background checks only for individuals is inadequate to do the job of keeping guns out of the wrong hands; and (4) identification of and background checks on responsible persons would increase accountability for firearms regulated under the NFA.

Department Response

The Department acknowledges the commenters’ support for the proposed

rule, which generally focuses on the importance of conducting background checks, particularly for individuals acquiring NFA firearms. This rule will require all responsible persons to provide the necessary information, including fingerprints, to allow ATF to conduct background checks through the various criminal record databases. In addition, individuals, as well as any responsible person associated with a trust or legal entity, will be required to provide notification to the local CLEO of the intent of the individual, trust, or legal entity with which the responsible person is associated, to make or acquire the NFA firearm identified on the form. This notification will provide the CLEO an opportunity to conduct any inquiries required by State law, and provide ATF with appropriate input regarding the lawfulness of the individual’s or responsible person’s acquisition or possession of a firearm.

Regarding the commenters who desired greater accountability for NFA weapons, the Department notes that the NFA requires inclusion of those weapons in the National Firearms Registration and Transfer Record (NFRTR), and that the NFRTR includes firearm identification information, as well as the name and address of the registrant. Moreover, by allowing for background checks on individuals who will possess and control firearms on behalf of trusts or legal entities, the rule will deter persons who are prohibited from possessing firearms from attempting to use such trusts or legal entities to unlawfully acquire firearms.

2. Particular Support for Portions of the Rule

a. Comments Relative to Forms 5330.20, 1, 4, and 5

Comments Received

Two commenters stated that the proposal to incorporate the information currently required on ATF Form 5330.20 into Forms 1, 4, and 5 is beneficial, will reduce unnecessary paperwork, and increase efficiency. Another two commenters, including an FFL who is an SOT, supported the proposed changes eliminating the Form 5330.20 and incorporating the information from that form into Forms 1, 4, and 5. One of these commenters based his support on guidance provided by Executive Order 13610 of May 10, 2012 (“Identifying and Reducing Regulatory Burden”). Another commenter, a member of the NFATCA, stated that he supports the part of the proposed rule that would incorporate the certification of an applicant’s status as a U.S. citizen, immigrant alien, or

² Although the NPRM proposed to add § 479.90a, see 78 FR at 55020, as a result of a clerical error, parts of the proposed rule styled the addition of the new section governing estates as a revision to § 479.90, see, e.g., *id.* at 55028–29. The Department believes it nonetheless clearly conveyed its intention to add a new section to 27 CFR part 479 and not replace § 479.90. Commenters did not appear to be confused by the mistake.

exempt nonimmigrant alien into Forms 1, 4, and 5, and eliminate the requirement to attach a separate certification of compliance. Another commenter stated that the elimination of the Form 5330.20 by adding a citizenship statement to the transfer forms would reduce the “human effort” expended by both the public and ATF, and reduce the expenditure of public funds to print, copy, and handle that form.

Department Response

The Department acknowledges the commenters’ support for incorporating the certificate of compliance required to obtain the exemption provided by 18 U.S.C. 922(g)(5)(B) into ATF Forms 1, 4, and 5. This change will reduce the burden on the applicant by reducing the number of forms the applicant must complete to acquire an NFA firearm. The change will also reduce the cost burden on the Department as the Form 5330.20 will no longer have to be printed and separately processed by ATF.

b. Addition of 27 CFR 479.90a, Estates Comments Received

Several commenters agreed with the addition of a new section in ATF’s regulations addressing firearm transfers by estates, and supported the provisions regarding when a transfer occurs, and when a transfer tax must be paid. These commenters supported the additions because they increase clarity and provide specific direction for transfers through estates.

Other commenters supported the proposed changes related to estates and transfers, but suggested that the proposed rule did not go far enough. One commenter recommended expanding regulations to cover all involuntary transfers, including transfers at the dissolution of a corporation or other entity, liquidation in bankruptcy, and forced transfers during divorce proceedings, not just those involving the death of the owner. Other commenters argued that although they supported the treatment of estates, the proposal ran afoul of the Department’s stated purpose to require the same identification and background checks of individuals and legal entities, and created a “fundamental internal inconsistency.” Similarly, another commenter suggested that trusts should be treated the same as estates, and not subject to the same requirements as apply to individuals. That commenter further stated that § 479.90a should expressly address the role of attorneys, because issues may arise that require an

attorney to take possession of a firearm to effectuate distribution to beneficiaries. This commenter also stated that a copy of the obituary in a recognized newspaper should be an acceptable alternative to the death certificate.

Department Response

The Department acknowledges supporters’ comments regarding the addition of § 479.90a to address the possession and transfer of firearms registered to a decedent. The addition of this section clarifies that an executor, administrator, personal representative, or others recognized under State law may possess the firearm during the term of probate, which is often a concern for individuals dealing with the NFA firearms as part of an estate. Additionally, the rule provides clarification as to when a transfer tax must be paid.

The Department does not agree that its positions with regard to estates should be expanded to include other types of involuntary transfers as part of this rulemaking. Other types of involuntary transfers were not addressed in the proposed rule. The Department has exercised its discretion to decline to expand the scope of the rulemaking to encompass involuntary transfers not addressed in the proposed rule. Should the Department determine that its position with regard to estates should be extended to other involuntary transfers, it will do so in a separate rulemaking.

Transfers of NFA firearms from an estate to a lawful heir are necessary because the deceased registrant can no longer possess the firearm. For this reason, ATF has long considered any transfer necessitated because of death to be involuntary and tax-free when the transfer is made to a lawful heir as designated by the decedent or State law. However, when an NFA firearm is transferred from an estate to a person other than a lawful heir, it is considered a voluntary transfer because the decision has been made to transfer the firearm to a person who would not take possession as a matter of law. Such transfers cannot be considered involuntary and should not be exempt from the transfer tax. Other tax-exempt transfers—including those made by operation of law—may be effected by submitting Form 5. Instructions are provided on the form.

The Department disagrees that § 479.90a should expressly address the role of attorneys to effectuate distribution to beneficiaries. Clear rules are provided that establish who can make the necessary distributions and

how those distributions should occur. The Department also disagrees with the assertion that a copy of an obituary in a “recognized newspaper” should be recognized as equivalent to a death certificate for purposes of the new section addressing estate transfers, as anyone can pay to have an obituary published in a newspaper. However, a death certificate is an official document issued by a government agency; a newspaper obituary has no equivalent guarantee of authenticity.

When an individual heir is named in a will, the executor of the estate would file a Form 5 to effect the transfer. The heir would be listed on the Form 5 as the transferee and an individual heir would be required to submit photographs and fingerprints and be subject to a background check. Similarly, if the trust expires upon the death of the grantor, then the trustee, as the administrator of the trust, would file Form 5 to transfer the firearm to the individual named as the beneficiary. Like the heir, the beneficiary would be required to submit photographs and fingerprints and be subject to a background check. Transfers to trusts and legal entities from estates will require that responsible persons at those trusts and legal entities identify themselves in the same manner as they would in circumstances involving a taxable transfer. If there is no beneficiary or the beneficiary does not wish to possess the registered firearm, the trustee would dispose of the property to a person other than a trust beneficiary on an ATF Form 4. If, however, the trust remains a valid trust after the death of the grantor, the trustee would continue to administer the trust property according to the terms of the trust as there would be no transfer under the NFA.

c. Background Checks for Responsible Persons

Comments Received

Seventy-two commenters, including members of a trade organization, stated in a form letter that they agree that requiring fingerprint cards and photographs of all adult applicants or responsible persons of a trust or LLC acquiring NFA firearms would ensure that NFA firearms are not acquired by prohibited persons. These same commenters stated that they oppose any expansion of the CLEO requirement. Thirty-six other commenters stated in a form letter that by eliminating the CLEO signoff and narrowing the definition of responsible persons, ATF could still require fingerprints and background checks on the person primarily

responsible for a legal entity application without exposing law-abiding citizens to what they consider to be the arbitrary and capricious CLEO signoff ban.

Another commenter expressed the belief that the regulations need to be changed to expand the requirements for fingerprints and photographs, but only as to one responsible person, not every responsible person who is part of a trust or legal entity. A few other commenters stated that they did not oppose fingerprints, photographs or background checks of responsible persons, but are opposed to the expansion of the CLEO signoff. Several other commenters, including an owner of a company that manufactures firearms and firearms accessories, an FFL/SOT, and employees of an FFL/SOT company, stated that requiring background checks for trust members is appropriate, but that ATF should remove the CLEO signature component. Another commenter stated that requiring background checks, fingerprints, and photographs for responsible persons “is sufficient” and makes more sense than the CLEO certification requirement that nullifies the right to acquire firearms for personal protection. Another commenter stated that he supports background checks, but is unequivocally opposed to the CLEO signoff requirement for any NFA transfer. Another commenter stated that the CLEO requirement is too time consuming and outdated, but it is reasonable for people associated with legal entities to be subject to the same fingerprint-based background checks that individuals go through before they can obtain some of the most dangerous weapons.

Department Response

The Department acknowledges support regarding the requirement for responsible persons of trusts or legal entities to submit fingerprints and photographs and undergo background checks. The Department agrees that responsible persons of trusts or legal entities should be subject to the same requirements as individuals acquiring an NFA firearm.

The Department acknowledges comments regarding expansion of the CLEO certification requirement. The Department has changed the CLEO certification in the proposed rule to a CLEO notification requirement in the final rule for all transferees, whether individuals, trusts, or legal entities. *See* discussion *infra* in section IV.C.1. The Department also acknowledges comments regarding those who would be considered a responsible person for a trust or legal entity. The Department

has changed the definition of responsible person to provide that responsible persons are generally those individuals in the organization who have the power and authority to direct the management and policies of the entity insofar as they pertain to firearms.

B. Comments Generally Opposing the Rule

A few commenters disagreed with all proposed changes without providing any specifics. The majority of commenters who were opposed to the proposed rule provided specific reasons as discussed below.

1. Current Regulations Are Sufficient Comments Received

Many commenters stated that there are already stringent Federal regulations in place for the firearms covered by the proposed rule; for example, prohibited persons who receive or possess an NFA firearm through a legal entity are already violating current laws. A few commenters stated that these existing laws work, as shown by ATF’s examples in the proposed rule. A few commenters objected to any additional firearm regulations.

Many commenters stated that this rule only creates more “red tape” for lawful citizens. Another commenter believed that the “filings” for corporations, trusts, and legal entities already identify a legally responsible person, and, as a result, maintained that the burdens of the proposed rule outweighed its benefits. Another commenter argued that a corporation or a trust was not a person, and should not be treated as one.

Department Response

The Department acknowledges that there are existing Federal laws and regulations that pertain to NFA firearms and firearms more generally. Requiring background checks for responsible persons of trusts and legal entities helps to enforce those laws by keeping firearms out of the hands of persons who are prohibited from possessing them. The efficacy of background checks is evident in the statistics. The most recent statistics released by the Department of Justice, Bureau of Justice Statistics, reflect that through the end of December 2012, background checks run through the NICS by either the FBI or State point-of-contact agencies resulted in about 2.4 million denials. *See* Karberg, Frandsen & Durso, Background Checks for Firearms Transfers, 2012—Statistical Tables, at 1 (December 2014). And given that there is not an abundant number of NFA firearms readily accessible without going through the

transfer process, background checks in this area should be expected to be highly effective in keeping NFA weapons out of the hands of those prohibited by law from possessing them.

In addition, requiring background checks for responsible persons of trusts and legal entities conforms the requirements applicable to those entities to those that apply to individuals. It also maintains consistency with the way ATF processes applications for Federal firearms licenses, where responsible persons for legal entities are subject to background checks. *See* 27 CFR 478.47(b)(2).

a. Allegations That the Proposed Changes Were Motivated by Politics

Comments Received

Many commenters stated their view that this rulemaking is motivated by politics and not driven by legitimate concerns. Some argued that the proposal was an executive “overreach,” represented an “end run” around Congress, and was beyond the scope of ATF’s regulatory authority. Some commenters expressed concern that the proposed regulation was intended to disarm law abiding citizens.

Department Response

The Department acknowledges that the regulation of firearms provokes strong feelings on all sides and that any form of firearm regulation is often a topic of substantial debate. The Department initiated this rulemaking after ATF received a petition from the NFATCA, a non-profit association. ATF agreed with the petitioner that by not requiring background checks for trusts and legal entities, the existing regulations created the potential for abuse. The goal—as stated in both the proposed rule and here—is to ensure that the rules regarding NFA applications that apply to individuals apply equally to trusts and corporate entities. By ensuring background checks are run on certain persons who may have access to NFA weapons, the rule is intended to help enhance public safety. Put simply, this rule will not prevent a person who can lawfully possess firearms from receiving or possessing NFA firearms; it was designed to prevent persons who are prohibited from receiving or possessing firearms from obtaining them through the use of trusts or legal entities not currently subject to the same procedures applicable to individuals. The rule will not disarm law abiding citizens. However, it will help ensure that persons who are prohibited by law from

possessing firearms are not able to acquire them.

The Department also does not agree that the rule is outside of ATF's authority. ATF has regulated the circumstances under which NFA firearms are manufactured, transferred, and acquired for decades. This authority is based upon the authority to implement the law that Congress has both expressly and implicitly delegated to the Department. Specifically, the authority to implement the regulations requiring a CLEO certification have withstood challenge. See *Lomont v. O'Neill*, 285 F.3d 9 (D.C. Cir. 2002). The Court, in upholding the CLEO certification requirement, noted that sections 5812 and 5822 of the NFA give "the Secretary broad authority to promulgate regulations governing application forms, including regulations pertaining to the identification of the transferee, the transferor and the firearm," and "broad authority over the form of applications for permission to make firearms." *Id.* at 16. Similarly, in upholding ATF's authority to make destructive device determinations, another court noted that Congress may lawfully leave "a certain degree of discretion to executive or judicial actors." The court noted that ATF acted lawfully in implementing the statutory definition, utilizing the authority delegated to it by Congress and the Secretary of the Treasury. *Demko v. United States*, 216 F.3d 1049, 1054 (Fed. Cir. 2000). Such authority was also recognized when, in construing the Gun Control Act (GCA), a court found that the Secretary of the Treasury was authorized to promulgate regulations to facilitate its enforcement. This responsibility was delegated within the Department of the Treasury to ATF. *National Rifle Ass'n v. Brady*, 914 F.2d 475, 477 (4th Cir. 1990).

b. Changes Are Not Necessary if Current Regulations Are Enforced

Comments Received

Many commenters stated that it is not necessary for the Department to add additional rules and that the current rules are sufficient to ensure NFA firearms are not acquired by unauthorized individuals. Many commenters felt that the proposed rule fails to address crime, and instead simply makes it more difficult for law-abiding citizens to legally obtain NFA registered firearms. Many commenters stated that someone who wishes to obtain a firearm for criminal purposes would not go through the NFA application process for a legal entity, a process that entails expense and efforts

to register such firearms with the Federal Government.

One commenter noted that the proposed rule would alter the timing of the background check, and asserted that the timing would have a negative effect on safety. Currently, background checks are performed at the time the weapon is physically transferred; the proposed change would require the background check be performed at the beginning of the application process. This commenter stated that it currently takes transfer applications a year for approval, and with the proposed change, any arrests, convictions, or restraining orders that occur during this year would not be discovered and restricted persons could potentially obtain possession of the NFA items. Several commenters questioned why it takes ATF months to approve NFA applications if it does not currently run checks on trusts and legal entities.

Many commenters stated that there is no "loophole" to close, arguing that nothing in the current system allows felons or otherwise prohibited persons to possess NFA items through trusts, corporations, or individually. Several commenters further added that their trust was constructed in a manner such that prohibited persons may not have a role in the trust. Other commenters noted existing requirements that the person picking up the NFA item must still fill out ATF Form 4473, *Firearms Transaction Record*, and pass the required NICS background checks at the point of sale before taking possession. Other commenters noted generally that it is already illegal to let unauthorized persons be in possession of firearms and NFA items. Others stated specifically that an individual who takes possession (*i.e.*, the responsible person), is prohibited by State and Federal law from transferring or making that weapon available to anyone with a firearm restriction. In addition, a few commenters stated that there is not an "underground black-market conspiracy" or "underworld entity" circumventing NFA gun laws by using trusts. Several commenters stated that trusts are used by law-abiding citizens to prevent unintentional illegal transfers; people creating an NFA trust are not trying to game or cheat the system or pass through a loophole.

Many commenters noted that ATF's three examples provided in the proposed rule fail to illustrate that there is a problem to be solved (*i.e.*, that a prohibited person ever gained actual possession of an NFA firearm by virtue of an association with a legal entity, much less committed a crime with that weapon). Those same commenters also

observed that these three examples just as strongly argue that prohibitions and safeguards, under current law, are entirely sufficient. A few of these commenters asked ATF for access to the details of the three situations and stated that without such access, there are many unanswered questions and no evidence of any problem that existing law does not address.

Many commenters requested ATF to leave the current regulations in place. Instead of proposing new rules and regulations, many commenters asked ATF to enforce the rules, laws, and penalties already on the books, and noted the small number of prosecutions resulting from NICS denials. A few of these commenters also requested that ATF give longer sentences and harsher penalties to those who break the rules. Another commenter noted that the current regulations are unenforceable due to an already "over-taxed and under-funded and under-staffed system." Another commenter stated that ATF makes so many "gun laws" that the public cannot possibly understand them, and asked how ATF proposes to enforce them.

Department Response

While the Department acknowledges that most individuals who apply to register and transfer an NFA firearm are not prohibited from possessing or receiving firearms, there have been a significant number of instances in which prohibited persons have submitted NFA applications. Information received from the ATF NFA Branch disclosed that from 2010 to 2014 there were approximately 270 NFA applications by individuals, out of 115,842 applications, that were disapproved due to background check denials. The NFA Branch also tracked the number of applications received from trusts and legal entities during the same period. The Department believes that the disapprovals would have been higher if background checks would have been conducted on responsible persons associated with the 217,996 applications received from trusts or legal entities during this time. This belief is based on the FBI's denial rate on NICS background checks between November 30, 1998, and December 31, 2014, which is approximately 1.24 percent. Additionally, the Department believes that the background check requirement has an important deterrent effect as a prohibited person would be less likely to try and acquire an NFA firearm knowing that the person would be subject to a background check.

As a result of the increased use of trusts or legal entities to acquire NFA

firearms, the number of qualifying firearms acquired without a background check has greatly increased. Between 2004 and 2014, the number of NFA applications received from trusts or legal entities increased from 1,938 to 90,726. In 2013 and 2014, ATF received a combined total of 162,759 applications from trusts or legal entities.

The Department does not agree that the proposed regulations are unnecessary. Background checks required under the Brady Act (18 U.S.C. 922(t) and 27 CFR 478.102), as part of the licensing process (18 U.S.C. 923(d)(1)(B) and 27 CFR 478.47(b)(2)), and the application process for individuals submitting applications to make or receive an NFA firearm (26 U.S.C. 5812 and 5822, 27 CFR 479.63 and 479.85) are in place to prevent prohibited persons from unlawfully acquiring firearms. The proposed rule is similarly intended to prevent prohibited persons from acquiring firearms by closing down an avenue that can be exploited.

The Department acknowledges that there is a backlog of NFA applications, and notes that the backlog has decreased over the last year. ATF processes applications as quickly as its resources allow.

The Department agrees with the commenters that the existing laws should be enforced, and the Department is committed to focusing its limited prosecutorial resources on the most significant violent crime problems facing our communities. That said, enforcement must be paired with common-sense regulatory efforts to help limit access to firearms by persons prohibited from possessing them. This rule is intended to do just that.

The Department acknowledges that the person picking up the NFA item must still fill out ATF Form 4473, *Firearms Transaction Record*, and pass a NICS background check at the point of sale before taking possession. Such a background check on the person picking up the firearm would verify that that individual is not a prohibited person, but it would not verify that other people who are responsible persons of a trust or legal entity are not prohibited.

The Department does not regard time-of-transfer background checks as sufficient to comply with the transfer provision of the NFA. The Department interprets that provision to require that background checks precede the transfer of NFA firearms. Specifically, the statute provides that a firearm “shall not be transferred unless” the Secretary has approved the application, and that an application “shall be denied if the transfer, receipt, or possession of the

firearm would place the transferee in violation of law.” 26 U.S.C. 5812(a). The Department construes that language to mean that background checks for individuals and responsible persons must be conducted before the application is approved. Additionally, this provision requires that an individual’s “identification must include his fingerprints and his photograph.” *Id.* A NICS background check does not satisfy the statute’s biometric language (fingerprint cards) requirement. The submission of fingerprints allows a more robust check of criminal history databases and provides a means of eliminating false negative and false positive matches. For example, the relevant individual may have a disqualifying criminal record under another name.

The Department does not agree that the proposed rule would alter the timing of the background check. Background checks under the statute’s transfer provision are not currently performed at the time the weapon is physically transferred, as the commenter suggested. Rather, background checks are currently performed before an application is approved and will continue to be performed in the same manner. With respect to the commenter’s concern that delay in processing applications might mean that an individual will become a prohibited person while awaiting a background check, the agency has two responses. First, because nothing about the Department’s method of processing applications will change because of this rule, the Department believes the commenter’s concern is outside the scope of this rulemaking. Second, processing times for applications reflect the delay between the time the application is received by the NFA Branch and the time the application is entered into the NFRTR and processed. As the background check is not conducted until after the information is entered into the NFRTR, any prohibitions that may have occurred after the applicant mailed the application will be disclosed when the background check is conducted.

c. Criminal Activity Assertions Are Not True

i. The NFA and Impact on Crime
Comments Received

Many commenters stated that these restrictions will not reduce crime and questioned whether violent crimes have been committed with registered NFA items, or by responsible persons of a trust or legal entity. Several commenters asked if ATF could provide the statistics demonstrating the need for the

regulations and direct link between the proposed rule and enhanced public safety.

Many other commenters observed that NFA items are expensive, already heavily regulated, and “virtually unheard of” in the hands of criminals. Although commenters disagreed on the number of crimes they believe have been committed with registered NFA weapons, those addressing the subject agreed that the number was small, and argued that the proposed rule would accordingly have little to no effect on public safety.

Department Response

The Department disagrees that it must show a direct link between the proposed rule and enhanced public safety. Congress has directed the Department to ensure that individuals who are prohibited from possessing NFA firearms do not obtain them, even if those individuals have no intention of using them in an unlawful manner. *See* 26 U.S.C. 5812(a) (“Applications shall be denied if the transfer, receipt, or possession of the firearm would place the transferee in violation of law”); 26 U.S.C. 5822 (“Applications shall be denied if the making or possession of the firearm would place the person making the firearm in violation of law.”). The Department regards the appropriate question to be whether the rule will better ensure that prohibited individuals do not unlawfully possess NFA firearms, not whether individuals who possess firearms are likely to use them to commit crimes.

Additionally, the Department notes that some individuals who own NFA firearms do in fact commit crimes. A review of trace data and criminal records from 2006 to 2014 disclosed twelve incidents in which owners of NFA firearms were convicted of crimes; however, there is no evidence that these crimes were committed with NFA firearms. Convictions include attempted homicide, conspiracy to commit felony offenses of firearms laws, operating a drug involved premises, possession of unlawful firearms, possession of marijuana, intent to distribute methamphetamine, possession of a firearm during commission of drug trafficking, domestic violence, theft, dealing firearms without a license, and possession of an unregistered NFA firearm.

In one instance the purchaser was arrested 9 days after the purchase of the firearm. In another instance the purchaser was arrested within 3 months of the purchase of the firearm. Both purchasers were convicted of drug related charges.

The Department acknowledges that the majority of firearms traced are handguns. However, between 2006 and 2013, local or Federal law enforcement recovered and ATF traced 5,916 NFA firearms. ATF is authorized to trace a firearm for a law enforcement agency involved in a bona fide criminal investigation. There were also at least seven instances in which the possessor of the firearm at the time it was traced was not the person it was registered to in the NFRTR. Under Federal law, possession of an NFA firearm by a person to whom it is not registered is unlawful (26 U.S.C. 5861(d)).

The Department also emphasizes that NFA weapons are dangerous weapons that can empower a single individual to take many lives in a single incident. Therefore, a low incidence of the use of NFA firearms in crimes does not reflect the threat to public safety that they pose. A low usage of NFA firearms in crime may also bespeak the success of the NFA in preventing such weapons from reaching the hands of prohibited persons in the past. The large increase in transfers in which no background check takes place, however, increases the risk that NFA firearms will reach prohibited persons. The Department does not believe it is reasonable to wait for an NFA firearm to be used in a significant criminal incident before crafting procedures reasonably calculated to carry out its regulatory mandate to prevent prohibited persons from obtaining NFA firearms.

ii. The NFA and Associated Background Checks for Transactions Involving a Trust or Legal Entity

Comments Received

Many commenters stated that the proposed rule is misleading because it suggests that there are no background checks currently required for trusts or legal entities when, in fact, the person who picks up an NFA item from a licensed dealer on behalf of a trust or legal entity must complete a Form 4473 and undergo an individual NICS background check prior to taking possession of the NFA item. Some of these commenters provided specific language from ATF's NFA Handbook as support for their point.

Department Response

The Department acknowledges that ATF procedures currently require that FFLs run a background check on any person picking up a firearm on behalf of a trust or legal entity. However, this ensures only that the direct recipient from the FFL is not a prohibited person. It does not verify the status of the other

responsible persons associated with a trust or legal entity who will have access to the firearm. Thus, this rule will help ensure that many persons with access to the firearm are neither prohibited possessors nor otherwise ineligible for such access. With the implementation of the rule, responsible persons for trusts and legal entities will undergo a background check as part of the application process. Therefore, a responsible person will not have to undergo a background check at the time of the transfer from the FFL.

d. Individuals Do Not Create Trusts or Legal Entities to Avoid Background Checks

Comments Received

Many commenters stated that the proposed rule mistakenly contends that individuals create trusts or legal entities solely to avoid background checks when acquiring NFA items. These commenters offered other valid reasons (e.g., for estate planning; to comply with laws and regulations associated with the NFA, especially by preventing accusations or criminal charges involving constructive possession; as the only available mechanism for acquiring NFA items for individuals who reside in a locale where CLEO certification is unobtainable).

Department Response

The Department is unable to assess the reason(s) for the recent exponential growth in the use of trusts, in particular, to acquire NFA firearms, and the proposed rule made no claim about the extent to which such trusts are being used predominantly to circumvent the background check requirement for individuals, as opposed to for other reasons. But the use of trusts has grown exponentially, and as a result so have the number of persons gaining access to NFA firearms without undergoing a background check. Regardless of their motive, the Department does not believe that responsible persons of trusts or legal entities should be excluded from the background check and other requirements that seek to ensure prohibited persons do not gain access to NFA firearms.

Additionally, the Department notes that it believes that even if individuals are not frequently exploiting the potential loophole in the statute, the existence of the loophole invites future exploitation. The Department regards it as wise to close the loophole to eliminate the opportunity for future evasion of the individual background check requirement, even if the tactic has not yet come into common use.

2. Rule Differs From NFATCA Petition Comments Received

Some commenters noted that NFATCA's petition asked ATF to amend §§ 479.63 and 479.85 to, among other things, require photographs and fingerprints of persons responsible for directing the legal entity, eliminate the requirement for CLEO approval of Forms 1 and 4 for natural persons, and require notification to CLEOs for all Form 1 and Form 4 applicants. One commenter noted that the proposed rule differed from the petitioner's request by adding CLEO certification requirements, not removing them. Another commenter observed that the proposed rule did largely what the petitioner requested by expanding requirements for all responsible persons involved with corporations and trusts; however, the proposed rule lessened—but did not entirely eliminate—CLEO certification requirements. Several commenters referenced NFATCA's letter, dated August 31, 2013, in which NFATCA said that it supports the elimination of the CLEO certification requirement, but does not support the proposed rule in its current form. The NFATCA letter states, in part, that “[t]he Executive Branch proposals unduly burden the law-abiding public, will restrain lawful commerce and bury an already overwhelmed agency with an administrative infrastructure that will not serve the public safety interest.”

NFATCA also submitted a public comment to the rulemaking, stating that the proposed rule bears little resemblance to its petition, or to changes that NFATCA discussed with ATF and that were published in “ATF's Unified Agenda repeatedly over the past several years”³ for Regulation Identification Number (RIN) 1140-AA43.

Department Response

The Department acknowledges that in proposing to extend CLEO certification rather than notification requirements, and not eliminating all CLEO involvement, the proposed rule differed not only from material contained in the published abstracts of RIN 1140-AA43 in the 2011 and 2012 Unified Agendas, but also from what the petition

³ This commenter's footnote stated “See Unified Agenda, RIN [Regulation Identifier Number] 1140-AA43 (Fall 2011); RIN 1140-AA43 (2012).” The Department notes that these published abstracts stated that this rulemaking proposed to require, among other things, “that a copy of all applications to make or transfer a firearm be forwarded to the [CLEO] of the locality in which the maker or transferee is located” and to eliminate “the requirement for a certification signed by the [CLEO].”

requested. *See supra* note 3. However, the Department notes that the intent of the Unified Agenda is to provide data on regulatory and deregulatory activities under development throughout the Federal Government. The activities included in individual agency agendas are primarily those currently planned to have a proposed rule or a final rule issued within the next 12 months. This does not mean that ATF, or any other agency, cannot change the direction of a proposed rulemaking if circumstances warrant. In addition, when ATF issued the proposed rule, ATF believed that the proposed requirements to extend CLEO certification would enhance public safety without overly burdening the public. However as is discussed *infra* in section IV.C.1, the Department has reassessed the need for CLEO certification and has implemented a new approach that focuses on notifying CLEOs, and requires responsible persons of a trust or legal entity to submit fingerprint cards and undergo a background check. See section IV.C.1 for discussion of the reasons for this change.

The Department agrees that a change from a CLEO certification to CLEO notification will require a change to the Forms 1, 4, and 5. See section IV.C.1 for further discussion.

3. Constitutional and Statutory Arguments

a. Violates the Second Amendment Comments Received

Hundreds of commenters stated that the proposed rule violated and infringed their Second Amendment rights. Many commenters stated the proposed rule further eroded and encroached on such rights as they believe that the NFA—with some also adding the GCA—is unconstitutional and already unconstitutionally infringes the rights protected by the Second Amendment. Many commenters referenced the Supreme Court's decision in *District of Columbia v. Heller*, 554 U.S. 570 (2008), which found that the Second Amendment protects an individual—not a collective—right to keep and bear firearms.

Numerous commenters specifically connected the perceived Second Amendment infringement to the CLEO certification requirement, as some CLEOs are represented as being unwilling to sign off on applications, regardless of the applicant's background, or the legality of the NFA item in the applicant's jurisdiction. See *infra* section IV.C.1.c for a detailed discussion of this issue. These same commenters pointed out that the

proposed rule, by extending the CLEO certification requirement to responsible persons of trusts or corporations and legal entities, removes the “gun trust” option, which does not require CLEO certification and thereby effectively bans law abiding citizens from exercising their Second Amendment rights, *i.e.*, constitutes a *de facto* ban.

A commenter focused particularly on silencers, which are included in the definition of firearm under the NFA. 26 U.S.C. 5845(a). This commenter provided data showing the benefits of silencers (*e.g.*, hearing protection), and that the situation is different from when the NFA was enacted—that is, silencers are no longer dangerous or unusual and are typically possessed by law-abiding citizens—and accordingly, merit constitutional protection under the Second Amendment. This commenter stated that 39 States permit private citizens to own and possess silencers, and more than 30 States permit their use in some form of hunting. This same commenter argued that short-barreled shotguns (SBSs), short-barreled rifles (SBRs), and any other weapons (AOWs) should not be controlled under the NFA because they are no more dangerous than conventional shotguns and rifles, they are commonly used by law enforcement and the military, and are favorably suited for law-abiding citizens to use in self-defense.

Department Response

The Department notes that the NFA regulates weapons such as machineguns, short-barreled rifles, short-barreled shotguns, silencers, destructive devices, which include such items as grenade launchers, as well as firearms meeting the definition of “any other weapon,” which include disguised devices such as penguins, cigarette lighter guns, knife guns, cane guns and umbrella guns. See 26 U.S.C. 5845.

The Department does not believe that the proposed regulation violates, erodes, or otherwise infringes any rights protected by the Second Amendment. The Supreme Court and several Courts of Appeal have recognized, “the right to keep and bear arms has never been unlimited.” *Nat'l Rifle Ass'n (NRA) v. ATF*, 700 F.3d 185, 200 (5th Cir. 2012) (quoting *Heller*, 554 U.S. at 626). The Supreme Court noted explicitly in *Heller* that the Second Amendment did not extend to “dangerous and unusual weapons” not in “common use.” 554 U.S. at 627; see also *United States v. Miller*, 307 U.S. 174, 178–79 (1939) (regarding short-barreled shotguns). Courts of Appeals have consistently found NFA weapons to be “dangerous

and unusual.” See *United States v. Henry*, 688 F.3d 637, 640 (9th Cir. 2012); *Heller v. District of Columbia* (“*Heller II*”), 670 F.3d 1244, 1263 (D.C. Cir. 2011); *United States v. Marzzarella*, 614 F.3d 85, 94 (3d Cir. 2010); *Hamblen v. United States*, 591 F.3d 471, 473–74 (6th Cir. 2009); *United States v. Tagg*, 572 F.3d 1320, 1326 (11th Cir. 2009); *United States v. Fincher*, 538 F.3d 868, 874 (8th Cir. 2008). Moreover, even if one assumes that NFA weapons are of the type protected by the Second Amendment, the Department believes that NFA statutory requirements imposed on the these weapons would be considered longstanding presumptively lawful regulations or restrictions and permissible under the Second Amendment given the Supreme Court's rulings in *Heller*, 554 U.S. 570, and *Miller*, 307 U.S. 174, and circuit court rulings, such as in *NRA*, 700 F.3d 185. Finally, even if the NFA's statutory requirements—or the requirements imposed by this regulation—are not considered longstanding, the Department believes that they would withstand constitutional scrutiny.

The Department's position is that the Second Amendment, properly construed, allows for reasonable regulation of firearms. *Heller* emphasized the importance of “prohibiting the carrying of ‘dangerous and unusual weapons’” in defining the limitation on the Second Amendment right, explaining that the Second Amendment would not prevent the ban of the “weapons that are most useful in military service—M–16 rifles and the like. . . .” *Heller*, 554 U.S. at 627; *id.* at 627–28.

In addition, although the Court did not purport to define the full scope of the Second Amendment right in *Heller*, the Court did consider *United States v. Miller*, 307 U.S. 174, which “upheld against a Second Amendment challenge two men's federal indictment for transporting an unregistered short-barreled shotgun in interstate commerce, in violation of the National Firearms Act.” *Heller*, 554 U.S. at 621–22 (citation omitted). *Heller* explained that the *Miller* Court's “basis for saying that the Second Amendment did not apply” was that the *type of weapon at issue* was not eligible for Second Amendment protection.

In the absence of any evidence tending to show that the possession or use of a [short-barreled shotgun] at this time has some reasonable relationship to the preservation or efficiency of a well-regulated militia, we cannot say that the Second Amendment guarantees the right to keep and bear *such an instrument*. Certainly . . . it is not within judicial notice that this weapon is any part

of the ordinary military equipment or that its use could contribute to the common defense.

Id. at 622 (quoting *Miller*, 307 U.S. at 178) (emphasis in *Heller*). Of particular importance to this rulemaking, the *Heller* Court further stated:

We may as well consider at this point (for we will have to consider eventually) what types of weapons *Miller* permits. Read in isolation, *Miller's* phrase “part of ordinary military equipment” could mean that only those weapons useful in warfare are protected. *That would be a startling reading of the opinion, since it would mean that the National Firearms Act's restrictions on machineguns* (not challenged in *Miller*) *might be unconstitutional*, machineguns being useful in warfare in 1939. We think that *Miller's* “ordinary military equipment” language must be read in tandem with what comes after: “[O]rdinarily when called for [militia] service [able-bodied] men were expected to appear bearing arms supplied by themselves and of the kind in common use at the time.” The traditional militia was formed from a pool of men bringing arms “in common use at the time” for lawful purposes like self-defense. “In the colonial and revolutionary war era, [small-arms] weapons used by militiamen and weapons used in defense of person and home were one and the same.” Indeed, that is precisely the way in which the Second Amendment’s operative clause furthers the purpose announced in its preface. *We therefore read Miller to say only that the Second Amendment does not protect those weapons not typically possessed by law-abiding citizens for lawful purposes, such as short-barreled shotguns.*

Id. at 624–25 (emphasis added) (internal citations and quotations omitted). *Heller* thus explicitly recognized an “important limitation on *the right* to keep and carry arms . . . the sorts of weapons protected [are] those ‘in common use at the time.’” *Id.* at 627 (quoting *Miller*, 307 U.S. at 179).

In *NRA*, the Fifth Circuit acknowledged *Heller's* “non-exhaustive list” of “presumptively lawful regulatory measures,” 700 F.3d 185, 197 (5th Cir. 2012) (citing 554 U.S. at 626–27). The Fifth Circuit held that firearm restrictions that are longstanding, like the NFA, are not likely to burden a person’s rights under the Second Amendment. *See id.* at 196; *see also Heller II*, 670 F.3d at 1253 (“[A] regulation that is ‘longstanding,’ which necessarily means it has long been accepted by the public, is not likely to burden a constitutional right; concomitantly the activities covered by a longstanding regulation are presumptively not protected from regulation by the Second Amendment.”).

Like the restrictions on machineguns, the Department believes that other longstanding Federal restrictions on making and transferring SBSs, SBRs,

silencers, and AOWs are “firmly historically rooted” and will not burden Second Amendment rights given the Court’s holding in *Heller* regarding presumptively lawful regulatory measures. *See NRA*, 700 F.3d at 204; *United States v. One Palmetto State Amory PA-15 Machinegun*, No. 15–2202, 2015 U.S. Dist. LEXIS 95302 (E.D. Penn. 2015) (holding that the Second Amendment does not create a right to possess a machinegun), and *Hollis v. Lynch*, No. 3:14–CV–03872–M, 2015 U.S. Dist. LEXIS 103656 (N.D. Tex. 2015) (holding that the Second Amendment does not create a right to make machineguns).

Finally, even if a court were to conclude that the NFA and its implementing regulations are not “presumptively lawful,” they would nevertheless pass constitutional muster under existing Second Amendment jurisprudence. The NFA and this final rule are not a ban on NFA items, as some commenters suggest. Rather they are reasonable regulations on the possession of such weapons that the Department believes are consistent with the Second Amendment.

In response to those commenters who seek the repeal of the NFA and a different treatment for certain NFA weapons, like silencers, the Department cannot repeal the NFA, nor can it choose to ignore provisions of the act for certain weapons, or minimize the burden of the statutory language for certain weapons, such as, silencers, SBSs, SBRs, and AOWs. The statute neither requires nor is best read as permitting disparate treatments of NFA firearms in the manner suggested by the comments.

Assuming, *arguendo*, that silencers are within the protection of the Second Amendment in the first place, they do not qualify for heightened Second Amendment protection. To the contrary, silencers were included in the original draft of the NFA in 1934, and have a long regulatory history. *See United States v. Gonzales*, No. 2:10–CR–00967 CW, 2011 U.S. Dist. LEXIS 127121 (D. Utah 2011) (describing legislative history surrounding 1934 enactment of the NFA). Because silencers, SBSs, and SBRs are statutorily defined as NFA firearms, they are regulated in the same manner as the other NFA weapons.

Although the CLEO certification process has been upheld by courts as a reasonable regulation (*see, e.g., Lomont*, 285 F.3d 9), the Department is not requiring such a certification in this final rule. Instead, the final rule contains a CLEO notification provision, requiring applicants to provide notification to the CLEO. Thus, the

concern expressed by many commenters that the CLEO certification provision in the rulemaking will effectively ban the transfer and making of NFA weapons is moot; likewise, commenters’ concerns about the alleged arbitrary and capricious nature of the CLEO certification process in some jurisdictions are also moot.

b. Violates the Fourth Amendment

Comments Received

One commenter stated that the wait time for ATF to approve NFA transfers is excessive, and that the proposed rule imposes additional restrictions. The commenter stated that these restrictions deprive him of the use of his legally obtained property, and violate the Fourth Amendment as they are a “de facto seizure.” Another commenter provided an example in which a county sheriff publicly stated that he would possibly provide CLEO certification, on the condition that the applicant “pass a background check” and “allow the Sheriffs (sic) Department to inspect the home where the weapon will be stored.” This commenter stated that this “safety inspection” blatantly violated the Fourth Amendment protection against unreasonable searches.

Department Response

The Department believes that the law provides that applicants do not have a property interest in the NFA firearm sought during the application period. Therefore, an NFA firearm is not the property of a transferee until the transferor receives a properly approved NFA Form 4.

The Department takes the view that individuals, trusts, and legal entities do not obtain a property interest in an NFA firearm until the Department has approved an application to make or transfer one. A “protected property interest simply ‘cannot arise in an area voluntarily entered into . . . which, from the start, is subject to pervasive Government control.’” *Dennis Melancon, Inc. v. City of New Orleans*, 703 F.3d 262, 272 (5th Cir. 2012); *see also Hearts Bluff Game Ranch, Inc. v. United States*, 669 F.3d 1326, 1330 (Fed. Cir. 2012) (same). In light of the comprehensive scope of Federal firearms regulation, the NFA and GCA delineate such an area of pervasive control when it comes to the acquisition or manufacture of such firearms. *See Mitchell Arms, Inc. v. United States*, 7 F.3d 212, 216 (Fed. Cir. 1993). Moreover, several courts have held that a property interest is lacking where the alleged property is not accompanied by the “crucial indicia of property rights,”

such as the right to assign, sell, or transfer the property at issue. *Gonzalez v. NOAA*, 695 F. Supp. 2d 474, 504 (S.D. Tex. 2010) (finding no legally cognizable property interest in Federal shrimping permits); see also *Melancon*, 703 F.3d at 269 (describing these indicia as “the right to possess, use, and dispose”); *Hearts Bluff Game Ranch*, 669 F.3d at 1330 (identifying “the ability to sell, assign, transfer, or exclude” as the crucial indicia of a property right). Because the statutory language in the NFA makes it clear that applicants do not have the right to make or transfer an NFA firearm until a properly approved Form 1 or 4 is issued, the applicant does not have a property interest in the NFA firearm until a properly approved Form 1 or 4 is issued. See 26 U.S.C. 5812 and 5822. See *Hollis*, 2015 U.S. Dist. LEXIS 103656 (holding “that Plaintiff had no property interest in either the machine gun or the erroneous approval of the Form 1 application”).

The Department therefore disagrees that delaying or preventing the transfer of an NFA firearm constitutes a “seizure” under the Fourth Amendment. As explained above, individuals, trusts, and legal entities do not have a property interest in an NFA firearm until a properly approved Form 1 or 4 is issued. They therefore lack standing to assert a Fourth Amendment claim because they cannot assert “an interest in the property seized.” *Rakas v. Illinois*, 439 U.S. 128, 148 (1978).

As to the comment regarding the home inspection that one CLEO purportedly required of citizens before granting a CLEO certification, the Department notes that the final rule will not include a CLEO certification requirement so there will be no further need to consent to such home inspections. Instead, the final rule will contain a CLEO notification provision, which should ease commenters’ concerns.

c. Violates the Fifth Amendment

i. Due Process Clause

Comments Received

Several commenters expressed a concern that local CLEOs would refuse to certify applications for little or no reason, amounting to a violation of due process under the Fifth Amendment. Several commenters also stated that applicants primarily use “gun trusts” due to their CLEOs’ arbitrary and capricious refusal to provide certification, and expressed concern that the proposal essentially removes this option.

In addition, a few commenters noted that Federal appellate courts have recognized the validity of trusts established with a prohibited person as the settlor, which allows the prohibited person to maintain the prohibited person’s “ownership” interest in the property while surrendering the prohibited person’s right to the “possessory” interest to a trustee, see *United States v. Zaleski*, 686 F.3d 90, 93 (1st Cir. 2012); *United States v. Miller*, 588 F.3d 418, 419–20 (7th Cir. 2009); *Cooper v. City of Greenwood*, 904 F.2d 302, 305–06 (5th Cir. 1990). One of these commenters also stated that trusts provide a well-established method to maintain regulatory compliance without exercising possession, and provided the common example of beneficiaries who are minors. This commenter predicted that the proposed rule, if finalized, would most certainly be challenged as a “taking” under the Fifth Amendment.

Department Response

The Department believes that most of the commenters’ concerns are addressed with the change from CLEO certification to CLEO notification. Moreover, this rule does not eliminate or significantly burden the use of trusts or legal entities by persons who may wish to employ them as part of the NFA firearm acquisition process.

The Department disagrees with commenters asserting that the proposed regulations would lead to a violation of an applicant’s due process rights under the Fifth Amendment. Recently, at least two courts considered whether a denied NFA applicant had a property interest in the denied Form 1 application or in the NFA weapons he sought to make. Both district courts ruled that the applicant had no property interest in the ATF Form 1 or firearm at issue. *Hollis*, 2015 U.S. Dist. LEXIS 103656; and *One Palmetto State Armory PA-15 Machinegun*, 2015 U.S. Dist. LEXIS 95302.

Procedural due process challenges must demonstrate that the “‘state has deprived a person of a liberty or property interest.’” *Wilson v. Birnberg*, 667 F.3d 591, 601 (5th Cir. 2012) (quoting *Welch v. Thompson*, 20 F.3d 636, 639 (5th Cir. 1994)). If it has, then the Court “must determine whether the procedures relative to that deprivation were constitutionally sufficient.” *Id.* As explained in the preceding section regarding whether this rule will effect a “seizure” in violation of the Fourth Amendment, individuals do not have a property interest in an NFA firearm until a properly approved Form 1 or 4 is issued.

Moreover, most, if not all, NFA applicants who will be impacted by the proposed change in the definition of a “person,” which requires “responsible persons” for a trust or legal entity to undergo a background check, will have no legally cognizable property interest in either the NFA firearm sought or the NFA application form. Several courts have held that a property interest is lacking where the alleged property is not accompanied by the “crucial indicia of property rights,” such as the right to assign, sell, or transfer the property at issue. *Gonzalez v. NOAA*, 695 F. Supp. 2d at 504 (finding no legally cognizable property interest in Federal shrimping permits). Further, the fact that it is unlawful to possess a firearm before ATF approves the relevant form reinforces the Department’s conclusion that there is no property interest in such firearms until such forms are properly issued. See *Hollis*, 2015 U.S. Dist. LEXIS 103656.

As for the comments expressing concerns about protecting the property interest of minors, the proposed regulation will allow trusts to possess the NFA weapon until the minor comes of age. Once the minor is of age, the minor can then complete the transfer application and background check and, if not otherwise prohibited from possessing an NFA firearm, take possession of the NFA weapon. The only change the rule makes is that it requires that responsible persons in trusts undergo background checks and not be prohibited persons. If anything, therefore, the rule will provide trust beneficiaries with an added measure of protection by ensuring that trust property is held in the hands of a law-abiding person who is not prohibited from possessing firearms under Federal or State law.

Moreover, to the extent that courts have recognized a felon’s ability to employ a trust or other device to maintain an ownership interest, so long as there is no ability to physically possess or control the firearm, those cases have no application here. Trust beneficiaries who cannot physically possess or control firearms held in trust for them will not typically be responsible persons under the rule. Additionally, this rule pertains to the acquisition of a firearm, not the disposition of a firearm already owned by someone who later becomes prohibited.

ii. Self-Incrimination

Comments Received

The Fifth Amendment provides a right against self-incrimination, which

permits an individual to refuse to disclose information that could be used against such individual in a criminal prosecution. One commenter argued that a criminal who desired to obtain an NFA weapon would not go through the appropriate routes of submitting to ATF the required forms, paying the associated tax, and waiting for the forms to be approved. This commenter cited case law, *Haynes v. United States*, 390 U.S. 85 (1968), as support for the proposition that felons and other prohibited individuals are not required to register NFA weapons due to the Fifth Amendment and self-incrimination.

Department Response

This comment has no relevance to the rule. *Haynes* does not stand for the proposition that a felon is entitled to obtain an NFA weapon without undergoing a background check because to do so would violate the felon's rights under the Fifth Amendment. While individuals cannot be compelled to give incriminating information against themselves during the NFA application process, they do not have the right to opt out of the background check process. Nor do they have the right to provide false information during the process. Further, they do not have a right to an approval of their application or to possess the firearm without an approved application.

Commenters should be aware that *Haynes* was based on an earlier version of the NFA where transferees were required to notify ATF of their possession of firearms regardless of whether possession was legal. The pre-1968 version of the NFA was "repeatedly . . . attacked on self-incrimination grounds," *United States v. Gullett*, 322 F. Supp. 272, 273 (D. Colo. 1971). "In *Haynes* the Supreme Court ruled that a timely assertion of the privilege was a defense to a prosecution for violation of former section 5851, which forbade the possession of certain classes of firearms not registered with the Secretary of the Treasury or the Secretary's delegate. The court found that the crime created by section 5851 was not meaningfully distinguishable from the section 5841 crime of failure to register possession of certain firearms and that compliance with the registration provision would have compelled petitioner to provide evidence facilitating his prosecution for violation of either the making or transfer clauses of section 5851." *Id.*

In response to *Haynes*, Congress amended the NFA and enacted, among other provisions, 26 U.S.C. 5848, which provides that registration information

may not be used, directly or indirectly, against a registrant in a criminal proceeding for an offense occurring prior to, or concurrent with, the registrant's registration. Because Congress specifically drafted the legislation to protect a registrant from criminal prosecution due to the registrant's act of registration, it follows that registration information cannot be used in a Federal or State prosecution for illegal acquisition of a registered firearm, a past crime involving the use of a registered firearm, or illegal possession of a registered firearm. 26 U.S.C. 5848(a). However, if the government obtains independent evidence of the offense, there is no immunity from prosecution. Also, section 5848 does not preclude the use of registration information in a false statements prosecution under 26 U.S.C. 5848(b). The Supreme Court approved the current statute on Fifth Amendment grounds in *United States v. Freed*, 401 U.S. 601, 604–07 (1971).

d. Violates the 14th Amendment

Comments Received

The 14th Amendment provides that "[n]o state shall . . . deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws." Many commenters stated that CLEOs categorically or arbitrarily refuse to sign any ATF forms, even though the NFA firearm is completely legal in their jurisdiction. Further, according to other commenters some CLEOs impose additional burdensome and arbitrary conditions not consistent with the law, or even common sense, to obtain their signature. A few commenters believed that, as written, the proposed rule allows CLEOs to exercise an "administrative veto" in a selective and arbitrary, and not uniform, manner across the United States, thereby violating the 14th Amendment's Equal Protection Clause, as well as the Due Process Clause.

Department Response

As previously stated, the final rule will not require CLEO certification or approval, but will instead require CLEO notification. This change moots the concerns—whether valid or not—that a CLEO's refusal to grant an individual a certification would violate the 14th Amendment.

e. Federalism Concerns

Comments Received

A few commenters argued that the proposed rule unnecessarily interferes

with State law in several ways, including by: (1) Undermining State law by granting CLEOs de facto arbitrary power to establish policies directly contrary to State law; (2) intruding on State law governing corporations, trusts, and LLCs by defining "responsible persons" of such entities; (3) undermining State laws limiting disclosure of information regarding ownership of firearms by mandating that an applicant share such information with a CLEO to obtain CLEO certification; and (4) imposing an unfunded mandate on CLEOs by expanding the CLEO certification requirement.

Department Response

Given that the final rule will not require CLEO certification but rather only CLEO notification, the Department believes that any Federalism concerns raised by this rule are moot.

Moreover, this rule defines "responsible person" for purposes of NFA registration, and for no other purpose. Nor does this rule purport to impose any dissemination obligations or restrictions upon CLEOs with respect to the notifications they receive. Accordingly, this rule does not infringe upon legitimate State prerogatives in those areas.

f. Exceeding Statutory Purpose Concerns

Comments Received

A few commenters asserted that the original purpose of the NFA was to use the tax code solely to provide a basis for prosecuting "gangsters" who possessed untaxed, unregistered firearms, and not to prohibit NFA firearms, or eliminate the ability to transfer them to law-abiding citizens who paid the tax and followed the registration procedures. One of these commenters further asserted that by passing the Firearm Owners' Protection Act (FOPA), Public Law 99–308, 110 Stat. 449 (1986), Congress made clear that "ATF's regulations and enforcement activities of *legal owners* of firearms—like those who seek to register firearms under the NFA—had already gone too far." Specifically, this commenter quoted section 1(b) of FOPA, as prohibiting the Department from placing "undue or unnecessary Federal restrictions or burdens on law-abiding citizens with respect to the acquisition, possession, or use of firearms" when implementing the GCA. These commenters asserted that the proposed rule exceeds the statutory purpose as it is not a provision to ensure the payment of NFA tax, and it imposes additional undue and unnecessary burdens on law-abiding citizens.

Another commenter, citing the Supreme Court's decision in *Mistretta v. United States*, 488 U.S. 361 (1989), asserted that the proposed rule represented an "aggrandizement of executive power" and a violation of the separation of powers doctrine because it would function as an amendment to existing legislation.

Another commenter stated that ATF lacked statutory authority to promulgate a regulation creating a new class of persons (*i.e.*, responsible persons)—and to require that a transferee provide additional information (*i.e.*, for the purposes of background checks) to be submitted by principal, agents, or employees of the transferee. This commenter maintained that Congress is familiar with the term "responsible person" and cited two statutory sections where the term was used (*i.e.*, 18 U.S.C. 841, where "responsible person" means "an individual who has the power to direct the management and policies of the applicant pertaining to explosive materials," and 21 U.S.C. 379aa, which refers to the "responsible person" as "the manufacturer, packer, or distributor whose name . . . appears on the label of a nonprescription drug marketed in the United States."). This commenter maintained that Congress has debated, on numerous occasions, background checks for firearms and has chosen, "through its act of omission," not to create a responsible person definition for the NFA or firearms. This commenter argued that the proposed rule was an "end run" around Congress.

Department Response

The Department does not agree with comments that this rulemaking exceeds its authority to issue regulations for administration of the NFA. Congress granted the Attorney General⁴ express authority to establish, by regulation, the procedures to be used for the transfer of NFA weapons, including the manner in which transferees and transferors are identified on NFA application forms. See 26 U.S.C. 5812(a). The Attorney General has, in turn, delegated that authority to ATF. See 28 CFR 0.130(a) (delegation of authority to ATF to administer laws related to firearms under 18 U.S.C. chapters 44 and 53). This rulemaking is being undertaken by ATF under its authority delegated by Congress and the Attorney General. See 18 U.S.C. 926(a); 26 U.S.C.

7801(a)(2)(A)(i), 7805(a); 28 CFR 0.130(a).

To the extent commenters assert that the proposed rule is inconsistent with the purpose underlying the NFA, the Department respectfully disagrees. The history of the NFA makes clear that Congress intended to use its tax authority to ensure the transfer of certain firearms was subject to a transfer tax and registration requirement to help prevent violent criminals from obtaining those firearms.

During the Great Depression, the Nation faced the difficulty of controlling violence by gangsters. Representative Robert L. Doughton noted that "for some time this country has been at the mercy of the gangsters, racketeers, and professional criminals." 78 Cong. Rec. 11,400 (1934). The Attorney General, Homer Cummings, warned Congress that "there are more people in the underworld today armed with deadly weapons, in fact, twice as many, as there are in the Army and the Navy of the United States combined." *Nat'l Firearms Act Hearings on H.R. 9066 Committee on Ways and Means*, 73d Cong. 4 (1934). In reviewing the legislative history, modern courts have noted, for example, that "the emergence of organized crime as a major national problem led to the enactment of the National Firearms Act of 1934." *Lomont*, 285 F.3d at 11. In 1934, Congress passed the NFA requiring everyone, including criminals, to register NFA firearms or face prosecution for failing to do so. In this way, Congress intended to keep criminals from obtaining NFA firearms or, if they obtained these firearms, to provide a powerful tool with which to prosecute them. When questioned about the impact of the tax and registration requirements on law-abiding citizens, the Attorney General testified that the requirement is "not an irrational request to make of the honest citizen who wants the criminal class stamped out." *Nat'l Firearms Act Hearings on H.R. 9066 Committee on Ways and Means*, 73d Cong. 25 (1934).

The proposed rule's definition of "responsible person," and its requirement that such persons undergo a background check prior to making or receiving an NFA firearm, are fully consistent with this legislative history and with the intended purpose of the NFA. The proposed rule serves Congress's intent in passing the NFA because it further denies criminals the ability to obtain NFA firearms. The proposed rule does not meaningfully limit the availability of firearms to the law-abiding public.

A similar response applies to the comments asserting that the proposed rule's requirement that responsible persons undergo a background check is inconsistent with Congressional intent underlying FOPA. The Department is certainly aware that, in passing FOPA, Congress expressed that it was not its intent to place undue or unnecessary restrictions or burdens on law abiding citizens with respect to the lawful private possession of firearms for lawful purposes. FOPA, Public Law 99-308, 100 Stat 449 (1986). However, this expression of intent was set out in a section of FOPA amending the GCA, not the NFA. In the context of the dangerous class of weapons regulated by the NFA, the Department's assessment is that the background check requirement is within its statutory authority, and the regulatory burden is proportionate and appropriate.

In any event, the rule in no way places undue or unnecessary Federal restrictions or burdens on law abiding citizens, but rather imposes regulations reasonably designed to fulfill the purposes of the NFA. The proposed rule is crafted to ensure consistent application of the law and effectuate Congress's preference that criminal background checks be conducted on unlicensed persons to whom firearms are transferred, including those who exert control over NFA firearms on behalf of trusts and legal entities. By defining many individuals affiliated with trust and legal entities who exert control over NFA firearms as "responsible persons" and requiring them to undergo background checks, the proposed rule helps achieve the Congressional objective of preventing the transfer of firearms to those who are prohibited or otherwise ineligible to possess or receive them.

g. Miscellaneous

One commenter challenged the adequacy of the industry impact disclosures in the proposed rule, asserting they were inaccurate and incomplete. Another commenter generally asserted that the proposed rule violated the constitutional rights of corporations.

Department Response

The Department has undertaken its best efforts to accurately calculate the rule's benefits and costs. The Department believes the financial impact information contained in the NPRM refutes the commenter's challenge to the adequacy of the financial impact disclosures. The Department fully and accurately assessed the financial impact of the cost

⁴ Congress originally delegated the authority to promulgate NFA regulations to the Secretary of the Treasury; Congress re-delegated that authority to the Attorney General. See 26 U.S.C. 7801(a)(2); 28 U.S.C. 599A(c)(1).

of this rulemaking on all interested parties, including various segments of the firearms industry; businesses that depend on the firearms industry; firearm purchasers; State and local police; trust attorneys, and its own resource costs in administering the proposed rule. The information set forth in the NPRM with respect to financial impact meets or exceeds the thresholds required for the proposed rule to become a final rule.

The NPRM included the required statutory and executive order review, which fully addressed the financial impact of the proposed rule. These reviews concluded that the annual effect of the proposed rule on the economy will not exceed \$100 million and that the proposed rule would not adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities. Accordingly, the proposed rule did not reach the threshold of an economically significant rulemaking under Executive Order 12866.

Moreover, because the statutory and executive order reviews in the NPRM included the costs of CLEO certification in their assessments, the cost estimates included in each of those reviews significantly overstate the cost that will be associated with the final rule. As noted, the final rule has eliminated the CLEO certification requirement and replaced that requirement with a less burdensome notice requirement. Thousands of commenters agreed that CLEO certification was the most expensive and cumbersome aspect of the proposed rule, and asserted that the elimination of the CLEO certification provision would result in substantial cost savings to the public and law enforcement. Examples of savings suggested in the comments included: (1) would-be applicants intended to create trust entities solely for the purpose of avoiding the CLEO certification process will now save the cost of that trust creation; (2) applicants who opt not to create a trust or cannot afford a trust will no longer have to expend time and resources obtaining CLEO certification; and (3) State and local law enforcement will not be required to expend the time and resources needed to complete certifications.

The Department does not agree that requiring responsible persons of trusts and legal entities to provide identification information and submit to a background check violates the constitutional rights of those entities. Background checks are lawful as applied to individuals, and the

Department believes they are similarly lawful when applied to the responsible persons behind corporate entities. In fact, responsible persons of FFLs are subject to a background check, as are responsible persons of corporate entities that wish to obtain explosives permits or licenses. There is no reason to believe that because NFA weapons are involved, that same approach violates the Constitution in this context.

4. Consequences of Implementing Rule Comments Received

Many commenters stated that the CLEO certification requirement makes the proposed rule “unworkable” and demonstrates the need to eliminate this requirement for individuals as well. A few other commenters foresaw the proposed rule exposing ATF to potential lawsuits filed by law-abiding citizens who could not obtain NFA weapons because some CLEOs refuse to certify NFA applications, and protested that the proposed rule would eliminate the option of obtaining NFA items without a CLEO certification through a trust. See section IV.C.4.c, on general applicability, for additional information. Others added that the certification requirement was an unworkable burden on both NFA applicants and State law enforcement agencies and that nothing in the proposed rule suggests that ATF has any intention to expand the size or funding of the NFA Branch to handle the increased workload as the number of individuals and Forms to check would drastically expand.

Several commenters stated generally that the proposed rule would cause “unintended consequences” and have “negative repercussions.” Many commenters stated that the proposed rule has the potential to dramatically increase the processing times and further burden what they regard as ATF’s already overwhelmed NFA Branch, which they assert presently takes 8 to 10 months—with some commenters stating even longer times, (e.g., 6–15 months)—to process an application. One commenter stated that the NFA Branch would come to rely more on CLEO signoffs and would fail to thoroughly vet transferees as it would struggle to maintain an acceptable rate of transfer approvals. The commenter asserted that the CLEO process in its current form is marred by corruption (e.g., bribery; cronyism) in many jurisdictions, and feared that a prohibited person could exploit the corruption created by the expanded CLEO requirement to obtain and misuse a NFA firearm, as the ATF would be forced to rely upon the CLEO

certification to keep pace with review of the number of forms submitted. A few commenters stated that the proposed rule would impact trustees’ abilities to manage trusts with the proposed requirement for new responsible persons to submit a Form 5320.23 as well as obtain a CLEO sign-off within 30 days of the new responsible person’s appointment. Another commenter alluded to potential State actions whereby States may enact legislation and put in place systems to obtain and sell or transfer machineguns to their citizens—nullifying ATF’s authority—since individual gun rights have been afforded greater respect in a number of States after *Heller*, 554 U.S. 570. The commenter stated that, under 18 U.S.C. 922(o), a State has a clear congressionally-granted power to transfer machineguns to any individual if authorized by State law. Still other commenters stated that the proposed rule would have negative economic effects, including damage to the suppressor⁵ industry and related small businesses, increased costs to local law enforcement agencies, and potential loss in tax revenue and funding to ATF. See section IV.E.1.g.i for full discussion of lost tax revenue.

Several commenters expressed concern that the proposed rule would impact an applicant’s ability to file applications electronically.

Department Response

As previously stated, in response to the concerns expressed by commenters, the final rule will no longer include a CLEO certification provision; instead, the final rule will include a CLEO notification provision that will require applicants simply to notify the CLEO in writing of the application in accordance with the language of the final regulation. Thus, the many concerns expressed by commenters regarding the CLEO certification are moot. The Department also believes that with the shift to CLEO notification, there will be cost and time-saving benefits for all applicants.

Likewise, concerns about the Department’s reliance on CLEO certification to complete background checks on NFA applicants are moot. The Department will continue to conduct background checks in accordance with established procedures.

⁵ “Suppressor” is a term commonly used by the firearms industry and the general public to refer to firearms that are defined in the NFA as “silencers.” The Department generally uses the word “silencer” in this preamble because that is the statutory term. See 26 U.S.C. 5845(a)(7) (defining silencer for purposes of the NFA by cross-reference to 18 U.S.C. 921(a)(24)).

The Department believes it has considered all reasonably foreseeable consequences and possible repercussions arising from the rule. As with most meaningful changes to regulations or laws, the new rule may cause some operational or procedural changes, and may alter the workload and costs for industry members and Government workers. The Department acknowledges that this final rule may increase the time required to process applications received from trusts and legal entities, as well as for individuals, as an increased number of applications undergo more complete checks. The Department estimates that this final rule initially will increase processing times of these applications from the current four months processing time to six to eight months for processing. The Department anticipates that this time will be reduced once the NFA Branch adjusts to the new process. In addition, ATF will work to increase its resources and staffing to process the applications. Of course, continued increases in the number of applications submitted may correspondingly continue to place pressure on processing times. The Department has done its best to consider all possible consequences arising out of the final rule and has considered, among other things, the increased operational cost for the Government and industry members; the increased cost associated with additional fingerprint cards and photographs for responsible persons; and the increased labor cost associated with the time it takes for applicants and industry members to complete the required forms. Having considered all of the reasonably foreseeable costs and benefits, the Department has determined that the benefits of ensuring NFA weapons are less easily obtained by persons prohibited from possessing them outweigh the cost of implementing the rule.

In response to commenters who believe that this rulemaking may “goad” States into passing firearm laws that attempt to “nullify ATF’s authority” in this area, the Department has two responses. First, the Department does not believe that State efforts to interfere with the rule’s effectiveness lessen the need for it. The Department believes that the rule will help to fulfill the purposes of the NFA and help to ensure public safety even if State efforts might make it somewhat less effective than it would otherwise be.

Second, the Department believes that, to be valid, State firearms laws must be consistent with Federal law. The Supremacy Clause of the United States Constitution provides that the laws of

the United States “shall be the supreme Law of the Land; . . . any Thing in the Constitution or Laws of any state to the Contrary notwithstanding.” U.S. Const. art. VI, cl. 2. Since *McCulloch v. Maryland*, 17 U.S. (4 Wheat.) 316, 427 (1819), it has been settled that State law that conflicts with Federal law is “without effect.” *Maryland v. Louisiana*, 451 U.S. 725, 746 (1981). When determining if such a conflict exists, the “purpose of Congress” is the ultimate touchstone. *Cipollone v. Liggett Group, Inc.*, 505 U.S. 504, 516 (1992). The purpose of the NFA is to enhance public safety and ensure that prohibited persons do not obtain firearms. State laws that conflict with the NFA’s purpose may therefore be preempted.

5. General Alternatives to Rule

Many commenters stated the proposed rule failed to consider more cost effective and practical alternatives that would enhance public safety and enable ATF to better meet administrative obligations under the NFA, and suggested other mechanisms that ATF should consider. The majority of commenters suggested that ATF eliminate the CLEO certification requirement for all NFA transactions, for reasons discussed in section IV.C.1. Many commenters also proposed general alternatives. These proposed alternatives included eliminating the NFA altogether; removing some categories of items subject to NFA regulation (such as silencers); varying the regulatory requirements depending on the nature of the NFA item; amending NFA transaction forms to more strongly emphasize criminal liability for possession by a prohibited person; developing and improving enforcement efforts; and improving the administrative process.

a. Eliminate the NFA Altogether

Comments Received

Several commenters suggested that the NFA transfer procedures be repealed. Some of these commenters suggested replacing NFA transfer procedures with the issuance of “NFA cards,” that would allow the cardholder to purchase any NFA weapon. One of these commenters recommended that card applicants be required to undergo background checks and submit fingerprints and photographs.

Several commenters, including FFLs, who urged repeal of the NFA, suggested that transfer of NFA firearms should be handled in the same manner as GCA transfers, with either the \$200 tax and registration requirements being abolished or having the tax collected at

the point of sale by the FFL. One of these commenters asserted that a simple and effective background check by the FBI’s National Crime Information Center would serve the same function as the current NFA procedure at greatly reduced cost. Another commenter characterized NFA regulations as “archaic” and argued that they should be repealed and changed in light of “advances in technology and linked NICS databases.” Another commenter urged that ATF abolish the requirements for fingerprints, photographs, and CLEO certification for all NFA transfers and add a requirement that the NFA Branch process and return all new applications in no more than 10 business days from date of receipt.

Department Response

The Department does not have the authority to repeal the NFA or any of its provisions; the NFA is a statute that only Congress may repeal or alter. Only Congress can remove a weapon from the purview of the NFA, or alter, increase or decrease, the making or transfer tax on a NFA weapon. ATF does not have the authority to change any of the requirements mandated in the statute. The NFA provides very limited authority to permit exemptions from the transfer tax, and commenters’ requested exemptions do not fall within that authority.

Specifically, the NFA provision governing the making of an NFA firearm, 26 U.S.C. 5822, requires that a person who seeks to make an NFA firearm (a) apply to make and register “the firearm,” (b) pay applicable taxes on such firearm, (c) identify the firearm to be made, (d) identify himself, and if an individual, “include his fingerprints and his photograph” and (e) obtain “approval of the Secretary to make and register the firearm.” 26 U.S.C. 5822. The statutory provision governing the transfer of NFA weapons, 26 U.S.C. 5812(a), is substantively similar to section 5822, requiring (a) an application for the specific firearm, (b) the payment of relevant taxes, (c) identification of the firearm, (d) identification of the applicant (with fingerprints and a photograph required for individuals), and (e) approval of the transfer of the firearm. The Department therefore cannot abolish the fingerprint and photograph identification requirements, nor issue blanket permits to individuals to make or transfer NFA firearms.

To the extent commenters would like the Department to change how it conducts its background checks, or not require fingerprints and photographs for applicants that are not individuals, the

Department believes that its current procedures for background checks are the best means of ensuring that prohibited individuals do not obtain NFA firearms, and that it would be administratively burdensome and encourage circumvention to create different application requirements for individuals, on the one hand, and trusts and legal entities on the other.

b. Remove Certain Categories of Items Subject to NFA Regulation or Subject Them to Minimal Regulation Within the NFA Framework

Many commenters suggested that certain categories of NFA-regulated items should be removed. A few commenters stated that silencers, short-barreled rifles, short-barreled shotguns, and weapons falling within the NFA's "any other weapon" (AOW) definition should be regulated in the same manner as non-NFA firearms—requiring only a NICS background check when transferred from an FFL. Another commenter suggested that there be a more nuanced approach to regulating NFA items—not a one-size-fits-all approach—and that some could have fewer regulatory requirements than others. The suggestions for treatment of the particular categories are separately addressed.

i. SBRs, SBSs, and AOWs

Comments Received

Many commenters argued that SBRs and SBSs are functionally no different than handguns. The same commenters noted that a criminal could easily make an SBR or SBS by cutting down a long gun, and stated that SBRs and SBSs should be treated the same as handguns. Several commenters argued that SBRs and SBSs are less accurate than handguns. These commenters asked how SBRs and SBSs are more deadly or more dangerous than AR-15-style pistols and other handguns that are more readily concealable.

A few commenters stated that ATF should deregulate SBRs and SBSs and remove them from the NFA. These commenters suggested that ATF allow FFLs to sell SBRs and SBSs in over-the-counter transactions, in the same manner as GCA long guns (rifles and shotguns). A few commenters stated that there is no reason to regulate SBRs and SBSs when these items are not normally used in crimes. A few other commenters stated that continuing to regulate these items will have no impact on crime.

Many commenters also believed that AOWs do not warrant NFA classification, and should also be handled under GCA transfer standards.

These commenters noted that AOWs generally pique the interest of collectors—not criminals—and are therefore owned by law-abiding citizens for lawful purposes. Another commenter suggested that ATF increase taxes on machineguns, and remove SBRs and SBSs from NFA regulations. Another commenter suggested that ATF direct its investigative energies toward AOW and machinegun applications, and apply lesser treatment for SBRs and silencers (*i.e.*, NICS check only). Other comments pertaining to silencers are addressed in section IV.B.5.b.ii, below.

Department Response

As noted, only Congress can bring a weapon under the purview of the NFA, and only Congress can repeal or remove a weapon from the purview of the NFA. All of the weapons referenced in these comments (SBSs, SBRs, silencers, AOWs, and machineguns) have been designated NFA weapons since the statute was enacted in 1934. With the exception of the reduced transfer tax on AOWs, no statutory provision in the NFA specifically provides for differing treatment of NFA firearms. While ATF has the authority to remove some firearms from the purview of the NFA due to certain factors that make them primarily a collector's item and not likely to be used as a weapon, ATF does not have the authority to change the definition of "firearm" under 26 U.S.C. 5845(a). To the extent that commenters would like the agency to take a more flexible approach to regulating NFA firearms, for example, by reducing or eliminating background checks, the Department takes the position that uniform measures best fulfill the NFA's statutory purposes and benefit public safety.

ii. Silencers

Comments Received

The Department received a number of comments concerning silencers (commonly known as "suppressors," *see supra* note 5). Many commenters pointed out that silencers do not measurably contribute to gun violence and are important and popular safety devices within the hunting and shooting sports communities to protect from hearing loss and reduce noise pollution, and may also be used for home protection. A few commenters stated that multiple studies have clearly shown that earmuffs, even when used together with earplugs, do not adequately protect against hearing loss when firing most calibers of weapons. A few commenters pointed out that silencers do not make a gun silent, and

provided information showing the silencers' goal is simply to reduce the sound to a certain decibel level to avoid hearing damage. One commenter provided in-depth research and data on noise-reducing benefits and superiority of silencers to ear-level devices. This commenter asserted that the proposed rule represents a step backward in protecting against hearing loss. Many commenters stated that several other countries with much stricter gun regulation than the United States (*e.g.*, United Kingdom, Finland) sell silencers without restriction and directly "off the shelf." Another commenter stated that many countries encourage the use of silencers to keep noise down and improve hearing safety. Many commenters observed that silencers are legal in several States (*e.g.*, North Carolina, Washington, Texas). Many commenters advocated that silencers should only require a NICS check. Another commenter suggested that if ATF retains the CLEO certification requirement, silencers be exempted from such a requirement. Another commenter suggested that ATF reduce the tax stamp cost for silencers to \$5.00 or to remove silencers from the NFA altogether. Another commenter stated that silencers should not need a tax stamp in States that permit silencers.

Department Response

The NFA defines silencers as firearms. 26 U.S.C. 5845(a)(7). The NFA defines the word "silencer" by reference to section 921 of title 18, *see id.*, which defines the terms "firearm silencer" and "firearm muffler" to mean "any device for silencing, muffling, or diminishing the report of a portable firearm, including any combination of parts, designed or redesigned, and intended for use in assembling or fabricating a firearm silencer or firearm muffler, and any part intended only for use in such assembly or fabrication." 18 U.S.C. 921(a)(24). Thus it is the NFA statute, and not the Department, that defines silencers (or "suppressors") as firearms for purposes of the NFA. And because silencers are "firearms" for purposes of the NFA, they are subject to the restrictions on making and transferring firearms in the NFA. *See* 26 U.S.C. 5812(a), 5822.

As noted, only Congress can remove a class of weapons from the purview of the NFA. ATF does not have the authority to remove silencers from the NFA and does not believe it would be prudent to make different types of firearms subject to different background check requirements. The NFA provides very limited authority to permit exemptions from the transfer tax, and

commenters' requested exemptions do not fall within that authority. ATF also lacks the authority to reduce tax stamp costs associated with NFA firearms, as those costs are fixed by statute. Finally, given that the Department is not requiring CLEO certification for any items covered by the NFA, the comments relating to removing the CLEO certification requirement for silencers are moot.

c. Ways for ATF To Stress Criminal Liability for Possession by a Prohibited Person

Comments Received

A commenter suggested that ATF amend all forms associated with NFA transactions to add warnings indicating that any individual or any member of a legal entity that permits a prohibited person access to any NFA item has committed a criminal act. The added language should also state that for a legal entity, the criminal responsibility for permitting such access rests with the legal entity and all of its individual members. The commenter further asserted that legal entities are not widely used by prohibited persons to acquire or possess NFA items because the NFA forms submitted to ATF identify all members of the legal entity involved in the transfer, and a prohibited person would likely fear being identified from the form and prosecuted. The commenter asserted that no evidence exists that ATF actually uses these names to identify, investigate, and prosecute criminal acts, and he suggested that ATF should do more to develop efforts to identify, investigate, and prosecute possession of NFA items by prohibited persons. If ATF were to institute such efforts, ATF could establish an information baseline to show the extent of any illegal practices, which could support any necessary regulatory or legislative changes.

Department Response

The Department believes that current NFA transfer forms (ATF Forms 1, 4, and 5) adequately convey information about the penalties for unlawful possession of an NFA weapon. With respect to the assertion that legal entities are not widely used by prohibited persons to circumvent background checks, the absence of background checks for transfers involving trusts or legal entities renders it extremely difficult to assess how often prohibited persons have obtained NFA firearms through such transfers. Finally, ATF enforces the criminal laws within its jurisdiction, and if it becomes aware

of any firearm—including NFA firearms—in the possession of persons prohibited from having it, it will take appropriate actions.

d. Miscellaneous General Comments
Comments Received

A few commenters requested that ATF reopen the NFRTR to permit the legal ownership of machineguns manufactured after 1986 (post-1986 machineguns). A few other commenters suggested revising the requirements by simply eliminating the “cut off” date in the NFA to allow for newly manufactured NFA weapons (*e.g.*, machineguns, automatic rifles) as the current stock is very limited, and to replace worn and unsafe weapons with new guns when “old weapons become nothing more than high-priced collector items.” A commenter stated that this change would reduce the purchase price due to increased market availability and would increase tax revenue. This same commenter supported a higher cost tax stamp for the post-1986 machineguns, and for these guns to continue to be heavily regulated. Another commenter stated that having new firearms available would greatly increase the income of both government and private firearms manufacturers, which benefits local governments through sales tax.

A commenter stated that ATF needs to rewrite the proposed rule to comply with the Plain Language Act of 2010. Another commenter suggested that, prior to drafting regulations, ATF should start a dialogue to enable “sound and rational” regulations to promote safety without the “animosity and conflict” that has divided the country on so many issues. Another commenter expressed his willingness to work with ATF to conduct geographic information system research to help devise a common sense approach to crime reduction. One commenter suggested that ATF delay the final rule's effective date to allow ATF to process its backlog of NFA applications.

A few commenters asked general questions and for additional information about other terms used in the proposed rule. For example, a commenter requested that ATF define the term “make” and asked if the proposed rule applied to all firearms or only to fully automatic weapons. Another commenter stated that the term “certain other firearms” was so vague that most semi-auto cartridge firing mechanisms would be considered illegal. Another commenter asked about a “destructive device.” This commenter asked what “constitutes” a destructive device, and

for guidance to ensure that this term is not open-ended.

Department Response

ATF does not have the authority to remove the general prohibition on the transfer and possession of machineguns that were not lawfully possessed on May 19, 1986. This is a statutory prohibition and therefore only Congress has the authority to remove this prohibition. 18 U.S.C. 922(o). Further, the statute requires that any machinegun be lawfully possessed by May 19, 1986. ATF does not have the authority to permit nongovernmental entities the ability to possess machineguns or other NFA firearms that are not lawfully registered in the NFRTR.

With respect to commenters who believe that the Department should engage in additional dialogue or gather more data before issuing this rule, the Department disagrees. The Department has complied with the notice and comment procedures in the Administrative Procedure Act, other requirements imposed by statute, and relevant procedures required by the President for the promulgation of rules. The Department invited public comment to improve and refine the proposed rule and it has used public comments to do so. But the Department is not persuaded that further delay in promulgating the rule is likely to improve it or is otherwise in the public interest.

The Department does not agree with the comment asserting that the final rule's effective date should be delayed until the backlog of NFA applications has been cleared. ATF's capacity to process NFA applications during a given timeframe is limited by resource constraints; absent a dramatic reduction in the number of applications ATF receives, it will likely continue to have some number of applications that await processing (*i.e.*, a “backlog”). That said, ATF has substantially reduced the backlog of pending applications over the course of the past year.

The terms in the proposed rule about which the commenters sought clarification, such as “make” and “destructive device,” are defined by the NFA and in its supporting regulations. The definitions may be found in 26 U.S.C. 5845 and 27 CFR 479.11.

C. Comments Addressing Specific Portions of the Rule

1. CLEO Certification

a. CLEO Certification Is Unnecessary and Unreasonable

Comments Received

Several commenters stated that ATF's access to NICS and other databases provides a more accurate background check than a CLEO certification. These commenters stated the CLEO signoff is "worthless," as the CLEO's signing or refusing to sign is in most cases based on the CLEO's personal political preferences; the CLEO signature has potential for abuse with the signature given for political support or other compensation; and that even on the limited occasions CLEOs perform background checks, they use NICS or the State equivalent for this type of check. Many commenters, noting that the CLEO certification requirement predated NICS, asserted that the CLEO certification no longer serves its original purpose. One commenter described the certification as "antiquated and a gross waste of resources." Another described it as "outdated, redundant, and superfluous," and urged ATF to eliminate it under the guidance provided in Executive Order 13610 of May 10, 2012, "Identifying and Reducing Regulatory Burdens."

Several other commenters noted that ATF acknowledged in the proposed rule that even without CLEO certification, ATF already has a "fuller picture of any individual than was possible in 1934." Many commenters also generally noted that technological and societal changes have made it less likely that a CLEO is the best source for information indicating an individual may be prohibited from firearm possession. One commenter observed that many applicants never previously interacted with their local CLEOs, and, consequently, CLEOs do not serve the function they once did to assess the character or potential of an individual to misuse an NFA item. Many commenters agreed with this assessment as they personally never had any interactions with their local CLEOs.

Many commenters asserted that the sign-off creates an insurmountable challenge and an unreasonable burden on applicants and CLEOs. Hundreds of commenters agreed that the consequence of retaining CLEO certifications for individuals and extending this requirement to responsible persons associated with legal entities would result in a *de facto* ban of NFA firearms, because they

report that some CLEOs will not provide the necessary certification.

Several commenters raised privacy concerns with the CLEO certification requirement, and asserted it should be completely eliminated in the interest of protecting personal tax information. These commenters considered the \$5 or \$200 tax paid to manufacture or transfer a NFA firearm or device to be "protected" or "confidential" tax information, and stated that the mere application before paying the tax should not be reported to or involve any local CLEO or other government official. Another commenter questioned why his private tax information must be subject to law enforcement inspection and approval. This commenter worried that his personal, nonpublic information might become public record if the local law enforcement agency received a Freedom of Information Act request. The commenter stated that ATF has a "well structured system for protecting [his] applications;" however, he did not know of any Federal or State guidelines applicable to local law enforcement protecting his personal tax information. A few other commenters also raised concerns with some CLEOs retaining copies of the forms they sign. These commenters stated that they cannot object to such retention or they would never receive signoff from the CLEOs. A few commenters believed that sharing Federal tax information involuntarily with local agencies was against the law. Another commenter expressed concern that his personal privacy was also invaded by permitting local government officials to know what firearms are in his home.

In addition, several commenters asked general questions about why CLEO certification was needed at all or why CLEO certifications are not required on all firearm transfers. Another commenter noted that there is no CLEO certification requirement for SOT-licensed manufacturers of NFA items to obtain their licenses, and such manufacturers merely need to send an "intent letter" informing local police agencies of their intent to manufacture NFA items in their local areas. This commenter asked how ATF determines SOT manufacturers are "trusted" persons with no CLEO certification. Further, this commenter opined that manufacturers of NFA items "pose greater risk" and should have "considerably more scrutiny" than an individual or legal entity desiring to possess a few items.

Department Response

The Department acknowledges that some trusts and legal entities would be

unable to obtain a CLEO certification, for reasons other than a responsible person being prohibited or local ordinances prohibiting such firearms, which would result in those trusts and legal entities being unable to obtain an NFA firearm. As the proposed rule was not intended to deny those trusts and legal entities the opportunity to acquire such firearms where permitted by law, the Department has changed the CLEO certification to a CLEO notification. Additionally, the Department believes that with the shift to CLEO notification, there will be cost and time-saving benefits for all applicants, including those who find the current CLEO certification process daunting.

The Department disagrees with the concern that providing the application to make or transfer NFA items to local law enforcement as part of CLEO notification is an unlawful release of tax information. Since the application has not been received by ATF at the time of CLEO notification, it does not constitute "return information." *See Lomont*, 285 F.3d at 15. Additionally, while it is unlawful for employees of the Federal Government to release an individual's tax information, *see* 26 U.S.C. 6103(a), in this instance it is the individual that shares the information. Therefore, even if such information were "return information," no employee of the Federal Government would be disclosing it. *Lomont*, 285 F.3d at 15.

The Department does not agree with commenters that ATF does not have the authority to formulate regulations enforcing the provisions of the NFA. Congress expressly delegated authority to the Attorney General in section 5812 and 5822, among other sections. Congress provided the Attorney General with the authority to require certain identification procedures for transferors and transferees. *See* 26 U.S.C. 5812(a) (providing, *inter alia*, that "[a] firearm shall not be transferred unless . . . the transferee is identified in the application form in such manner as the Secretary may by regulations prescribe, except that, if such person is an individual, the identification must include his fingerprints and his photograph . . ." (emphasis added)); 26 U.S.C. 5822 (same with respect to making firearms). These sections require fingerprints and photographs for individuals at a minimum, but the information that the Attorney General can seek is not limited to these things. Finally, the Attorney General has delegated the authority to the Director of ATF to investigate, administer, and enforce the Federal firearms laws. *See* 28 CFR 0.130.

Finally, the Department has the authority to require CLEO notification for the same reason that it has the authority to require CLEO certification. Sections 5812 and 5822 give the Department broad authority to promulgate regulations governing application forms, including regulations pertaining to the identification of a firearm and its maker or, in the case of a transfer, its transferee and transferor. *See* 26 U.S.C. 5812(a), 5822. Both sections provide that applications “shall be denied” if the transfer, receipt, making, or possession of the firearm would place the transferee or person making the firearm in violation of law. *See id.* Neither, however, “restricts the Secretary’s broad power to grant or deny applications in any other respect.” *Lomont*, 285 F.3d at 17. The notification requirement thus falls within the Department’s authority to request information from individuals who seek to make or transfer NFA firearms that helps it to fulfill its statutory mandate to prevent prohibited individuals from obtaining NFA firearms.

b. Authority To Require CLEO Certification

Comments Received

Many commenters stated that the proposed extension of the CLEO certification requirement exceeds ATF’s statutory authority. A few commenters noted that ATF cites to 26 U.S.C. 5812 and 5822 of the NFA as the statutory authority for the proposed rule, but disputed that these statutory provisions provided ATF with authority to impose a CLEO certification requirement on individuals, much less a responsible person of a legal entity. These commenters argued that section 5812 authorizes ATF to prescribe the form of NFA applications with the limited purpose of identifying the transferor, transferee and firearm, and that seeking opinions from local CLEOs goes beyond establishing the actual identity of the applicant.

One commenter asserted that the Attorney General cannot delegate the duties of the office to a CLEO—a non-Federal agency—as a CLEO’s arbitrary or capricious actions, or failure to act, are not subject to review under the Administrative Procedure Act (5 U.S.C. 551–559). Other commenters stated that ATF cannot delegate this authority arbitrarily to itself or to a third party without authorization from Congress and that requiring CLEO certification gives “absolute and unchecked discretion” to local CLEOs. Another commenter stated that no provision in the NFA provides ATF the authority to

refuse to issue a “stamped application form” when the applicant can be identified by a method other than CLEO certification. This commenter stated that section 5812(a)(3) only requires that an individual be identified by fingerprints and photographs, not by CLEO certification. All these commenters contended that the local CLEO certification should be eliminated not expanded.

Department Response

Although the Department does not agree with the assertions that ATF lacks statutory authority to require CLEO certifications, for other reasons described herein at section IV.C.1.a–d, the Department has removed the CLEO certification requirement from the final rule. Since removal of the CLEO certification requirement is the ultimate result advocated by these commenters, in-depth discussion of their assertions is not necessary to the final rule.

In addressing the comments, it must be noted that Congress provided the Attorney General with the authority to require certain identification procedures for transferors and transferees. *See* 26 U.S.C. 5812(a). These sections require fingerprints and photographs for individuals at a minimum, but the information that the Attorney General can seek is not limited to these things. CLEO certification and CLEO notification are also identification procedures authorized by section 5812(a).

Under the proposed regulation, ATF would not have delegated the application process to the CLEO. ATF merely proposed to extend to the responsible persons of trusts and legal entities the CLEO certification requirement, which was the same process that had been in place for many years with individuals. A certification was just one step involved in the process of determining if an application could be approved. These issues are moot, however, as ATF will adopt a CLEO notification process instead.

c. CLEO Issues With Certifying

Comments Received

Numerous commenters, including trade associations and individuals, discussed the reasons some CLEOs refused to approve NFA applications. These commenters disputed ATF’s statement in the proposed rule that liability concerns are a primary reason some CLEOs refuse to approve NFA applications. A commenter stated that ATF was wrong to rely on this “false premise,” and requested that ATF perform a “systematic study and survey

of CLEOs to develop a solution to the actual problem at hand rather than disrupt established procedures for entities developed over the past 80 years.” Many commenters stated that CLEOs often refuse to sign based on personal or political concerns, not civil liability concerns. Some of the stated political reasons include that the transferee did not donate to their political campaigns; general political liability—as opposed to civil liability—concerns; and the CLEO’s personal disagreement with the policy choices of the CLEO’s States and Congress to permit private ownership of NFA firearms. Another commenter stated that there are jurisdictions where CLEOs collectively refuse to sign, exercising their “personal fiat.” Many commenters related personal experiences purporting to show that CLEOs in certain regions and jurisdictions refuse to sign due to political party affiliation and ideological beliefs. Several commenters urged ATF to place time limits within which CLEOs would be required to act on certifications requests; if the CLEO failed to act on the certification request within the time limit, ATF would be required to proceed as if the certification had been approved. Many commenters referenced newspaper articles and other sources that provide quoted statements from local CLEOs regarding their reasons for refusal and their publicly announced policies to no longer consider applications for silencers, short-barreled shotguns, explosives, etc. Another commenter asked if ATF has proposed guidelines that CLEOs must follow to ensure no discrimination. This commenter also asked if ATF will establish a system to prosecute and reprimand CLEOs who refuse to provide certification when there are no issues preventing such certification.

NFATCA’s comment noted that in the NPRM ATF had accurately cited a quote from NFATCA’s 2009 petition regarding CLEO concerns over liability (“[s]ome CLEOs express a concern of perceived liability; that signing an NFA transfer application will link them to any inappropriate use of the firearm”), but asserted that this point was secondary to its primary concern that the CLEO certification requirement was unlawful. NFATCA further asserted that in focusing on liability, ATF had failed to acknowledge that many CLEOs would not sign NFA certifications for reasons other than liability, such as budgetary concerns and opposition to private ownership of NFA firearms, or firearms in general.

NFATCA, the American Silencer Association (ASA),⁶ and a majority of other commenters, all advocated complete elimination of the CLEO certification requirement.

Department Response

The Department acknowledges that there are many reasons why a CLEO may not sign an NFA application. Taking these concerns and other factors into consideration, the Department has removed the CLEO certification requirement from the final rule.

The Department notes, however, that its decision to remove the certification requirement from the final rule does not reflect agreement with assertions, such as those put forward by NFATCA in the comments, that the CLEO certification requirement is unlawful.

d. Alternatives to CLEO Certification Comments Received

The majority of commenters were opposed to the expanded CLEO certification requirement, and many suggested alternatives to this requirement. The most commonly cited alternative was to completely eliminate the requirement for all NFA transfers. Many commenters suggested that instead of CLEO certification, ATF could require notification whereby the individual or the responsible person executing the form in the name of the legal entity must provide the local CLEO with a copy of Form 1, 4, or 5 submitted to ATF, and provide the CLEO a reasonable time for review. If, by the end of that time period, the CLEO has not provided ATF with information showing cause for denial, ATF should consider the application cleared at the CLEO level and proceed with the application. The commenters believed this alternative would meet the statutory requirements of sections 5812 and 5822 of the NFA without allowing CLEOs to arbitrarily deny applications. The time period that commenters considered “reasonable” varied, with suggestions for periods of 7, 15, 30, and 60 business days. A commenter noted that a similar process is already used with Form 7. Several commenters noted that NFATCA had recommended this alternative in its petition (*i.e.*, eliminating the CLEO certification requirement and replacing it with notification to the CLEO of the pending transfer, combined with ATF conducting a NICS check of an individual and principle officers of a trust or legal entity). Several commenters noted that ATF previously

indicated its intent—per published abstracts in the Unified Regulatory Agenda in 2011 and 2012—to propose notification instead of CLEO certification and eliminate such certification altogether.⁷ At least one of these commenters requested that ATF provide a reasoned explanation for changing course from a regulatory alternative that would be more “cost effective, serve legitimate statutory objectives, and avoid legal vulnerabilities.”

A few commenters suggested ways to amend §§ 479.63 and 479.85, as well as Forms 1, 4, and 5, to provide for a notification process similar to the one the Department has chosen to adopt. One commenter provided specific language to replace the CLEO certification on Form 1. Another commenter suggested replacing the CLEO certification language on Form 4 with a certified statement—under penalty of perjury or falsification of an official government form—by the individual or the responsible person of the legal entity executing the form. This statement would indicate that such individual or responsible person has “conferred with their attorney and/or the local law enforcement officials and that the individual or the entity and each ‘responsible person’ in the entity are not prohibited by local or state law from owning or possessing the items being transferred to them on the form and that they are not a prohibited ‘alien’ who cannot own or possess the items.”

Many commenters supported eliminating CLEO certification and instead requiring all members of a trust, once the application is returned “approved” from ATF, to undergo a NICS check prior to the transfer of the NFA firearm. One commenter suggested that ATF keep the NICS check requirement for the individual or responsible person completing Form 4473 to obtain the transferred item. This commenter also suggested that ATF keep the current process where only the individual or one of the responsible party(s) of a legal entity complete and sign the transfer form.

Many commenters suggested that if the objective is to prevent restricted persons from owning NFA items, a simpler solution would be to substitute fingerprinting and background checks for the CLEO certification requirement for all NFA transfers. Many other commenters concurred with eliminating

CLEO certification and making NFA weapons point-of-sale items as they saw no difference between the background checks performed by ATF’s NFA Branch and those performed by FFLs.

A commenter stated that the best alternative is to either keep the status quo—requiring CLEO certification for individual applicants—or eliminate the CLEO certification requirement for trusts while retaining the need for a standard “NFA-style” background check for each individual. Other commenters requested that ATF consider either no change to ATF’s stance on trusts and legal entities regarding CLEO certification or remove the CLEO certification requirement for all NFA items. Other commenters urged ATF to eliminate the CLEO certification requirement for all transfers, replacing it with various forms of automated background checks. Another commenter suggested an “equitable solution” would be to have an applicant’s local police department provide a “letter of good conduct,” which states that “you are who you say you are and provides a list of any criminal offenses you may have had.” This commenter named a local police department that issued these letters quite regularly.

Many commenters questioned the intention of CLEO certification. If the objective is to verify the applicant’s identity (*i.e.*, that the applicant is the one signing the form and is the person in the provided photograph), these commenters maintained that any Notary Public could accomplish this objective. Other commenters supported methods used by other Federal agencies to verify identification, such as local police departments, State police, or fingerprinting companies. Another commenter suggested that instead of CLEO certification, that local ATF offices take the applicants’ photographs and fingerprints, perform background checks, and approve applications on the spot. This commenter suggested that the local ATF offices could additionally perform a NICS check as required by Form 4473.

Many other commenters suggested alternatives under which ATF could require individual applicants and responsible persons to provide various forms of government-issued identification with photographs to verify identity. One commenter suggested revising the application forms to include a page for individuals and all responsible persons of legal entities to attach photograph(s) showing the front and back of a currently valid State-issued identification or driver’s license. Another commenter stated that ATF only needs a full name, date of birth,

⁶ Now known as the American Suppressor Association.

⁷ Fall 2011 Unified Regulatory Agenda (<http://www.reginfo.gov/public/do/eAgendaViewRule?pubId=201110&RIN=1140-AA43>) and 2012 Unified Regulatory Agenda (<http://www.reginfo.gov/public/do/eAgendaViewRule?pubId=201210&RIN=1140-AA43>).

and Social Security number to perform background checks. Another commenter suggested that instead of having CLEOs verify fingerprints and photographs, there be a database containing an approved set of fingerprints and photograph of each applicant. Another commenter questioned the rationale for relying on CLEO approval for Federal law, and suggested for improving efficiency to either make the entire process Federal or have the entire process rely on “local/state” law.

Another commenter suggested that ATF reform the process to have the \$200 tax either be an “excise tax” payable at the point of sale or, with the advances in technology, have the retailer print out a tax stamp at the point of sale. This would enable the purchaser to complete a Form 4473, enable a NICS check to be performed, and enable remittance of the taxes through the retailer.

Although many commenters preferred that the CLEO certification requirement be completely eliminated, they also provided compromise positions if ATF were set on keeping and expanding the CLEO certification requirement. These commenters suggested that ATF make the CLEO certification a “shall issue” and require CLEOs to decide based on legal restrictions and obligations, and sign off on the certification, if the background check is “clean” unless there is a valid reason not to sign (*e.g.*, criminal or mental health history).

If ATF were to maintain the certification, a few commenters suggested changing the sequence of CLEO review by requiring ATF to provide the application information to the CLEO only after conducting a review. Many commenters suggested that ATF provide for judicial review of instances where CLEOs would not sign off on the certification; others requested that the CLEO be required to state the reason for the denial and provide “real tangible evidence” and state “specific, objective and legally relevant reasons” for the non-concurrence or denial.

Several commenters suggested that Forms 1, 4, and 5 be revised to provide an area indicating that the local CLEO would not sign off on the form, and in such instances ATF could require more information or perform a more extensive background check. For example, one commenter suggested adding three signature lines on the forms: (1) First line—for the CLEO to sign and state “no disqualifying information;” (2) second line—for the CLEO to sign and state “information indicating disqualification” and for the CLEO to explain the disqualification; and (3) third line—for the applicant to certify “I certify I submitted this to this CLEO

(name address) over 30 days ago and received no response.”

Many commenters recommended that ATF broaden the list of officials who could provide certifications, to include local district attorneys, judges, officials in local ATF offices, or a designated official in each State, among others.

Many commenters suggested that individual applicants and responsible persons of legal entities who hold a concealed carry permit or license in the State where they reside—authorizing them to purchase, obtain, or carry weapons—should be exempt from the CLEO certification requirement, as well as the photograph and fingerprint requirements, since State and Federal background checks have already been performed and verified.

One commenter requested that ATF consider not requiring CLEO certification for active and retired law enforcement officers, active and retired military officers, including Guard and Reserve officers, and any government employee with a security clearance, as well as FFLs. Other commenters suggested that the CLEO certification requirement be removed for silencer ownership. Another commenter recommended requiring CLEOs to sign off on forms in States where SBRs, machineguns, and silencers were legal. Another commenter recommended that ATF require differing levels of CLEO certification per NFA item, and that silencers and “any other weapons” should not be subject to CLEO certification.

Another commenter suggested simply that a large red “F” be placed on the driver’s license of a convicted felon to ensure that criminals do not obtain or use firearms, and proprietors of gun ranges and sellers of ammunition could easily ascertain who is permitted to do business with them and who is not.

Department Response

Although the Department does not agree with all of the concerns expressed or suggestions made in the above-summarized comments, it does concur with the conclusion of many commenters that the benefits of CLEO certification do not outweigh the costs of the CLEO certification requirement, and that alternate procedures will satisfy the statutory requirements of section 5812 and 5822. Consequently, as previously noted, the Department has removed the CLEO certification requirement from the final rule. As an alternative to certification, the final rule adopts a CLEO notification requirement that is similar to that suggested by many commenters. In conjunction with the mandatory background check required

of all applicants, including responsible persons of trusts and legal entities, the requirement of CLEO notice fulfills the primary objectives that have supported the certification requirement: It provides the CLEO awareness that a resident of the CLEO’s jurisdiction has applied to make or obtain an NFA weapon and affords the CLEO an opportunity to provide input to the ATF of any information that may not be available during a Federal background check indicating the applicant is prohibited from possessing firearms. As noted in the NPRM, although the NICS provides access to a substantial number of records to verify if an individual is prohibited from possessing firearms, CLEOs often have access to records or information that has not been made available to NICS. Providing notice to the CLEO of a prospective NFA transfer with instructions on how to relay relevant information to ATF will help fill possible information gaps in NICS by affording the CLEO a reasonable opportunity to provide relevant information to ATF.

To effectuate the CLEO notice requirement, the Department is revising the regulations in §§ 479.63 and 479.85 to require the applicant or transferee, and all responsible persons, to provide a notice to the appropriate State or local official that an application is being submitted to ATF, and conforming changes will be made to ATF Forms 1, 4, and 5. In addition, responsible persons for trusts or legal entities will be required to provide CLEO notification on ATF Form 5320.23, *NFA Responsible Person Questionnaire*.

Consistent with the recommendation of many commenters, the changes to Forms 1, 4, and 5 will also include a certification requirement by the applicant or transferee under penalty of perjury, that the applicant or transferee has provided notification to the CLEO; a corresponding change will be made to Form 5320.23 for certification by responsible persons of trusts and legal entities. Applicants will also be required to provide the name and location of the CLEO to whom the form was sent, and date the form was sent. Removal of the CLEO certification requirement also means that CLEOs will no longer need to attest to the authenticity of the applicant’s or transferee’s photographs and fingerprints. To ensure verification of identity, however, the official taking the applicant/transferee’s fingerprints must sign the fingerprint card to certify the official has verified identity of the applicant/transferee. In reaching the decision to substitute CLEO notification for certification, the Department

determined that the proposal to have local ATF offices process NFA applications and conduct background checks was neither efficient nor feasible due to other mission requirements and resource constraints. For a discussion of other suggested alternatives the Department has elected not to implement, see section IV.C.3.c (addressing recommendations that background checks be conducted only at time of transfer) and section IV.B.1.b (addressing recommendations that NICS checks alone are sufficient for NFA transfers).

The Department recognizes comments received suggesting that the Department (1) require that CLEOs certify forms, (2) require that CLEOs provide reason for not certifying forms, (3) make judicial review available when a CLEO does not certify a form, and (4) expand the number and types of officials who may provide certifications. As the certification has been replaced with a notification, the suggested changes are no longer a necessary part of the process. Additionally, the Department rejects comments proposing that ATF, rather than the applicant, provide a copy of the application to the CLEO; ATF is prohibited from releasing an individual's tax return information.

The Department rejects the suggestion of collecting the "excise tax" and printing out the tax stamp at the point of sale. The Department believes that allowing nongovernmental entities to issue tax stamps could lead to fraud and abuse.

The Department has not adopted suggestions that the fingerprints and photograph requirement be replaced by State permitting or licensing because such State-issued documents may not meet the biometric fingerprint check requirements of 26 U.S.C. 5812 and because the background check process for each State-issued concealed carry permit or license is different and not all permits or licenses qualify as an exception to a background check. Additionally, it is unclear to what extent the Department has the legal authority to require local and State officials to aid it in implementing Federal firearms regulations.

The Department recognizes comments regarding exempting certain categories of persons and certain types of NFA firearms from CLEO certification. While CLEO certification has been replaced with a CLEO notification, all applicants, including active and retired law enforcement, active and retired military officers, and government employees with security clearances, and all types of NFA firearms, including silencers,

will be subject to the notification requirement.

The Department does not adopt the suggestion of special markings on a driver's license for convicted felons. The Department does not have the authority to require this information on State-issued identification documents.

2. Fingerprints and Photographs for Background Checks

a. Authority To Require Submission of Fingerprints and Photographs of Responsible Persons for Trusts and Legal Entities

Comments Received

Many commenters stated that the proposed rule exceeds ATF's statutory authority to require photographs or fingerprints of responsible persons. One of these commenters, NFATCA, acknowledged that its 2009 petition requested a requirement that responsible persons of legal entities submit photographs and fingerprints, but advised that it has changed its conclusion as to the statutory authority of ATF to impose this requirement, and was withdrawing its 2009 recommendation. A few commenters argued that the provision of the NFA that ATF cited as authority for extending the photograph and fingerprint requirement to responsible persons of legal entities, section 5812, does not support ATF's position because the text of that section extends the photograph and fingerprint requirement only to individuals, and not to legal entities.⁸ Because section 5812 of the statute specifically names only one class of transfers covered by this requirement (*i.e.*, individuals), they argue, ATF is without statutory authority to extend it to any other type of transfer (*i.e.*, those involving legal entities).

Department Response

The Department does not agree with comments that this rulemaking exceeds its authority by requiring photographs or fingerprints of responsible persons. Information that the Attorney General can seek is not limited to fingerprints and photographs for individuals. The inclusion of individual transfers as a specific category that requires the submission of fingerprints and photographs in 26 U.S.C. 5812 does not equate to a limitation on the authority of ATF to extend that requirement to

⁸ The commenters limited their discussion to the text of 26 U.S.C. 5812 but noted that 26 U.S.C. 5822 provided substantively similar language in the context of an application to manufacture an NFA firearm.

transfers involving trusts or legal entities. See 26 U.S.C. 5812.

The Department believes it may require trusts and legal entities to submit identifying information regarding their responsible persons as a component of the identifying information it requires a trust or legal entity to submit prior to obtaining authorization to receive or make an NFA firearm. Sections 5812 and 5822 provide broad authority for the Department to require the identifying information of any applicant to make or transfer an NFA firearm. Section 5812 prohibits the transfer of a firearm "unless . . . the transferee is identified in the application form in such manner as ATF may by regulations prescribe." Similarly, section 5822 prohibits the making of any firearm unless the maker has "identified himself in the application form in such manner as ATF may prescribe." The Department views the identities of responsible persons associated with trusts and legal entities as a vital aspect of the identities of those entities themselves. The very purpose of the NFA would be undermined if a criminal could use a trust or legal entity the criminal controls to obtain an NFA firearm without submitting any personally identifying information to the Department.

b. Alternatives To Requiring All Responsible Persons To Provide Fingerprints and Photographs

Comments Received

Many commenters asserted that all NFA applicants, including legal entities, should be required to undergo background checks and submit fingerprints and photographs. Some of these commenters differed, however, as to which individuals associated with a legal entity should be subject to these requirements. Several commenters supported background checks for trustees only. A few commenters asserted that successor trustees and other members of trusts (other than the original trustee) should be excluded. Many commenters stated that beneficiaries do not have actual possession and should also be excluded. Another commenter suggested requiring all responsible persons to submit a background check annually to the "head of the trust" to be maintained on file, and to make that head person responsible for all law enforcement approvals. A few commenters supported background checks on the "main person" in the trust or legal entity. Other commenters supported background checks on a single responsible person only. Several

commenters supported background checks only on the person in the legal entity picking up the firearm.

A few commenters suggested requiring a one-time fingerprinting and background check of responsible persons associated with a trust at the creation of the trust, not on every transfer of regulated items contained in the trust. Another commenter suggested requiring only the executor to provide fingerprints and photographs and undergo a background check one time, and that this process be repeated whenever the executor dies or forfeits the executor's position to the next person appointed as executor or owner of the corporation. Another commenter suggested only requiring fingerprints and photographs from trustees once, or perhaps once every ten years upon a new NFA item form. This commenter urged that ATF also adopt the "once every ten years rule" for individuals, too.

In addition to recommendations specific to trusts and legal entities, several commenters suggested that ATF devise alternative methods to identify individuals. Some commenters recommended the use of digital technology to submit photographs and fingerprints, citing as examples other Federal agencies such as the Securities and Exchange Commission (which uses a digital fingerprinting service) and the Transportation Security Agency (which uses a digital service to perform background checks on its employees).

Department Response

The Department agrees with comments that beneficiaries should not generally be included in the definition of responsible person and has removed beneficiaries from the definition in the final rule. The Department does not agree with comments that background checks should only be conducted on the "main person" in the trust or legal entity, a single responsible person for the trust or legal entity, or only the person picking up the firearm. These recommendations fail to account for multiple individuals within a trust or legal entity that will exercise control over NFA firearms. The "responsible person" definition in the final rule accounts for such individuals, and requires them to meet the same requirements that apply to all other individuals who apply to make or possess an NFA firearm.

The Department concludes that proposals involving one-time or periodic background checks and submission of fingerprints and photographs—for example at the creation of a trust or legal entity or only

once every ten years—do not meet the NFA's requirement that each NFA transaction must be accompanied by an individual application and registration. See 27 CFR 479.62 and 479.84.

Moreover, such proposals do not adequately ensure that an applicant is not prohibited at the time each NFA weapon is made or acquired; a background check in conjunction with each application is needed to ensure no change in status has occurred. With respect to allowing a single-submission of fingerprints and photographs, the NFRTR is a tax registry that does not have the technical capacity or statutory authorization to track such documents. The Department acknowledges that other Federal agencies utilize electronic fingerprinting technology. However, ATF does not currently have the resources to utilize this technology.

3. Legal Entities

a. Purposes of Trusts and Legal Entities Comments Received

Many commenters stated that the proposed rule ignored or misunderstood the common circumstances surrounding the creation of an NFA trust, and did not account for the "myriad of innocuous and legitimate" reasons why a trust would own an NFA item, for example to pass the NFA item to one's heirs. Several commenters stated that the proposed rule, by naming a beneficiary as a "responsible person," deprived individuals from common estate planning techniques (e.g., using living trusts and naming their minor children as beneficiaries). In addition, a few commenters stated that the proposed rule intruded upon the traditional uses of trusts and upon the rights of settlors to manage their estate plans by proposing that any new responsible person must submit a Form 5320.23 as well as a CLEO signoff within 30 days of the responsible person's appointment.

Many commenters stated that trust use is on the increase as many people live in areas where the CLEO simply will not sign an NFA certification, causing law-abiding citizens to use trusts and corporations to bypass the CLEO certification requirement in order to lawfully make or obtain an NFA weapon. One of these commenters added, "[t]he simple truth is, corporations and trusts are formed NOT to circumvent background checks, but to take power away from an antiquated unfair system of CLEO signoff."

Many commenters stated that a trust's main purpose is to hold assets, property, and expensive collector investments for inheritance, and as such is a critical

estate planning and management tool. Other commenters stated that trusts are being used to lawfully permit multiple people and families to share access to, and use, legally owned and registered NFA items. These commenters noted that without a trust, only the person who directly purchased the NFA item can lawfully possess it. Another commenter asserted that absent ownership by a trust the NFA item must always be in the registered individual's possession when it is out of the safe. Several commenters noted that the NFA makes it unlawful for any person "to possess a firearm that is not registered to him in the National Firearms Registration and Transfer Record." 26 U.S.C. 5861(d). Hence, if the item is registered only to an individual, and not a trust or legal entity, then family members of the registrant who possess or use the NFA item are exposing themselves to serious criminal charges. See 26 U.S.C. 5871, 5872. Several commenters provided personal examples where trusts prevented legal complications by allowing possession of the NFA item by individuals named in a trust during life changing events (e.g., military deployment or death).

Many commenters stated that a trust eases the burden of transferring NFA items upon the death of the grantor/settlor. Other commenters stated that a trust prevents the need to pay a \$200 transfer tax, amounting to a "double tax," and file another Form 4 to transfer and retain the property, should one of the family members die before the other family member. Other commenters stated that trusts are used to ensure that remaining family members could not be prosecuted for being in possession of an illegal firearm upon death of the person who obtained the NFA tax stamp. Several other commenters stated that another benefit to a trust is that a settlor can list the settlor's children as beneficiaries, and after the settlor's death, a trustee will continue to oversee the items until the children are of legal age to possess the items. Many commenters also stated that these beneficiaries should not have to submit to their civil liberties being violated simply because they inherited private property.

Two commenters stated that most (NFA) trusts are being used to lawfully obtain silencers. These commenters stated that if ATF really desired to reduce the use of trusts, it should remove silencers from the NFA "list." Several commenters noted that trusts are established in a variety of contexts (e.g., voluntary or mandated by law; by a decedent's will or during the lifetime of a settlor), and some of the contexts

should “amelioriate” concerns regarding potential misuse. These commenters, and others, noted that many trusts are specialized and designed as “gun trusts” with safeguards, pertinent to the settlor, trustees, and beneficiaries, to ensure compliance with the regulation of NFA firearms.

A commenter noted that the Seventh Circuit Court of Appeals held that a trust is a proper legal entity for holding a firearm where the settlor was prohibited, provided that the trust included proper safeguards to ensure that a prohibited person did not possess the firearm. *Miller*, 588 F.3d 418. Some commenters noted that trust agreements may exclude prohibited persons. Several commenters provided examples of language and provisions in trusts designed specifically to hold NFA items that required full compliance by all members and trustees with laws governing possession of NFA firearms. For example, one commenter cited to provisions in her trust stating that “any trustee that is or becomes an ineligible person as defined by Federal law or State law must be deemed as to have immediately resigned and must immediately surrender all NFA items held on behalf of the trust.” Several commenters asserted that ATF should set a wide variety of requirements necessary for a trust to hold NFA items.

Another commenter stated that, if necessary, ATF could add additional language to the transferee’s certification, similar to that already found in Forms 1, 4, and 5, to ensure that the responsible person understands that it is unlawful to make the firearms available to prohibited persons, and could add a definition of “prohibited person” consistent with 18 U.S.C. 922(g) in the “Definitions” section of the application. This commenter proposed specific language for this purpose.

Department Response

The Department is aware of the legitimate reasons individuals may choose to utilize a trust or legal entity to acquire an NFA item. These include facilitating the transfer of an NFA item to a decedent’s heirs and providing a mechanism that allows several individuals to lawfully possess the same NFA item. To the extent that courts have recognized a felon’s ability to employ a trust or other device to maintain an ownership interest, so long as there is no ability to physically possess or control the firearm, trusts have been employed. The Department also recognizes that some trusts created to hold NFA assets contain provisions seeking to ensure that Federal, State,

and local laws regarding possession and transfer of NFA firearms are not violated.

The final rule that the Department is promulgating is not designed or intended to reduce the use of trusts for estate planning or other lawful purposes. Instead, provisions of the final rule are intended to facilitate the ability of trusts and legal entities to comply with the statutory requirements of the NFA through the establishment of tailored mechanisms that help ensure prohibited persons are not able to misuse such entities to illegally obtain NFA firearms. The final rule accomplishes this objective by defining as responsible persons those individuals associated with a trust or legal entity who are able to control firearms, and requiring those individuals to undergo the background checks and submit fingerprints and photographs required by statute and ATF’s regulations.

With respect to the concerns voiced by many commenters regarding the impact a new rule may have on estate planning, the provisions of the final rule do not materially alter long-existing procedures ATF has established to facilitate the registration of NFA firearms to legal heirs. Those procedures take into account that a decedent’s registered NFA firearm(s) must be managed by the executor or administrator of the estate, and provide for a reasonable amount of time to arrange for the transfer of the firearms to the lawful heir. They further provide that a decedent’s registered NFA firearm(s) may be conveyed tax-exempt to lawful heirs as an “involuntary transfer” resulting from the death of the registrant.

In promulgating the final rule, the Department has also evaluated the assertions by several commenters that:

- New Federal regulations are not necessary because many trusts designed to hold NFA assets contain voluntary, self-imposed, provisions designed to preclude prohibited persons from acquiring NFA weapons through the trust

- ATF should set requirements mandating provisions in trust agreements for trusts that acquire NFA weapons

With respect to the assertion that trust self-regulation renders new regulation unnecessary, the Department notes that ATF has no authority to enforce private trust agreements, nor may private trusts have the authority to obtain NICS background checks of associated individuals. Hence, self-regulation does not adequately ensure statutory compliance. With respect to suggestions

ATF should regulate the terms of trust agreements for trust holding NFA firearms, ATF believes it is more efficient and effective simply to require responsible persons to submit to background checks than to dictate the language in trust documents.

Finally, the Department does not agree with commenters’ assertions that additional language needs to be added to the certification in ATF Forms 1, 4, and 5 regarding firearm possession by prohibited persons. The instructions on these Forms already include specific information on who is considered a prohibited person.

b. Number of Trust and Legal Entity Form 1, 4, and 5 Applications

Comments Received

A commenter desired more information and clarification concerning the number of legal entities that file Form 1, 4, and 5 applications. This commenter stated that the NFATCA petition—as described by the NPRM, section II. Petition—contends that the number of applications to acquire NFA firearms via a legal entity has increased significantly. This commenter noted that this same section of the NPRM also provided ATF research data showing that the number of Form 1, 4, and 5 applications submitted to ATF by legal entities that are not FFLs have increased from “approximately 840 in 2000 to 12,000 in 2009 and to 40,700 in 2012.” This commenter could not determine ATF’s statistical methodologies, as they were “neither stated nor explained” in the NPRM, and ATF’s analyses did not seem to allow for the same legal entity filing multiple Form 1, 4, and 5 applications during the reporting periods CY 2000, CY 2009, and CY 2012. The commenter contended that it was not uncommon for a legal entity (or an individual) to file multiple Form 1, 4, and 5 applications during a single calendar year. In addition, this commenter noted that ATF did not provide corresponding data to show how many non-legal entities or natural persons submitted to ATF Form 1, 4, and 5 applications during the same reporting periods (*i.e.*, CY 2000, CY 2009, and CY 2012). As a result, this commenter maintained that ATF’s methodologies used in the NPRM left many important questions unanswered, including:

- (1) What are the actual number of separate and distinct Legal Entities that submitted ATF Form 1, 4, and 5 applications during these same reporting periods, including CY 2000, CY 2009, and CY 2012?

- (2) What are the actual number of separate and distinct non-Legal Entities or natural

persons that submitted ATF Form 1, 4, and 5 applications during these same reporting periods, including CY 2000, CY 2009, and CY 2012?

(3) What is the increase (or decrease) in the actual number of separate and distinct Legal Entities that submitted ATF Form 1, 4, and 5 applications during these same reporting periods, including CY 2000, CY 2009, and CY 2012?

(4) What is the increase (or decrease) in the actual number of separate and distinct non-Legal Entities or natural persons that submitted ATF Form 1, 4, and 5 applications during these same reporting periods, including CY 2000, CY 2009, and CY 2012?

(5) How does the increase (or decrease) in the actual number of separate and distinct Legal Entities that submitted ATF Form 1, 4, and 5 applications compare with the increase (or decrease) in the actual number of separate and distinct non-Legal Entities or natural persons that submitted ATF Form 1, 4, and 5 applications during these same reporting periods, including CY 2000, CY 2009, and CY 2012?

Another commenter also desired information regarding parties that file multiple applications, and asked how many of the applications received during the CY 2012 represent parties who have applied for more than one NFA-registered item.

Another commenter stated that there was an “unexplained discrepancy” between the numbers that ATF used in Table A of the NPRM for the number of applications for legal entities received in 2012 and the numbers ATF used in its “Firearms Commerce in the United States Annual Statistical Update 2013” (ATF’s 2013 Statistical Update), available at <https://www.atf.gov/sites/default/files/assets/pdf-files/052013-firearms-commerce-in-the-us-annual-update.pdf>. This commenter provided statistics from Exhibit 7 of this statistical update, which showed the number of applications for CY 2012 as totaling 230,937 with the number of applications for Form 1 as 7,886; Form 4 as 52,490; and Form 5 as 170,561. This commenter noted that ATF’s 2013 statistical update did not break down the application numbers for legal entities, individuals, or qualified FFLs (Gov/FFLs) so the commenter did not have any numbers to compare with the breakdown done in the NPRM, Table A. However, this commenter compared the numbers provided in Table A of the NPRM with those in ATF’s 2013 Statistical Update Exhibit 7 as follows:

Table A CY 2012 # applications	Statistical Update CY 2012 # applications
ATF Form 1: 9,662 ...	ATF Form 1: 7,886.
ATF Form 4: 65,085	ATF Form 4: 52,490.
ATF Form 5: 9,688 ...	ATF Form 5: 170,561.

Table A CY 2012 # applications	Statistical Update CY 2012 # applications
Total: 84,435	Total: 230,937.

This commenter stated that ATF has not explained why it excluded over 146,500 legal entity applications in its basis for rationalizing the proposed rule change, as well as its cost and economic impact analyses. As a result, this commenter stated that ATF’s inaction called into question the “validity and integrity of the assumptions, arguments, analyses, and conclusions” in the proposed rule. Therefore, this commenter asked ATF to clarify and revise, if needed, its statistical methodology.

Department Response

The Department has carefully considered all commenters’ concerns relating to the number of legal entities that file Form 1, 4, and 5 applications. For purposes of the NPRM, ATF conducted an analysis of all applications actually received in the NFA Branch in CY 2012.

The total number of transfers to trusts, corporations, governmental entities, and individuals cited in the NPRM were taken from the total number of all applications received. When an application is received in the NFA Branch it is counted one time. Additionally, each application covers the transfer of a separate firearm with a separate and unique serial number. Thus, the transfer or making of an NFA firearm is counted each and every time an application is submitted. There is no system in place that counts the number of applications received at different times from the same applicant. However, such a system would have been irrelevant for purposes of the NPRM. The key fact is the number of transfers made by legal entities without a background check. The fact that legal entities may have made more than one transfer does not lessen the concern. Also, for purposes of the final rule, new numbers for CY 2014 have been compiled. Those new numbers will cover only those applications that have been processed with a final determination, as opposed to all applications received regardless of a final determination.

The Department did not prepare an analytical impact statement concerning non-legal entities as the definition of “Person” in section 479.11 does not use the term. Applicants who submit Forms 1, 4, and 5 are identified as trusts, legal entities, governmental entities, FFLs and individuals. Further, as some commenters noted, the NPRM did not reflect any increase or decrease in the

number of individuals (natural persons), government entities, or FFLs who submitted Form 1, 4, or 5 applications for CY 2000 or 2009 because the NPRM in part was a response to inquiries on legal entities as identified in the petition from NFATCA. The NPRM in Table A does reflect a breakdown of the type of forms received by corresponding categories in order to compare the costs to those applicants who are currently required to submit fingerprints, photographs, and CLEO certifications with the costs reflected in the final rule that will require each responsible persons of a trust or legal entity to submit the same personal information to ATF before a trust or legal entity is allowed to make or have transferred to it an NFA firearm.

Some comments noted a possible discrepancy between ATF’s 2013 Statistical Update and Table A of the 2012 NPRM. The difference appears to be attributable to the fact that the NPRM counted the number of applications received in CY 2012, whereas the Statistical Update counted the number of firearms processed in CY 2012. ATF processed fewer Forms 1 and 4 than it received in CY 2012, which is why there are fewer firearms processed than applications received in those categories. The 170,561 number used in relation to Form 5 in ATF’s 2013 Statistical Update reflects the total number of firearms processed on Form 5 applications for CY 2012 from all applicants to make or transfer firearms, *i.e.*, trusts, individuals, government entities, etc. The total does not reflect an actual number of separate and distinct legal entities or “non-legal entities”; however, the NFRTR contains each registered NFA firearm by serial number. As an example, the NFA Branch may receive one Form 5 from a transferor (FFL) to transfer 20–40 NFA firearms at one time to a large governmental entity, *i.e.*, a police department, at one time. Each individual firearm that is transferred is counted. See section VI.A.2 for additional details about the numbers of persons who submit ATF Forms 1, 4, and 5.

c. Alternative Approach to Legal Entities

Comments Received

Several commenters stated that ATF’s “one-size-fits-all solution” failed to consider that trusts and legal entities vary widely and differ in purposes and structure. These commenters asserted that ATF should engage in a proactive assessment of each trust and legal entity, first reviewing the

documentation establishing each trust or legal entity and determine whether the creators and operators of a particular trust or legal entity have taken appropriate safeguards to prevent prohibited persons from using the trust or legal entity to acquire NFA firearms. If ATF finds that the particular trust or legal entity did not take appropriate safeguards, only then should ATF subject that trust or legal entity to additional scrutiny and impose default requirements such as “specially designed provisions addressing firearms issues.”

Another commenter recommended excluding specific trust roles from the “responsible person” definition, including successor trustees, beneficiaries, and contingent beneficiaries and that successor trustees should be expressly excluded until they become a trustee. Another commenter described the types of individuals who are generally trust beneficiaries (*e.g.*, children), which, although not specifically stated by the commenter, leads one to the conclusion that beneficiaries should not be deemed responsible persons.

Some commenters recommended exemptions or clarifications for trust members and executors. For instance, a commenter suggested exempting members of the trust that are related by lawful marriage and adoption, and through the commonplace definitions of family. Another commenter suggested that if ATF removes the option for a trust that ATF “amend the classification of individual to include immediate family” as he would “love to pass down [his] NFA items to [his] children.” Another commenter suggested clarifying wording to allow the executor or an estate temporary possession and that would not be considered a transfer, which according to the commenter is much needed for those with trusts.

Another commenter suggested requiring that trust members include their Social Security numbers when submitting a Form 1 or Form 4. In addition, when a new member is added to a trust, the trust must include that new member’s Social Security number when a new Form 1 or Form 4 is submitted.

Another commenter believes that only the main person in the trust should be held responsible for the others named in the trust. This same commenter also supported doing a background check on the main person in the trust when the trust is formed but was against having to recheck background checks every single time they get an NFA item. Another commenter suggested only requiring photographs and fingerprints

for the settlor/grantor of the trust. This commenter stated that the settlor/grantor is the person who completes the Form 4473, undergoes the background check at the time of transfer, and is ultimately responsible for how the trust items are disposed of and used.

A few commenters suggested other alternative processes for legal entities. A commenter suggested that ATF automate Form 1 and Form 4 transactions to tie them into the Form 4473 background check process, and that all listed trustees or legal entities be included in this process. Another commenter suggested that if the issue is with trusts and having all trust members submit their information to ATF, that ATF create a new FFL classification and follow the “well established and functioning process” of the FFL system. Another commenter suggested that ATF could achieve its goals through establishing an NFA equivalent of U.S. Customs and Border Protection’s Global Entry System. Such a system would enable ATF to perform a “single extensive” background check on each trust member and would simplify background checks for future trust purchases.

Another commenter suggested that ATF allow corporations or trusts to file the necessary information separately, and not be included in the Form 1 or Form 4 submission. The legal entity could then electronically file (e-file) the tax stamp request. Another commenter suggested that, for any NFA item that a trust or legal entity purchases, the transaction include either a NICS check or the presentation of a State-issued carry permit to complete a Form 4473.

Another commenter recommended that for trust applications, ATF accept the Affidavit of Trust instead of requiring the full trust document be submitted. This commenter contended that the full trust document is not relevant for firearm approval, and would lessen the paperwork for the applicant and improve the processing times and reduce the burden for ATF. Another commenter asked that ATF consider requiring members of trusts to be issued a license similar to the process for a concealed carry weapon license.

Another commenter suggested that ATF permit trusts, partnerships, and other corporate entities to transfer any NFA items to an individual on a tax-free basis for a one year period.

Department Response

The Department is aware that there are differences in purpose and structure among various trusts and legal entities; these differences, however, do not provide an appropriate basis to apply

different standards when applying the provisions of the NFA.

The Department rejects the suggestion that it review the documentation establishing each trust or legal entity and determine whether the creators and operators of that trust or legal entity took appropriate safeguards to prevent prohibited persons from using the trust or legal entity to acquire NFA firearms. The Department believes that it is more efficient and effective to ensure, at a minimum, that all trusts and legal entities do not have any responsible persons who are prohibited from possessing NFA firearms. The Department believes that it is the responsibility of those trusts and legal entities to take all other appropriate measures to ensure that they comply with State and Federal law. Additionally, requiring that the Department determine whether trusts and legal entities had sufficient safeguards in place to prevent NFA firearms from coming into the possession of prohibited persons would be costly and time consuming.

The Department does not agree with the suggestion that it should require only the acting trustee to submit fingerprints and photographs and receive a CLEO signature. Depending on the terms of the trust, additional people beyond the acting trustee may have the power and authority, directly or indirectly, to direct the management and policies of the entity insofar as they pertain to firearms.

The Department also does not agree with performing the background check at the time of the NFA transfer, as this would necessarily take place after the application is approved. Such a process is not consistent with the statutory requirements of section 5812(a) (providing that applications shall be denied if the transfer, receipt, or possession of the firearm would place the transferee in violation of the law) and section 5822 (providing that applications shall be denied if the making or possession of the firearm would place the person making the firearm in violation of law). Prior to approving the application, ATF must verify that the person is not prohibited from making, receiving, or possessing the firearm. This cannot be accomplished by having the FFL conduct the background check at the time of the transfer. See section IV.C.4 for responses relating to the definition of “responsible persons.”

The Department rejects the suggestion that it exempt family members from the definition of “responsible persons” as these are the individuals most likely to be named as grantors, trustees, or

beneficiaries in the trust, and family members may be prohibited persons. However, the Department agrees that certain individuals associated with trusts should not generally be considered responsible persons, including beneficiaries. As previously stated, the final rule includes an amended definition of responsible person to make clear that beneficiaries and certain other individuals typically fall outside the definition.

The Department has chosen not to require Social Security numbers on the Form 5320.23 for responsible persons, nor on Forms 1, 4, and 5. The Department believes such information is not necessary to be included on these forms because the information is already requested on the FBI Form FD-258 (fingerprint card) used for conducting the necessary background checks.

The Department rejects the suggestion that it only require the Affidavit of Trust to verify that an applicant is a genuine trust. That document does not contain all the information necessary to verify that it is a valid trust and may not contain all the information necessary to verify who is a responsible person for the trust.

Regarding alternate means of conducting background checks, the Department believes that using NICS in conjunction with a fingerprint-based background check provides the best option. The NICS has access to several Federal databases that contain information relevant to determining whether a person is prohibited from possessing a firearm, and since its inception has identified over two million prohibited persons attempting to purchase firearms and denied transfers to those individuals. Additionally, the fingerprint-based background check may identify a disqualifying criminal record under another name.

The transfer tax is fixed by statute, *see* 26 U.S.C. 5811(a), and ATF does not have the authority to waive transfer taxes except in very limited circumstances not applicable to the types of transfers commenters wish to see exempted.

4. Definition of “Responsible Person”

a. Ambiguous and Poorly Reasoned Definition

i. Definition Is Overly Broad and Includes, by Title, Many Individuals Associated With Trusts and Legal Entities That May Have No Power or Authority

Comments Received

A few commenters stated that the interpretation of the definition of

responsible person could mean that any person who has possession of a firearm could be required to get CLEO certification. The commenters also stated that “nowhere in the law is every member of an organization held accountable for every action of the organization.” A few other commenters stated that every employee of an FFL is not required to be listed as a responsible person on the license, so there is no reason to require everyone associated with a legal entity to be designated as a responsible person. Two other commenters stated that by requiring fingerprints, photographs, and CLEO signature for each responsible person, it increases the burden to both applicants and CLEOs, and could become an administrative nightmare. One of the two commenters also asked, since ATF anticipates a requirement for notification in changes of responsible persons, “[w]ill trustees be aware of such a requirement and practically be able to comply?” Another commenter, an attorney, stated that every corporation has shareholders and that extending the definition of responsible person to include all shareholders defeats the purpose of the corporation and “overrides well developed statutory case law relating to corporate governance and property ownership rights.” The commenter also stated that the proposed rule eliminates the advantages of corporations and their ability to exercise their right to own property. Another commenter asked whether beneficiaries who are under the age of 21 years old, who may live in different States, and who do not have any authority to possess, transport, or acquire NFA firearms, would be required to obtain photographs, fingerprints, and the CLEO signature. Another commenter, a licensed NFA dealer, stated that given the broad definition of responsible person as related to trusts, and the possible criminal consequence of non-compliance, entities have no choice but to err on the side of over-inclusion, which places a burden on both the entity and ATF. The commenter suggested that there might be hundreds or thousands of responsible persons for a single entity, and gave the example of a corporation with headquarters in Maryland with over 4000 employees located in 38 States. A few commenters, including a licensed manufacturer, stated that the definition is too broad and exceeds both what is reasonable and the definition of responsible person currently used for FFLs.

Other commenters noted that the definition for responsible person

appears to extend to beneficiaries of a trust holding NFA firearms, and even to successor trustees, remainder beneficiaries, and trust protectors. The commenter noted, however, that in a typical trust document, the trustee is the only person with legal title to any items in such a trust, and that the “beneficial interest” of the beneficiary does not vest until the time specified in the trust.

Another commenter stated that the proposed definition for responsible person exceeds the definition of responsible person used for handling explosives. This commenter asked if ATF intended to extend the CLEO’s “veto” to explosives workers. Another commenter stated that the proposed definition was very vague on which “entity” could decide who would be a responsible person. This commenter expressed concern that any government agency could be capable of making that decision. Another commenter recognized the need to define responsible person; however, this commenter expressed concern that if the government alone defined the term that it might allow them more power over which persons could exercise their right to bear arms.

Department Response

The Department has reviewed the definition in the proposed rule and amended it to address concerns about its breadth while maintaining the important objective of ensuring background checks for relevant parties associated with a trust or legal entity. As in the definition of “responsible person” in the NPRM, the definition of “responsible person” in this final rule applies to those who possess the power or authority to direct the management and policies of an entity insofar as they pertain to firearms. This addresses commenters’ concerns that shareholders and others who are associated with an entity are not always in a position to possess the entity’s firearms. It should be noted that if an individual has the power or authority to direct the management and policies for a legal entity, that individual would fall within the definition of “responsible person.” Trusts differ from legal entities in that those possessing the trust property—trustees—are also the individuals who possess the power and authority to direct the management and policies of the trust insofar as they pertain to trust property, including firearms.⁹ As it applies to trusts, the definition of “responsible person” in this final rule

⁹ Restatement (Third) of Trusts § 3 (2003) (defining “trustee” as “the person who holds property in trust”).

serves the dual purpose of requiring these individuals to undergo background checks while also addressing the commenters' concerns about unnecessarily requiring background checks of individuals who would not, or could not, possess the firearms. Depending on how the trust is set up, the identity of trust beneficiaries may remain uncertain for a period of time or may include individuals who will not possess the firearms. Therefore, the Department believes that it is not necessary to positively identify a beneficiary as a "responsible person" within the definition.¹⁰ However, under the amended definition, beneficiaries and other individuals will be considered responsible persons if they meet the criteria for designation as responsible persons because of their capacity to control the management or disposition of a relevant firearm on behalf of a trust or legal entity.

The Department believes that the definition of "responsible person" in this final rule appropriately addresses concerns that the necessary individuals receive background checks before receiving NFA firearms, and that the potentially large number of individuals who are merely associated with the trust or legal entity, but will not possess firearms, are not required to submit applications. Further, the Department notes that under 18 U.S.C. 922(g), it remains unlawful for a prohibited person to possess firearms. Similarly, under section 922(d) it remains unlawful for any person to sell or deliver a firearm to any prohibited person if that person knows or has reasonable cause to believe the person is prohibited. For responses to comments on CLEO certification see section IV.C.1. As noted previously, ATF Forms 1, 4, and 5 will be updated to reflect the definition of responsible persons in the final rule.

The Department does not agree that including shareholders in the definition of "responsible person" defeats the purpose of a corporation, as a shareholder will only be a responsible person if the shareholder possesses, directly or indirectly, the power or authority to direct the management and policies of the entity insofar as they pertain to firearms.

ii. Beneficiaries Are Often Minors or Not Yet Born, Presenting a Challenge to Proposal That Beneficiaries Submit Fingerprints, Photographs and a CLEO Certification

Comments Received

Many commenters stated in a form letter that the proposed rule interferes with the lawful use of trusts for estate planning. These same commenters stated that the overly broad definition of a responsible person means contemplating the "absurd possibility of fingerprinting, photographing, and securing CLEO sign-offs for unborn children." Another commenter, who holds a trust, stated that the proposed rule places a hardship on his family and trust by possibly requiring fingerprints of his elderly grandmother and his two-year-old and five-year-old children. Another commenter, a trust holder, asked how the definition of responsible persons applies to minor beneficiaries in a trust, and asked if ATF is proposing the fingerprinting and photographing of minor children who lawfully cannot possess a firearm. Other commenters also asked about the need for CLEO certification, as well as fingerprints and photographs, for children and minors. At least one commenter specifically argued that his CLEO would not provide a certification for beneficiaries. Many commenters questioned the practicality of requiring fingerprints and photographs for minors, and wondered how this would be done, in particular on babies and young children. Many commenters stated that a background check for beneficiaries is more appropriately conducted at the time an item in the NFA trust is actually transferred to them from the trust. Another commenter questioned whether doing a background check on a minor beneficiary would have any benefit, and asked if a background check would show the chances of committing a felony or domestic violence in the future. Another commenter asked if the requirements for photographs, fingerprints, and CLEO certification do not apply to minors, would the minor upon turning 18 need to submit these required items?

Department Response

As noted, the Department agrees that beneficiaries should not generally be included in the definition of responsible person. The definition of responsible person has been amended and no longer includes beneficiaries as a typical example of a "responsible person."

iii. Challenge in Determining Who Qualifies as a Responsible Person

Comments Received

Many commenters, most of whom have trusts, and an FFL, noted in a form letter that the Department's definition of responsible persons is different for different types of entities. They stated that based on the Department's general definition of a responsible person, and the complexity of trust laws, they would need to speak to a lawyer to determine who in their trust would be considered a responsible person. Ninety-eight of the same commenters, all of whom have trusts, also stated that their trust includes beneficiaries who are under 18 years old and that they would need to speak to a lawyer to get a clear answer about whether they fall under the responsible person definition.

Other commenters asked various questions concerning companies that own NFA firearms and how they are to determine who counts as responsible persons. A commenter asked if such companies would have to "photograph, fingerprint, and complete a favorable background check" on each individual before accepting that individual as an employee or partner. This commenter also asked if a stockholder would be viewed as having ownership of the corporate assets such that they would need to be fingerprinted. Another commenter stated that the proposed rule left many unanswered questions concerning its definition of a responsible person, including whether and when minor trust beneficiaries would qualify.

Department Response

The final rule incorporates a new definition of "responsible person" that addresses many of the questions and concerns raised by these comments, including the concerns about trust beneficiaries who are minors. That said, the Department agrees that in some cases persons may need to seek legal counsel to determine who is a responsible person for purposes of this rule. The Department notes, however, that many of the trust applications it currently reviews were prepared with the advice or assistance of a lawyer. As a result, it is not clear whether the overall need for legal counsel will increase or decrease because of this rule. The Department anticipates, for example, that persons who have used a trust in the past to avoid the CLEO certification requirement may well choose to acquire future NFA firearms as individuals once the CLEO certification requirement has been modified to a notification requirement,

¹⁰ See *id.* (defining beneficiary as "a person for whose benefit property is held in trust").

thereby diminishing the overall need for legal counsel among makers and transferees.

b. Proof of Citizenship for Responsible Persons

Comments Received

Several hundred commenters objected to the proposed requirement that any responsible person of a legal entity prove citizenship as part of submitting an application to transfer or possess NFA items. The bases for this objection varied from an ideological opposition to ever having to prove citizenship to an observation that not all aliens are prohibited from possessing firearms under Federal law. Other commenters approved of the requirement to demonstrate citizenship, even though they were otherwise opposed to the rule.

Department Response

Under Federal law (18 U.S.C. 922(g)(5)(B)) it is generally unlawful for any alien admitted to the United States under a nonimmigrant visa to ship or transport in interstate or foreign commerce, or possess in or affecting commerce, any firearm or ammunition, or to receive any firearm or ammunition that has been shipped or transported in interstate or foreign commerce. This prohibition extends to NFA firearms. Federal law (18 U.S.C. 922(y)(2)) also provides certain exceptions to this prohibition. As a result, before ATF can approve an NFA registration request it must determine if the applicant or transferee is a U.S. citizen, and if the applicant or transferee is not a citizen, whether the applicant or transferee falls within the prohibition or exceptions described above. This requirement is not unique to NFA transfers. For example, the ATF Form 4473 requires the transferee or buyer to respond to questions to determine if the transferee or buyer is an alien admitted under a nonimmigrant visa, and if so, whether the transferee or buyer qualifies for an exception to the section 922(g)(5)(B) prohibition. On the ATF Form 7 (5310.12), *Application for Federal Firearms License*, the applicant is required to provide the applicant's country of citizenship and nonimmigrant aliens are required to certify compliance with 18 U.S.C. 922(g)(5)(B). This rule simply applies the same requirement to NFA registration documents in order to assure compliance with Federal law.

c. General Applicability Questions

Comments Received

Many commenters stated that the proposed rule gave rise to many unanswered questions, especially about the operation of the CLEO certification requirement in jurisdictions where CLEOs were reluctant or refused to provide the certification, regardless of the applicant's background. Another commenter asked how the rule would apply when, following the transfer, some or all of the responsible persons are replaced, and whether the answer would be different based upon the type of legal entity involved.

Department Response

As indicated in section IV.C.1 the Department has replaced the CLEO certification requirement with a CLEO notification requirement. This change renders moot many of the hypothetical questions submitted by commenters, including those that focus on jurisdictions in which obtaining CLEO certification is hindered for "political" reasons.

With respect to issues raised by the prospect of a post-transfer change in responsible parties, this rule does not require that ATF be notified of such changes. In the NPRM, the Department indicated that it was considering a requirement that new responsible persons submit Form 5320.23 within 30 days of a change in responsible persons at a trust or legal entity. After receiving several public comments on this issue, the Department is not requiring in this final rule that new responsible persons submit a Form 5320.23 within 30 days of any change in responsible persons.

d. Alternatives to Definition

Comments Received

A number of commenters took issue with the proposed definition of "responsible person." Some found it vague and overly broad. Others argued for a more finite definition, with some suggesting specific alternative definitions. Quite a few argued that, depending on the nature of the trust or legal entity, and the roles performed by persons associated with the trust or legal entity, ATF should permit designation of a sole or primary responsible person, thereby minimizing the burden associated with processing the application.

Department Response

The Department acknowledges that whether an individual meets the definition of a responsible person will depend on the structure of the trust or legal entity acquiring the firearm and

who within that structure has the power and authority to direct the management or policy of the trust or legal entity pertaining to firearms. The final rule provides guidance to persons seeking to acquire an NFA firearm for a trust or legal entity about who qualifies as a responsible person under most routine circumstances. For example, under the terms of a trust, if a minor child does not have the power and authority to direct the management and policy of the trust, and is not authorized under any trust instrument, or under State law, to receive, possess, ship, transport, deliver, transfer, or otherwise dispose of a firearm for, or on behalf of, the trust, the minor child would not meet the definition of a responsible person. Additionally, beneficiaries do not appear in the non-exclusive list of possible "responsible persons" in the definition and will not be considered responsible persons unless they meet the definition set out in the final rule.

The Department agrees that trusts and legal entities may have complex structures. However it is the responsibility of each trust, association, partnership, LLC, or corporation to determine which individuals within its structure are responsible persons under this rule. The Department does not agree with comments limiting the responsible person to only one individual per trust or legal entity because multiple individuals may have the power and authority to make decisions for the trust or legal entity, or otherwise meet the definition of "responsible person." This includes co-trustees, members of the board of directors, or controlling members of an LLC.

The Department has amended the originally proposed definition of "responsible person," *see supra* section IV.C.4.a, and the Department believes those revisions provide the clarity that many of the commenters requested, albeit without accepting some of their specific suggestions.

The Department further believes that it is the duty of individuals having the power or authority to direct the management and policies of the trust or legal entity to ensure that prohibited persons do not have access to firearms.

D. Comments on Proposed Rule's Statutory and Executive Order Reviews

1. Executive Order 12866

Several commenters argued that the proposed rule violated or failed to comply with Executive Order 12866, an order which a few of these commenters noted was "revived by" Executive Order 13497. In general, these commenters took issue with ATF's cost-benefit

analysis of the rule, finding that analysis to be lacking for a host of reasons including that ATF (1) failed to identify the existence of a problem the proposed rule was intended to solve; (2) failed to credibly assess costs and benefits of the proposed rule or consider more cost effective alternatives; (3) failed to properly estimate the full economic costs; (4) failed to properly weigh those costs against the expected benefits; (5) relied upon “spurious and anecdotal incidents” and “speculative logic” to justify the proposed rule; and, (6) by failing to conduct a proper cost-benefit analysis, improperly considered the rule not to be a significant regulatory action. Several commenters requested that ATF conduct an “in-depth,” “detailed” financial impact study to assess the rule’s costs and “actual, tangible benefits.”

In addition, a few commenters argued that, in particular, the rule’s extension of the CLEO certification requirement violated sections 1(b)(9) and (11) of Executive Order 12866 by failing to adopt the least burdensome effective alternative.

A commenter supported the estimates in the proposed rule, and concluded that the public safety benefits—expanding background checks to legal entities and ensuring fewer firearms would be possessed by prohibited persons—were “massive” and far outweighed any minor monetary or time costs to potential makers or acquirers of NFA firearms.

Another commenter stated that the proposed regulations extending the CLEO certification requirements would increase the processing workload for the NFA Branch by nine times, and that this would further add to the NFA Branch’s backlog of one year. The commenter thus concluded that wait times would approach a decade.

Department Response

The Department believes it has thoroughly considered the costs and benefits of the rule. Commenters have not provided the Department with data or information that would alter or refine the Department’s estimates of the rule’s costs and benefits. The Department has done its best to consider all relevant costs and benefits traceable to the rule, including, among other things, the benefits to public safety that will stem from the rule; the increased operational cost for the Government and industry members; the increased cost associated with additional fingerprint cards and photographs for responsible persons; and the increased labor cost associated with the time it takes for applicants and industry members to complete the

required forms. Having considered all of the reasonably foreseeable costs and benefits, the Department has determined that the benefits of ensuring NFA weapons are less easily obtained by persons prohibited from possessing them outweighs the cost of implementing the rule.

The Department acknowledges the commenters’ concerns with the Department’s assessment of costs and benefits of the proposed rule in the NPRM. The final rule reflects that after careful consideration of all comments, the Department has elected to eliminate the CLEO certification and replace it with a CLEO notification that will lessen the burden to CLEOs and applicants for registration. See section IV.C.1 for the in-depth discussion of the Department’s decision to adopt a CLEO notification requirement in lieu of CLEO certification.

This final rule also identifies important benefits to public safety and security that will be achieved by the rule. For example, by conducting background checks on persons who meet the new definition of a “responsible person,” ATF will be better able to ensure that responsible persons within trusts and legal entities are not prohibited from possessing NFA firearms. Presently, only individuals are required to submit fingerprint cards and undergo background checks to ensure that they are allowed to possess and receive an NFA firearm.

Further, the CLEO notification will ensure that CLEOs are aware of NFA firearm acquisitions in their jurisdictions and have an opportunity to provide input to ATF, but will reduce costs because they will no longer be responsible for signing certifications or conducting background checks for individual applicants. This final rule will require all applicants and responsible persons within trusts and legal entities to notify their local CLEO by either forwarding a completed copy of Form 1, 4, or 5, or a completed copy of Form 5320.23, if applicable. ATF estimates that the time for a CLEO to review the notification is 15 minutes per applicant/responsible person. Because not all responsible persons within a trust or legal entity may live in the same location as the applicant trust or legal entity, a different CLEO may review the ATF Form 1, 4, or 5 from the CLEO that reviews a Form 5320.23 for each responsible person. However, if a CLEO determines that there is any reason why an applicant or transferee should not have an NFA firearm, the CLEO should notify ATF. While there will be additional costs to ATF, the Department

has determined that the benefits will significantly outweigh any costs.

The NPRM identified a few instances when a prohibited person nearly erroneously acquired an NFA firearm; however, the transaction did not occur because the responsible person within the particular trust or legal entity had undergone a background check. Those examples show that there is a tangible risk of a prohibited person acquiring an NFA firearm through a trust or legal entity. The Department has not relied on those instances to conclude that there are presently a large number of erroneous transfers. However, the fact that some individuals have been prevented from obtaining firearms supports the Department’s position that a risk exists that should be addressed.

The Department stands by its determination that this rule will neither have a significant annual effect on the economy of \$100 million or more, nor adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities.

The Department recognizes that the final rule will affect processing times and is implementing processes to keep the impact to a minimum.

2. Executive Order 13132

A commenter quoted text that ATF used in section IV.B of the NPRM (78 FR at 55023), from which the Attorney General concluded that the NRPM did not have sufficient federalism implications to warrant ATF’s preparing a federalism summary impact statement, and accordingly complied with section 6 of Executive Order 13132 (Federalism). This commenter noted that ATF acknowledged that the proposed expansion of the CLEO certification requirement to all responsible persons of a legal entity had the potential for increased utilization of State and local agencies’ resources for processing CLEO certifications. This commenter questioned ATF’s statement that such utilization would be “voluntary” and was “expected to be minimal.” This commenter stated ATF needs to further clarify this “voluntary” utilization, and perform proper cost-benefit analyses to clarify its “claim” of minimal impact, or else abandon its proposal to extend the CLEO certification requirement to responsible persons of a legal entity.

Department Response

After considering the objections of numerous commenters concerning the extension of the CLEO certification

requirement to trusts and legal entities, the Department has decided not to expand the CLEO certification requirement to include responsible persons of trusts and legal entities. Instead, the Department has elected to remove the CLEO certification requirement entirely—for both responsible persons and individuals—and adopt CLEO notification in its place. This decision will lessen the burden on State and local agencies' resources in preparation and review of applications for responsible persons and individuals. Regardless of whether the rule might have required a federalism summary impact statement before, the decision to eliminate the CLEO certification requirement means that there is no need for one now. Because CLEOs will continue to be informed about the NFA firearms present within their jurisdictions, the Department also believes that this change will not materially degrade public safety.

The Department continues to maintain that the proposed rule did not have sufficient federalism implications to warrant a federalism summary impact statement. The Department noted in the proposed rule that the impact on resources used by State and local agencies would be "voluntary" and was "expected to be minimal." As many commenters have observed, CLEOs voluntarily decide to sign or not to sign off on any particular application, and would have continued to be able to do so under the proposed rule.

3. Regulatory Flexibility Act

Numerous commenters stated that ATF did not comply with the Regulatory Flexibility Act (RFA), 5 U.S.C. 601–612. According to most of these commenters, there was no indication in the proposed rule that ATF adequately considered the needs of small businesses and the costs that were likely to be associated with the rule, especially the costs imposed on small businesses directly and indirectly associated with the manufacture, distribution, purchase, and use of NFA firearms. Numerous commenters suggested that the proposed rule would dramatically increase the cost of acquiring NFA firearms, especially silencers. They also suggested that the proposed rule would likely force a number of small businesses out of business, resulting in job loss and economic turmoil. Many of these commenters focused on the proposed requirement that CLEO certification be obtained for all acquisitions, regardless of the nature of the trust or legal entity, but some also identified the burden that would be imposed by requiring

responsible persons for trusts and legal entities to have background checks run as part of the acquisition process. In addition, many commenters argued that ATF's estimated increased costs to legal entities were too low, as ATF estimated the number of responsible persons as two, a figure commenters regarded as an underestimate. Further, a commenter requested that ATF clarify the research and methodology it used to determine that the proposed rule complied with the RFA and perform further research, analyses, and clarification before implementing the final rule.

A few commenters explained that under the RFA and (as amended by) SBREFA, when "promulgating a rule, an agency must perform an analysis of the impact of the rule on small businesses, or certify, with support, that the regulation will not have a significant economic impact on them." *Nat'l Mining Assoc. v. Mine Safety and Health Admin.*, 512 F.3d 696, 701 (D.C. Cir. 2008). According to these commenters, the regulatory flexibility analysis must "describe the impact of the proposed rule on small entities" and, among other things, must contain (1) "a description of the reasons why action by the agency is being considered;" (2) "a succinct statement of the objectives of, and legal basis for, the proposed rule;" (3) "a description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply;" and (4) "identification, to the extent practicable, of all relevant Federal rules which may duplicate, overlap or conflict with the proposed rule." 5 U.S.C. 603. The commenters continued that the "analysis must also include discussion of alternatives to the proposed rule," and, although an agency head may certify that the rule will not "have a significant economic impact on a substantial number of small entities," such certification must be supported by "a statement providing the factual basis for such certification." 5 U.S.C. 605. Using this legal framework, these commenters argued that ATF did not follow its obligations under the RFA.

Another commenter stated that ATF should clarify the research and methodology it used to determine that the NPRM complied with RFA, and that further research, analyses, and clarification is required regarding the proposed rule's economic impact. Another commenter disagreed with ATF's estimated cost increase per legal entity being only \$293.93, and believed this was far too low. The commenter attributed that result to ATF underestimating the average number of responsible persons as two.

Department Response

The Department believes it has thoroughly considered whether the rule will have a significant impact on small businesses and has reasonably concluded that it will not have such an impact. Commenters have pointed to no flaws in the Department's analysis that would call into question the reasonableness of its conclusion that the rule will minimally impact small businesses. Commenters have identified only two specific issues with the Department's analysis—namely, (1) that the Department underestimated the average number of responsible persons for trusts and legal entities, and (2) that the Department failed to consider potential secondary market impacts on small businesses that sell NFA firearms to trusts and legal entities covered by the rule. As to the first objection, the Department disagrees that its estimate of two responsible persons per entity was unreasonable. As to the second, the Department believes that any secondary market impacts will be negligible. The Department thus rejects the suggestion that it failed to give careful consideration to the full effect the proposed rule would have had on small businesses. In any event, this final rule has been revised to eliminate or ameliorate many of the concerns reflected in the comments about the RFA, and the rule remains fully compliant with that Act.

This final rule primarily affects trusts and legal entities that seek to make or acquire NFA firearms and are not making or acquiring them as qualified FFLs. The Department believes that the increased cost of implementing the regulations will not be significant on trusts or legal entities. ATF has estimated that the cost of implementing the regulation will increase the cost for 115,829 trusts and legal entities with an average of two responsible persons by \$25,333,317 (identification costs for background checks: \$23,846,679; CLEO notification costs: \$1,487,244) per year.¹¹ Accordingly, the estimated cost increase per trust or legal entity is \$218.71 (cost of increase (\$25,333,317) ÷ number of trusts and legal entities (115,829)).

In reaching this estimate the Department was quite specific in the proposed rule in allowing 10 minutes for each responsible person to complete Form 5320.23 and considered this a reasonable amount of time for

¹¹ This total does not include the cost of agency processing time for notification, but is instead based upon the costs to entities for notification. Based on 115,829 trusts and legal entities, the notification cost is \$1,487,244 (\$5,330,450 less \$3,843,206).

responsible persons at any business, large or small, to allocate for compliance with regulatory requirements. However, after further consideration, the Department has adjusted this time estimate to 15 minutes. See section IV.E.1.f for additional discussion. Similarly, ATF projected that it would take only 50 minutes to procure needed photographs—a generous allocation considering the range of photo-taking technology available in this era of mobile and virtual technologies. See also section IV.C.1 for details concerning the shift from CLEO certification requirements to CLEO notification requirements.

By developing Table B(1)—Cost Estimates of the Time to Comply with the Proposed Rule's Requirements and Table B(2)—Cost Estimates of Procuring Photographs, Fingerprints, and Documentation, the Department complied with the requirement that it analyze the impact of the rule on small businesses and documented the anticipated effect of the regulation.

In section IV.A.2 of the proposed rule, ATF reported that “[i]n calendar year (CY) 2012, ATF received 84,435 applications that were either ATF Forms 1, 4, or 5. Of these, 40,700 applications were for unlicensed trusts or legal entities (e.g., corporations, companies) to make or receive an NFA firearm; 29,448 were for individuals to make or receive an NFA firearm; and 14,287 were for government agencies or qualified Federal firearms licensees (Gov/FFLs) to make or receive an NFA firearm.” 78 FR at 55020–21. This data taken from actual applications received provided accurate data as to the number of trusts and legal entities to which the rule applies. Further, the Department believes that an average of two responsible persons per trust or legal entity is appropriate, especially in light of modifications to the responsible person definition in the final rule. See *infra* section IV.E.1.a. As explained there, ATF's estimate that each trust or legal entity has an average of two responsible persons is based on ATF's review of 454 randomly selected applications for corporations, LLCs, and trusts processed during CY 2014.

The Department disagrees with the comments indicating that the proposed rule would impose substantial recordkeeping obligations and increase the costs to ensure regulatory compliance, thereby resulting in small businesses being driven from the field. This final rule incorporates information required on ATF Form 5330.20 into the existing Forms 1, 4, and 5 that will reduce the burden upon the applicant or transferee by eliminating an additional

form to be completed and filed. The current estimated time to complete the form is 3 minutes. Because the information requested on the forms is the same, savings will result from the applicant not having to attach a separate form. Further, these forms are not kept by the FFL and therefore will result in no increase in small business recordkeeping obligations.

Several commenters argued that ATF's RFA statement considered only the NFA purchasers and their estimated additional costs of compliance, but ignored the proposed rule's significant effect on manufacturers and distributors/sellers, and the fact that business' customers would have a difficult time obtaining certification via a CLEO, therefore hurting sales. The Department notes again that it has changed the certification requirement to a notification requirement. See *supra* section IV.C.1. Further, the Department notes that the rule's primary focus relates to those responsible persons who have authority to direct firearms policy. The Department believes that because the rule is unlikely to significantly burden trusts and legal entities that wish to acquire NFA firearms, small businesses that sell or distribute NFA firearms and components to such trusts or legal entities will see a negligible or non-existent impact on their sales.

Finally, the Department emphasizes that this rule will primarily affect trusts and legal entities that are seeking to make or acquire NFA firearms and are not making or acquiring them as qualified FFLs. Many commenters have observed that the increased use of trusts during the last decade has been in response to increased CLEO refusals to provide the certification required for individual NFA acquisition applications. If that is true, the Department's revision of that requirement can be expected to dramatically decrease the use of trusts to acquire NFA firearms in the future, meaning that the rule's impact on small businesses may be even less than it estimates. In any event, the increased cost of implementing the rule will not be significant on trusts or legal entities, even if the number of trusts and legal entities remains the same. The Department has estimated that the cost of implementing the regulation will increase the cost for 115,829 entities with an average of 2 responsible persons by \$25,333,317 per year (identification costs: \$23,846,679; notification costs: \$1,487,244).¹² Accordingly, the

estimated cost increase per trust or legal entity is \$218.71 (cost of increase (\$25,333,317) ÷ number of trusts and legal entities (115,829)).

4. Small Business Regulatory Enforcement Fairness Act of 1996

Although the proposed rule stated that it did not constitute a “major rule” as defined by section 251 of the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), 5 U.S.C. 804, several commenters disagreed. In addition, while the proposal stated that it would not result in “an annual effect on the economy of \$100 million or more; a major increase in costs or prices; or significant adverse effect on . . . employment . . .,” 78 FR at 55024, several commenters disagreed with these assertions as well. One commenter requested that ATF clarify the research and methodology it used to determine that the proposed rule complied with SBREFA.

One commenter asserted that extending the CLEO certification requirement to responsible persons of trusts and legal entities would effectively destroy the market for NFA firearms because “99% of ‘legal entity’ transfers” stemmed from the CLEO's refusal to sign an individual application. According to the commenter, the proposed rule would thus eliminate “approximately \$54 million dollars of tax generating commerce,” with a corresponding impact on jobs, with zero value gained in terms of public safety, and, thus would constitute a “major rule” under SBREFA. Other commenters made similar points concerning the proposed rule's impact under the assumption that CLEO certification would be a larger hindrance to conducting commerce in NFA firearms. Several commenters noted that this would also collaterally impact the Federal fiscal budget through a decreased payment of the Special Occupational Tax. Another commenter proposed that the economic impact of the proposed rule would have a “chilling” effect on NFA items' sales (especially lower-cost sound suppressors) due to the cost increase incurred by transferees under the proposed rule.

Department Response

The Department maintains that it complied with the SBREFA in the proposed rule. Nonetheless, for this final rule, the Department has reassessed burdens and costs to

¹² This increased cost total does not include the cost of agency processing time for notification. Based on 115,829 trusts and legal entities, the

notification cost is \$1,487,244 (\$5,330,450 less \$3,843,206).

applicants, responsible persons, and CLEOs.

In preparing this final rule, the Department looked at the additional impact on licensed manufacturers, dealers, legal entities, applicants, and responsible persons and determined that the changes would not exceed a threshold greater than \$100 million or more on the economy. The impact on small businesses should remain minimal.

Based upon concerns from commenters that the Department underestimated the number of responsible persons in the NPRM, the Department revisited the definition of “responsible person” and has amended it in this final rule. *See supra* section IV.C.4.a.i. Beneficiaries are no longer specified as typical responsible persons in the definition, though they may still be required to submit to a background check if they otherwise meet the definition of “responsible person.” ATF has also reassessed the number of responsible persons and the number of pages of supporting documentation per legal entity. *See* section IV.E.1.b for the methodology used. This reassessment reflects that the estimated number of responsible persons per trust or legal entity application remains at two, and the number of pages for the supporting documentation is averaged at 16 pages. *See* section IV.E.1.a and IV.E.1.b. *See* section VI.A.3 for additional details about the cost to State and local entities.

As discussed in section IV.C.1, the Department is eliminating the CLEO certification requirement and implementing a CLEO notification requirement; this will lessen the burden to CLEOs. The CLEOs will have the discretion and flexibility to review, manage, and maintain this information in the manner that they believe is most appropriate to the public safety concerns in their respective jurisdictions.

In addressing commenters’ concerns that the CLEO extension requirement could force many FFLs out of business, ATF did not assess the indirect costs to FFLs, such as manufacturers or dealers, but concentrated on the direct costs to applicants, responsible persons and CLEOs, who have the greatest investment in the making or transfer process. However, as stated, CLEO notification will diminish, if not eliminate, the economic impact on small businesses, including FFLs, that CLEO certification may have imposed.

5. Unfunded Mandates Reform Act of 1995

A few commenters expressed concerns that the proposed rule did not

comply with the Unfunded Mandates Reform Act of 1995 (UMRA), with two commenters identifying certain areas that they contended called for additional study and justification by ATF to ensure compliance with UMRA. One commenter stated that the proposal to extend the CLEO certification requirement shifts a “significant regulatory burden” onto State and local agencies, causing them to have to undertake additional expenditures, hire new staff, and engage in additional training. This commenter stated that UMRA (2 U.S.C. 1532) requires that an analysis be performed to determine whether additional government funding is needed for State and local agencies to comply with the mandate. Many other commenters questioned or disagreed with ATF’s statement that the proposed rule did not impose any “unfunded mandates,” again focusing on the proposal to extend the CLEO certification requirement to responsible persons of trusts and legal entities, which, they noted, would significantly burden CLEOs and divert local law enforcement resources from other criminal justice priorities. Numerous commenters referenced the U.S. Supreme Court case, *Printz v. United States*, 521 U.S. 898 (1997), which articulated an “anti-commandeering principle” and held invalid a Federal regulatory regime that mandated that CLEOs perform background checks for handgun transfers. These commenters stated that the proposed rule effectively imposed on CLEOs the burden of conducting background investigations as part of a Federal regulatory regime, in violation of *Printz*. These commenters also reiterated their view that ATF’s estimate of the costs imposed by its proposed rule, especially the costs imposed on CLEOs, were too low, both with respect to the time it would take to perform a certification and the direct costs associated with the process. For example, one commenter calculated that for an average legal entity with four responsible persons, certification would involve four hours of CLEO time, equating to \$123.20 per entity ($4 \times \$30.80 = \123.20). Extrapolating further, this commenter calculated that the total costs to CLEOs around the country would be at least \$5,014,240.

Department Response

The Department acknowledges commenters’ concerns that the proposed extension of the CLEO certification would place additional burdens on CLEOs for processing and reviewing additional responsible persons’ forms, and for taking and reviewing fingerprints. The Department, however,

complied with UMRA in the proposed rule. In any event, for this final rule, the Department reexamined the burdens and costs to CLEOs.

In preparing this final rule, the Department based the costs and expenditures upon direct costs to State and local agencies, licensees, and ATF. While it acknowledges that there may be several indirect costs or resources that may be associated with complying with the rule, the Department believes that the amount would still not be greater than \$100 million or more.

For this final rule, the Department prepared an additional analysis of approved applications in response to several comments that it provided a “low estimate” of the number of responsible persons per applicant, and the number of pages of chartering documents at those entities, which directly affects the time and resources required by the CLEO to review applications. As discussed in section IV.C.1, the Department is eliminating the CLEO certification requirement and replacing it with a CLEO notification requirement that will significantly lessen the burden to CLEOs. The CLEOs will have the flexibility and discretion to review and maintain the information they obtain as a result of this rule in the manner that best enhances public safety in their respective jurisdictions.

Regarding the commenters who referenced *Printz v. United States*, 521 U.S. 898 (1997), the Department notes that current Federal regulations do not require CLEOs to provide a CLEO certification for an applicant, a fact that many commenters pointed out as the primary reason for the proliferation of the use of NFA trusts. Unlike in *Printz*, this final rule imposes no obligations on CLEOs but does provide them with the ability to obtain information that is potentially useful to accomplishing their missions and the opportunity to provide relevant information to ATF. Historically, the CLEO certification was designed to assist in maintaining public safety and was established to gather any information on the local level that might require denial of an application to make or receive an NFA firearm. Prior to the advent of comprehensive criminal history databases, CLEO certification was critically important. That role is less important today, and public safety concerns can still be addressed with CLEO notification without imposing unnecessary burdens upon local CLEOs.

As a result of ATF’s review of public comments received in response to the proposed rule, the Department will remove the CLEO certification and replace it with a notification obligation upon the applicant/transferee, including

responsible persons of a trust or legal entity. This notification will reduce the burden on State and local agencies because notification does not involve signing off on applications. This will also simplify the process for CLEOs as the same criteria will apply to both unlicensed trust, legal entity, and individual applicants/transferees. Finally, ATF will continue to receive fingerprint cards along with applications for the purpose of conducting background checks to ensure that responsible persons of an applicant or transferee are not prohibited from possessing an NFA firearm. ATF will continue to conduct these activities and therefore these activities will impose no additional costs on CLEOs.

Because CLEO notifications will require only those resources that the CLEOs themselves decide to devote to notification management, additional funding to assist State, local, and tribal governments in complying with this rule is unnecessary.

The Department has determined that this rule is not an unfunded mandate because it does not meet the criteria under UMRA. Specifically, it does not result in the expenditure of funds by State, local, and tribal governments, in the aggregate, or by the private sector of \$100 million or more in any one year. See section VI.A.3 for additional details about the Department's estimate of costs to State and local entities.

6. Paperwork Reduction Act

Many commenters stated that the proposed rule, with its proposal to expand the CLEO certification requirement to responsible persons, imposed an increased information collection burden (*i.e.*, additional paperwork) on the public, and violated the Paperwork Reduction Act (PRA). Some commenters mentioned the impact in terms of the PRA generally; others focused on the PRA of 1980 (Pub. L. 96–511, 94 Stat. 2812, codified at 44 U.S.C. 3501–3521) as an Act designed to reduce the “total amount” of the paperwork burden the Federal Government imposes on private businesses and citizens. Others mentioned the PRA of 1995, which confirmed that the authority of the Office of Information and Regulatory Affairs (OIRA) at the Office of Management and Budget (OMB) “extended over not only agency orders to provide information to the government, but also agency orders to provide information to the public.” A few commenters argued that the CLEO certification requirement, regardless of the proposed expansion, places an

“unnecessary burden” of paperwork on the public as there is no “just reason” for CLEO certification given ATF's access to the FBI's national criminal history databases. Others observed that the rule would complicate and perhaps degrade applicants' opportunities to submit their NFA applications by electronic means, thereby increasing the paperwork burden. Some commenters observed, however, that eliminating the CLEO certification requirement for individuals and legal entities, and instead requiring a NICS check with a Form 4473 at the time of physical transfer of the NFA firearm, would enable applicants to e-file all NFA transfer forms, greatly reducing paperwork and streamlining the approval process at ATF. A number of commenters offered additional suggestions designed to increase application processing efficiency and speed; for example, having ATF maintain a database of approved applicants, having ATF permit electronic payments, and reducing the redundancy in ATF's processing system associated with multiple applications.

One commenter suggested further ways to decrease paperwork and reduce the redundancy in ATF's processing system associated with multiple applications submitted by the same person or legal entity. This commenter suggested that ATF consolidate applications from repeat applicants, maintain and use a database of approved applicants, and perform background checks on new applications from the date of the last approval. In this way, the commenter contended, the process would be shortened but maintain its integrity.

Department Response

The Department acknowledges the commenters' concerns that the proposed expansion of the CLEO certification requirement, as well as the CLEO certification requirement for individuals, imposed paperwork burdens on the public and on ATF. The Department also acknowledges that the proposed expansion may have limited the use of the ATF eForms system for many NFA applications because of the manual submission of fingerprint cards, etc. As discussed in section IV.C.1, the Department is removing the CLEO certification requirement for individuals, and replacing it with a notification requirement for both individuals and trusts or legal entities. This change will help reduce paperwork and increase efficiency for the public and ATF. Section VI.G of this rule fully discusses the paperwork burdens.

Regarding commenters' other suggestions for streamlining the process (*e.g.*, permitting electronic payments and reducing redundancy with multiple applications), the Department addresses those comments in section IV.G. The Department continues to maintain that requiring background checks for responsible persons, which includes a requirement that they submit photographs and fingerprint cards to ATF, increases public safety. See section IV.C.4 for discussion of benefits.

E. Comments on Costs and Benefits

1. Implementation Costs of Rule are Underestimated

a. Number of Responsible Persons per Legal Entity

Comments Received

In the proposed rule, ATF estimated an average of two responsible persons associated with a legal entity. Many commenters stated that ATF grossly underestimated this number and that having more than two responsible persons was not calculated into the cost. A number of objections were raised as to the sample size ATF used to obtain its estimate, which commenters argued was too small and not determined through statistically rigorous analysis. One of these commenters stated that if ATF's estimate of two responsible persons was inaccurate, it should propose another comment period with a revised number of responsible persons and associated costs.

Numerous commenters also noted that given the breadth of the definition of “responsible person” in the proposed rule, it was likely that the average number per legal entity was much higher than two. Commenters, including persons with experience preparing NFA trusts, opined that two was more likely to be the minimum number per legal entity, not the average. For corporations or LLCs, in particular, commenters observed that the number could be higher still, potentially in the “hundreds to thousands.”

Commenters noted that if, as they believed, ATF's estimated average number of responsible persons was unreasonably low, its cost estimate was equally unreliable. One commenter opined that the total annual direct implementation costs to citizens involved in NFA transactions should be at least three times higher than ATF's estimate (*i.e.*, \$35,889,261 instead of \$11,963,087). This commenter stated that the estimated annual costs to ATF and local law enforcement agencies also should be adjusted (*i.e.*, ATF annual costs: \$5,423,682 instead of \$1,807,894;

local law enforcement annual costs: \$3,790,680 instead of \$1,263,560). Therefore, this commenter estimated the total implementation costs at \$45,103,623 (\$35,889,261 + \$5,423,682 + \$3,790,680 = \$45,103,623), three times higher than ATF's total implementation costs of \$15,007,541 (\$11,963,087 + \$1,807,894 + \$1,263,560 = \$15,007,541).

Department Response

For this final rule, the Department reviewed a random sampling of 454 forms to determine the average number of responsible persons per legal entity. The random sample was pulled from the 115,825 Forms 1, 4, and 5 processed in CY 2014. The forms to be reviewed were generated using established sampling methods based on ATF criteria of a 95 percent confidence level with a 2 percent sampling error, and represented a mixture of legal entities including trusts, corporations, and LLCs. The random sample showed that the average number of responsible persons was approximately two. Additionally, the random sample showed that the most frequent number of responsible persons was one (with 226 instances), followed by two (with 124 instances). This represents 78 percent of the forms reviewed. The highest number of responsible persons in the sample was 11. Based on its random sample, the Department continues to estimate that each trust or legal entity has an average of two responsible persons. Moreover, the criteria used for determining who would be a responsible person in the most recent random sample review was based on a definition of "responsible person" materially similar to the revised definition of responsible person in this rule. See *supra* section IV.C.4.a. The Department acknowledges that the cost estimates for this final rule are based on an estimated average number of two responsible persons, but that individual experiences may vary.

To be considered a responsible person, the individual must possess, directly or indirectly, the power or authority to direct the management and policies of the entity insofar as they pertain to firearms. This power or authority will be limited by the terms of the trust or the structure of a legal entity. Therefore, not every individual named in a trust document will be considered a responsible person, but any person who has the capability to exercise such power and possesses, directly or indirectly, the power or authority under any trust instrument, or under State law, to receive, possess, ship, transport, deliver, transfer, or otherwise dispose of a firearm for, or on

behalf of, the trust, will be considered a responsible person of the trust.

With respect to the definition of responsible person that was used to determine the average number of responsible persons at trusts and legal entities, the definition used was materially similar to the definition that appears in this final rule. The Department has thus concluded that, under the definition of responsible person that appears in this final rule, the best estimate of the average number of responsible persons at trusts and legal entities is two. The Department notes that none of the trust documents reviewed in the sampling gave beneficiaries the power or authority to direct the management and policies of the trust, including the capability to exercise such power and possess, directly or indirectly, the power or authority under any trust instrument, or under State law, to receive, possess, ship, transport, deliver, transfer, or otherwise dispose of a firearm for, or on behalf of, the trust.

b. Number of Pages of Supporting Documents

Comments Received

A few commentators questioned the sampling methodology ATF used to determine that the documents chartering a legal entity averaged 15 pages in length and thought it was "highly suspect." These commenters noted that ATF reviewed a different sample size to determine the average length of documentation than it used to compute the average number of responsible persons per legal entity (*i.e.*, ATF reviewed 50 applications to determine the average number of constitutive documents for trusts and legal entities and 39 applications to determine the average number of responsible persons). Without access to ATF's methodology, these commenters believe that the unexplained difference strongly suggests sampling or selection bias. One of these commenters stated that ATF has not addressed his request—through counsel—for information about the methodology used. In addition, these commenters, and a few others, alleged that the sample size was too small. Another commenter stated that for the average length to be 15 pages, that would mean, statistically, that half of the trusts have fewer than 15 pages of trust documents, which the commenter did not consider believable.

Another commenter stated that his own experiences as the owner and founder of Gun Trust Lawyer®, a nationwide network of lawyers, confirm

what many other commenters observed, namely, that ATF underestimated the document length and other costs associated with the proposed rule. This commenter and several other commenters stated that the document length of a sample revocable trust used by Gun Trust Lawyer®, including exhibits and attachments, is almost double the length that ATF estimated when the trust has four to six trustees, a typical number of trustees. These commenters stated that the sample revocable trust, used by this network includes a 19-page trust document, with additional pages for assignment of property and recording contributions, witnessed statements from each trustee and the settlor, and the signed "Trustee Declaration" and notarized signature page. Another commenter stated that documents associated with sophisticated estate plans or complicated trusts can be quite lengthy with trust instruments and entity formation documents ranging from a few pages to hundreds of pages when their schedules, exhibits, and attachments—all of which must be filed with ATF—are included. Another commenter stated that the gun trusts he creates are at least 65 pages long, and that he knows a substantial number of other attorneys who also create trusts of this length. Another commenter stated that his trust comprises 18 articles and over 70 pages. This commenter stated that ATF needed to reevaluate the sample and revise the cost assumptions.

Another commenter stated that ATF did not consider corporations and LLCs when estimating the average document length, and asked about the average length of document pages that a corporate entity and its shareholders would submit. Another commenter stated that the type of documents needed to evidence the existence and validity of partnerships, companies, associations, corporations, and trusts is governed by "formation and continuation" rules, which vary among the 50 States and are "complex, state-specific, and diverse in purpose." This commenter stated that it is highly unlikely that ATF will be able to examine "hundreds or perhaps thousands of pages of trust or entity documents" due to lack of time and expertise.

Department Response

For this final rule, the Department reviewed a random sampling of 454 applications to determine the average number of pages in the corporate or trust documents. The random sample was derived from 115,825 Forms 1, 4, and 5 processed in CY 2014. The forms

to be reviewed were generated using established sampling methods based on criteria of a 95 percent confidence level with a 2 percent sampling error and represented a mixture of trusts and corporations, LLCs, and other legal entities. Based on its review of the random sample, ATF now estimates an average length of sixteen pages. Thirty-eight percent of the random sample had between six and ten pages. Twenty-nine percent of the random sample had between eleven and twenty pages. The highest number of pages in the random sample was fifty-five. Only two percent of the random sample had more than 50 pages and only three percent of the random sample had more than 40 pages. The Department acknowledges that the cost estimates are based on an average number of pages, including attachments, and that individual experiences may vary.

The Department acknowledges that each State is specific in the documentation required for partnerships, companies, associations, corporations, and trusts. ATF examines all submitted documents when trusts and legal entities apply for a Federal firearms license.

c. Costs for Photographs and Fingerprints

Comments Received

ATF estimated that photographs would cost \$8.00 and take an average of 50 minutes to obtain, and that fingerprints would cost \$24.00 and take 60 minutes to obtain. Many commenters stated that ATF's estimates for photographs and fingerprints were unrealistically low, and, in their experiences, the costs and times were "higher" and even "significantly higher." The costs and times provided by the commenters for photographs ranged from \$8.00 to \$125 and 5 minutes to two weeks, respectively. The costs and times provided by the commenters for fingerprints ranged from no cost—complimentary service—to \$120, and from 10 minutes to three weeks. A commenter stated that since ATF did not provide any supporting documentation for the estimated costs and times, it was not clear whether ATF surveyed only service providers in "highly-competitive, urban markets." This commenter referenced the experiences of another commenter, who lived in a rural area and had to contact six police departments, taking several hours, before finding someone willing to fingerprint him. Other commenters mentioned additional costs in obtaining photographs and fingerprints that they believed ATF did not take into

consideration such as work time missed, drive time, "fuel, wear and tear on my personal vehicle," and "value of my time." Another commenter stated that the stores offering in-house photography are dwindling and that applicants will spend 15 minutes locating a store, an average of at least 40 minutes for travel to and from the store, 20 minutes waiting for copy machines to warm up at the store, and additional time getting pictures taken and printed, totaling 75 minutes. This commenter referenced a nationwide chain's price for passport photographs at \$11.99 plus tax, totaling \$12.71, plus an \$11.30 cost of driving to the store, computed by estimating an average roundtrip of 20 miles at the Federal mileage rate. This commenter summed up costs and time at \$24.01 and 75 minutes, respectively, to obtain photographs. This commenter accepted ATF's estimate of \$24.00 to obtain fingerprints but considered ATF's estimate of the associated time as 60 minutes to be low. This commenter estimated the time at 100 minutes (70 minutes total travel time plus 30 minutes on site to obtain fingerprints) plus an average round trip of 40 miles costing \$22.60, determined at the Federal mileage rate. This commenter tallied the fingerprint costs and time at \$46.60 ($\$24.00 + \$22.60 = \46.60) and 100 minutes, equating to \$97.93 per responsible person. As support for his position that ATF underestimated the fingerprint costs, another commenter provided a link to the Department of Homeland Security's Transportation Security Administration Web page¹³ to show listed fingerprint service costs.

Department Response

Fingerprints may be taken by anyone who is properly equipped to take them (see instructions on ATF Form 1, Form 4, Form 5, and Form 5320.23). Therefore, applicants may utilize the service of any business or government agency that is properly equipped to take fingerprints. Depending on where the fingerprints are taken, the service may require an appointment, and appointment availability may be limited. Some businesses provide evening and weekend appointments and a number of private companies provide mobile fingerprinting services at a location chosen by the customer to be fingerprinted. Additionally, some mobile fingerprinting services offer special pricing to groups of individuals who need to be fingerprinted.

ATF reviewed 254 Web sites that published the cost of fingerprint service.

¹³ The Department notes that this link was a nonfunctioning link.

Information was obtained from businesses and government agencies located throughout the United States, in both urban and rural areas. The review disclosed a cost from zero to \$75.00 for two fingerprint cards. One hundred thirty-eight of the Web sites listed a cost between \$10.00 and \$20.00. Based on its review, ATF estimates the average cost to be \$18.66.

The estimated time to obtain fingerprints set forth in the proposed rule was 60 minutes. This estimate was derived from information ATF submitted to OMB as part of the renewal approval process for ATF Forms 1, 4, and 5. The time estimate has been accepted by OMB as an appropriate estimate of the time needed to obtain fingerprints. A review of twenty-two Web sites that published an approximate amount of time to obtain fingerprints disclosed time estimates ranging from 5 minutes to 120 minutes, with the average time being 22 minutes. As not all the Web site estimates include wait time to obtain fingerprints, the Department believes the estimate of 60 minutes is a reasonable time approximation. The Department recognizes that individual experiences may vary from the estimated time.

Photographs must be a size of 2 inches x 2 inches of a frontal view taken within one year of the date of the application (see 27 CFR 479.63 and 479.85). There is no requirement that the applicant/transferee use a professional photographer to acquire the photographs, provided that they meet the stated requirements. The photographs may be taken at home with a digital camera and printed out in the required size using a color printer or the applicant/transferee may use a Web site that provides this service. In addition, the applicant/transferee may choose to obtain passport photographs, which meet the required specifications.

Numerous businesses offer passport photograph services including national chain stores. Generally, there is no appointment necessary to obtain passport photographs from these types of businesses.

ATF reviewed 57 Web sites that published the cost of passport photographs. Information was obtained from businesses located throughout the United States, in both urban and rural areas. The review disclosed a cost for two passport photographs that ranged from zero to \$25.00. Thirty-five of the Web sites listed a cost between \$10.00 and \$15.00. Based on its review, ATF estimates the average cost is \$11.32. The Department recognizes that the costs associated with individual experiences may vary from the estimated cost.

The estimated time of 50 minutes to obtain photographs was obtained from information ATF submitted to the OMB as part of the renewal approval process for ATF Forms 1, 4, and 5. The time estimate has been accepted by OMB as an appropriate estimate of time to obtain photographs. A review of fifteen Web sites that published an approximate amount of time to obtain photographs disclosed time estimates ranging from 5 to 15 minutes with the average time being 10 minutes. As the Web site estimates include only the time necessary to have the photograph taken and printed, ATF believes the estimate of 50 minutes (accounting for travel time and possible wait time) is a more accurate time approximation. The Department recognizes that individual experiences may vary from the estimated time.

d. Time To Obtain CLEO Certification Comments Received

ATF estimated that the time needed for a responsible person to procure the CLEO certification was 100 minutes (70 minutes travel time and 30 minutes review time with the CLEO). Several commentators stated that in their experiences, ATF's estimate was inaccurate, too low, "way off-base," and did not include additional associated costs. A few of those commenters stated that ATF did not consider the large number of instances where multiple CLEOs were unwilling to sign and an applicant needed additional time to "hunt" for a CLEO willing to sign the certification, which may have included visiting several different government offices, making appointments with multiple CLEOs, and educating and persuading the CLEO to sign the certification. A commenter stated that his CLEO would not review the form with him, and instead advised the commenter to mail in the form with an estimated wait of over 30 days for the CLEO to decide whether to sign the form. Another commenter expressed knowledge of many CLEOs who require that the applicant leave the form with their offices, and return later to pick it up, doubling ATF's estimated travel time of 70 minutes to 140 minutes. This commenter also stated that a typical process is for the CLEO's assistant to first review the form—taking 30 minutes—and then for the CLEO to review the form—taking 15 minutes—so that the total CLEO review time is 45 minutes. This commenter also estimated applicants' drive time to average 40 miles, twice, to obtain the CLEO certification with a total mileage cost of \$45.20 at the Federal mileage rate. This

commenter tallied the costs at \$140.17 per responsible person. Another commenter estimated that he spent over 240 minutes calling and writing letters to try and obtain CLEO certification to no avail, far exceeding ATF's estimated 100 minutes.

Another commenter stated that ATF did not justify or substantiate its estimate of 100 minutes. This commenter requested that ATF sample a statistically relevant number of NFA item owners to determine how long it actually takes to obtain CLEO certification. This commenter also requested that ATF consider the additional costs that some CLEOs arbitrarily impose on applicants as a condition to providing certification. According to the commenter, these conditions may include acquisition of an FFL03 Curio and Relic license or Concealed Weapons Permit, attendance at police fundraisers, volunteer service with the CLEO's department, or contributions to political campaigns.

Department Response

The Department acknowledges that individual experiences to obtain CLEO certification have varied from the time estimate. However, the time estimate is no longer relevant as the CLEO certification has been replaced with a CLEO notification requirement. See *supra* section IV.C.1.

e. Time Valuation Costs on Civilian Workers

Comments Received

A trade organization commenter stated that by basing all of its time valuations on \$30.80—the current average hourly compensation for all civilian workers in the United States—ATF failed to consider that NFA firearms are often very costly, and that even the least expensive ones are discretionary purchases and unlikely to be made by low-income individuals. This commenter also noted that these items typically have a \$200 making or transfer tax, and that people using legal entities to make or acquire NFA firearms will already have incurred other expenses to create the legal entities, such as legal fees and corporate filing fees. This commenter suggested that ATF base its cost burden estimates on the actual characteristics of those who would be considered responsible persons. Other commenters stated that an individual purchasing NFA firearms would have higher than average disposable income and is not an average civilian worker.

Department Response

The Department does not have access to confidential information such as the salary or disposable income for individuals purchasing NFA firearms. Commenters have not suggested a methodology or dataset that would permit the Department to more accurately estimate the time-value of responsible persons than the one it has adopted. The Department thus continues to believe that it is appropriate to base the time valuations for individuals and responsible persons of trusts and legal entities on the civilian hourly rate, as determined by the U.S. Department of Labor, Bureau of Labor Statistics. In June 2015, the hourly earnings for civilians was \$33.19. See section VI.A.1 of this rule for further discussion and the U.S. Department of Labor, Bureau of Labor, Web site at <http://www.bls.gov/news.release/pdf/eccec.pdf>.

f. Other Incorrect Costs

A commenter stated that ATF's time estimate of 10 minutes for a responsible person to complete Form 5320.23 was too optimistic. This commenter thought that ten minutes might be reasonable if the person completing it was familiar with the form, but that additional costs would be incurred to learn how to complete the form. This commenter asserted 15 minutes would be a more accurate estimate, equating to \$7.70 per responsible person. Another commenter asked how ATF could accurately estimate a "mere" 10 minutes, on average, per responsible person to complete Form 5320.23, when the form had not yet been created. This commenter disagreed with ATF's statement that there would be no increased costs associated with mailing the application package to ATF, and called such a statement "either willfully false, or woefully ignorant." This commenter argued that the proposed rule would add weight and increased cost to mail an application, which now must contain a "significant" number of paper pages (*i.e.*, forms 5320.23, fingerprint samples, photograph samples, and CLEO certifications). This commenter also noted that the U.S. Postal Service recently announced a rate increase, which ATF did not factor into its cost calculations. This commenter also questioned how ATF could maintain that it would incur no additional costs to review this new paperwork when the proposed rule would result in more CLEO certifications, fingerprints, and photographs with each application.

Another commenter considered ATF's estimate of cost to copy documents, associated with a legal entity, at \$0.10 per page, a fair estimate; however, this commenter stated that the average trust, if properly drafted, would have 20 pages, not the estimated 15 pages. Additionally, this commenter stated that ATF's time estimate of 5 minutes to make copies was low. This commenter stated that many legal entities do not have a copy machine on site and would need to travel to a commercial facility to make copies. This commenter estimated such a round trip to be 30 minutes and cover 15 miles on average, costing the applicant \$8.48 (using the Federal mileage rate). This commenter stated that making copies and paying for those copies would take 10 minutes. Tallying the total times and costs, this commenter estimated that the entity would spend "\$16.95 to travel, \$2.00 on copies, and 40 minutes to travel and acquire the copies. In dollars, this equates to \$39.48 per entity."

A commenter questioned ATF's estimated cost of \$14.50 to process fingerprints. This commenter stated that \$14.50 is the cost ATF pays but may not be the actual cost to the FBI. This commenter expressed interest in hearing from the FBI on the "true" cost transfer from ATF to the FBI.

Department Response

The Department agrees with the suggestion that allowing 15 minutes to complete Form 5320.23, 5 minutes more than the estimate in the proposed rule (78 FR at 55022), is a fair estimate. With respect to mailing costs, the addition of a CLEO notification requirement will result in the mailing of an additional form to the CLEO (if the applicant/transferee or responsible person(s) opts to use mail delivery) but the associated costs are minimal. Moreover, any additional mailing costs will be offset by cost and time savings resulting from the elimination of the CLEO certification requirement. Further, postage costs are already included in the costs of completing and mailing Forms 1, 4, or 5 to ATF. As discussed in the proposed rule (78 FR at 55022), individuals, trusts, and legal entities must complete and mail Forms 1, 4, or 5 to ATF. This final rule should not change the costs associated with that process. Even if there are multiple responsible persons associated with a trust or legal entity, the trust or legal entity still will be completing and mailing one Form 1, 4, or 5. Similarly, because CLEO notifications have replaced CLEO certifications, ATF's internal costs will remain as discussed in the proposed rule (78 FR at 55022).

The Department agrees with the commenter who referenced ATF's estimate of cost to copy documents "at \$0.10 per page a fair estimate." Further, a more recent analysis of 454 random samples available to ATF suggests that 16 pages approximates the mean length for properly drafted trust documentation. In addition, the Department concurs with the estimate of ten minutes to make and pay for copies. Current data indicates that ATF pays the FBI \$12.75 to process fingerprints, which is the appropriate cost for inclusion in this final rule.

g. Costs Not Considered

i. Lost Tax Revenue

Comments Received

Many commenters stated that ATF failed to account for the significant loss of tax revenue by ATF from fewer NFA transfers, and on the income tax lost on the sale of NFA firearms by manufacturers, distributors, and dealers. Several of these commenters noted that ATF estimated 40,565 ATF Forms 1 or 4 were submitted in 2012 for non-FFL legal entities (78 FR at 55021). Several commenters stated that the proposed rule would "discourage" or "scare off" individuals from purchasing or making NFA firearms because the rule will make the application process for legal entities more difficult. These commenters stated that for every Form 1 and Form 4 that is not submitted to ATF, a \$200 tax payment loss will result (unless the application is submitted for an "Any Other Weapons" weapon, in which case the tax payment loss would only be \$5). Several commenters provided estimates of the decreased volume in NFA applications that they asserted would result from implementation of the proposed rule, and corresponding losses in NFA tax stamp revenue. These estimates of reduced applications ranged from a 50 percent reduction (attributed primarily to predicted refusal of CLEOs to sign certifications for legal entity responsible persons) to a 75 percent reduction (attributed primarily to a decrease in legal entity applications), with corresponding estimated losses in NFA tax stamp revenue of \$6.1 to \$8.1 million. Several commenters stated that the proposed rule would make it harder for people to legally purchase silencers, and asked, "is ATF trying to eliminate \$12,000,000+ in annual tax revenue?" Several commenters asserted tax revenue losses would occur in addition to lost NFA tax stamp revenue. They stated that if the business of selling NFA firearms declined and caused small FFL dealers and custom manufacturers to

cease dealing in NFA firearms, such dealers and manufacturers would surrender their SOT status and stop paying at least \$500 annually to the U.S. Treasury. If small custom manufacturers determined it was no longer profitable to stay in business and were forced to shut their doors, such manufacturers would stop annual payments of at least \$2,400 to the U.S. Treasury under the International Traffic in Arms Regulations. *See* 22 CFR 122.3. There would also be a less direct effect, as the entity operating the FFL, as well as the individual owners and employees, would lose income, which would result in a reduction in income tax revenue.

Department Response

As noted, the final rule eliminates the CLEO certification requirement. Consequently, comments asserting tax revenue losses resulting from the refusal of CLEOs to sign certifications for legal entities are now moot. Moreover, the Department does not anticipate a decline in Form 4 applications. The Department has not observed, and does not anticipate, reduced demand for NFA firearms or a decline in the filing of applications (Forms 1 and 4). Applications have generally increased each year and the Department expects this trend to continue as more States loosen restrictions on the use, in particular, of silencers for hunting or target shooting.

Moreover, because the CLEO notification requirement and the requirements for fingerprint and photograph submission will be the same under the final rule for individual applicants and trusts and legal entities, applicants may choose to forgo the formation of a trust or legal entity and acquire firearms as individuals. A number of commenters have observed that the proliferation of NFA trusts is a direct result of the CLEO certification requirement for individual applicants. It is therefore fair to predict that eliminating the certification requirement will reverse that trend. Applications submitted by an individual are less complex because they do not require documentation evidencing the existence and validity of a trust or legal entity, such as articles of incorporation.

Contrary to the assertions of several commenters, the Department does not anticipate that implementation of the final rule will result in an increase in the number of FFLs or FFL/SOTs going out of business. The number of FFLs that also paid SOT to manufacture, import, or deal in NFA firearms increased 117 percent between 2009 and 2014. The Department estimates that the

number of FFLs that also pay SOT will increase an additional 30 percent by the end of 2015.

ii. Hearing Loss

Comments Received

Many commenters stated that the proposed rule completely overlooked the cost of hearing loss due to the unavailability of silencers. Many commenters stated that many citizens desire to make or acquire silencers to protect their hearing while engaged in lawful, recreational shooting, as well as in self-defense situations. These commenters stated that the proposed rule imposed obstacles to making and acquiring silencers, and a significant number of shooters who desire to use silencers will be unable to do so. Several commenters provided data and statistics showing: The level of impulse noise generated from unsuppressed firearm discharge; that firearm discharge is a leading cause of noise induced hearing loss; the efficacy of silencers at protecting hearing; and the impracticality of using means other than silencers in certain situations (e.g., ear protectors in a home-defense situation). These commenters also provided data estimating that a 7 percent hearing loss may result for every five years spent hunting. These commenters stated that over time many recreational shooters, who are continually exposed to the noise, will have permanent hearing loss. A few commenters stated that those impacted hunters will bear “substantial medical costs and partial disability resulting in lost productivity.” Another commenter provided data from a specialist who put a specific dollar estimate on firearm related hearing-loss costs (the commenter stated the estimate was supported by the “Value of a Statistical Life” method). This specialist estimated a minimum cost of \$15 million, considering only the direct costs of medical care, testing, and hearing aids, and stated that the estimate is likely to exceed \$100 million when one adds disability to the direct medical costs. A few commenters generally mentioned a National Shooting Sports Foundation study that showed that in 2011 there were 14,630,000 paid hunting license holders and that total recreational shooters exceeded 30 million.

Department Response

The Department recognizes that the use of a silencer while shooting a firearm may help to reduce hearing loss. Neither the proposed rule nor the final rule prohibit the manufacture or sale of silencers; the primary premise of the

comments is that silencers will become less available as a result of the proposed rule, thereby increasing societal costs from shooting related hearing loss. The Department disagrees that the final rule will significantly reduce the availability of silencers. The final rule no longer requires CLEO certification, the aspect of the proposed rule most commonly cited by commenters as an impediment to consumers obtaining silencers and other NFA weapons (from either retailers or private transfers). With the elimination of the CLEO certification requirement for all NFA applications, including individuals, the process for individuals who wish to purchase a silencer to protect from hearing loss becomes less, not more, burdensome. Moreover, as is noted in several sections of this final rule, the silencer industry has experienced significant growth largely as the result of several States legalizing the ownership of silencers for hunting and other purposes under State law. This legalization trend among the States is likely to continue, strengthening demand for silencers, thus driving additional industry growth and increased product availability. Finally, with respect to assessing the societal costs of firearms-related hearing loss, the Department is unaware of any peer reviewed study calculating an average value for hearing loss attributable only to the use of firearms without silencers.

iii. Attorney Costs

Comments Received

Many commenters stated that ATF failed to consider the costs that individuals associated with trusts or legal entities would incur to consult with attorneys to accurately determine the number of individuals associated with their trusts or legal entities that would fall under the proposed “responsible person” definition. Another commenter stated that the proposed rule did not address the interstate nature of corporations, and that an individual would need to consult an attorney—at \$150 per hour—to determine what jurisdiction the CLEO certification would be required to be obtained in. A few commenters provided their total attorney fees to consult with lawyers specializing in NFA legal matters and to form an NFA trust that complied with all the relevant laws; these fees ranged from \$200 to over \$1,500. Another commenter stated that if the proposed rule were implemented, applicants would need to obtain revised trust documents from a licensed attorney. This commenter, a licensed attorney, conservatively

estimated the average cost and time at \$200 per trust and at least two hours of the applicant’s time, respectively. After assuming that 20 percent of the approximately 100,000 NFA related trusts or other entities would require revision, this commenter estimated the costs to trusts for legal fees to be \$4,000,000 plus 40,000 client hours.

This same commenter stated that ATF did not estimate the costs for attorneys to revise forms, attend continuing legal education, and perform other uncompensated work needed to comply with the proposed changes. This commenter estimated five hours for each attorney to perform these activities. After assuming 1000 attorneys are involved nationwide in NFA matters and a conservative hourly rate of \$200, this commenter estimated the total cost at \$1 million.

Another commenter stated that ATF did not estimate the cost to ATF for a State licensed attorney to review the submitted trust documentation to ensure the trust’s validity and that all responsible persons are included. This commenter estimated the annual cost to ATF at \$1,628,000 after assuming 40,700 trust documents, half an hour of the attorney’s time to review each trust, and an \$80 hourly rate.

Department Response

There is no requirement to form a trust or legal entity to acquire an NFA firearm. In fact, all of the legal fees included in the comments may be avoided if the NFA firearm is acquired by an individual. Therefore, when an applicant voluntarily decides to register a firearm to a trust or legal entity, the applicant assumes all responsibilities for determining the responsible persons—including legal fees associated with making that determination. Additionally, as noted, the final rule no longer requires CLEO certification; the final rule requires only CLEO notification. Moreover, both the text of the final rule (when incorporated into a regulation) and instructions on revised ATF forms will provide specific directions as to who must provide notification to the CLEO. Therefore, it may not be necessary to consult an attorney to determine this information.

As the attorney-commenter did not specify why trust documents would need to be revised, the Department cannot directly address this concern. There is no requirement, existing or proposed, to form a trust or legal entity to acquire an NFA firearm or to satisfy any CLE requirement. The cost of CLE is therefore outside the scope of the cost of this final rule.

iv. Costs To Update Publications/ Resources

Comments Received

A commenter stated that ATF did not estimate the costs to revise various publications, informational brochures, industry Web pages, and other miscellaneous resources relied upon by NFA applicants and potential applicants for NFA information such as those published by hobbyists, industry, retailers, local law enforcement, and Federal agencies. The commenter could not estimate such costs but imagined that such costs could easily be \$1,000,000 or more nationally.

Another commenter stated that ATF's cost analysis did not address the cost of implementing the forms and applications in the NFA Branch that have a "pending" status when the rule changes are implemented.

Department Response

ATF updates its publications, Web site, and forms on an ongoing basis and will continue to do so each time there are changes to Federal firearms laws or regulations. FFLs, other law enforcement agencies, trade associations, and other entities are not required under Federal law or regulation to provide information on the NFA or on how to acquire an NFA firearm. Therefore, these comments are outside the scope of this rulemaking. Additionally, such costs are difficult to estimate, and informational resources provided by other entities are routinely updated as a matter of course, making it difficult to trace what update costs are specifically attributable to ATF's new rule. The commenter did not suggest a methodology by which ATF could readily quantify such costs, and ATF believes any such costs directly traceable to the promulgation of this final rule will be negligible.

With regard to the comment regarding applications that have a "pending" status when the rule is implemented, all applications postmarked prior to the effective date of the rule will be processed under the current regulations. The same is the case for any applications that have a pending status at the time the rule is implemented. Consequently, no additional costs will be incurred by ATF to process pending applications.

v. Litigation Costs

Comments Received

Several commenters stated that ATF omitted the costs to ATF, DOJ, and local law enforcement of litigation that could potentially arise if the proposed rule were implemented. These commenters

stated that ATF must expect significant judicial challenges to the proposed CLEO certification requirements for responsible persons as many law abiding citizens will no longer have a "work-around" or mechanism to avoid CLEO certification, will consequently face arbitrary refusal by CLEOs, and will be unable to own or possess otherwise legal NFA items. A few of these commenters stated that citizens who live in jurisdictions where every local CLEO refuses to sign off on the NFA paperwork would have no recourse other than to sue ATF or DOJ. Another commenter referenced *Lomont*, 285 F.3d 9, and stated that ATF's proposal to extend the CLEO certification would survive a "facial challenge" under the Administrative Procedure Act. However, this commenter predicted that in cases where every qualified CLEO refuses to provide the certification even though the applicant is not prohibited by State or local law from making or receiving the firearm, such an applicant could bring an "as-applied challenge" and win.

Another commenter expressed the opinion that the rule was too vague to withstand legal scrutiny and would result in expensive litigation. Another commenter stated that DOJ will spend millions of taxpayer dollars "in vain" trying to defend this rule in various courts. Another commenter agreed that taxpayers would "foot the bill" for the litigation that citizens allegedly denied their constitutional rights would bring against local and State governments, and the Federal Government, and that this would place a huge burden on local departments and agencies.

Department Response

The change from CLEO certification to notification addresses the substance of the concerns expressed in these comments and will reduce the likelihood of litigation.

Additionally, the Department regards the possible costs of potential future legal challenges as difficult to quantify. Commenters did not suggest a methodology by which the Department could accurately measure such costs. Moreover, the Department already must maintain a legal staff to defend its rules that it must fund whether or not any particular legal challenge is brought. It would thus be difficult to determine the extent to which litigation about the rule would add to the Department's legal costs.

Finally, the Department does not regard the potential cost of defending the lawfulness of its rule as appropriate to include in an assessment of the costs and benefits of the rule. Such costs are

imposed by third parties that choose to file suit regardless of the potential legal merit of their claims. If the costs of defending suits formed part of the cost of a rule, opponents could claim that they would file suit, regardless of the merits of their claims, and thereby drive up the estimated cost of the rule. If an agency were required to factor litigation threats into the cost of a rule, opponents threatening litigation could exercise a sort of veto over agency rulemaking by artificially increasing the rule's costs.

vi. Miscellaneous Costs

Comments Received

A commenter stated that ATF severely underestimated the time and costs to trust participants arising from the rule. This commenter stated that the proposed rule would take trust participants an additional 30 days to properly coordinate and submit the required documentation for each NFA item requiring approval by the NFA Branch.

Another commenter stated that neither ATF nor any other component within DOJ provided "credible information, studies, or analysis" showing details of the estimated annual fiscal costs and the feasibility of implementing the proposed rule. This commenter asked that the Government Accountability Office (GAO) perform an "independent, non-partisan review" of the proposed rule and its current and potential fiscal impact, as well as its feasibility, and submit the findings to Congress so Congress could review to determine if the proposed rule complied with the "policies, rules, and standards" governing ATF.

One commenter noted that ATF calculated the costs of the proposed rule based on the number of legal entity applications from previous years, and further noted that ATF listed a large increase in legal entity applications from 2000 to 2012 as evidence, in the commenter's words, that these applications "are serving as a mask for individuals who otherwise would be prohibited from owning guns." This commenter stated that if the proposed rule's purpose is to target and reduce such activity, then ATF's cost calculations should reflect a reduction in the number of applications by legal entities.

Department Response

The Department does not agree with the commenter that the proposed rule would add an additional 30 days to the process of acquiring an NFA firearm. The commenter provided no empirical evidence or analysis supporting this

assertion, and the Department is unaware of any aspect of the final rule that would lead to an increase in time expended by applicants on this scale. Under the revised definition of responsible person, the average number of responsible persons is estimated at two. Those two responsible persons may reside in the same household (e.g., husband and wife) or work in close proximity to each other, which would ease coordination of the collection of fingerprints and photographs required for the application. Furthermore, because responsible persons are no longer required to obtain CLEO certification, no delay will result from that issue.

Proposed changes to ATF regulations, including the proposals set forth in the NPRM and this final rule, undergo a rigorous review process by both the Department and the Office of Management and Budget. These reviews include close scrutiny of the estimated annual fiscal costs associated with the proposed and final rules. Finally, the proposed rule and this final rule have been published for public comment and scrutiny. In light of all these review procedures, the Department does not believe additional review of this rule by the GAO, as requested by a commenter, is necessary or warranted.

The Department also does not agree with the commenter who asserts that the purpose of the proposed rule is to target and reduce NFA applications filed by trusts. The objective of the final rule is instead to ensure all applicants, regardless of whether they are an individual applying in an individual capacity or applying in a representative capacity on behalf of a trust or legal entity, are subject to the same approval process to help ensure that prohibited persons do not obtain NFA firearms.

Moreover, the Department's decision to base its estimate of the costs of the rule on the number of trusts and legal entities that currently apply to make and transfer NFA firearms is appropriate because it likely accurately estimates the overall number of background checks and information submissions that will need to be undertaken as a result of the rule. To the extent individuals presently create single-person trusts and legal entities to circumvent background check requirements, they may now choose simply to submit individual applications. To be sure, that would result in a decrease in the number of applications from trusts and legal entities. But it would be accompanied by a concomitant increase in the average number of responsible persons at the trusts and legal entities that remain. The

overall number of information submissions and background checks is therefore likely to remain roughly equivalent to the Department's estimate. Commenters have not suggested a method of estimating the costs of the final rule that is superior to the methodology the Department has chosen.

2. Financial Impact on Firearms Industry

a. Impact on the NFA and General Firearm Industry, Specific Types of NFA Manufacturers, and Related Businesses (Including Law Firms)

Comments Received

A large percentage of commenters asserted that the proposed rule will negatively impact NFA industry participants (including manufacturers, dealers, and employees) as well as related businesses such as suppliers. The commenters characterized their assessments of the financial impact on business in a number of different ways: The impact on NFA manufactures; the impact on specific NFA manufacturers such as silencer manufacturers; the impact on firearm dealers; the impact on related industries such as suppliers to manufacturers; the impact on general lawful commerce in firearms; the impact on "small businesses;" the impact on employees of various businesses in the form of lost jobs and wages; and general claims of "reduced revenue" for industry and affiliated business.

Most of the commenters focused their assessment of the proposed rule's negative impact on the provision in the proposed rule extending the CLEO certification requirement to trusts and legal entities. These commenters emphasized that, for numerous reasons, some CLEOs will not sign the NFA certifications even if the applicant is not prohibited by law from acquiring a firearm, freezing the application approval process. Because no process exists to override a CLEO's refusal to sign a certification, the refusal to sign functions as a denial of the application, preventing the applicant from purchasing the NFA item, and thereby depriving NFA manufacturers and dealers of law-abiding customers. A second recurring theme in the comments was that the proposed rule would decrease demand for NFA firearms, and thereby negatively impact businesses, because the rule will require a greater number of NFA applicants to undergo background checks (i.e., individuals affiliated with trusts and legal entities who fall within the proposed rule's definition of "responsible persons").

Examples of comments from the various categories of characterization used by the commenters include the following:

i. Manufacturers and Dealers

Several commenters reasoned that the proposed rule would make it more difficult to obtain NFA items and as a result would drive manufacturers out of business; one such commenter characterized the impact as jeopardizing the entire, booming "cottage industry" of NFA manufacturers. Similarly, an employee of a silencer manufacturer, that has been in business for more than 20 years, commented that the proposed rule would "cripple" his employer's business. One commenter listed multiple negative impacts he predicted the proposed rule would have on NFA manufacturers: (1) Lost investment in machines; (2) lost investment in unsellable inventory; (3) lay-offs of manufacturing and sales staff; and (4) no market for their product. Several commenters argued that the proposed regulation would make wait times for customers to obtain ATF approval even longer, resulting in frustrated customers and reduced sales.

Many commenters directly linked predictions that the proposed rule would negatively impact NFA manufacturers and dealers to the CLEO certification requirement. They asserted that extending the certification requirement to legal entities will drastically inhibit sales of NFA items, particularly silencers, causing reductions in business, business closure, and loss of employees. Several FFL commenters asserted that the proposed rule would "destroy" their businesses because CLEO certification was difficult or impossible to obtain in their counties. One of these FFLs stated he had researched the impact of CLEO certification in his State, Texas, and determined that approximately "70% of Texans" will not be able to obtain a CLEO signature; therefore, he predicted, "70% of his customer base" would be eliminated by the proposed rule. Another FFL asserted that he anticipated a 75 percent loss in sales due to the CLEO requirement, and two other FFLs stated that they anticipated a 20 percent loss in revenue due to the CLEO certification requirement.

Several commenters opined that the proposed rule would place significant financial burdens on firearm dealers by prolonging the transfer process for trusts and legal entities because under the responsible person definition the trust or legal entity will need to obtain the fingerprints and photographs of all members of the trust or legal entity.

These commenters maintained that the proposed rule will require dealers to reserve inventory without payment until the transfer process is complete—which currently takes in excess of nine months. Several other commenters stated that further delays encountered in the transfer process place NFA dealers at a significant financial disadvantage, noting that by the time a transfer is approved, often the item being transferred is a previous production model. Finally, a number of commenters focused on their belief that the proposed rule would negatively impact employment in the firearms industry, causing lay-offs and increased unemployment among employees of firearm manufacturers and sellers.

ii. Small Businesses

Many commenters stated generally that the proposed rule will hurt, hinder, or make it harder for small business owners, particularly firearm related businesses, by increasing transaction costs and transaction times. Several commenters emphasized that small firearms related businesses are engaged in lawful commerce, and expressed the view the government was seeking to unfairly target such businesses with regulations increasing the cost of doing business. Other commenters hypothesized that the proposed rule will destroy small businesses because it would limit or prevent law-abiding citizens from acquiring NFA items.

iii. Specific Types of NFA Manufacturers and Markets

Several commenters focused on the proposed rule's negative effect on specific NFA market segments such as the markets for silencers, short-barreled rifles, machineguns, and military surplus firearms. A large number of commenters claimed the proposed rule would significantly reduce the sale of silencers, driving silencer manufacturers out of business and potentially causing the entire silencer industry segment to collapse. Another commenter predicted the proposed rule would cause the collapse of the military surplus firearms market. Some commenters expressed concerns that the proposed rule could harm technical innovations for silencers, with one commenter asserting that advancements in silencer technology will grind to a halt, affecting the military firearms supplied to "our troops overseas who deserve and require the best we have to offer." One commenter reasoned that the proposed rule will limit the availability of NFA items, thus making the value of silencers, machineguns, and short-barreled rifles increase for those

who own them. This commenter anticipated that this effect would make current owners "happy."

iv. Impact on Related Businesses (Including Law Firms)

Several commenters expressed concerns that the proposed rule will negatively impact firearms related-industries, not only those businesses directly involved in the sale and manufacture of firearms. Many of these commenters asserted that the proposed rule's CLEO certification requirement will have the effect of halting the sale of all NFA items in many areas (because, they assert, certain CLEOs will not sign certifications), which, they assert, will have a cascading effect: Reduced sales will result in substantial losses for NFA manufacturers and dealers (particularly those involved in the silencer market), which, in turn, will negatively impact businesses that contribute to the manufacturing process or derive business from firearms dealers and manufacturers. One commenter stated that the proposed regulation will cause well paying, American jobs to be lost in machining, manufacturing, marketing, and retail sales. Examples provided of related businesses that commenters believe would be negatively impacted also included: Ranges, materials suppliers, computer numerical control and milling operations and manufacturers, third party processors (such as Cerakote coating, powder-coating, anodizing, black oxide, metal sales, tooling, laser marking, and engraving), office supply stores, trade shows, and various NFA shooting events (such as machinegun shoots).

Other commenters asserted that the proposed rule will negatively impact law firms that handle trust matters involving NFA items because demand for creation of trusts solely used to obtain and hold NFA firearms will decrease as a result of the proposed rule's provision defining responsible persons for legal entities and requiring such persons to undergo background checks. These commenters asserted that the decreased demand for firearm trusts will cause a loss of revenue to law firms and layoffs of law firm employees.

Department Response

The Department acknowledges that this rulemaking will have some modest impact on the firearms industry; the Department does not agree, however, with the assessment of the many commenters who assert that this rulemaking will have a substantial negative economic impact on NFA industry participants (including

manufacturers, dealers, and employees), and on related businesses such as suppliers. The comments asserting that the proposed rule will have substantial negative (and even catastrophic) impacts on the industry are primarily premised on two conclusions, neither of which, in the Department's view, are supported by the facts and circumstances underlying this final rule. The first conclusion is that the CLEO certification requirement in the proposed rule will deter potential purchasers who previously would have chosen to obtain an NFA firearm through a trust or legal entity because they could do so without the need for CLEO certification. This conclusion is largely based on assertions that many CLEOs (1) refuse to sign NFA certifications even when the applicant is not prohibited from possessing a firearm; (2) too slowly process certification requests due to resource constraints; or (3) seek to extract political or economic favors from applicants in exchange for signing a certification. As a result of the impediments posed by CLEO certification, the commenters assert, the proposed rule would have resulted in a drastic reduction in the sale of NFA weapons (particularly silencers), thus decimating the NFA industry and greatly harming related industries. The second conclusion is that the demand for NFA firearms will dramatically decrease if a greater number of NFA applicants are required to undergo background checks and to submit fingerprints and photographs. This conclusion is directly linked to the rule's definition of "responsible persons" affiliated with trusts and legal entities; persons meeting that definition will be required under this final rule to undergo background checks and submit fingerprints and photographs when the trust or legal entity they are affiliated with files an NFA application or is a transferee.

The conclusion regarding the impact of CLEO certification has been rendered moot by this final rule. In response to the concerns expressed by commenters relating to CLEO certification, the Department has eliminated that requirement, and replaced it with a less burdensome CLEO notification requirement. Hence, obtaining CLEO certification is no longer a hurdle for individuals, trusts, or legal entities acquiring an NFA firearm, and therefore the problems identified by the commenters with respect to the CLEO certification process are no longer a factor threatening the economic health

of NFA manufacturers, dealers, and related businesses.

With respect to the commenters' conclusion regarding background checks, the Department believes the reality of the firearms marketplace refutes the conclusion that background checks will deter individuals from acquiring NFA firearms. Background checks, a vital law enforcement tool that ensures prohibited persons will not unlawfully obtain firearms, are already conducted on virtually all non-licensed individual persons who purchase either a GCA or NFA firearm from an FFL or FFL/SOTs. Notwithstanding these checks, both the GCA and NFA firearms markets are flourishing. Background checks do not significantly deter non-prohibited individuals from purchasing firearms from licensed dealers, including NFA dealers and manufacturers.

Other market conditions also refute the concerns about the proposed or final rule threatening the viability of NFA dealers and manufactures. Many States have been relaxing prohibitions on ownership of silencers, SBRs, and SBSs, thus expanding the market for these NFA firearms. In addition, the firearms industry is constantly introducing new and improved models. As evidence of this, the Shooting, Hunting and Outdoor Trade (SHOT) Show is attended annually by more than 62,000 industry professionals from the United States and many foreign countries, seeking information on new firearms and shooting products. This is a clear market signal that demand for innovation and development of new firearms and shooting products, including NFA products, is strong, and will continue to support NFA manufacturers and dealers regardless of whether or when the final rule is implemented. Additionally, demand for silencers has continued to increase as several States have recently legalized ownership of silencers for hunting and self-defense; the trend of States legalizing silencer ownership appears likely to continue.

Consequently, the Department anticipates demand for silencers will continue to rise. Finally, some States have recently relaxed laws restricting the possession of SBRs and SBSs, thereby increasing the potential market and demand for these NFA items.

The Department also disagrees with comments that FFLs will be hurt because they reserve inventory without payment during the application process. An FFL may choose, as part of its business practice, to require payment in full on an NFA firearm before an application may be submitted. Additionally, ATF posts the processing

time for NFA items on its Web site so a purchaser may determine the approximate time necessary to process the application. Due to the nature of the application process, some risk that a new model will be introduced prior to the approval of a customer's purchase is inherent; the new rule, however, does not materially increase that risk.

The Department also rejects comments asserting that this rulemaking is intended to limit or prevent ownership of NFA items by persons who are not prohibited from receiving or possessing them. This final rule is intended to ensure only that persons acquiring and having access to NFA firearms are not prohibited from receiving or possessing them. Furthermore, in response to commenters who asserted that the decreased demand for firearm trusts will cause a loss of revenue to law firms and layoffs of law firm employees, a formation of a trust or other legal entity is not required to acquire an NFA firearm. Therefore, comments on the loss of income for attorneys who draft these documents is outside the scope of this rulemaking.

b. Burden of Implementation

Comments Received

Several commenters took issue with ATF's assertion that the proposed rule would cause only a minimal burden to industry. In sum, these commenters explained that the proposed rule will be more than minimally financially burdensome to the industry because it will cause customers to stop buying NFA items due to the extended wait times and increased regulatory burdens created by the rule, thus making it less profitable for licensees to hold their SOT status.

According to some commenters, as a result of the proposed regulation, some retailers are facing shutdowns, others face employee lay-offs, and all licensees and related-industries are bracing for revenue reduction. Some commenters stated the proposed rule unreasonably burdens commerce because of the cost of fingerprinting and passport photographs for every purchase. A commenter stated the proposed rule will make it more difficult for local businesses to sell items that are already difficult to obtain. Finally, a commenter argued that the proposed rule is so burdensome it will deter citizens from acquiring NFA items through the approved government process, and encourage the rise of a black market in NFA items. Several commenters claimed it will take about two or three additional hours of customer service assistance per transaction to handle the

additional fingerprint cards, photographs, and application paperwork should the NPRM be implemented. One commenter estimated three additional customer service hours would be needed while others estimated two hours would be needed.

Department Response

Applicants who purchase NFA firearms in an individual capacity have long paid the costs of fingerprints and photographs; the final rule equitably extends these costs to trust and legal entity applicants, and reasonably limits the photograph and fingerprint requirements to responsible persons of the trust and legal entity applicants. The Office of Management and Budget, when granting the renewal of the ATF Forms 1, 4, and 5, has determined that the cost of fingerprints and photographs is not an unreasonable burden. To the extent commenters have asserted that requiring responsible persons to submit fingerprints and photographs is more burdensome than the requirement for individuals because a trust or legal entity may have multiple responsible persons, the option exists for the applicants who have formed trusts or legal entities for the express purpose of acquiring NFA firearms to forego use of a trust or legal entity and acquire the NFA firearm in an individual capacity. The formation of a trust or legal entity is not required to purchase an NFA firearm. For corporate applicants, the costs associated with submitting fingerprints and photographs for responsible persons is a reasonable cost of doing business; for trusts or legal entities that acquire NFA firearms to allow multiple individuals to possess and use the same firearm (each of whom will therefore be a responsible person), the cost of submitting fingerprints and photographs for each of those persons is directly related to the statutory goal of ensuring prohibited persons do not possess and use NFA firearms.

The Department also notes that, as has been explained elsewhere, the Department predicts that the rule's impacts on demand for NFA firearms will be minimal and the costs to trusts and legal entities will be low.

The final rule also simplifies the process of acquiring an NFA firearm by eliminating the CLEO certification requirement for all applicants or transferees and replacing it with a less burdensome notification requirement. Similarly, the final rule has clarified the "responsible person" definition to ensure it does not extend to all members of a trust or legal entity (e.g., by excluding from the definition corporate

shareholders who do not control the management or policies of the entity with respect to firearms).

c. Assessment of the NPRM Implementation Cost

Comments Received

A commenter observed that the proposed rule will be expensive to implement for the firearms industry. Another commenter warned that ATF failed to take into account the fact that the proposed rule will also have an adverse financial impact on those who manufacture and sell or transfer NFA firearms. At least one commenter stated ATF failed to consider the significant revenue losses the proposed rule would impose on small businesses. Another commenter disagreed with ATF's assertion that the proposed rule will not affect small businesses. A commenter who works for a firearms business stated, "[I] manage a small business that holds an FFL and deals in NFA devices. . . . All (100%) of our customers utilize legal entities to lawfully obtain NFA firearms. Since the proposed rule change our business in selling NFA firearms has dropped to zero as our customers do not want to spend money with the risk that they may not be able to take delivery of the NFA item. That drop translates into loss of revenue for my small business, distributors I buy from, manufacturers of the devices and manufacturers of related equipment." A commenter who is an employee of a silencer manufacturer stated that the proposed regulation will "surely cripple if not disable our business." Finally, another commenter asked the question, "what about the manufacturers and vendor of these controlled items who would inevitably lose a substantial amount of business?" That commenter argued that it is foreseeable that businesses involved in the manufacturing and selling of NFA items will suffer from the implementation of the proposed regulation.

Department Response

The Department believes that any impact on the firearms industry arising from the proposed rule will be insignificant. As noted, the CLEO certification requirement has been changed to a notification requirement, and the definition of responsible person has been clarified. These changes will ensure that the impact on the firearms industry is minimal. Applications postmarked prior to the implementation of the final rule will be processed under the current regulations. Only those applications postmarked on or after the implementation of the final rule will be

subject to the new regulations. Therefore, individuals who refuse to purchase NFA items on the basis of their belief that the rule will interfere with their ability to complete the transfer process are mistaken.

d. Commenters' Assessments of Implementation Cost

Comments Received

A commenter challenged ATF's assessment of the implementation cost of the proposed regulation, saying that ATF failed to assess the loss of revenue from several sources; this commenter continued that ATF failed to consider all of the monetary loss manufacturers, wholesalers, dealers, individuals, and "corporate/trust" entities will incur as a result of the proposed rule. This commenter argued that there will be "perceptual monetary loss" as well. According to this commenter, when law abiding buyers perceive that the transaction will require CLEO certification that cannot be obtained in their area, the potential buyers will not attempt to buy the NFA items because they will believe the CLEO will not approve the sale. The commenter continued that this perception will ultimately lower the number of purchasers, thus creating a monetary loss for the NFA industry.

A commenter stated that the proposed regulation does not adequately address the economic impact to small and medium businesses. This commenter stated that no assessment of this type could be valid without conservative assumptions on the number of lost sales due to these increased restrictions; these restrictions will have a significant and material impact on the number of silencers and other NFA items sold in the United States. This commenter stated that this is likely to cause many businesses (including large, medium, and small businesses) to close and would have a "downstream ripple effect to their suppliers and local communities." At least one commenter asked the following questions: "can you imagine the damage this will cause to the NFA market? What happens to the value of our items when you indirectly prohibit 90 percent of potential customers from obtaining the item? What happens to the R&D budget for our arms manufacturers when they don't sell anywhere near the volume to their most abundant customer base?"

Another commenter noted that ATF failed to identify the cost associated with lost time from the backlog of applications for both existing and future employees of any company. Another commenter stated the proposed rule will

have a considerable and obvious negative impact on the industry by stifling sales and adding significant burdens relating to long term secure storage of pending NFA items. Another commenter stated that the proposed rule will decimate the industry that makes these NFA products for the military and the police because the NPRM will put these companies out of business, making product warranties that the military and police rely on invalid.

Department Response

The Department agrees that CLEO certification for all responsible persons of trusts or legal entities is not necessary; consequently that requirement has been eliminated in this final rule and replaced with a less burdensome notification requirement. The change from certification to notification will reduce the impact on the firearms industry. The Department believes that the impact on demand for NFA firearms arising from the rule will be slight. Please see section IV.E.2.a above for additional detail regarding the Department's response to claims this rule will negatively impact NFA manufacturers, dealers, and related businesses.

The Department does not agree with the commenters who assert that the proposed rule would have a negative effect on NFA firearms suppliers to the military and police. Government entities are exempt from the requirements in the rule and therefore neither the NPRM nor the final rule affects this industry. Moreover, because the impact of the rule on the market for NFA firearms will be slight, the Department does not anticipate that military and police suppliers will go out of business as a result of the rule.

The Department recognizes that the final rule will affect processing times and is implementing processes to keep the impact to a minimum. However, processing times do not appear to reduce the demand for NFA firearms. ATF received more than ninety thousand applications in 2014 when processing times were approximately nine months.

3. Quantification of the Rule's Expected Benefits

Comments Received

Several commenters noted that the proposed rule provided only three "anecdotal" examples occurring over the 80-year life of the NFA to support the need for the proposed rule; they asserted that these examples failed to quantify any expected benefits, raised many questions, and could just as

strongly justify a claim that the current procedures are working. Two commenters stated that ATF likely did not quantify any benefits or assign an economic value to such benefits because the NPRM predominantly addressed conduct already criminalized and prohibited by statute and regulations, and also noted that none of ATF's examples illustrated or supported the problem that ATF speculated existed. Many commenters stated that the proposed rule presented no benefit to public safety or to ATF's ability to execute its responsibilities relating to the NFA. Several commenters stated that the overall benefits were inconclusive, nonexistent, and insignificant. A few commenters stated that simply speculating as to some "marginal" benefit without estimating the size or value of that benefit made a "charade" of the rulemaking process, and asserted that a "rather unlikely combination of circumstances" would need to exist for the rule to produce any benefits at all. Another commenter believed changes were needed to the current regulations; however, this commenter stated that the changes should actually balance implementation costs with the desired effect. Another commenter wanted more specifics, and asked, "[w]hat are the metrics of success for this proposed rule? How many lives will it save for the cost of actual implementation using the numbers I provided [for responsible persons] rather than the (no offense) ludicrous number of '2' propounded by ATF?" Another commenter asked if ATF could show how these proposed changes would improve public safety, and how the NFA's current rules are unsafe.

Other commenters stated that the problems with the proposed rule far outweigh any perceived benefits. One commenter acknowledged the benefit of increasing public safety by preventing prohibited persons from obtaining firearms, but requested that ATF expand its explanation of the benefits the proposed revisions would deliver. This commenter stated that this additional information on benefits would be useful when considering and offsetting the increase in costs from the proposed rule.

Several commenters stated that ATF's assumptions lacked statistical validity. Other commenters stated that the proposed rule lacked evidence to support the proposition that the proposed changes were needed to enhance safety by preventing criminal use of highly regulated NFA items. A commenter asked ATF to provide statistical evidence that the proposed rule would reduce violent crime, and to provide a list of all violent crimes

committed with registered NFA weapons by the actual owner of the firearm where these proposed changes would have deterred the crime. Another commenter similarly asked for current statistics on crimes committed by NFA weapons, and how the proposed rule would make citizens safer. This commenter also asked for the studies that ATF did "in conjunction with this legislation," and asked ATF to provide the studies and specific statistics that support the proposed regulations. Another commenter asked if ATF's three provided examples represent the only examples that ATF has identified since the origin of the NFA in 1934. This commenter requested that ATF clarify its analyses used to support a public safety benefit for the proposed rule since this commenter, and many others, contend that there is no documented violent criminal activity associated with NFA firearms. These commenters noted that the proposed rule would not have applied to the few rare occurrences of violent crime with legally owned NFA registered firearms, as those activities were committed by a non-prohibited person in possession of a properly registered NFA item. Another commenter asked ATF to have "an unbiased third party" show a real risk to public safety through past harms from the use of NFA items acquired via a living trust or legal entity, as well as project future risk trends from the use of such items.

Another commenter referenced a 2001 survey of inmates that showed that less than two percent of inmates used semi-automatic or fully automatic rifles to commit their crimes. This commenter contended that the proposed rule's effect of "tightening restrictions on law abiding citizens" would not reduce this rate, and that ATF did not need to "pass greater legislation to reduce the access of law abiding citizens to weapons and accessories which are registered, carefully monitored, and taxed."

Department Response

Between 2006 and 2014, there were over 260,000 NFA firearms acquired by trusts or legal entities where no individual associated with the trust or legal entity was subject to a NFA background check as part of the application process. NFA firearms have been singled out for special regulation by Congress because they are particularly dangerous weapons that can be used by a single individual to inflict mass harm. The Department does not agree that a mass shooting involving an NFA firearm obtained by a prohibited person through a legal entity must occur

before these persons must be subject to a background check.

The GCA, at 18 U.S.C. 922(t)(1), requires FFLs to run a NICS check "before the completion of the transfer" of a firearm, and verify the identity of the transferee. There is a limited exception under 18 U.S.C. 922(t)(3)(B) when a firearm is transferred "between a licensee and another person . . . if the Attorney General has approved the transfer under section 5812 of the Internal Revenue Code of 1986." The purpose of this exception is to avoid multiple background checks on the same individual by exempting a person from a NICS check at the point of transfer when that same person has already been the subject of a background check during the NFA registration process. Congress did not intend for NFA firearms to be transferred to individuals who avoided the background check process altogether. Between November 30, 1998, and August 31, 2015, the FBI's Criminal Justice Information Services Division conducted 216,349,007 background checks using NICS. Of the background checks conducted during this time period, 1,229,653 resulted in a denial. The 99.4 percent "proceed" rate does not negate the public safety associated with the 0.6 percent denied. While the number of NFA applications that are denied due to the background check is small, because even one prohibited individual with an NFA firearm poses an enormous risk to the lives of others, that small number does not negate the public safety associated with denying a prohibited person access to an NFA firearm. Furthermore, requiring a background check on responsible persons of trusts and legal entities during the application process is consistent with Congressional intent for these individuals to undergo a background check to be eligible for the limited exception under 18 U.S.C. 922(t)(3)(B).

Additionally, even though 70 percent of all crime gun traces are on handguns, Federal law (18 U.S.C. 922(t)) requires FFLs to conduct background checks prior to the transfer of long guns (rifles and shotguns) as well as handguns (pistols and revolvers) to unlicensed persons. Thus, Congress did not intend to exclude certain types of firearms from background checks simply because those firearms may be less frequently involved in criminal activity. The Department does not agree that further research is needed to show that a responsible person for a legal entity purchasing a machinegun should be subject to a background check. There is a tangible risk to public safety whenever

a prohibited individual has the power to exercise control over an NFA firearm. For additional responses to comments on public safety see section IV.B.1, which specifically addresses the sufficiency of current regulations.

See sections IV.E.1.a and E.1.b for responses to comments on the methodology for determining the number of responsible persons and number of pages of supporting documents. See section IV.D.1 regarding responses to comments on Executive Order 12866.

F. Comments on Rulemaking Process

1. Availability of Background Information

Comments Received

A commenter stated that ATF did not make the NFATCA petition available for public inspection at any time before or during the public comment period for ATF 41P. This commenter noted that ATF cited the NFATCA petition as its basis for the NPRM, and that the petition formed the “central and critical foundation” of ATF’s argument for the proposed changes. Noting that ATF did not explain why it withheld this vital information, this commenter called ATF’s lack of transparency inexcusable, and stated this inaction warrants further investigation and clarification by ATF.

Another commenter stated that the NPRM indicated that the proposal rested on certain studies and other underlying information, but that such underlying documents (seven categories, including the rulemaking petition; alleged “numerous statements” from CLEOs that ATF received regarding “purported reasons” for denying CLEO certifications, details regarding the instances that prompted the decision that the regulation was needed; and the methodology employed in random samples to estimate the number of responsible persons and the documentation pages) were not placed in the rulemaking docket and, thus, the commenter had requested such documents (and any other documents that ATF replied upon when preparing the NPRM) “[i]n order to ensure an adequate opportunity to comment on the ATF proposal.” The commenter asserted that ATF declined to make public the requested information, and that ATF neither posted materials to the eRulemaking site, nor made them available in ATF’s reading room. The commenter also requested the documents via a Freedom of Information Act (FOIA) request without receiving such documents. The commenter stated its concern that omitting these items raised the question

of what other pertinent materials may have been excluded. The commenter quoted several legal cases explaining that interested parties should be able to participate in a meaningful way in the final formulation of rules, which would require an accurate picture of the agency’s reasoning, which should be done with the agency providing the data used and the methodology of tests and surveys relied upon to develop the NPRM. The commenter continued that case law provides that an agency commits serious procedural error when it fails to reveal the basis for a proposed rule in time to allow for meaningful commentary. Thus, the commenter reasoned that providing access to materials like those it requested has long been recognized as essential to a meaningful opportunity to participate in the rulemaking process. The commenter concluded that the lack of access to the requested materials hindered the ability of interested persons to address the assertions in the NPRM, and that if ATF intends to revise part 479 in the manner proposed, ATF should first lay the foundation for a proposal and then expose that foundation to meaningful critique.

Department Response

In response to the assertion that the Department withheld the NFATCA petition, the Department references section II of the NPRM that details each of NFATCA’s four categories of concern—amending §§ 479.63 and 479.85; certifying citizenship; providing instructions for ATF Forms, 1, 4, and 5; and eliminating the CLEO certification requirement. 78 FR at 55016–55017.

The NPRM explained those aspects of the NFATCA petition that were relevant to the rulemaking. The Department provides the following excerpt from section II.A of the NPRM:

The NFATCA expressed concern that persons who are prohibited by law from possessing or receiving firearms may acquire NFA firearms through the establishment of a legal entity such as a corporation, trust, or partnership. It contends that the number of applications to acquire NFA firearms via a corporation, partnership, trust, or other legal entity has increased significantly over the years. ATF has researched the issue and has determined that the number of Forms 1, 4, and 5 involving legal entities that are not Federal firearms licensees increased from approximately 840 in 2000 to 12,600 in 2009 and to 40,700 in 2012.

This passage illustrates, with complete transparency, how ATF approached and researched the rulemaking process. Such detail not only lays “the foundation for a proposal” but also exposes “that foundation to meaningful

critique.” Moreover, the NFATCA petition was readily available through the internet. Thus, all relevant aspects of the NFATCA petition that were used in the development of the proposed rule were available to commenters and clearly discussed in the NPRM.

In response to the commenter who indicated that ATF did not provide certain documents related to seven categories of information that the commenter deemed essential to meaningfully commenting on the rule, the Department acknowledges that ATF received requests for disclosure of the information from the commenter. Those requests were processed by ATF’s Disclosure Division and a copy of the NPRM was provided to the commenter in response to the commenter’s request. The response did not include the requested seven categories of information. The Department believes, however, that all of the requested information was discussed and addressed in the NPRM to a degree sufficient to provide the commenter with the opportunity to participate in a meaningful way in the discussion and final formulation of the final rule. The Department did not rely on any data, methodologies, predictions, or analysis that it did not clearly explain in the NPRM. The Department provided commenters “an accurate picture of the reasoning that . . . led the agency to the proposed rule” and “identif[ied] and ma[de] available technical studies and data that it . . . employed in reaching” its decisions. *Connecticut Light & Power Co. v. NRC*, 673 F.2d 525, 530–31 (D.C. Cir. 1982).

For example, the Department explained the source and number of samples it used to determine the average number of constitutive documents and responsible persons at trusts and legal entities. The Department cited and relied upon the NFATCA petition that prompted the rulemaking. The Department gave examples of instances in which background check requirements were nearly evaded to show that a risk of circumvention existed. The Department openly discussed the benefits and drawbacks of the CLEO certification requirement and its proposed expansion. Further, specific details about public safety concerns, including specific instances, were included in the NPRM. The Department believes that the details provided in the NPRM were sufficient and, as such, no additional information needed to be placed in the docket.

With respect to CLEO certification specifically, the Department believes that the NPRM amply conveyed ATF’s

knowledge of various reasons that CLEOs deny CLEO certifications. This is knowledge gained from the field and interactions that the NFA Branch has had with CLEOs, as well as with applicants and transferees, during the application process and at other times. In any event, the Department notes that any failure in this regard caused commenters' no prejudice, as the Department was persuaded to change the CLEO certification requirement to a notice requirement. *See Am. Radio Relay League, Inc. v. FCC*, 524 F.3d 227, 236–37 (D.C. Cir. 2008).

Finally, the Department emphasizes that it remained open to persuasion throughout the rulemaking. In response to comments critical of the CLEO certification requirement, the Department adopted a CLEO notification requirement. In response to comments critical of various aspects of its statutory and regulatory review and its cost-benefit analysis, the Department expanded and strengthened its analysis and revised its estimates where appropriate. The Department believes that the analysis and responses to comments in this preamble conclusively show that commenters were provided a meaningful opportunity to support, challenge, and critique the proposed rule and help to shape the Department's decision.

2. Public Submissions

a. ATF Posted Unrelated Materials to the Docket During the Public Comment Period

Comments Received

A commenter noted that ATF posted an unrelated final rule in the docket for this NPRM at www.regulations.gov, and asked ATF to remove it. This same commenter noted that two weeks after the comment period opened for this NPRM, ATF's Web site entitled "ATF Submissions for Public Comments" also contained references to two unrelated matters, and requested this be clarified. This commenter expressed concern that this "extraneous material" confused the public to think that the comment period for ATF 41P had ended, and referenced *MCI Telecommunications Corp v. FCC*, 57 F.3d 1136 (D.C. Cir. 1995).

Department Response

The Department is unaware of any "extraneous material" in the docket. A Department review of the www.regulations.gov site reveals that there are no documents to support this comment included in this docket. The only document available is the subject NPRM. The Department also notes that on its public Web site, ATF's link to

"ATF's Submissions for Public Comment" directs users to the Bureau's FOIA library, with resources appropriate to a full array of regulatory and policy issues.

b. ATF Failed To Accept or Post Public Comments

i. ATF Failed To Include "Pertinent" Submissions to the Docket

Comments Received

A commenter stated that "ATF has a statutory duty to provide public access to members of the public and where . . . access is denied during the very period when the public are supposed to be able to investigate matters as a basis for submitting comments on a proposed rule, ATF has denied a meaningful opportunity to participate in the notice and comment rulemaking process." The commenter expressed concern regarding the closure of the reading room from November 8, 2013, until November 15, 2013, while ATF was open. The commenter questioned how such a closing was consistent with ATF's duty under FOIA. The commenter also expressed concern that ATF mandated that counsel for commenter submit documentation regarding race, ethnicity, employment history, and other matters before ATF would permit access to its reading room.

This same commenter stated that it physically inspected the docket at ATF's reading room, but that it appeared that only the public comments were available for review. The commenter expressed concern that the physical inspection of the docket also revealed that ATF had "selectively excluded correspondence clearly related to the rulemaking proceeding." The commenter stated that it identified six items that had not been entered into the docket and requested that all pertinent material be placed in the docket. One such item was posted, but the other five referenced items were not added to the docket prior to commenter's second physical inspection of the docket. The commenter stressed concern that ATF either delayed posting items or ignored its requests.

Department Response

The Department notes that on September 12, 2013, ATF posted the first comment relative to this NPRM on www.regulations.gov. ATF posted the final comment on February 7, 2014. In total, ATF posted 8,433 comments out of 9,479 received. Given the volume of comments and the resources available to ATF, the Department contends that ATF strived to post all comments that met the criteria in the Public Participation

section of the NPRM (78 FR at 55025) in the order they were received and reviewed. For this final rule, all comments received are included in the final rule's administrative record.

Regarding the commenter's portrayal of ATF's reading room being closed November 8, 2013, until November 15, 2013, this is not accurate. The Department acknowledges that a few days elapsed between the commenter's request and his counsel gaining access to ATF's reading room. Regarding the commenter's concern that ATF requested that his counsel provide certain documentation before gaining access to the reading room, ATF notes that this documentation is part of its standard procedures that have been implemented to address public safety concerns and does not meaningfully interfere with access to all of the materials available in the ATF reading room.

ii. ATF Failed To Permit a 90-Day Public Comment Period

Comments Received

A commenter pointed out problems inhibiting access to public to public comments through, for example, (1) the reading room being unavailable, (2) the www.regulations.gov site malfunctioning, (3) the government closure, (4) ATF's slowness to post submitted comments, and (5) ATF's staffing. This commenter previously requested that ATF extend the comment period, and noted that other commenters made similar requests to ATF. This same commenter also noted that others raised concerns about ATF's delay in posting comments to the docket. This same commenter stated that other agencies granted extensions of comment periods due to the government shutdown. Several commenters requested an extension for public comment by at least one day for each day that either ATF was closed or the www.regulations.gov site was inaccessible.

Department Response

The Department determined that an extension of the 90-day comment period was not warranted because it had received a large volume of diverse comments and additional time was unlikely to result in the submission of comments identifying new concerns. Many of the comments ATF received were a repetition or duplication of previous comments. Further, using all resources available, ATF followed the guidelines for public participation that appeared in the NPRM and posted "All comments [that referenced] the docket

number (ATF 41P), [were] legible, and [included] the commenter's name and complete mailing address." The www.regulations.gov Web site is maintained by the Environmental Protection Agency. Neither the Department nor ATF has control of the functionality of an external agency's Web site.

iii. ATF Selectively Delayed Reviewing and Posting Comments Received

Comments Received

A commenter noted ATF's delays in posting comments and that the delays were not uniform. This commenter contended that ATF "conveniently" delayed the posting of the comment the commenter prepared for another individual, which critiqued flaws in the NPRM, while ATF simultaneously "apparently seeded the docket with submissions from proxies." The commenter stated that once the comment it prepared for another individual was posted, the cause for delays in posting comments, in general, was ameliorated and that comments were continually posted. This commenter also expressed concern that ATF continued to exclude its submissions or delayed posting them to the docket while processing correspondence and comments from other interested persons, which raised a question regarding "what other material submitted for the docket by other interested persons was not properly posted." The commenter stated that its communications to ATF regarding the rulemaking only occasionally received a reply, only sometimes were placed in the docket, and only sometimes were posted promptly. Despite commenter's inquiries, ATF declined to provide any explanation for the "seemingly arbitrary management of the docket."

Another commenter stated that ATF repeatedly delayed posting comments, and that this significantly impacted his ability to meaningfully participate in the comment process. This commenter observed that well past the government shutdown, 25–50 percent of the comments received had not been posted; during other periods when the government was not shutdown, four or five days passed without ATF posting any comments even though the total comments received increased every day.

Department Response

The Department stresses that it posted all comments that followed the public participation guidelines in the NPRM. ATF followed its processes for reviewing and posting comments.

iv. ATF "Distorted" the Public Comment Process by "Apparently Submitting Hearsay Information via Proxies"

Comments Received

A commenter stated that ATF had proxies submit comments "in an effort to bolster the suggestion of prior misuse of legal entities" and listed examples of comments from ATF Special Agent Gregory Alvarez and John Brown, President of NFATCA. This commenter stated that ATF did not disclose its relationship with John Brown or reveal that the only information John Brown offered in his public comment is "what ATF leaked to him."

Department Response

Neither the Department nor ATF uses or recruits "proxies." Both the Department and ATF are committed to a robust, candid rulemaking process and have an interest only in authentic public comments.

v. ATF's Previous "Lack of Candor" Shows a Heightened Need for Procedural Regularity

Comments Received

A commenter stated that ATF has a well-documented record of "spinning" facts and engaging in outright deception of the courts, Congress, and the public. As a result, this commenter believes there is even more reason for ATF to provide the documentation showing its basis for characterizing the issues in the NPRM, that it fairly considered alternatives, that it only inadvertently provided potentially misleading information or omitted pertinent information from the docket, that it only accidentally failed to consider requests for extension of the comment period, and that it had no knowledge that commenters with a connection to ATF would act to bolster "ATF's unsupported assertions."

The commenter purported to provide instances where: (1) ATF committed blatant "institutional perjury" in the context of criminal prosecutions and in support of probable cause showings for search warrants; (2) ATF delayed answering questions or provided deceptive answers to congressional inquiries about NFRTR inaccuracies and the "Fast and Furious" gun-walking operation, for example, and published proposed rules in flagrant disregard to limitations on appropriations; and (3) ATF misled the public about the accuracy of the NFRTR.

Department Response

The Department notes that ATF has committed available resources to

develop this NPRM and respond to comments as part of the rulemaking process. In developing this rulemaking and responding to comments, ATF has followed all established regulatory procedures and complied with all relevant policies and requirements.

3. Timetable for Final Rule

Comments Received

A commenter identified prior communications with ATF employees in August 2013, prior to the proposed rule's publication in September 2013, regarding whether a rule finalizing the proposed changes in the NPRM would only apply to applications submitted after the effective date of the regulation, and stated that these communications indicated that such would be the case. However, this commenter stated that the text of the proposed rule was not clear on this matter and ATF had "needlessly confused the public" and potentially falsely reassured persons interested in filing comments. This commenter noted that several commenters expressed concern with the "grandfathering" or transition issues. A few commenters specifically asked whether ATF would grandfather any trusts or legal entities where the applications have been sent in, the \$200 tax stamp check has been cashed, and the application is "pending" prior to the effective date of the final rule. A few commenters asked what would happen to pending or "in limbo" applications, and if the applications would be sent back to the applicants. Several commenters suggested—or would want to ensure—that ATF "grandfather in" (*i.e.* not apply the requirements of the final rule to) all applications already submitted. A commenter stated that ATF could just as likely grandfather the pending applications as reject them on the grounds that they were not submitted on a new form. If ATF does not grandfather these applications, another commenter asked how ATF would handle them, and about the involved costs. Another commenter asked if the pending applications would have to be resubmitted, and if so, whether they would go to the back of the line for processing. Another commenter specifically asked whether ATF would refund the transfer tax for the applications pending approval. A few commenters asked about retroactive changes to previously completed transfers. Another commenter urged ATF to publish a notice clarifying that ATF has no intent to return pending applications to applicants for resubmission to conform with any new regulation.

A few commenters asked if existing legal entities and trusts holding NFA items must submit to ATF fingerprints, photographs, and CLEO certifications for each responsible person or if they would be grandfathered. Another commenter pointed out that the proposed rule did not provide a cost estimate to bring the “many thousands” of existing trusts and corporations into compliance with the new rule, and therefore surmised that past transfers would be grandfathered. If this is not the case, this commenter suggested that ATF publicly disclose such a cost estimate. This commenter stated that it could take months for a large corporation, which routinely purchases and sells NFA weapons, to establish policies and bring the entire workforce into compliance. This commenter asked whether employees who have been approved as responsible persons could continue conducting business while other employees were pending approval as responsible persons, and presumed that ATF would answer affirmatively. Finally, this commenter asked if ATF has estimated, even internally, the ATF staffing level and expansion of staff required to implement these new rules considering that the current wait time for Form 4 transfers and Form 3 (dealer to dealer) transfers is six to nine months, and three months, respectively, and the proposed rule, if finalized, would result in a “likely substantial” additional workload for ATF.

Department Response

The final rule is not retroactive and therefore the final rule will not apply to applications that are in “pending” status, or to previously approved applications for existing legal entities and trusts holding NFA items. The Department has considered the additional costs to ATF as a result of this rule, which are detailed in section VI.A below.

4. Commenters Urge ATF To Withdraw Proposed Rule and Request a Public Hearing

Several trade association commenters, as well as individuals, encouraged ATF to withdraw the proposal. One of these commenters, a trade association, suggested that ATF work with makers, sellers, and users of NFA firearms to develop a rule that is more realistic and addresses the real needs of all those concerned. Another trade association urged ATF to withdraw or substantially rewrite the rule. Both trade associations requested that ATF hold a public hearing to ensure that all views and comments are fully heard. An individual commenter requested a

hearing, or series of hearings around the country. In addition, another of these commenters advised ATF to focus on streamlining the NFA application process and reducing the stress on local law enforcement.

Department Response

The Department does not believe that soliciting additional information and views from the public, either through informal meetings to further refine the scope of the rulemaking, or through public hearings, are necessary or appropriate.

The Department notes that the proposed rule included four direct, clear objectives:

1. Defining the term “responsible person,” as used in reference to a trust, partnership, association, company, or corporation;
2. Requiring responsible persons of such legal entities to submit, *inter alia*, photographs and fingerprints, as well as a law enforcement certification, when filing an application to make an NFA firearm or function as the transferee on an application to transfer an NFA firearm;
3. Modifying the information required in a law enforcement certification to relieve the certifying official from certifying that the official has no information indicating that the maker or transferee of the NFA firearm will use the firearm for other than lawful purposes; and
4. Adding a new section to ATF’s regulations stipulating that the executor, administrator, personal representative, or other person authorized under State law to dispose of property in an estate may possess a firearm registered to a decedent during the term of probate without such possession being treated as a “transfer” under the NFA, and specifying that the transfer of the firearm to any estate beneficiary may be made on a tax-exempt basis.

ATF received nearly 9,500 responses from diverse public commenters, including professional associations, lobbying groups, and individuals, and the Department has afforded full consideration to these comments in formulating this final rule. Further, the Department’s receipt and review of this volume of comments provides the Department with a complete array of comments likely to arise in a public hearing, making additional public events redundant. A public hearing, or even a series of them, will only serve to provide the Department information it has already collected without delivering new insights.

G. Comments on NFA Registration and Processing

Comments Received

Many commenters stated that there is nothing wrong with the current system, and believed that the only change needed is to speed up the NFA approval process. Many remarked on the huge backlog of pending NFA applications and that it takes months to well over a year for the NFA Branch to process Form 1 and Form 4 applications. A commenter thought that speeding up the process was especially essential for a person trying to register a second item. Several commenters stated that if ATF and the Department really wanted to improve the NFA process, they should modernize the current process and upgrade their systems to permit electronic forms that need to be filled out only once, and “upgrade systems” and utilize technology so that after the initial NFA approval, ATF could access and use “data” and “background checks” already on file to further speed up the process for subsequent transfer requests.

Several commenters stated that ATF needed to hire more people (*e.g.*, agents, inspectors, examiners, processors) to process the applications more efficiently. A few other commenters requested that more funding be given to ATF to hire additional staff; another commenter suggested that ATF figure out how to use the tax stamp money for this purpose. Several commenters believed that the NFA Branch is already overworked and understaffed, and that the proposed rule change would exponentially increase its workload and cause approval wait times to further increase. A commenter stated that the proposed rule’s requirements would cause a “912% increase in the number of papers and forms” the NFA Branch has to process, and that increasing its workload more than nine times translates to wait times approaching a decade. One of these commenters stated that, at one time, Form 1 and Form 4 applications took less than 3 months from submission to approval; however, in the past several years, the workload has increased resulting in dramatically slower approval times. Another of these commenters noted that ATF’s own Web site shows that “NFA applications increased 250% from 2005 to 2011, while the number of NFA examiners decreased 25%.” This commenter contended that ATF is not meeting its “customer service” goals. Another commenter stated that ATF should address and correct its internal deficiencies before proposing regulatory changes that will only exacerbate

administrative challenges, without enhancing public safety at all.

Another commenter stated that the process should only take a few days at most to process instead of the current “months” processing time. Another commenter suggested that ATF implement a maximum approval time of 30 days, and that if ATF has taken no action in that time, the application should be automatically approved. Another commenter suggested that the process be no longer than three months by default.

In addition to their suggestions on speeding up the process, a few commenters suggested that ATF decrease the tax stamp costs. A commenter asked, “if I have an individual tax stamp why do I have to pay again to move it to a trust that I set up?” Another commenter suggested that ATF draft new regulations to change the tax stamp costs for all NFA items from \$200 to \$5. Another commenter suggested that ATF either reduce the \$200 tax stamp cost to \$50 or eliminate it altogether. Another commenter added that a reduction of the tax stamp cost would increase ATF’s revenues and the “tax basis” of the firearms industry.

Department Response

The Department and ATF are committed to processing NFA forms as efficiently and expeditiously as possible considering that an ever-increasing number of forms are submitted. In FY 2010, ATF’s NFA Branch processed almost 92,000 forms (Forms 1, 2, 3, 4, 5, 9, 10, and 5320.20). In FY 2014, the number of forms processed increased to over 236,000, an increase of 250 percent. As a result of this increase, ATF has dedicated more staffing to the NFA Branch, increasing the number of legal instruments examiners from 9 to 27. Research assistants were provided to the examiners to research and resolve problems. Data entry staffing has been increased. Similarly, customer service representative staffing has been increased so that examiners are not pulled away from their tasks, and can respond quickly to the public and industry.

ATF has approved overtime in an effort to increase the forms processing rate and has brought in staffing on detail to process forms. In February 2014, the forms backlog was over 81,000 forms. As of October 7, 2015, the backlog has been reduced to just over 51,000. The time frame for the processing of each type of form has also decreased (note: since each form has a different purpose, the processing times vary). Processing times for Forms 1 and 4, for example,

have been reduced from nine months to approximately five months.

ATF has used technology to help make the process quicker and more efficient. In 2013, ATF introduced an electronic filing system (eForms) designed to allow forms to be filed more accurately, and more quickly, with immediate submission into the NFA system for processing. This reduces data entry demands otherwise required with paper forms. The eForms system, however, was not designed to allow the filing of forms where fingerprints, photographs, and the law enforcement certification were required. However, it did allow the filing of forms by trusts or legal entities, such as LLCs. After several months of operation, the system encountered complications. It was taken out of service for a brief period and then brought back up over a period of time. To preclude further complications, the highest volume forms submitted, Forms 3 and 4, have been kept out of service while ATF seeks to implement a new system with a more robust platform to process these forms and others in the existing eForms system. This process continues at the present time.

Some commenters stated that ATF should modernize the process and utilize technology so that data and background checks can be used for subsequent transfer requests. The Department agrees and, resources permitting, will look to design systems that will utilize information on file.

Budget allowing, the Department and ATF anticipate a staffing increase for the NFA Branch in FY 2016. As stated above, over the past two years, ATF has committed additional resources to address the increase in applications submitted to the NFA Branch. The legal instrument examiner staffing has been tripled to 27 positions. However, the rate of submission continues to increase from almost 164,000 forms in CY 2013, to 236,000 in CY 2014 and a projected total of 322,000 in CY 2015.

Because the tax rate is set by statute, ATF has no authority to change it. The NFA provides very limited authority to permit exemptions from the transfer tax, but commenters’ requested exemptions do not fall within that authority. ATF is also precluded by law from utilizing the taxes generated, as the making, transfer, and special (occupational) tax revenues are deposited into a general Treasury fund. In regard to a transfer between an individual and a trust, the NFA imposes a tax on the transfer of an NFA firearm. A trust is a separate “person” and, thus, the transfer from the individual to a trust is a taxable “transfer” under the statute and is subject to tax.

H. Comments on Efficiencies and Priorities

Comments Received

The majority of commenters thought that the proposed rule would do nothing to lessen crime and gun violence and suggested that ATF first focus its efforts in other directions. A few commenters stressed educating children about gun safety, and stated that this could be done by parents and not on a Federal level. A few commenters urged the reduction or elimination of gun-free zones. A few commenters suggested that gangs are a problem for gun violence and crime, and that more time be spent addressing the causes of gang violence. Other commenters mentioned “Operation Fast and Furious” and suggested that ATF focus on “clean[ing] up [its] own house before attacking lawful gun owners.”

Several commenters believed that mental health issues greatly needed more attention, including more accessible and affordable resources and better screening, with commenters calling the mental health system “crippled” and a “failure.” A few commenters noted that the problem in the most recent mass gun murders has been mental health, and that the focus of prevention efforts should be on the “unrestricted mental capacity” of citizens who cannot understand and obey laws, not the tool (firearms) used in the crime. A commenter suggested that the Department devote time and efforts to enact regulations for mental health; another commenter suggested working on the “mental health aspect” of people obtaining firearms. Another commenter suggested that gun purchasers take a mental exam. Another commenter suggested spending money to educate people about the signs of severe mental illness. Another commenter desired a national database, consisting of criminal offenders and mental health patients, released to each State’s police force and the FBI.

Many commenters also stated that the administration, the Department, and ATF should better enforce the laws already on the books, modify the current NICS instant check system to include mental health mandatory reporting, stiffen penalties, and stop handing out plea deals to people who violate the laws. Another commenter noted the items listed in the NFA constitute less than one percent of all firearm felonies, and questioned why ATF would go after the “smallest portion of a problem.” This commenter suggested that ATF go after the criminals and not law-abiding citizens. Another commenter suggested that ATF focus on repeated felonies.

Another commenter questioned where ATF would obtain the funding for the additional checks of NFA applications, and suggested applying this funding source toward improving efficiency and reducing the six- to eight-months-plus backlog of existing applications.

Another commenter suggested that an NFA passport book be issued to each individual or trust that has completed an NFA background check. This passport book would be presented after paying the tax, at the time of the item's purchase. A stamp would immediately be placed in the passport book and the customer could leave with the purchased item. This commenter added that the check would then be mailed to ATF, and ATF could conduct yearly audits to regulate the passport books.

Department Response

The Department's ultimate objective in the promulgation of this final rule is to enhance public safety by ensuring prohibited persons do not possess and use NFA weapons—the primary statutory goal of the NFA. Contrary to the comments submitted suggesting otherwise, the objective of this final rule complements, rather than detracts from, the numerous other public safety efforts that the Department and ATF engage in every day.

With the numbers of transactions involving trusts or legal entities increasing, the Department believes the possibility of a prohibited person obtaining an NFA firearm also increases. For example, currently, it is possible that one or more responsible persons at a trust or legal entity are prohibited persons, yet that person could obtain access to an NFA firearm by having someone at the trust or legal entity who is not a prohibited person serve as the subject of the point-of-transfer background check. As noted above, the costs to ATF are detailed in section VI.A, below. ATF is dedicating resources to the processing of the forms currently submitted, and will continue to apply resources to ensure improvements in the process.

The Department considered alternatives, such as the implementation of “passport books” or similar systems, but determined that implementing them would require a statutory change.

I. New Responsible Persons and Form 5320.23

Comments Received

In the NPRM, ATF stated that it was considering a requirement that new responsible persons submit Form 5320.23 within 30 days of a change in responsible persons at the trust or legal

entity, and sought opinions and recommendations. *See* 78 FR at 55020. A commenter provided three reasons why this change is unnecessary, unworkable, and would lead to chaos within legal entities. First, ATF only has authority under the NFA to identify applicants, which applies to responsible persons before the transfer has occurred, and is not an ongoing obligation once the transfer has occurred. Second, companies today face many situations that would make it very difficult and overly burdensome to determine who is a responsible person and submit the required information (e.g., high employee turnover, shifting management responsibilities and roles, temporary management changes, overlaps in manager authority). In addition, many small legal entities would not have the administrative personnel to handle this required process. Third, this requirement would create much confusion and raise many questions if a potential new responsible person could not obtain the CLEO certification.

This commenter further stated that a continuing obligation to obtain approval from ATF to add each new responsible person would magnify the burdens related to the proposed CLEO certification requirement and the “responsible person” definition, particularly because legal entities have less control over managerial structure changes than they do over a decision about whether and when to acquire or make a new NFA firearm. This commenter believes that non-firearm related factors overwhelmingly dictate changes in personnel and managerial structure, and that complications relating to ensuring compliance with an ongoing designation obligation under the implementing regulations should not impact the personnel and managerial structure of a legal entity.

A few commenters did not recognize that ATF was only considering this change, and thought that this change was being proposed; they included their comments on the issue with comments on the proposed change to CLEO certification for responsible persons. For example, a few commenters stated that the NPRM would impact trustees' abilities to manage trusts because of the proposed requirement that new responsible persons submit a Form 5320.23 and obtain a CLEO sign-off within 30 days of their appointment. A few other commenters stated that, by proposing that any new responsible person submit a Form 5320.23 and obtain a CLEO signoff within 30 days of the new responsible person's appointment, the proposed rule

intruded upon the traditional uses of trusts and upon the rights of settlors to manage their estate plans.

Another commenter, noting ATF's long-held position that certain activities, such as the sale of a company, hiring new employees, or adding new trustees are not “transfers” of firearms, stated that the rule change would improperly extend ATF's authority. This commenter stated that ATF and DOJ incorrectly relied on their authority under 26 U.S.C. 5812(a) for the proposed change, because that section only authorizes ATF to collect information on the transferee during a transfer, not to continue collecting information on the transferee (or persons who act on behalf of the transferee) after the application is approved. This commenter asserted that the 30-day rule requirement would enable CLEOs and ATF to veto private decisions that are not the business of the government, and that Congress has not authorized such veto rights. This commenter asked ATF to consider the negative unintended consequences of the 30-day rule requirement, because its imposition would effectively mean a CLEO has to approve the sale of a company where buyers reside, the addition of trustees where trustees reside, the hiring of employees where employees reside, and the membership of an association. Further, this commenter stated that if ATF implemented this change, ATF would be violating First and Second Amendment rights, as well as rights of privacy, when ATF's objective could be achieved by any licensed FFL performing a “discreet, confidential NICS check.” Further, this commenter stated that requiring a legal entity to request and receive permission for all personnel changes would be cumbersome, impacting personnel decisions and greatly increasing hiring costs.

Another commenter stated that a requirement for all responsible persons to submit Form 5320.23 and comply with the CLEO certification within 30 days would be a “radical” departure from trust law and estate planning. As a result, this commenter cautioned ATF to expect long and costly court battles, that ATF would lose, as the proposed requirements would infringe property rights and the ability to pass trust property to legal heirs.

Department Response

The Department notes that it did not propose to make any changes on this issue in the proposed rule. Rather the Department requested input and guidance relative to identification of

new responsible persons who receive, possess, ship, transport, deliver, transfer, or otherwise dispose of a firearm for, or on behalf of, an entity. The Department is not requiring, in this final rule, that new responsible persons submit a Form 5320.23 within 30 days of any change of responsible persons at a trust or legal entity.

The Department further notes that nothing in this rulemaking has altered the requirement for trusts and legal entities to submit new applications to make or transfer (as applicable) if the trust or legal entity intends to possess additional NFA items, or if there is a sufficient change in control or ownership of the trust or legal entity such that it is considered a new or different entity under relevant law. In either case, at the time of such application, the trust or legal entity will need to identify current responsible persons, who will submit photographs and fingerprints, and undergo a background check.

Refer to section IV.C.1 in this document to review ATF's shift from CLEO certification to CLEO notification—a process that alleviates the potential for administrative backlogs as a result of personnel changes, and any concerns that a CLEO may dictate the operation of an entity.

V. Final Rule

For the reasons discussed above, this final rule has been revised from the proposed rule to eliminate the requirement for a certification signed by a CLEO and instead add a CLEO notification requirement. The final rule also clarifies that the term “responsible person” for a trust or legal entity includes those persons who possess the power or authority to direct the management and policies of an entity to receive, possess, ship, transport, deliver, transfer, or otherwise dispose of a firearm for, or on behalf of, the trust or entity. In the case of a trust, those with the power or authority to direct the management and policies of the trust includes any person who has the capability to exercise such power and possesses, directly or indirectly, the power or authority under any trust instrument, or under State law, to receive, possess, ship, transport, deliver, transfer, or otherwise dispose of a firearm for, or on behalf of, the trust. The Department has removed “beneficiaries” from the final non-exclusive list in the definition of “responsible person.” However, a beneficiary or any other individual actually meeting the definition of a “responsible person” in the final rule shall be considered one.

Accordingly, because the law enforcement certification will no longer be required, the regulations in §§ 479.63 and 479.85 are being revised to require the applicant maker or transferee, as well as each responsible person, to provide a notice to the appropriate State or local official that an application is being submitted to ATF. The Department also agrees that a change from a CLEO certification to CLEO notification will require a change to the Forms 1, 4, and 5.

This final rule clarifies proposed § 479.62(b)(2) to denote that the required employer identification number for an applicant, other than an individual, may be “if any.” This final rule makes a minor change to proposed §§ 479.63(b)(2)(ii) and 479.85(b)(2)(ii) by removing “Social Security number (optional)” and “place of birth” from the “certain identifying information” required to be submitted on the Form 5320.23 in both of these sections, and clarifying that the “country of citizenship” must only be provided if other than the United States. In addition, this final rule removes “place of birth” from proposed § 479.62(b)(2) for the required Form 1 applicant identity information. This final rule adopts all other proposed changes in the NPRM.

VI. Statutory and Executive Order Review

A. Executive Order 12866 and 13563—Regulatory Review

This regulation has been drafted and reviewed in accordance with section 1(b) of Executive Order 12866 (“Regulatory Planning and Review”) and with section 1(b) of Executive Order 13563 (“Improving Regulation and Regulatory Review”). The Department of Justice has determined that this final rule is a significant regulatory action under section 3(f) of Executive Order 12866, and, accordingly, this final rule has been reviewed by the Office of Management and Budget.

This final rule will not have an annual effect on the economy of \$100 million or more; nor will it adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities. Accordingly, the final rule is not an economically significant rulemaking under Executive Order 12866. The estimated costs and benefits of the final rule are discussed below.

1. Summary of Costs and Benefits

This rule requires certain trusts and legal entities (partnerships, companies, associations, and corporations) applying to make or receive an NFA firearm to submit information for each of its responsible persons to ATF in order for ATF to ensure that such persons are not prohibited from possessing or receiving firearms. ATF estimates a total additional cost of approximately \$29.4 million annually for trusts and legal entities to gather, procure, and submit such information to ATF and for ATF to process the information and conduct a background check on responsible persons. These provisions have public safety benefits in that they will enable ATF to ensure that the estimated 231,658 responsible persons within trusts or legal entities that request to make or receive NFA firearms each year are not prohibited from possessing such firearms.

The Department acknowledges that this final rule may increase the time required to process applications received from trusts and legal entities, as well as for individuals, as an increased number of applications undergo more complete checks. The Department estimates that this final rule initially will increase processing times of these applications from four months to six to eight months. However, the Department anticipates that this time will be reduced once the NFA Branch adjusts to the new process. In addition, ATF will work to increase its resources and staffing to process the applications. Of course, continued increases in the numbers of applications submitted may correspondingly continue to place pressure on processing times.

This final rule eliminates the current requirement that all individual applicants obtain a certification from the CLEO for the locality. Instead, under the final rule, applicants seeking to make or receive an NFA firearm are required to notify their local CLEO before they submit the ATF application to make or receive an NFA firearm. Similarly, the final rule does not adopt a requirement that responsible persons obtain a CLEO certification, as was discussed in the proposed rule; instead, the final rule extends the same notification requirement to all responsible persons for each trust and legal entity applicant. ATF estimates the total cost of the CLEO notification requirement in this final rule to be approximately \$5.8 million annually (\$0.5 million for individuals; \$5.3 million for legal entities), as compared to the approximate costs of \$2.26 million annually for the current

requirement that individuals obtain a certification from their local CLEO. Therefore, the estimated net cost increase of this final rule relating to CLEO notification is approximately \$3.6 million annually. However, the final rule's estimated cost reduction for individual applicants is approximately \$1.8 million annually.

2. Costs and Benefits of Ensuring Responsible Persons Within Trusts and Legal Entities Are Not Prohibited From Possessing NFA Firearms

a. Methodology for Determining Costs

ATF estimated the cost of the provisions to ensure responsible persons within trusts and legal entities are not prohibited from possessing NFA firearms by: (1) Estimating the time and other resources that would be expended by legal entities to complete paperwork,

obtain photographs and fingerprints, and send this information to ATF; and (2) estimating the time and other resources that would be expended by ATF to process and review the materials provided by the trusts and legal entities and to conduct background checks of responsible persons.

ATF estimated the cost of the time for trusts and legal entities to complete these tasks using employee compensation data for June 2015 as determined by the U.S. Department of Labor, Bureau of Labor Statistics (BLS). See <http://www.bls.gov/news.release/pdf/ecec.pdf>.¹⁴ The BLS determined the hourly compensation (which includes wages, salaries, and benefits) for civilian workers to be \$33.19, and for State and local government workers to be \$44.22. In addition, ATF estimates that each trust or legal entity has an average of two responsible persons, an estimate

that is based on ATF's review of 454 randomly selected applications for corporations, LLCs, and trusts processed during calendar year CY 2014.

ATF used data from CY 2014 to estimate the number of trusts, legal entities, and individuals that would be affected by the final rule. In CY 2014, ATF processed 159,646 applications that were either ATF Forms 1, 4, or 5. Of these, 115,829 applications were for unlicensed trusts or legal entities (e.g., corporations, companies) to make or receive an NFA firearm; 29,191 were for individuals to make or receive an NFA firearm; and 14,626 were for government agencies or qualified Federal Firearms Licensees (Gov/FFLs) to make or receive an NFA firearm. The numbers of applications, by Form and submitting individual or entity, are set forth in Table A.

TABLE A—NUMBERS OF APPLICATIONS PROCESSED

CY 2014	Trust & legal entity	Individual	Gov/FFL	Total
Form 1	21,879	3,360	477	25,716
Form 4	93,739	25,343	4,257	123,339
Form 5	211	488	9,892	10,591
Total	115,829	29,191	14,626	159,646

ATF estimated the cost of complying with the final rule's requirements by estimating the cost of undertaking each of the steps necessary to complete an application. Under this final rule, a trust or legal entity is required to complete the following steps in addition to completing the applicable Form 1, 4, or 5 before it is permitted to make or receive an NFA firearm:

1. Complete and submit Form 5320.23 for each responsible person;
2. Submit fingerprints and photographs for each responsible person; and
3. Submit a copy of the documentation that establishes the legal existence of the legal entity.

In addition, under the final rule, information required on the existing ATF Form 5330.20 would be incorporated into the ATF Forms 1, 4, and 5.

b. Cost to Trusts and Legal Entities of Applying To Make or Transfer

i. Time Cost of Completing a Responsible Person Form

The final rule requires trusts and legal entities to complete and submit to ATF

a new form (Form 5320.23), photographs, and fingerprint cards for each responsible person before the trust or legal entity is permitted to make or receive an NFA firearm. The information required on Form 5320.23 includes the responsible person's name, position, home address, and date of birth. The identifying information for each responsible person is necessary for ATF to conduct a background check on each individual to ensure the individual is not prohibited from possessing an NFA firearm under Federal, State, or local law.

ATF estimates the time for each responsible person to complete Form 5320.23 to be 15 minutes. Based on an estimate of 2 responsible persons per trust or legal entity and 115,829 entities, the estimated time cost to complete Form 5320.23 is \$1,922,182 (15 minutes at \$33.19 per hour \times 115,829 \times 2).

ii. Cost of Photographs

ATF estimates that:

- The cost of the photographs is \$11.32 (based on the average of the costs determined for 60 Web sites); and

- The time needed to procure photographs is 50 minutes.

Currently, only individuals must obtain and submit photographs to ATF. Based on an estimate of 29,191 individuals, the current estimated cost is \$1,137,816 (Cost of Photographs = $\$11.32 \times 29,191 = \$330,442$; Cost to Procure Photographs = 50 minutes at \$33.19 per hour \times 29,191 = \$807,374). Under the final rule, costs for individuals would remain the same, but trusts and legal entities would incur new costs. Each responsible person of a trust or legal entity would be required to obtain and submit photographs. Based on an estimate of 2 responsible persons per entity and 115,829 entities, the estimated cost for trusts and legal entities to obtain and submit photographs is \$9,029,642 (Cost of Photographs = $\$11.32 \times 115,829 \times 2 = \$2,622,368$; Cost to Procure Photographs = 50 minutes at \$33.19 per hour \times 115,829 \times 2 = \$6,407,274).

iii. Cost of Fingerprints

ATF has reviewed various fingerprinting services. At the present time, ATF is only able to accept

¹⁴ In the 2013 NPRM, the Department relied on BLS employee compensation data from September 2012. In this final rule, the Department has used the

more recent BLS data from June 2015 because it believes that the more recent data more accurately reflects the actual benefits and costs of the final

rule. The more recent BLS data does not meaningfully change the Department's estimates of the rule's costs and benefits.

fingerprints on hard copy fingerprint cards. Thus, the cost estimates are based on the submission of two hard copy fingerprint cards for each responsible person.

- The estimated cost of the fingerprints is \$18.66 (cost based on the average of the costs determined for 275 Web sites); and

- The estimated time needed to procure the fingerprints is 60 minutes.

Currently, only individuals must obtain and submit fingerprints. Based on an estimate of 29,191 individuals, the current estimated cost is \$1,513,553 (Cost of Fingerprints = \$18.66 × 29,191 = \$544,704; Cost to Procure Fingerprints = 60 minutes at \$33.19 per hour × 29,191 = \$968,849). Under the final rule, costs for individuals would remain the same, but trusts and legal entities would incur new costs. Each responsible person of a trust or legal entity would be required to obtain and submit fingerprints to ATF. Based on an estimate of 2 responsible persons per entity and 115,829 entities, the estimated cost for trusts and legal entities to obtain and submit fingerprints is \$12,011,467 (Cost of Fingerprints = \$18.66 × 115,829 × 2 = \$4,322,738; Cost to Procure Fingerprints = 60 minutes at \$33.19 per hour × 115,829 × 2 = \$7,688,729).

iv. Cost of Documents To Establish Existence of Trust or Legal Entity

A trust or legal entity that is applying to make or receive an NFA firearm must provide to ATF documentation evidencing the existence and validity of the entity—e.g., copies of partnership agreements, articles of incorporation,

corporate registration, declarations of trust with any trust schedules, attachments, exhibits, and enclosures. Currently, trusts and legal entities may submit this documentation with their application package, although they are not required to do so. Therefore, ATF is treating the costs for documentation as new costs. ATF accepts, and will continue to accept, photocopies of the documents without notarization. ATF made the cost estimate by determining the average number of pages in the corporate or trust documents for 454 recent randomly selected submissions processed during CY 2014, which was 16 pages.

ATF estimates that:

- The cost of the copied documentation is \$1.60 (\$.10 per page at 16 pages); and
- The time needed to copy attachments is 10 minutes.

Assuming 115,829 entities would provide ATF this documentation each year, the estimated annual cost to submit the documentation is \$826,053 (Cost of documentation = \$1.60 × 115,829 = \$185,326; Cost to copy attachments = 10 minutes at \$33.19 per hour × 115,829 = \$640,727). This cost is not dependent on the number of responsible persons associated with a legal entity. ATF notes that the estimated cost is likely to be lower if the entity has already filed the documents with ATF as part of a recent making or transfer application and the information previously provided has not changed. Under these circumstances, the entity can certify to ATF that the documentation is on file and is unchanged.

v. Cost of Completing and Mailing Form 1, 4, or 5

Currently, individuals, trusts, and legal entities must complete and mail Form 1, 4, or 5. This final rule should not change the costs to individuals, trusts, or legal entities to complete such forms. Even if there are multiple responsible persons associated with a trust or legal entity, the trust or legal entity still will be completing and mailing one Form 1, 4, or 5. However, ATF estimates that trusts and legal entities will incur increased postage costs to mail Forms 1, 4, and 5 applications to ATF. Currently, for trusts and legal entities, these applications only contain the completed form itself; ATF estimates postage costs at \$56,756 (115,829 × \$.49). However, under the final rule, trusts and legal entities must also include Form 5320.23, photographs, and fingerprint cards for each responsible person, as well as documentation evidencing the existence and validity of the trust or entity. ATF estimates postage costs for this complete application package at \$113,512 (115,829 × \$.98). Therefore, ATF estimates the new mailing costs for trusts and legal entities, under this final rule, to be \$56,756 (\$113,512 – \$56,756).

The estimated costs to legal entities that are discussed above are summarized in Tables B(1) and B(2). The total estimated new cost of the final rule for legal entities to provide to ATF identification information for each of its responsible persons is \$23,846,679 annually.

TABLE B(1)—COST ESTIMATES OF THE TIME TO COMPLY WITH THE FINAL RULE'S REQUIREMENTS

Process	Estimated time (minutes)	Number of entities	2 Responsible persons
Completion of Form 5320.23	15	115,829	\$1,922,182
Procure Photographs	50	115,829	6,407,274
Procure Fingerprints	60	115,829	7,688,729
Copy Attachments	10	115,829	640,727
Total			16,658,885

TABLE B(2)—COST ESTIMATES OF PROCURING PHOTOGRAPHS, FINGERPRINTS, DOCUMENTATION, AND MAILING

Process-related item	Estimated cost	Number of entities	2 Responsible persons
Photographs	\$11.32	115,829	\$2,622,368
Fingerprints	18.84	115,829	4,322,738
Documentation of Legal Entity	1.60	115,829	185,326
Increased Application Postage .....	.49	115,829	56,756
Total			7,187,188

c. Cost to ATF

ATF incurs costs to process forms, fingerprint cards, photographs, and to conduct and review background checks. Currently, ATF incurs these costs for the 29,191 applications for individuals to make or receive NFA firearms. Under the final rule, ATF would incur these costs for applications for trusts and legal entities to make or receive NFA firearms. ATF estimates that:

- ATF's cost for the FBI to process a set of fingerprints is \$12.75. (The cost is based on the FBI's current fee, which is set by statute on a cost recovery basis.)
 - The estimated cost for an examiner at ATF's NFA Branch to conduct and review the results of a background check is \$11.06 (15 minutes at \$44.22 per hour); and
 - The estimated cost to print the new 5320.23 forms is \$.0747 per form.
- Based on an estimate of 2 responsible persons per legal entity and 115,829

entities, the estimated cost for ATF to process forms, fingerprint cards, photographs, and to conduct and review background checks for applications for legal entities to make or receive firearms is \$5,533,082 annually (Cost for processing fingerprints = $\$12.75 \times 115,829 \times 2 = \$2,953,640$; Cost for background checks = $\$11.06 \times 115,829 \times 2 = \$2,562,137$; Cost to print forms = $\$.0747 \times 115,829 \times 2 = \$17,305$).

TABLE C—COSTS TO ATF UNDER FINAL RULE

Process	Estimated cost or time	Number of entities	2 Responsible persons
ATF's costs for Processing Fingerprints	\$12.75	115,829	\$2,953,640
Time Needed to Conduct and Review Background Check by ATF	15 minutes	115,829	2,562,137
Cost of Form 5320.23	\$.0747	115,829	17,305
Total .....	.....	.....	5,533,082

The estimated total additional cost of the final rule for trusts and legal entities to gather, procure, and submit to ATF responsible person forms, fingerprints, photographs, documents to establish existence of trust or legal entity, and Form 1, 4, or 5, and for ATF to process the information and conduct a background check on responsible persons is \$29,379,155 annually (Sum of tables B(1), B(2), and C: $\$16,658,885 + \$7,187,188 + \$5,533,082 = \$29,379,161$).

d. Benefits of Background Checks for Responsible Persons

The background check requirement for responsible persons provides at least two important benefits. First, it provides important public safety and security benefits by helping ATF to prevent individuals who are prohibited from possessing firearms from obtaining them. Second, by requiring responsible persons to submit the same information and meet same requirements as individuals who seek permission to make or transfer a firearm, the final rule closes a potential loophole that might otherwise allow individuals to form trusts or legal entities for the purpose of obtaining a firearm they are prohibited from possessing.

This final rule provides important public safety and security benefits by enabling ATF to ensure that individuals who are prohibited from possessing firearms do not obtain them. Existing regulations do not require the identification of responsible persons of a trust or legal entity. Therefore, ATF lacks the necessary information to perform a background check on a person who meets the rule's definition of

“responsible person” to determine if that person is prohibited from possessing an NFA firearm. This final rule provides important public safety and security benefits by enabling ATF to identify and perform background checks on such persons.

For example, there may be a number of responsible persons associated with a corporation, LLC, or trust. As noted above, based on a recent review of applications for corporations, LLCs, and trusts, ATF estimates that there are 2 responsible persons associated with such legal entities. One or more of these persons could be a prohibited person, e.g., a convicted felon. These prohibited persons could be establishing trusts or legal entities as a means of avoiding a fingerprint-based background check. Therefore, requiring the responsible parties of a trust or legal entity to follow the same requirements as individuals will close this loophole. Currently, when an NFA transfer application is approved, a corporate officer or trustee arranges for the receipt of the firearm. If the seller is an FFL, the officer or trustee must complete ATF Form 4473 (5300.9), *Firearms Transaction Record*. On the Form 4473, the officer or trustee must answer questions that determine if the officer or trustee is a prohibited person. If one of the officers or trustees is prohibited, then one of the other officers or trustees may pick up the firearm and complete the Form 4473. Once the firearm is picked up by the officer or trustee, it then becomes corporate or trust property and can be possessed by any of the officers or trustees. As discussed in the NPRM, ATF has

encountered situations in which it lacked the necessary information to conduct any background checks to determine whether the responsible person at an LLC or trust was a prohibited person. See 78 FR at 55023 for more detailed discussion. As discussed in section IV.B.1.c, there are more recent examples. Between 2006 and 2014 there were over 260,000 NFA firearms acquired by trusts or legal entities where no individual associated with the trust or entity was subject to a NFA background check as part of the application process. As a result, under current regulations, prohibited persons can circumvent the statutory prohibitions and receive firearms.

3. Costs and Benefits of Final Rule To Notify CLEOs Before Making or Transferring an NFA Firearm

a. Cost of Current Requirement To Obtain Law Enforcement Certification

Under current regulations, the maker or transferee of an NFA firearm typically will bring a Form 1, 4, or 5 to the maker or transferee's local CLEO to obtain the CLEO certification as required on the form and therefore may need to meet with the CLEO. The maker or transferee may need to return to pick up the certified form. ATF estimates that the time needed for the maker or transferee to procure the CLEO certification is 100 minutes (70 minutes travel time and 30 minutes review time with the CLEO).

For CY 2014, of the 159,646 Form 1, Form 4, and Form 5 applications processed by ATF, 115,829 were for trusts or legal entities to make or receive NFA firearms. Trusts and legal entities

are not currently required to obtain CLEO certification. However, certification is required for the 29,191 applications for individuals to make or receive NFA firearms. The current cost to obtain CLEO certification is estimated as follows:

- The estimated cost for the individual to obtain the CLEO certification is \$1,614,749 (100 minutes at \$33.19 per hour × 29,191)
- The estimated cost for the CLEO to review and sign the certification is

\$645,413 (30 minutes at \$44.22 per hour × 29,191)
The total estimated cost of the certification requirement is \$2,260,162 (individuals \$1,614,749; CLEOs: \$645,413).

TABLE D—CURRENT CLEO CERTIFICATION PROCESS COSTS

Current CLEO process	Estimated time (minutes)	Number of respondents	Cost
Procure Certification from CLEO	100	29,191	\$1,614,749
Agency Review and Sign Certification	30	29,191	645,413
Total .....	.....	.....	2,260,162

b. Cost of Requirement To Notify CLEOs

The final rule replaces the existing requirement to obtain certification by the local CLEO before submitting an application to make or receive an NFA firearm with a requirement to notify the local CLEO before submitting an application to make or receive an NFA firearm. The notification requirement requires the maker or transferee to mail a copy of the application to the CLEO with jurisdiction over the area of the applicant's residence or, in the case of a trust or legal entity, the CLEO with jurisdiction over the business or trust. In addition, the notification requirement requires all responsible persons for trusts and legal entities to mail a copy of Form 5320.23 to the CLEO for their area of residence, principal office, or business. The effect of this provision is that trusts and legal entities, as well as their responsible persons, are required to provide notification of the proposed making or transfer to their local CLEOs, whereas currently trusts and legal entities and their responsible persons are not required to notify or obtain certification from their local CLEOs. Individuals must only notify their local CLEOs under the final rule, whereas currently they are required to obtain certification from their local CLEOs.

In CY 2014, ATF processed 115,829 applications from trusts and legal entities and 29,191 application from individuals. Under the final rule, each of these applications require CLEO notification. For individuals, the CLEO

notification will include a copy of the Form 1, 4, or 5 application, which contains 3 pages for each application. For trusts and legal entities, the CLEO notification will include: (1) For the applicant, a copy of the Form 1, 4, or 5 application, which contains 3 pages for each application; (2) for responsible persons, a copy of Form 5320.23, which contains 2 pages. Form 5320.23 will contain a "copy 1" page for ATF and a "copy 2" page for the CLEO. This means that trusts and legal entities will not need to make copies of Form 5320.23 when mailing Form 5320.23 to the CLEO. All applicants will need to make copies of the application to mail the application to the CLEO.

ATF estimates the cost of CLEO notification for individuals as follows:

- The estimated cost to copy an application to send as a notification to the CLEO is \$.30 for each Form 1, Form 4, and Form 5 (\$.10 per page for 3 pages). Cost is \$8,757 (\$.30 × 29,191).
- The estimated cost to mail an application to the CLEO is \$.49 (current postage cost). Cost is \$14,304 (\$.49 × 29,191).
- The estimated cost of the time to copy and mail the application to the CLEO is \$5.53 (10 minutes at \$33.19 per hour). Cost is \$161,426 (\$5.53 × 29,191).
- The estimated cost of the time for the CLEO to review the notification is \$11.06 (15 minutes at \$44.22 per hour). Cost is \$322,852 (\$11.06 × 29,191).

ATF estimates the cost of CLEO notification for trusts and legal entities as follows:

Applicants

- The estimated cost to copy an application to send as a notification to the CLEO is \$.30 for each Form 1, Form 4, and Form 5 (\$.10 per page for 3 pages). Cost is \$34,749 (\$.30 × 115,829).
- The estimated cost to mail an application to the CLEO is \$.49 (current postage cost). Cost is \$56,756 (\$.49 × 115,829).
- The estimated cost of the time to copy and mail the application to the CLEO is \$5.53 (10 minutes at \$33.19 per hour). Cost is \$640,534 (\$5.53 × 115,829).
- The estimated cost of the time for the CLEO to review the notification is \$11.06 (15 minutes at \$44.22 per hour). Cost is \$1,281,069 (\$11.06 × 115,829).

Responsible Persons

- The estimated cost to mail Form 5320.23 to the CLEO is \$113,512 (\$.49 × 115,829 × 2 (number of responsible persons)).
- The estimated cost of the time to mail Form 5320.23 to the CLEO is \$2.77 (5 minutes at \$33.19 per hour). Cost is \$641,693 (\$2.77 × 115,829 × 2 (number of responsible persons)).
- The estimated cost of the time for the CLEO to review the notification is \$11.06 (15 minutes at \$44.22 per hour). Cost is \$2,562,137 (\$11.06 × 115,829 × 2 (number of responsible persons) = \$2,562,137).

TABLE E(1)—CLEO NOTIFICATION PROCESS COSTS FOR INDIVIDUALS

Process	Estimated cost or time	Number of individuals	Cost
Provide Copy of Application for Notification to CLEO	\$.10/page for 3 pages	29,191	\$8,757
Mailing of CLEO Notification to Agency	\$.49 for stamp	29,191	14,304
Copy and Mail Notification	10 minutes	29,191	161,426
Agency Process CLEO Notification	15 minutes	29,191	322,852

TABLE E(1)—CLEO NOTIFICATION PROCESS COSTS FOR INDIVIDUALS—Continued

Process	Estimated cost or time	Number of individuals	Cost
Total	507,339

TABLE E(2)—CLEO NOTIFICATION PROCESS COSTS FOR TRUSTS AND LEGAL ENTITIES (APPLICANTS)

Process	Estimated cost or time	Number of trusts & legal entities	Cost
Provide Copy of Application for Notification to CLEO	\$.10/page for 3 pages	115,829	\$34,749
Mailing of CLEO Notification to Agency	\$.49 for stamp	115,829	56,756
Copy and Mail Notification	10 minutes	115,829	640,534
Agency Process CLEO Notification	15 minutes	115,829	1,281,069
Total .....	.....	.....	2,013,108

TABLE E(3)—CLEO NOTIFICATION PROCESS COSTS FOR TRUSTS AND LEGAL ENTITIES (RESPONSIBLE PERSONS)

Process	Estimated cost or time	Number of trusts & legal entities	2 Responsible persons
Mailing of Form 5320.23 to Agency	\$.49 for stamp	115,829	\$113,512
Mail Form 5320.23 to Agency	5 minutes	115,829	641,693
Agency Process CLEO Notification	15 minutes	115,829	2,562,137
Total .....	.....	.....	3,317,342

The estimated total cost of the final rule to require notification to the CLEO is \$5,837,789 annually (sum of Tables E1, E2, and E3). As shown in Table D, the estimated cost of the current requirement to obtain CLEO certification is \$2,260,162. Therefore, the final rule notification requirement results in an estimated cost increase of approximately \$3.6 million per year. However, for individuals, the final rule notification requirement results in an estimated reduction of approximately \$1.8 million per year (\$2,260,162 – \$507,339 = \$1,752,823).

c. Benefits of Requirement To Notify CLEOs

The new law enforcement notification requirement provides at least two important benefits. First, by changing the certification requirement to a notification requirement, the final rule reduces the burdens on individuals and entities who seek to possess firearms in jurisdictions whose chief law enforcement officers either process certifications slowly or refuse to process them at all. Second, by making the same notification requirement applicable to individuals and responsible persons of trusts and legal entities the rule closes a loophole that incentivized individuals to form trusts and legal entities to circumvent the certification requirement.

Under current regulations, individuals must obtain a certification from a CLEO in their jurisdiction stating, inter alia, that the certifying official has no information indicating that possession of the firearm by the individual would be in violation of State or local law, or no information that the individual will use the firearm for other than lawful purposes. Some applicants have found the process of obtaining a CLEO certification burdensome. Additionally, local and State officials have the option of participating or not, and some CLEOs have refused to issue certifications, thereby making it more difficult for applicants and transferees to obtain the needed certification. Requiring only notice, rather than a certification, will benefit applicants and transferees by removing a potentially burdensome impediment to furnishing ATF with a completed application.

Under the current rule, the certification requirement does not apply to trusts and legal entities. Some individuals have therefore created trusts and legal entities to circumvent the certification requirement. This final rule makes the requirements for background checks the same for trusts and legal entities as they now are for individuals. The Department believes the incentive for makers and transferees to create corporations and trusts solely to avoid the CLEO certification requirement will

decrease once the certification is no longer required. As noted in the comments above, some CLEOs are reluctant to issue certifications for a variety of reasons. As a result, an individual may decide to establish a trust or legal entity because trusts and legal entities are not required to provide CLEO certifications under current regulations. By eliminating the CLEO certification requirement, this rulemaking will reduce the burden imposed on such individuals. Certainly, there are legal reasons to create a corporation or a trust unrelated to the desire to avoid the certification. The Department therefore believes creation of these trusts and legal entities will continue.

4. Consolidation of Forms

The incorporation of the information required on ATF Form 5330.20 into the existing Forms 1, 4, and 5 reduces the burden upon the applicant or transferee by eliminating an additional form to be completed and filed. The current estimated time to complete the form is 3 minutes. Because the information requested on the forms is the same, any savings result from the applicant not having to attach a separate form. ATF estimates the elimination of the form will reduce the industry costs by \$240,661 (145,020 transactions for individuals, trusts, and legal entities × 3 minutes per form saved × \$33.19 per

hour) and ATF's printing costs by \$1,451 (145,020 forms × .01 cents per form) for a total reduction in costs of \$242,112.

B. Executive Order 13132

This regulation will not have substantial direct effects on the States, on the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government. The elimination of the CLEO certification reduces the burden on State and local agencies, and its replacement with the notification of the pending application still provides the agency with knowledge of a controlled firearm in its area of jurisdiction. As noted in the benefits section, ATF estimates that the cost of the notification to the agencies will be less than the cost to the agencies of completing the certification. ATF discussed this change with State and local agencies. While agencies will no longer be able to "deny" an application by not completing the law enforcement certification, the agencies will receive a notification and can contact ATF with any issues.

While there would be an increase in the paperwork filed with ATF and an increase in ATF's processing workload, that is balanced by ATF being able to conduct background checks on persons who do not receive background checks under the current regulations. The overall impact on the States will be positive. Therefore, in accordance with section 6 of Executive Order 13132 ("Federalism"), the Attorney General has determined that this regulation does not have sufficient federalism implications to warrant the preparation of a federalism summary impact statement.

C. Executive Order 12988

This regulation meets the applicable standards set forth in sections 3(a) and 3(b)(2) of Executive Order 12988 ("Civil Justice Reform").

D. Regulatory Flexibility Act

The Regulatory Flexibility Act requires an agency to conduct a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. See 5 U.S.C. 605(b). Small entities include small businesses, small not-for-profit enterprises, and small governmental jurisdictions. See 5 U.S.C. 601. The Attorney General has reviewed and approved this rule, thereby

certifying that it will not have a significant economic impact on a substantial number of small entities.

This rule primarily affects trusts and legal entities that seek to make or acquire NFA firearms and are not making or acquiring them as a qualified FFL. This rule requires responsible persons of trusts or legal entities to undergo background checks and comply with CLEO notification requirements. For CY 2014, ATF processed 115,829 applications from trusts and legal entities that were not qualified FFLs. ATF estimates the cost of implementing the rule will increase the cost for 115,829 trusts and legal entities with an average of 2 responsible persons by \$25,333,317 (identification costs for background checks: \$23,846,073; CLEO notification costs: \$1,487,244) per year.¹⁵ In addition, in a revision to the NPRM, this rule requires that individuals comply with CLEO notification requirements rather than CLEO certification procedures, resulting in a compliance cost reduction of \$1,430,262 from the costs estimated in the NPRM.¹⁶ Accordingly, the estimated compliance cost per entity is estimated to be \$218.71 (cost of increase (\$25,333,317) ÷ number of entities (115,829)).

E. Small Business Regulatory Enforcement Fairness Act of 1996

This rule is not a major rule as defined by section 251 of the Small Business Regulatory Enforcement Fairness Act of 1996. See 5 U.S.C. 804. This rule will not result in an annual effect on the economy of \$100 million or more; a major increase in costs or prices; or significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic and export markets.

F. Unfunded Mandates Reform Act of 1995

This rule will not result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of \$100 million or more in any one year, and it will not significantly or uniquely affect small governments. Therefore, no actions are

deemed necessary under the provisions of the Unfunded Mandates Reform Act of 1995.

G. Paperwork Reduction Act

Under the Paperwork Reduction Act, a Federal agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid control number assigned by OMB. This final rule revises several existing information collections and creates a new information collection. The existing information collections that are revised are in 27 CFR 479.62, 479.63, 479.84, 479.85, 479.90, 479.90a, and 479.91, which are associated with ATF Forms 1, 4, and 5. Forms 1, 4, and 5 have been approved by the OMB under control numbers 1140-0011, 1140-0014, and 1140-0015, respectively. The new information collection that is being created is associated with ATF Form 5320.23, and is currently in review for approval by OMB prior to the effective date of this final rule. Form 5320.23 requires certain identifying information for each responsible person within a trust or legal entity requesting to make or receive an NFA firearm, including the responsible person's full name, position, home address, date of birth, and country of citizenship if other than the United States. Form 5320.23 also requires a proper photograph of each responsible person, and two properly completed FBI Forms FD-258 (Fingerprint Card) for each responsible person. In addition, Form 5320.23 requires each responsible person to list the full name and complete address of the chief law enforcement officer in the responsible person's locality to whom the responsible person has forwarded the responsible person's completed copy of Form 5320.23.

The estimated total annual burden hours and related information (number of respondents, frequency of responses, costs, etc.) for the revisions to Forms 1, 4, and 5, as well as the new Form 5320.23, appear below.

The current estimated total annual burden hours and related information for Forms 1, 4, and 5 are based upon the current CLEO certification requirements, and the number of applications processed in CY 2012. As this final rule eliminates CLEO certification and adds CLEO notification, the estimated submission times for Forms 1, 4, and 5 for individuals, trusts, legal entities, and Gov/FFL have changed. For example, the revised estimated submission times associated with Form 1 are:

- 140 minutes for submission to or by an individual (50 minutes to procure

¹⁵ This increased cost does not include cost of agency processing time for notification. Based on 115,829 entities, the notification cost is \$1,487,244 (\$5,330,450 less \$3,843,206).

¹⁶ Individual CLEO certification cost, excluding agency processing cost, is \$1,614,749. Individual CLEO notification cost, excluding agency processing cost, is \$184,487 (\$507,339 less \$322,852). Notification decreases costs by \$1,430,262 (\$1,614,749 less \$184,487).

photographs; 60 minutes to procure fingerprints, 10 minutes to copy and mail notification; and 20 minutes to complete and mail the form)

- 260 minutes for submission to or by a trust or legal entity (for 2 responsible persons) (100 minutes to procure photographs; 120 minutes to procure fingerprints; 10 minutes to procure the attachments; 10 minutes to copy and mail notification; and 20 minutes to complete and mail the form)
- 20 minutes (to complete and mail the form) for a submission to or by a government agency or to a qualified FFL

The above estimated times do not reflect that a trust or legal entity must also submit to ATF, as part of each Form 1, Form 4, or Form 5 application, a completed Form 5320.23 for each responsible person, and must provide a copy of completed Form 5320.23 to the CLEO of the jurisdiction for each responsible person. Those times are separately reflected in the estimated submission time of 40 minutes for submission to or by a trust or legal entity of Form 5320.23 (for 2 responsible persons) (30 minutes to complete and include "copy 1" of Form 5320.23 in the Form 1, Form 4, or Form 5 application, and 10 minutes to mail "copy 2" of Form 5320.23 for notification.

With respect to ATF Form 1:

Estimated total annual reporting and/or recordkeeping burden: 102,808 hours (current estimated total annual reporting and/or recordkeeping burden from OMB Information Collection Number 1140–0011: 16,374 hours). Note: 477 Gov/FFL responders will take 20 minutes (159 hours); 21,879 trust and legal entity responders will take 260 minutes (94,809 hours); and 3,360 individual responders will take 140 minutes (7,840 hours). (The numbers of responders by type are estimated based on the data in Table A.)

Estimated average burden hours per respondent and/or recordkeeper: 3.86 hours (current estimated average burden hours per respondent or recordkeeper from OMB Information Collection Number 1140–0011: 1.69 hours).

Estimated number of respondents and/or recordkeepers: 25,716 (current estimated number of respondents and/or recordkeepers from OMB Information Collection Number 1140–0011: 9,662).

Estimated annual frequency of responses: 1 (current estimated annual frequency of responses from OMB Information Collection Number 1140–0011: 1).

Estimated total costs: \$1,472,570.95

\$1,412,597 (fingerprints and photographs (\$29.98 × 3,360 (individuals) = \$100,732; \$29.98 × 43,758 (2 responsible persons) = \$1,311,865))

\$35,006 (copies of legal entity documents (\$1.60 × 21,879))

\$24,967.95 (mailing (\$.98 each for 25,239 respondents = \$24,734.22; \$.49 for 477 respondents = \$233.73) (current estimated total costs from OMB Information Collection Number 1140–0011: \$146,766).

With respect to ATF Form 4:

Estimated total annual reporting and/or recordkeeping burden: 466,755 hours (current estimated total annual reporting and/or recordkeeping burden from OMB Information Collection Number 1140–0014: 109,552 hours). Note: 4,257 Gov/FFL responders will take 20 minutes (1,419 hours), 93,739 trust and legal entity respondents will take 260 minutes (406,202 hours), and 25,343 individual respondents will take 140 minutes (59,134 hours). (The numbers of responders by type are estimated based on the data in Table A.)

Estimated average burden hours per respondent and/or recordkeeper: 3.66 hours (current estimated average burden hours per respondent and/or recordkeeper from OMB Information Collection Number 1140–0014: 1.68 hours).

Estimated number of respondents and/or recordkeepers: 123,339 (current estimated number of respondents and/or recordkeepers from OMB Information Collection Number 1140–0014: 65,085).

Estimated annual frequency of responses: 1 (current estimated annual frequency of responses from OMB Information Collection Number 1140–0014: 1).

Estimated total costs: \$6,649,141.29 \$6,380,373 (fingerprints and photographs (\$29.98 × 25,343 (individuals) = \$759,783; \$29.98 × 187,478 (2 responsible persons) = \$5,620,590))

\$149,982 (copies of trust or legal entity documents (\$1.60 × 93,739))

\$118,786.29 (mailing (\$.98 each for 119,082 respondents = \$116,700.36; \$.49 for 4,257 respondents = \$2,085.93) (current estimated total costs from OMB Information Collection Number 1140–0014: \$979,645).

With respect to ATF Form 5:

Estimated total annual reporting and/or recordkeeping burden: 5,350 hours (current estimated total annual reporting and/or recordkeeping burden from OMB Information Collection Number 1140–0015: 5,287 hours). Note: 9,892 Gov/FFL responders will take 20 minutes (3,297 hours); 211 trusts or legal entity respondents will take 260 minutes (914

hours); and 488 individual respondents will take 140 minutes (1,139 hours). (The numbers of responders by type are estimated based on the data in Table A.)

Estimated average burden hours per respondent and/or recordkeeper: .51 hours (current estimated average burden hours per respondent and/or recordkeeper from OMB Information Collection Number 1140–0015: 33 minutes).

Estimated number of respondents and/or recordkeepers: 10,591 (current estimated number of respondents and/or recordkeepers from OMB Information Collection Number 1140–0015: 9,688).

Estimated annual frequency of responses: 1 (current estimated annual frequency of responses from OMB Information Collection Number 1140–0015: 1).

Estimated total costs: \$33,152.10 \$27,282 (fingerprints and photographs (\$29.98 × 488 (individuals) = \$14,630; \$29.98 × 422 (2 responsible persons) = \$12,652))

\$338 (copies of trust or legal entity documents (\$1.60 × 211))

\$5,532.10 (mailing (\$.98 each for 699 respondents = \$685.02; \$.49 for 9,892 respondents = \$4,847.08)) (current estimated total costs from OMB Information Collection Number 1140–0015: \$25,844).

With respect to ATF Form 5320.23:

Estimated total annual reporting and/or recordkeeping burden: 57,914.50 hours (based on 2 responsible persons)

Estimated average burden hours per respondent and/or recordkeeper: .25 hours.

Estimated number of respondents and/or recordkeepers: 115,829.

Estimated annual frequency of responses: 1.

Estimated total costs: \$113,512 (mailing to CLEO (\$.49 × 231,658 (2 responsible persons)). All other estimated costs are associated with the submission package for Forms 1, 4, and 5.

Comments concerning the accuracy of these burden estimates for Form 5320.23 and suggestions for reducing the burden should be directed to the Chief, Materiel Management Branch, Bureau of Alcohol, Tobacco, Firearms, and Explosives, 99 New York Avenue NE., Washington, DC 20226, and to the Office of Management and Budget, Attention: Desk Officer for the Department of Justice, Bureau of Alcohol, Tobacco, Firearms, and Explosives, Office of Information and Regulatory Affairs, Washington, DC 20503.

The current estimated costs provided above for Forms 1, 4, and 5 are being revised. ATF has provided OMB with

the revised cost estimates for these forms.

Disclosure

Copies of the final rule, proposed rule, and all comments received in response to the proposed rule will be available for public inspection through the Federal eGovernment portal, <http://www.regulations.gov>, or by appointment during normal business hours at: ATF Reading Room, Room 1E-062, 99 New York Avenue NE., Washington, DC 20226; telephone: (202) 648-8740.

Drafting Information

The author of this document is Brenda Raffath Friend, Office of Regulatory Affairs, Enforcement Programs and Services, Bureau of Alcohol, Tobacco, Firearms, and Explosives.

List of Subjects in 27 CFR Part 479

Administrative practice and procedure, Arms and munitions, Excise taxes, Exports, Imports, Military personnel, Penalties, Reporting and recordkeeping requirements, Seizures and forfeitures, and Transportation.

Authority and Issuance

Accordingly, for the reasons discussed in the preamble, 27 CFR part 479 is amended as follows:

PART 479—MACHINE GUNS, DESTRUCTIVE DEVICES, AND CERTAIN OTHER FIREARMS

■ 1. The authority citation for 27 CFR part 479 is revised to read as follows:

Authority: 26 U.S.C. 5812; 26 U.S.C. 5822; 26 U.S.C. 7801; 26 U.S.C. 7805.

■ 2. In § 479.11, revise the definition for “Person” and add a new definition for the term “Responsible person” to read as follows:

§ 479.11 Meaning of terms.

* * * * *

Person. A partnership, company, association, trust, corporation, including each responsible person associated with such an entity; an estate; or an individual.

* * * * *

Responsible person. In the case of an unlicensed entity, including any trust, partnership, association, company (including any Limited Liability Company (LLC)), or corporation, any individual who possesses, directly or indirectly, the power or authority to direct the management and policies of the trust or entity to receive, possess, ship, transport, deliver, transfer, or otherwise dispose of a firearm for, or on behalf of, the trust or legal entity. In the

case of a trust, those persons with the power or authority to direct the management and policies of the trust include any person who has the capability to exercise such power and possesses, directly or indirectly, the power or authority under any trust instrument, or under State law, to receive, possess, ship, transport, deliver, transfer, or otherwise dispose of a firearm for, or on behalf of, the trust. Examples of who may be considered a responsible person include settlors/grantors, trustees, partners, members, officers, directors, board members, or owners. An example of who may be excluded from this definition of responsible person is the beneficiary of a trust, if the beneficiary does not have the capability to exercise the powers or authorities enumerated in this section.

* * * * *

■ 3. Section 479.62 is revised to read as follows:

§ 479.62 Application to make.

(a) *General.* No person shall make a firearm unless the person has filed with the Director a completed application on ATF Form 1 (5320.1), Application to Make and Register a Firearm, in duplicate, executed under the penalties of perjury, to make and register the firearm and has received the approval of the Director to make the firearm, which approval shall effectuate registration of the firearm to the applicant. If the applicant is not a licensed manufacturer, importer, or dealer qualified under this part and is a partnership, company (including a Limited Liability Company (LLC)), association, trust, or corporation, all information on the Form 1 application shall be furnished for each responsible person of the applicant.

(b) *Preparation of ATF Form 1.* All of the information called for on Form 1 shall be provided, including:

(1) The type of application, *i.e.*, tax paid or tax exempt. If the making of the firearm is taxable, the applicant shall submit a remittance in the amount of \$200 with the application in accordance with the instructions on the form;

(2) The identity of the applicant. If an individual, the applicant shall provide the applicant's name, address, and date of birth, and also comply with the identification requirements prescribed in § 479.63(a). If other than an individual, the applicant shall provide its name, address, and employer identification number, if any, as well as the name and address of each responsible person. Each responsible person of the applicant also shall comply with the identification requirements prescribed in § 479.63(b);

(3) A description of the firearm to be made by type; caliber, gauge, or size; model; length of barrel; serial number; other marks of identification; and the name and address of the original manufacturer (if the applicant is not the original manufacturer);

(4) The applicant's Federal firearms license number (if any);

(5) The applicant's special (occupational) tax stamp (if applicable); and

(6) If the applicant (including, if other than an individual, any responsible person) is an alien admitted under a nonimmigrant visa, applicable documentation demonstrating that the nonimmigrant alien falls within an exception to 18 U.S.C. 922(g)(5)(B) under 18 U.S.C. 922(y)(2), or has obtained a waiver of that provision under 18 U.S.C. 922(y)(3).

(c) *Notification of chief law enforcement officer.* Prior to the submission of the application to the Director, all applicants and responsible persons shall forward a completed copy of Form 1 or a completed copy of Form 5320.23, respectively, to the chief law enforcement officer of the locality in which the applicant or responsible person is located. The chief law enforcement officer is the local chief of police, county sheriff, head of the State police, or State or local district attorney or prosecutor. If the applicant is not a licensed manufacturer, importer, or dealer qualified under this part and is a partnership, company, association, or corporation, for purposes of this section, it is considered located at its principal office or principal place of business; if a trust, for purposes of this section, it is considered located at the primary location at which the firearm will be maintained.

(d) *Approval of Form 1.* If the application is approved, the Director will affix a National Firearms Act stamp to the original application in the space provided therefor and properly cancel the stamp (*see* § 479.67). The approved application will then be returned to the applicant.

■ 4. Section 479.63 is revised to read as follows:

§ 479.63 Identification of applicant.

(a) If the applicant is an individual, the applicant shall:

(1) Securely attach to each copy of the Form 1, in the space provided on the form, a 2 x 2-inch photograph of the applicant, clearly showing a full front view of the features of the applicant with head bare, with the distance from the top of the head to the point of the chin approximately 1¼ inches, and

which shall have been taken within 1 year prior to the date of the application; and

(2) Attach to the application two properly completed FBI Forms FD-258 (Fingerprint Card). The fingerprints must be clear for accurate classification and should be taken by someone properly equipped to take them.

(b) If the applicant is not a licensed manufacturer, importer, or dealer qualified under this part and is a partnership, company (including a Limited Liability Company (LLC)), association, trust, or corporation, the applicant shall:

(1) Be identified on the Form 1 by the name and exact location of the place of business, including the name and number of the building and street, and the name of the county in which the business is located or, in the case of a trust, the primary location at which the firearm will be maintained. In the case of two or more locations, the address shown shall be the principal place of business (or principal office, in the case of a corporation) or, in the case of a trust, the primary location at which the firearm will be maintained;

(2) Except as provided in paragraph (c) of this section, attach to the application—

(i) Documentation evidencing the existence and validity of the entity, which includes complete and unredacted copies of partnership agreements, articles of incorporation, corporate registration, and declarations of trust, with any trust schedules, attachments, exhibits, and enclosures;

(ii) A completed ATF Form 5320.23 for each responsible person. Form 5320.23 requires certain identifying information, including each responsible person's full name, position, home address, date of birth, and country of citizenship if other than the United States;

(iii) In the space provided on Form 5320.23, a 2 x 2-inch photograph of each responsible person, clearly showing a full front view of the features of the responsible person with head bare, with the distance from the top of the head to the point of the chin approximately 1 $\frac{1}{4}$ inches, and which shall have been taken within 1 year prior to the date of the application;

(iv) Two properly completed FBI Forms FD-258 (Fingerprint Card) for each responsible person. The fingerprints must be clear for accurate classification and should be taken by someone properly equipped to take them.

(c) If the applicant entity has had an application approved as a maker or transferee within the preceding 24

months, and there has been no change to the documentation previously provided, the entity may provide a certification that the information has not been changed since the prior approval and shall identify the application for which the documentation had been submitted by form number, serial number, and date approved.

■ 5. Section 479.84 is revised to read as follows:

§ 479.84 Application to transfer.

(a) *General.* Except as otherwise provided in this subpart, no firearm may be transferred in the United States unless an application, Form 4 (5320.4), Application for Tax Paid Transfer and Registration of Firearm, in duplicate, executed under the penalties of perjury, to transfer the firearm and register it to the transferee has been filed with and approved by the Director. The application shall be filed by the transferor. If the transferee is not a licensed manufacturer, importer, or dealer qualified under this part and is a partnership, company (including a Limited Liability Company (LLC)), association, trust, or corporation, all information on the Form 4 application shall be furnished for each responsible person of the transferee.

(b) *Preparation of ATF Form 4.* All of the information called for on Form 4 shall be provided, including:

(1) The type of firearm being transferred. If the firearm is other than one classified as “any other weapon,” the applicant shall submit a remittance in the amount of \$200 with the application in accordance with the instructions on the form. If the firearm is classified as “any other weapon,” the applicant shall submit a remittance in the amount of \$5;

(2) The identity of the transferor by name and address and, if the transferor is other than a natural person, the title or legal status of the person executing the application in relation to the transferor;

(3) The transferor's Federal firearms license number (if any);

(4) The transferor's special (occupational) tax stamp (if any);

(5) The identity of the transferee by name and address and, if the transferee is a person not qualified as a manufacturer, importer, or dealer under this part, the transferee shall be further identified in the manner prescribed in § 479.85;

(6) The transferee's Federal firearms license number (if any);

(7) The transferee's special (occupational) tax stamp (if applicable); and

(8) A description of the firearm to be transferred by name and address of the manufacturer or importer (if known); caliber, gauge, or size; model; serial number; in the case of a short-barreled shotgun or a short-barreled rifle, the length of the barrel; in the case of a weapon made from a rifle or shotgun, the overall length of the weapon and the length of the barrel; and any other identifying marks on the firearm. In the event the firearm does not bear a serial number, the applicant shall obtain a serial number from ATF and shall stamp (impress) or otherwise conspicuously place such serial number on the firearm in a manner not susceptible of being readily obliterated, altered, or removed.

(9) If the transferee (including, if other than an individual, any responsible person) is an alien admitted under a nonimmigrant visa, applicable documentation demonstrating that the nonimmigrant alien falls within an exception to 18 U.S.C. 922(g)(5)(B) under 18 U.S.C. 922(y)(2), or has obtained a waiver of that provision under 18 U.S.C. 922(y)(3).

(c) *Notification of chief law enforcement officer.* Prior to the submission of the application to the Director, all transferees and responsible persons shall forward a completed copy of Form 4 or a completed copy of Form 5320.23, respectively, to the chief law enforcement officer of the locality in which the transferee or responsible person is located. The chief law enforcement officer is the local chief of police, county sheriff, head of the State police, State or local district attorney or prosecutor. If the transferee is not a licensed manufacturer, importer, or dealer qualified under this part and is a partnership, company, association, or corporation, for purposes of this section, it is considered located at its principal office or principal place of business; if the transferee is not a licensed manufacturer, importer, or dealer qualified under this part and is a trust, for purposes of this section, it is considered located at the primary location at which the firearm will be maintained.

(d) *Approval of Form 4.* If the application is approved, the Director will affix a National Firearms Act stamp to the original application in the space provided therefor and properly cancel the stamp (see § 479.87). The approved application will then be returned to the transferor.

■ 6. Section 479.85 is revised to read as follows:

§ 479.85 Identification of transferee.

(a) If the transferee is an individual, such person shall:

(1) Securely attach to each copy of the Form 4, in the space provided on the form, a 2 x 2-inch photograph of the applicant, clearly showing a full front view of the features of the applicant with head bare, with the distance from the top of the head to the point of the chin approximately 1¼ inches, and which shall have been taken within 1 year prior to the date of the application; and

(2) Attach to the application two properly completed FBI Forms FD-258 (Fingerprint Card). The fingerprints must be clear for accurate classification and should be taken by someone properly equipped to take them.

(b) If the transferee is not a licensed manufacturer, importer, or dealer qualified under this part and is a partnership, company, association, trust, or corporation, such person shall:

(1) Be identified on the Form 4 by the name and exact location of the place of business, including the name and number of the building and street, and the name of the county in which the business is located or, in the case of a trust, the primary location at which the firearm will be maintained. In the case of two or more locations, the address shown shall be the principal place of business (or principal office, in the case of a corporation) or, in the case of a trust, the primary location at which the firearm will be maintained;

(2) Except as provided in paragraph (c) of this section, attach to the application—

(i) Documentation evidencing the existence and validity of the entity, which includes complete and unredacted copies of partnership agreements, articles of incorporation, corporate registration, and declarations of trust, with any trust schedules, attachments, exhibits, and enclosures;

(ii) A completed ATF Form 5320.23 for each responsible person. Form 5320.23 requires certain identifying information, including the responsible person's full name, position, home

address, date of birth, and country of citizenship if other than the United States;

(iii) In the space provided on Form 5320.23, a 2 x 2-inch photograph of each responsible person, clearly showing a full front view of the features of the responsible person with head bare, with the distance from the top of the head to the point of the chin approximately 1¼ inches, and which shall have been taken within 1 year prior to the date of the application; and

(iv) Two properly completed FBI Forms FD-258 (Fingerprint Card) for each responsible person. The fingerprints must be clear for accurate classification and should be taken by someone properly equipped to take them.

(c) If the applicant entity has had an application approved as a maker or transferee within the preceding 24 months, and there has been no change to the documentation previously provided, the entity may provide a certification that the information has not been changed since the prior approval and shall identify the application for which the documentation had been submitted by form number, serial number, and date approved.

§ 479.90 [Amended]

■ 7. Section 479.90(b) is amended by removing the word “natural” in the third sentence.

■ 8. Section 479.90a is added to subpart F to read as follows.

§ 479.90a Estates.

(a) The executor, administrator, personal representative, or other person authorized under State law to dispose of property in an estate (collectively “executor”) may possess a firearm registered to a decedent during the term of probate without such possession being treated as a “transfer” as defined in § 479.11. No later than the close of probate, the executor must submit an application to transfer the firearm to

beneficiaries or other transferees in accordance with this section. If the transfer is to a beneficiary, the executor shall file an ATF Form 5 (5320.5), Application for Tax Exempt Transfer and Registration of Firearm, to register a firearm to any beneficiary of an estate in accordance with § 479.90. The executor will identify the estate as the transferor, and will sign the form on behalf of the decedent, showing the executor's title (*e.g.*, executor, administrator, personal representative, etc.) and the date of filing. The executor must also provide the documentation prescribed in paragraph (c) of this section.

(b) If there are no beneficiaries of the estate or the beneficiaries do not wish to possess the registered firearm, the executor will dispose of the property outside the estate (*i.e.*, to a non-beneficiary). The executor shall file an ATF Form 4 (5320.4), Application for Tax Paid Transfer and Registration of Firearm, in accordance with § 479.84. The executor, administrator, personal representative, or other authorized person must also provide documentation prescribed in paragraph (c) of this section.

(c) The executor, administrator, personal representative, or other person authorized under State law to dispose of property in an estate shall submit with the transfer application documentation of the person's appointment as executor, administrator, personal representative, or as an authorized person, a copy of the decedent's death certificate, a copy of the will (if any), any other evidence of the person's authority to dispose of property, and any other document relating to, or affecting the disposition of firearms from the estate.

Dated: January 4, 2016.

Loretta E. Lynch,

Attorney General.

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