ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 257

[EPA–HQ–OLEM–2020–0107; FRL–7814.3–01–OLEM]

RIN 2050–AH39

Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; Legacy/CCRMU Amendments

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule; public hearing.

SUMMARY: The Environmental Protection Agency (EPA or the Agency) is proposing several revisions to the existing federal CCR regulations, including exempting CCR dewatering structures and modifying the legacy coal combustion residual (CCR) surface impoundment and CCR management unit provisions. Additionally, EPA is proposing to establish a new compliance pathway that allows for site-specific considerations during permitting regarding the groundwater monitoring points of compliance, the cleanup levels for corrective action, the appropriate closure requirements, closure timeframes, and allowing CCR extraction for beneficial use during the post-closure care period. The Agency is also proposing to revise the definition of beneficial use by eliminating the requirement for an environmental demonstration for the non-roadway use of more than 12,400 tons of unencapsulated CCR on land, as well as proposing a definition of CCR storage pile, and proposing to exclude specific beneficial uses from federal CCR regulations. Lastly, EPA is providing notice that EPA will reopen the public comment period for the Federal CCR permit program proposed rule, published on February 20, 2020, for a period of 30 days in a future separate action.

DATES:

Comments due: Comments on this action must be received on or before June 12, 2026.

Public hearing: EPA will hold an online (*i.e.,* virtual) public hearing on May 28, 2026. Please refer to the **SUPPLEMENTARY INFORMATION** section for additional information on the public hearing.

ADDRESSES: You may send comments on this action, identified by Docket ID No. EPA–HQ–OLEM–2020–0107, by any of the following methods:

- *Federal eRulemaking Portal: https://www.regulations.gov/* (our preferred method). Follow the online instructions for submitting comments. A plain language summary of the proposed rule is also available on the Federal eRulemaking Portal.
- *Mail:* U.S. Environmental Protection Agency, EPA Docket Center, Office of Land and Emergency Management (OLEM) Docket, Mail Code 28221T, 1200 Pennsylvania Ave. NW, Washington, DC 20460.
- *Hand Delivery or Courier (by scheduled appointment only):* EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue NW, Washington, DC 20004. The Docket Center's hours of operations are 8:30 a.m.–4:30 p.m., Monday–Friday (except Federal Holidays).

Instructions: All submissions received must include the Docket ID No. for this rulemaking. Comments received may be posted without change to *https://www.regulations.gov/,* including any personal information provided. For detailed instructions on sending comments and additional information on the rulemaking process, see the ''Public Participation'' heading of the **SUPPLEMENTARY INFORMATION** section of this document.

The public hearing will be held online (*i.e.,* virtually). Refer to the **SUPPLEMENTARY INFORMATION** section below for additional information.

FOR FURTHER INFORMATION CONTACT: Taylor Holt, Office of Resource Conservation and Recovery, Waste Identification, Notice, and Generators Division, Environmental Protection Agency, 1200 Pennsylvania Avenue NW, MC: 5304T, Washington, DC 20460; telephone number: (202) 566–1439; email address: *holt.taylor@epa.gov.* For questions concerning the beneficial use provisions discussed in Unit IV.C. of this preamble, contact Tracy Atagi, Office of Resource Conservation and Recovery, Waste Identification, Notice, and Generators Division, Environmental Protection Agency, 1200 Pennsylvania Avenue NW, MC: 5304T, Washington, DC 20460; telephone number: (202) 566–0511; email address: *atagi.tracy@epa.gov.* For more information on this rulemaking please visit *https://www.epa.gov/coal-combustion-residuals.*

SUPPLEMENTARY INFORMATION:

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List of Acronyms

ACAA American Coal Ash Association
AEP American Electric Power
ARAR Applicable or Relevant and Appropriate Requirement
BH Berkshire Hathaway
CAMA Coal Ash Management Act
CARA Corrective Action/Risk Assessment
CBI Confidential Business Information
CCIG Cross-Cutting Issues Group
CCR coal combustion residuals
CCRMU coal combustion residuals management unit
CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
CFR Code of Federal Regulations
CSM Conceptual Site Model
EEI Edison Electric Institute
EPA Environmental Protection Agency
F.A.C. Florida Administrative Code
FER facility evaluation report
FR **Federal Register**
HELP Hydrologic Evaluation of Landfill Performance
HSWA Hazardous and Solid Waste Amendments
ICR Information Collection Request
IEPA Illinois Environmental Protection Agency
LEAF Leaching Environmental Assessment Framework
MCL maximum contaminant level
MSWLF Municipal Solid Waste Landfill
NAICS North American Industry Classification System
NCDEQ North Carolina Department of Environmental Quality
N.C.G.S. General Statutes of North Carolina
NPDES National Pollution Discharge Elimination System
NRECA National Rural Electric Cooperative Association
NTTAA National Technology Transfer and Advancement Act
OMB Office of Management and Budget
PRA Paperwork Reduction Act
RCRA Resource Conservation and Recovery Act
RIA Regulatory Impact Analysis
SCDHEC South Department of Health and Environmental Control
TDEC Tennessee Department of Environment and Conservation
TVA Tennessee Valley Authority
USWAG Utility Solid Waste Activities Group
UV Ultraviolet
WIIN Water Infrastructure Improvements for the Nation

I. Public Participation

A. Written Comments

Submit your comments on this action, identified by Docket ID No. EPA–HQ–OLEM–2020–0107, at *https://www.regulations.gov* (our preferred method), or the other methods identified in the **ADDRESSES** section. Do not submit any comments on the Federal CCR permit program proposed rule to this docket; comments on that action must be submitted during the reopened comment period to Docket ID No. EPA–HQ–OLEM–2019–0361 in accordance with the future **Federal Register** document. Once submitted, comments cannot be edited or removed from the docket. EPA may publish any comment received to its public docket. Do not submit to EPA's docket at *https://www.regulations.gov* any information you consider to be Confidential Business Information (CBI), Proprietary Business Information (PBI), 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). Please visit *https://www.epa.gov/dockets/commenting-epa-dockets* for additional submission methods; the full EPA public comment policy; information about CBI, PBI, or multimedia submissions; and general guidance on making effective comments.

B. Participation in the Virtual Public Hearing

EPA will hold a virtual public hearing on May 28, 2026. The hearing will convene at 9:00 a.m. Eastern time (ET) and will conclude at 6:00 p.m. (ET).

EPA will begin pre-registering speakers for the hearing upon publication of this document in the **Federal Register**. To register to speak at the hearing, please use the online registration form available on EPA's CCR website (*https://www.epa.gov/coal-combustion-residuals*) or contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section to register to speak at the hybrid hearing. The last day to pre-register to speak at the hearing will be May 26, 2026. On May 26, 2026, EPA will post a general agenda for the hearing on EPA's CCR website (*https://www.epa.gov/coal-combustion-residuals*).

EPA will make every effort to follow the schedule as closely as possible on the day of the hearing; however, please plan for the hearings to run either ahead of schedule or behind schedule. Additionally, requests to speak will be taken the day of the hearing according to the procedures specified on EPA's CCR website (*https://www.epa.gov/coal-combustion-residuals*) for this hearing. EPA will make every effort to accommodate all speakers who register or join virtually, although preferences on speaking times may not be able to be fulfilled.

Each commenter will have five (5) minutes to provide oral testimony. EPA encourages commenters to provide EPA with a copy of their oral testimony electronically by emailing it to the person listed in the **FOR FURTHER INFORMATION CONTACT** section. EPA also recommends submitting the text of your oral comments as written comments to the rulemaking docket. If EPA is anticipating a high attendance, the time allotment per testimony may be shortened to no less than three (3) minutes per person to accommodate all those wishing to provide testimony and who have pre-registered. While EPA will make every effort to accommodate all speakers who do not preregister, opportunities to speak may be limited based upon the number of pre-registered speakers. Therefore, EPA strongly encourages anyone wishing to speak to preregister. Participation in the public hearing does not preclude any entity or individual from submitting a written comment.

EPA may ask clarifying questions during the oral presentations but will not respond to the presentations at that time. Written statements and supporting information submitted during the comment period will be considered with the same weight as oral comments and supporting information presented at the public hearing. Verbatim transcripts of the hearings and written statements will be included in the docket for the rulemaking.

Please note that any updates made to any aspect of the hearing will be posted online at EPA's CCR website at *https://www.epa.gov/coal-combustion-residuals.* While EPA expects the hearing to go forward as set forth above, please monitor our website or contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section to determine if there are any updates. EPA does not intend to publish a document in the **Federal Register** announcing updates.

If you require the services of an interpreter, translator, or special accommodations such as audio transcription or closed captioning, please pre-register for the hearing with the person listed in the **FOR FURTHER INFORMATION CONTACT** section and describe your needs by May 14, 2026. EPA may not be able to arrange accommodations without advance notice. Registrants should notify the person listed in the **FOR FURTHER INFORMATION CONTACT** section and

indicate on the registration form any such needs when they pre-register to speak.

II. General Information

A. Does this action apply to me?

This rule may be of interest to electric utilities and independent power producers that fall within the North American Industry Classification System (NAICS) code 221112. The reference to NAICS code 221112 is not intended to be exhaustive but rather provides a guide for readers regarding entities likely to be affected by this action. This discussion lists the types of entities that EPA is now aware could potentially be affected by this action. Other types of entities not described here could also be affected. To determine whether your entity is affected by this action, you should carefully examine the applicability criteria found in § 257.50 of title 40 of the Code of Federal Regulations (CFR). If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

B. What action is the agency contemplating?

EPA is proposing to amend the regulations governing the disposal of CCR in landfills and surface impoundments and defining the beneficial use of CCR, codified in 40 CFR part 257, subpart D (CCR regulations). First, the Agency is proposing to exempt CCR dewatering structures from the CCR regulations under part 257 and to establish a new compliance pathway that allows for site-specific considerations during permitting. This pathway incorporates permit flexibilities for CCR units complying with the federal CCR groundwater monitoring, corrective action, and closure requirements under a federal or participating-state CCR permit. Additionally, EPA is proposing to clarify the deadline by which new CCR landfills and CCR surface impoundments (which includes any lateral expansions) must comply with the requirement to establish background concentrations.

EPA is also proposing to amend the regulations governing the disposal of CCR in CCR surface impoundments that no longer receive CCR but contained both CCR and liquids on or after October 19, 2015 and are located at inactive facilities (*i.e.,* legacy CCR surface impounds) and the regulations governing the disposal of CCR in inactive and closed landfills, in closed surface impoundments and on land where noncontainerized accumulations of CCR are received, placed, or otherwise managed (*i.e.,* CCR management units or CCRMU). Specifically, the Agency is proposing to: (1) Broaden the criteria for the closure by removal certification for legacy CCR surface impoundments; (2) Broaden the deferral criteria for legacy CCR surface impoundments that have completed closure under a regulatory authority prior to November 8, 2024; and (3) Amend the scope of the CCRMU regulations.

Furthermore, EPA is proposing to revise several provisions related to CCR beneficial use. Specifically, the Agency is proposing to revise the definition of beneficial use by removing the fourth criterion that requires an environmental demonstration for the non-roadway use of more than 12,400 tons of unencapsulated CCR on land, proposing a definition of CCR storage pile, and excluding the following beneficial uses from federal CCR regulations: (1) CCR used in cement manufacturing at cement kilns, (2) Flue gas desulfurization (FGD) gypsum used in agriculture, and (3) FGD gypsum used in wallboard.

Lastly, EPA is providing notice that in a future separate action identified by Docket ID No. EPA–HQ–OLEM–2019–0361, EPA will reopen the public comment period for the Federal CCR permit program proposed rule (85 FR 9940, entitled *Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; Federal CCR Permit Program*) for a period of 30 days. Note that comments on the Federal CCR permit program proposed rule must be submitted to Docket ID No. EPA–HQ–OLEM–2019–0361 during the future reopening of the comment period to be considered.

EPA intends that the provisions of the rule be severable. In the event that any individual provision or part of the rule is invalidated, EPA intends that this would not render the entire rule invalid, and that any individual provisions that can continue to operate will be left in place.

In this proposal, EPA is not reconsidering, proposing to reopen, or otherwise soliciting comment on any other provisions of the existing CCR regulations beyond those specifically identified in this proposal. For the reader's convenience, EPA has provided a background description of existing requirements in several places throughout this preamble. In the absence of a specific request for comment or proposed change to the identified provisions, these descriptions do not reopen any of the described provisions. EPA will not respond to comments submitted on any issues other than those specifically identified in this proposal, and such comments will not be considered part of the rulemaking record.

C. What is the agency's authority for taking this action?

EPA is publishing this rulemaking under the authority of sections 1008(a)(3), 2002(a), 4004, and 4005(a), (d) of the Solid Waste Disposal Act of 1965, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA) and the Water Infrastructure Improvements for the Nation (WIIN) Act of 2016, 42 U.S.C. 6907(a), 6912(a), 6944, 6945(a) and (d).

D. What are the incremental costs and benefits of this action?

EPA establishes the requirements under RCRA sections 1008(a)(3) and 4004(a) without taking cost into account. See, *Utility Solid Waste Activities Group, et al.* v. *EPA* (*USWAG*) 901 F.3d 414, 448–49 (D.C. Cir. 2018). The following cost estimates are presented in the Regulatory Impact Analysis (RIA) and summarized in this preamble for compliance with OMB Circular A–4 and E.O. 12866. The requirements in this rule do not rely on these cost estimates.

The RIA estimates that the annualized cost savings of this action will be approximately:

- $174–$194 million per year when discounting at 3%; and
- $232–$262 million per year when discounting at 7%.

The RIA estimates that the annualized change in benefits of this action will be approximately:

- A $5 million decrease per year when discounting at 3%; and
- A $4–$2 million decrease when discounting at 7%.

Overall, the RIA estimates that the net annualized cost savings and benefits, net of disbenefits, of this action will be $169–$189 million per year when discounting at 3%, and $229–$260 million when discounting at 7%.

Further information on the economic effects of this action can be found in Unit VII. of this preamble.

III. Background

A. 2015 CCR Rule

On April 17, 2015, EPA finalized national minimum criteria for the disposal of CCR as solid waste under

subtitle D of RCRA titled, ''Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities'' (80 FR 21302) (2015 CCR Rule). The 2015 CCR Rule, codified in subpart D of part 257 of title 40 of the CFR, established regulations for existing and new CCR landfills, existing and new CCR surface impoundments, including all lateral expansions of these CCR units. The 2015 CCR Rule also imposed requirements on inactive surface impoundments at active facilities but exempted inactive surface impoundments at inactive facilities. The requirements consist of location restrictions, design and operating criteria, groundwater monitoring and corrective action requirements, closure and post-closure care requirements, recordkeeping, notification, and website posting requirements.

At the time of the promulgation of the 2015 CCR Rule, EPA did not have the authority to issue CCR permits, authorize state CCR permit programs, or otherwise provide the oversight typically performed by a regulatory agency or permit authority. Therefore, the 2015 CCR Rule established nationwide requirements for CCR units under a self-implementing regulatory structure. Due to the lack of regulatory oversight and the limitations of a national risk assessment, as described in Unit III.D. below, the 2015 CCR Rule did not allow for site-specific variances from the regulations or tailored requirements based on site-specific characteristics. Instead, the 2015 CCR Rule relied on certifications by qualified professional engineers and web posting requirements as a substitute for regulatory oversight in certain cases.

As discussed in Unit IV.B. of this preamble, the self-implementing framework and national requirements have resulted in a one-size-fits-all approach to compliance with the federal CCR requirements. For example, site-specific revisions to the technical standards are not permissible under the 2015 CCR Rule due to the lack of regulatory oversight. Likewise, as discussed in Unit III.B.1.b. of this preamble, during the development of the 2015 Rule, EPA rejected requests to allow regulated entities to establish alternative groundwater standards for constituents without a federal maximum contaminant level (MCL) established under §§ 141.62 and 141.66 and referenced in § 257.95(h)(1) due to a lack of regulatory oversight and scientific expertise. Consequently, the 2015 CCR Rule represents a regulatory structure that met the RCRA standard of no reasonable probability of adverse effect to health or the environment within the constraints of the law at that time. However, as discussed in further detail in Units III.D. and IV.B. of this preamble, the self-implementing framework is no longer the only, nor the best, regulatory structure available.

B. 2023 Legacy Proposed Rule

On May 18, 2023, EPA proposed revisions to the CCR regulations (88 FR 31982) (''the Legacy Proposed Rule'' or ''Legacy Proposal''). These revisions included establishing regulations specifying that legacy CCR surface impoundments are subject to 40 CFR part 257, subpart D and that owners or operators of legacy CCR surface impoundments must comply with all the appropriate requirements applicable to inactive CCR surface impoundments at active facilities. In addition, EPA proposed to establish requirements to address the risks from certain exempt solid waste management that involves the direct placement of CCR on the land (*i.e.,* CCRMU). EPA proposed to extend a subset of the existing requirements in part 257, subpart D to CCRMU, which was proposed to include CCR surface impoundments and landfills that closed prior to the effective date of the 2015 CCR Rule, inactive CCR landfills, and other areas where CCR is managed directly on the land. EPA proposed to apply the CCRMU provisions to all active CCR facilities and all inactive facilities with a legacy CCR surface impoundment.

C. 2024 Legacy Final Rule

On May 8, 2024, EPA established regulations applicable to inactive surface impoundments at inactive facilities (legacy CCR surface impoundments or legacy impoundments) under 40 CFR part 257, subpart D (89 FR 38950) (Legacy Final Rule). EPA also established regulations requiring owners and operators of legacy CCR surface impoundments to comply with the following requirements in the existing CCR regulations: installation of a permanent marker, history of construction, hazard potential classification, structural stability and factors of safety assessments, emergency action plan, air criteria, inspections, groundwater monitoring and corrective action, closure and post-closure care, recordkeeping, and notification and CCR website requirements. EPA further established new compliance deadlines for these newly applicable regulatory requirements to ensure the owners or operators of these units have time to come into compliance.

In addition, the Legacy Final Rule established requirements to address the risks from solid waste management activities that involves the direct placement of CCR on the land. EPA extended a subset of the existing requirements in 40 CFR part 257, subpart D to CCRMU, which are CCR surface impoundments and landfills that closed prior to the effective date of the 2015 CCR Rule, inactive CCR landfills, and other areas where CCR is managed directly on the land. These additional requirements apply to all active CCR facilities, all inactive facilities with legacy CCR surface impoundments, and those active facilities (*i.e.,* facilities producing electricity for the grid as of October 19, 2015) that ceased placing CCR in onsite CCR units prior to the effective date of the 2015 CCR Rule.

Owners or operators of some legacy CCR surface impoundments and CCRMU that had closed under a regulatory authority are eligible for certain relief from the established regulatory requirements provided they met specific criteria. Owners or operator of legacy CCR surface impoundments who certify that prior to November 8, 2024, they completed closure by removal of the impoundment, consistent with the standards in § 257.102(c), are subject to no further requirements under the Legacy Final Rule for that unit. Similarly, for legacy CCR surface impoundments and CCRMU that completed a closure prior to November 8, 2024, and can meet the criteria in § 257.101(g), compliance with the closure criteria in § 257.102 is deferred until a permitting authority can evaluate the previous closure to determine if it met the appropriate section of the § 257.102 closure standard. Owners or operators of these units are still required to comply with rest of the applicable CCR regulations.

Owners or operators of an active facility or a facility with a legacy CCR surface impoundment are required to conduct a facility evaluation to identify and delineate any CCRMU at the facility and document the findings in two reports, FER Part 1 and FER Part 2. See § 257.75(b). The FER Part 1 documents the thorough review of readily and reasonably available records regarding where CCR was either routinely and systematically placed on land, or where facility activities otherwise resulted in measurable accumulations of CCR on land. The FER Part 2 documents the conclusions of a physical evaluation of the facility to address any data and information gaps identified in FER Part 1. Together, the FER Parts 1 and 2 give a complete picture of the historic use, placement and the status of CCR at the facility, ultimately identifying any

CCRMU of 1 ton or greater onsite. After identifying the regulated CCRMU through the facility evaluation, owners or operators of CCRMU must comply with the existing requirements in 40 CFR part 257, subpart D for groundwater monitoring, corrective action (where necessary), and in certain cases, closure, and post-closure care requirements.

D. New Information Received Since Publication of the Legacy Final Rule

Since publication of the Legacy Final Rule, EPA received information from numerous companies and representatives of industry regarding the scope of the deferrals within the Legacy Final Rule, the scope of the CCRMU universe, challenges complying with the existing CCR requirements, and requests for regulatory changes.[1] Several of these letters and materials critiqued the findings or applicability of the 2014 and 2024 Risk Assessments conducted by EPA to support the 2015 CCR Rule and the Legacy Final Rule, respectively. Most recently, EPA received two reports that critique the Agency's Risk Assessments, which were prepared on behalf of various industry groups.[2] [3]

Throughout the rulemaking process and thereafter, EPA has received comments from industry groups and individual companies criticizing both the 2014 and 2024 Risk Assessments as overly conservative. These comments frequently reference some combination of literature and field data to assert the risks posed by individual units are not as high as those reported in the two risk assessments. The Agency has previously addressed various iterations of these types of comments in the preamble discussions and response to comments documents for both the 2015 CCR Rule and the Legacy Final Rule, and so does not replicate those specific responses here. Instead, the following discussion focuses on the broader theme of these comments, which is that not every CCR unit will pose the same level of risk.

The ''Report on Joint Data Analysis'' states that it draws on site-specific data from 38 CCR landfills, surface impoundments and CCR management unit fills at 19 stations across nine states. This report summarizes unit characteristics and groundwater monitoring data, along with data drawn from broader literature, and compared those data against values modeled in the Risk Assessments. The other report, ''Technical Evaluation,'' summarizes a separate effort to re-evaluate the modeling approach for CCRMU fills. This effort involved varying different model inputs used in the screening phase of the 2024 Risk Assessment and evaluating how that altered those initial risk results. Both reports conclude that EPA's Risk Assessments systematically overstate the risk from CCR disposal units and fills, and that it would be more effective and appropriate to assess risks on a site-specific basis. For example, the ''Technical Evaluation'' emphasized that individual fills are generally smaller than the disposal units regulated in 2015. The 2024 Risk Assessment demonstrated that risks tend to decrease along with size due to the smaller volumes of leachate generated. The fills associated with high-end risks that formed the basis for national regulation tend to be on the larger end of the size spectrum. However, there remains a sizeable fraction of modeled scenarios where smaller units were found to result in no adverse impacts to groundwater quality. EPA has acknowledged there is a lack of data from facilities about the actual distribution of fill sizes across the country. As such, there is potential that the prevalence of these smaller fills were underrepresented in previous modeling.

The 2014 and 2024 Risk Assessments aimed to incorporate the best available data at the time of each assessment. Site-specific data were used where available, supplemented by regional and national data to fill data gaps, to capture the variability of waste management practices, environmental conditions, and receptor behavior. However, it is inevitable that some sources of uncertainty and variability will remain in any risk assessment. To account for this fact, EPA typically considers a ''high-end'' exposure level to ensure an adequate margin of safety for most of the potentially exposed, susceptible population, or ecosystem. EPA's high-end levels typically fall around the 90th percentile and above, an approach designed to be consistent with both legislative mandates and recommendations from the National Academy of Sciences' National Research Council.[4]

EPA uses a national risk assessment for a particular source or industry category to inform its decision concerning whether a regulatory program is needed or in need of revisions. Both the 2014 and 2024 Risk Assessments were designed to capture the full spectrum of potential disposal scenarios across the country with available data. Decisions about the need for national regulations were based on high-end risks identified from across these scenarios, considered together with damage cases, to ensure that regulations would be consistently protective. Consequently, the 2014 Risk Assessment has served its purpose as EPA used it to inform its decision to create the 2015 CCR Rule creating a Federal CCR regulatory program. EPA relied on the 2024 Risk Assessment to inform its decision to expand the Federal CCR regulations to cover CCRMU.

The Agency acknowledges that these high-end risks may not manifest at every site and concurs that risks associated with individual CCR units may be lower. This is equally true for disposal units, fills, piles, and unencapsulated accumulations on the land for any other stated purpose. However, pinpointing conditions that would lead to reliably lower risks and justify less stringent national standards is complicated by limited site characterization and various factors that could not be reliably modeled at a national level, such as waste disposed below the water table. While this diversity of site conditions creates uncertainty in a national model, it provides a key rationale for the need to design a regulatory program that can account for these site-specific conditions while providing for sufficient regulatory oversight.

Owners or operators of regulated facilities have installed groundwater monitoring networks downgradient of regulated disposal units. Whether prior to or since promulgation of the 2015 CCR Rule, these systems are designed to demonstrate whether a release has occurred. If a release is detected, additional information about the magnitude and extent of the release from the unit and the potential for contamination to spread is required to design a remedial system. That type of broader site characterization typically occurs as part of remedy selection, which most sites have either not yet triggered or completed. Consequently, while industry comments providing further information may lack the types or resolution of data needed to

[1] These materials are available in the docket for this rulemaking.

[2] Haley Aldrich. 2025. ''Report on Joint Data Analysis to Support Revisions to Federal Regulation of Coal Combustion Residuals.'' Prepared for American Electric Power, Duke Energy Corporation, Southern Company Services Inc., and Vistra Corp., Greenville, SC. September.

[3] Gradient. 2025. ''Technical Evaluation of the Environmental Protection Agency's 2024 Risk Assessment of CCR Management Units.'' Prepared for Utility Solid Waste Activities Group and National Rural Electric Cooperative Association. Boston, MA. November.

[4] U.S. EPA. 2004. ''An Examination of EPA Risk Assessment Principles and Practices.'' EPA/100/B–04/00. Prepared by the Office of the Science Advisor. Washington, DC. March.

meaningfully update the existing national risk assessments, the submitted data and description of regulatory oversight provide a foundation for revisions to the self-implementing 2015 CCR Rule to add an option for site-specific determinations involving a permitting authority. A number of commenters cited to data drawn from the broader literature, rather than site-specific measurements. While national data is helpful, any further refinement of the existing risk record will likely need to rely on data from individual sites, where more representative data can be reliably compiled.

To address identified risks in the 2014 Risk Assessment, EPA promulgated national requirements under the authorities in sections 1008(a), 4004, and 4005(a) of RCRA. This included detailed, prescriptive requirements for design of groundwater monitoring systems and corrective action programs drawn from the existing 40 CFR parts 264 and 258 regulations. Decades of experience implementing these requirements for a variety of other wastes, under a range of conditions, provided the Agency confidence that similar performance standards would be equally protective for CCR disposal. When EPA later expanded the regulated universe as part of the Legacy Final Rule to include legacy surface impoundments and CCRMU, the Agency promulgated requirements intended to provide comparable standards across the regulated universe.

During these rulemakings, EPA received numerous comments requesting that EPA adopt alternative performance standards that would allow a permit authority, such as a state regulator (or owners or operators of facilities) to ''tailor'' the requirements to particular site conditions. Many requested EPA adopt particular performance standards found in EPA's municipal solid waste landfill (MSWLF) regulations in 40 CFR part 258.

Although the 2015 CCR Rule was largely modeled on the MSWLF regulations, as explained in both the proposed and final rules, at the time EPA lacked the authority to establish a program analogous to part 258, which relies on approved states to implement the federal criteria through a permitting program. In addition, in 2015, EPA could not issue permits or enforce any of the CCR regulations. In the absence of a mandated oversight mechanism to ensure that the alternative standards would be technically appropriate, EPA concluded it could not adopt many of the ''more flexible'' performance standards that commenters requested. Many of these provisions are not tied to specific performance standards that could be used to readily judge compliance. EPA concluded that allowing individual owners and operators to interpret and implement these provisions in the absence of any mandated oversight mechanism would create too much potential for misinterpretation. Instead, the 2015 CCR Rule was designed to be self-implementing, tied to concrete performance and design standards that must be met, so that the rule could be implemented and compliance demonstrated without any interaction with state or federal regulatory officials.

However, in 2016, the WIIN Act was enacted, establishing new statutory provisions applicable to CCR units, including: (a) Authorizing States to implement the CCR regulations through an EPA-approved permit program; and (b) Authorizing EPA to enforce the regulations and, in certain situations, to serve as the permit authority. In doing so, this legislation provides an opportunity to move away from the ''one-size-fits-all'' regulatory approach necessitated by the previous statutory structure.

EPA therefore proposes to create an additional regulatory pathway that incorporates new regulatory provisions providing permit authorities the ability to approve certain flexibilities for owners or operators complying with the federal CCR rules under a federal or participating-state CCR permit. The aim of these revisions is to allow a permit authority to establish permit conditions that are better tailored to site conditions. Typically permit authorities can require collection of any additional site data necessary to establish permit conditions, and consequently can develop a better understanding of individual sites than could be achieved in national risk assessments. A refined risk record developed through the permitting process would supersede the previous national assessments. As discussed above, the 2015 CCR Rule was based on high-end risks from across the country, which incorporated regional or national data where site-specific data was unavailable. Consequently, it is expected that a permit authority may determine a set of technical requirements different than those set forth in the national, self-implementing scheme that will achieve the standard of ''no reasonable probability of adverse effects on health or the environment'' and better account for the site-specific data and risks of individual units and sites. Most provisions discussed throughout this proposal will allow these permit authorities to provide greater flexibility to owners or operators while ensuring there is no reasonable probability of adverse effects on health or the environment from the regulated units.

This is especially relevant to D.C. Circuit caselaw preserving EPA's discretion, when supported by evidence in the record, to classify disposal facilities, set standards for disposal, and structure closure proceedings. In *Utility Solid Waste Activities Group* v. *EPA,* 901 F.3d 414, 425 (D.C. Cir. 2018) (''*USWAG*''), the U.S. Court of Appeals for the D.C. Circuit vacated several provisions of the 2015 CCR rule that authorized the continued operation of unlined and clay-lined impoundments and that exempted legacy CCR surface impoundments, finding portions of the 2015 CCR rule to be promulgated without an adequate record to demonstrate regulatory compliance with RCRA. In particular, the court found it ''inadequate under RCRA for the EPA to conclude that a major category of impoundments [(*i.e.,* unlined surface impoundments)] that the agency's own data show are prone to leak pose 'no reasonable probability of adverse effects on health or the environment . . . simply because they do not already leak.'' *Id.* at 427. In addition, the court determined that EPA failed to ''explain how the [2015 CCR] Rule's contemplated detection and response could assure 'no reasonable probability of adverse effects to health and the environment' at unlined [surface] impoundments,'' as well as at ''existing impoundments lined with nothing more than compacted soil [*i.e.,* clay-lined surface impoundments].'' *Id.* at 431. Similarly, the court found that EPA lacked sufficient rationale to support exempting legacy CCR surface impoundments from the 2015 CCR Rule. *See id.* at 432. Overall, the court's focus on the Agency's lack of rationale to support the vacated portions of 2015 CCR Rule does not preclude future changes to EPA's Part 257 regulations.

Of particular note, while not relevant to the court's determination that portions of the 2015 CCR Rule were arbitrary and capricious, the court recognized that the WIIN Act provides EPA with ''new tools[,]'' *Id.* at 437, to address CCR. Most notably, the Administrator may approve qualified state permit programs or other systems of prior approval and conditions under State law—for regulation by the State of CCR units—to operate in lieu of EPA regulation of CCR units in the State. *See* 42 U.S.C. 6945(d)(1)(B) (d)(3). This broad discretion for the Administrator to approve state permit programs contemplates various standards for what triggers closure, what constitutes

adequate protection of the environment, and the sequencing and timeliness of closure procedures based upon a holistic review of environmental concerns.

As stated elsewhere, the WIIN Act, 42 U.S.C. 6945(d), enhances such flexibility as long as any state permit program or other system of prior State approval is in full compliance with the EPA's Part 257, or successor regulations establishing criteria, governing CCR units. 42 U.S.C. 6945(d)(6). This flexibility is unchallenged by the *USWAG* decision as long as, as stated by the court, EPA's regulatory standard for disposal of solid waste ''ensure[s] that there is no reasonable probability of adverse effects on health or the environment.'' See *USWAG,* 901 F.3d at 448–49 (''RCRA's statutory language instructs the EPA to classify a disposal site as a sanitary landfill and not an open dump only 'if there is no reasonable probability of adverse effects on health or the environment from disposal of solid waste at such facility.' (emphasis omitted)); see also *Id.* at 437 (''[A]lthough the WIIN Act does not affect the validity of the Rule itself, it does provide the EPA with new tools to pursue its regulatory goals'').

Thus, *USWAG* is best understood as rejecting the record at issue in that case as insufficient to defend the standards promulgated. This leaves intact a permitting regime which, buttressed by an adequate demonstration that the ''no reasonable probability'' standard would be met, could still account for site-specific variability. The record established here and through comments to this proposal may support defining an acceptable level of leakage on a unit- or site-specific basis. Such case-by-case analysis may enable each regulatory authority to opt not to close facilities immediately upon monitoring revealing risks but rather enable owners or operators to flexibly comply with an ongoing monitoring regime which guarantees safety. This discretion is cabined by statute and by the court in *USWAG* in that the Administrator may only approve a state alternative permit program if its standards are at least as protective as the criteria set by the EPA in its corresponding (and successor) regulations. See 42 U.S.C. 6945(d)(1)(C); 40 CFR part 257, subpart D.

In *USWAG* the Court found that EPA had not adequately demonstrated that certain parts of the 2015 regulations adequately met the statutory protectiveness standard in RCRA 4004(a). However, that decision was based on the record EPA used to support its 2015 CCR rule, which was before the court at the time, and *USWAG* does not foreclose further evaluation and consideration of risk in regulating in this area. See, *e.g., USWAG,* 901 F.3d at 429 (''EPA has not shown that harmful leaks will be promptly detected; that, once detected, they will be promptly stopped; or that contamination, once it occurs, can be remedied.'') Left intact is the interpretation of section 4004(a) as requiring a baseline standard of protection, *but not uniformity in the manner of attainment,* and EPA maintains broad discretion to adopt performance-based criteria based on a record of protectiveness in various state instances. The *USWAG* court merely found that the record then at issue did not explain how the specific groundwater monitoring and corrective actions proposed were sufficient to mitigate the risks proscribed by statute.

In keeping with *USWAG*'s admonition of the insufficient evidence and analysis behind the 2015 CCR Rule, EPA is seeking additional comment and record support regarding the use of evidence-based engineering controls, institutional controls, risk assessments, hydrogeological assessments and monitoring techniques.

Additionally, EPA solicits comment and data regarding alternative closure timelines which holistically consider the harms posed to the environment by standards of closure which may fail to account for site-specific factors. The *USWAG* decision does not foreclose the Agency from designing an alternative regulatory path that defines the circumstances that would ''trigger'' a case-by-case, site-specific analysis or one that sets a new identifiable standard to guide the Agency or a permitting authority's judgment when operating under that path.

RCRA requires EPA to set minimum criteria for sanitary landfills that prevent harm to either ''health or the environment.'' 42 U.S.C. 6944(a). Thus, commenters should focus on the circumstances that should ''trigger'' a case-by-case analysis and identify the case-specific scenarios necessitating unique regulatory treatment. EPA's discretion to incorporate such judgments into the general standard of ''no reasonable probability of adverse effects'' remains intact. And even post closure trigger, EPA retains discretion to determine the timing and sequencing of closure activities based on the record support. This proposal seeks to further facts that point to specific site-based variations which validate and call for the flexible approach to regulatory approval contemplated by the WIIN Act and section 257 authority, as well the interplay between the ''new tools'' created by the WIIN Act and the changes to the ''default federal regulatory regime,'' *Waterkeeper Alliance, Inc.* v. *Regan,* 41 F.4th 654, 662 (D.C. Cir. 2022) that would be sufficient to meet RCRA's ''no reasonable probability of adverse effects to human health or the environment'' standard.

E. Beneficial Use of CCR

1. May 2000 Regulatory Determination on Fossil Fuel Combustion Wastes

In 2000, EPA published a final regulatory determination that addressed the management of fossil fuel combustion wastes under RCRA. In this regulatory determination, the Agency concluded that regulation as hazardous waste was not warranted for these wastes, which included coal combustion residuals. (65 FR 32214, May 22, 2000).

The 2000 determination also specifically addressed beneficial uses of CCR, acknowledging the significant environmental and economic benefits these uses can provide. Beneficial uses include a range of applications that effectively conserve natural resources and reduce disposal costs. These included construction applications such as cement, concrete, and wallboard, where the materials were encapsulated, thus minimizing exposure risks. The determination also assessed agricultural uses as lime substitutes, revealing lower risk levels than previously anticipated, thereby supporting continued exemption. In the 2000 regulatory determination, EPA states that ''. . . we have decided that national regulation under subtitle C or subtitle D is not warranted for any of the other beneficial uses of coal combustion wastes.'' (65 FR 32221, May 22, 2000)

2. Beneficial Use in the 2015 CCR Rule

On April 17, 2015, EPA finalized the 2015 CCR Rule to regulate the disposal of CCR as solid waste under subtitle D of RCRA (80 FR 21302, April 17, 2015). The 2015 CCR rule established national minimum criteria for classification of solid waste disposal facilities and practices, codified at 40 CFR part 257, subpart D.

In the 2015 CCR final rule, EPA retained the original 2000 Regulatory Determination for CCR that is beneficially used. (80 FR 21329). EPA also established in the final rule a beneficial use definition to distinguish between beneficial use of CCR, which is not subject to federal regulation, and the disposal of CCR, which is subject to regulation under 40 CFR part 257, subpart D (See 80 FR 21347).

The beneficial use definition is comprised of four criteria: (1) The CCR must provide a functional benefit; (2) The CCR must substitute for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices such as extraction; (3) The use of the CCR must meet relevant product specifications, regulatory standards, or design standards, when available, and where such specifications or standards have not been established, CCR may not be used in excess quantities; and (4) When unencapsulated use of CCR involves placement on the land of 12,400 tons or more in non-roadway applications, the user must demonstrate and keep records, and provide such documentation upon request, that environmental releases to groundwater, surface water, soil, and air are comparable to or lower than those from analogous products made without CCR, or that environmental releases to groundwater, surface water, soil, and air will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use. See: 40 CFR 257.53 and 80 FR 21349–54 (April 15, 2015). In addition, EPA stated in the preamble that ''the Agency expects potential users of unencapsulated CCR below this [12,400 ton] threshold to work with the states to determine the potential risks of the proposed use at the site and to adopt the appropriate controls necessary to address the risks.'' (80 FR 21353)

3. CCR Rule Litigation Related to Beneficial Use

The 2015 CCR rule was challenged by several different parties, including a coalition of regulated entities and a coalition of environmental organizations. See *USWAG et al* v. *EPA,* No. 15–1219 (D.C. Cir.).

On September 13, 2017, EPA granted petitions from the Utility Solid Waste Activities Group (USWAG) and AES Puerto Rico LLP, requesting the Agency initiate rulemaking to reconsider certain provisions of the 2015 final rule. In light of that decision, EPA requested that the D.C. Circuit Court of Appeals hold the case in abeyance until the Agency had completed its reconsideration. EPA subsequently requested that the court remand certain provisions of the 2015 CCR rule on the grounds that the Agency was reconsidering the provisions.

Included in that remand request were two sets of provisions related to the beneficial use of CCR: (1) The 12,400-ton threshold in the beneficial use definition, and (2) The requirements for ''piles'' of CCR located onsite of a utility and those that are located off-site but destined for beneficial use. On August 21, 2018, the D.C. Circuit Court of Appeals granted EPA's request to remand the challenged beneficial use provisions back to EPA in order to allow the Agency to complete its administrative reconsideration.

4. Beneficial Use in the 2019 CCR Proposed Rule

On August 14, 2019, EPA published a proposed rule titled ''Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Enhancing Public Access to Information; Reconsideration of Beneficial Use Criteria and Piles'' (84 FR 40353, August 14, 2019) (2019 CCR proposal). In the 2019 CCR proposed rule, EPA proposed to redefine the criteria for beneficial use of CCR, shifting from a 12,400-ton mass-based numerical threshold to specific location-based criteria as the threshold for requiring an environmental demonstration. This location-based approach aligned with practices observed in state beneficial use programs, which often incorporate location-based restrictions to safeguard sensitive areas (84 FR 40358–60). The rationale for this proposed change stemmed from the need to accurately identify when the use of unencapsulated CCR on the land should require further demonstration that the use does not present a reasonable probability of adverse effects on health or the environment. The previous mass-based threshold, which required a demonstration for uses exceeding 12,400 tons, was based on a unit conversion error made when evaluating data regarding landfill sizes. EPA proposed location-based criteria to reflect siting and construction considerations that more directly impacted environmental risks from CCR. These criteria included factors such as proximity to groundwater, wetlands, flood plains, and seismic zones, which were known to influence the potential for environmental releases. The Agency also requested comment on how these criteria would impact state beneficial use programs.

The 2019 CCR proposal also requested comments on whether a mass-based threshold should be retained, and if so, what the appropriate value should be. The proposal also requested comment on the possibility of using both mass-based and location-based criteria to trigger environmental demonstrations for unencapsulated CCR uses, or whether every unencapsulated use of CCR should be subject to an environmental demonstration, regardless of size or location.

Finally, the proposal requested comment on whether the beneficial use definition should include a requirement for notifying relevant parties when CCR was placed on land. This requirement could involve informing state agencies, landowners, or the public, similar to practices in some state programs.

The 2019 CCR proposal also included proposed revisions to the requirements applicable to piles of CCR. Under existing regulations, CCR piles are defined as non-containerized accumulations of solid, non-flowing CCR placed on land. This classification subjected piles of CCR to the same regulatory criteria as CCR landfills unless they are containerized or part of an off-site beneficial use.

In the 2019 CCR proposal, EPA proposed to unify the regulatory mechanism for all temporary placements of CCR on land, whether onsite or off-site, and regardless of their ultimate use for disposal or beneficial purposes, setting the standard to control releases from piles. The proposal aimed to provide a consistent mechanism to address potential environmental and health issues associated with piles of CCR, irrespective of their location or intended use, characterizing these activities as ''storage'' rather than disposal or beneficial use. A definition for CCR storage piles was proposed, identifying temporary accumulations of CCR that are designed and managed to control environmental releases.

The 2019 CCR proposal discussed how entities would need records documenting the removal of CCR within a specific timeline and sought comments on the feasibility of this requirement and alternative criteria for demonstrating temporary piles. Additionally, EPA proposed requirements to control releases from CCR storage piles. The proposal excluded CCR stored in enclosed structures from these requirements.

5. 2020 CCR Notice of Data Availability

On December 22, 2020, EPA published a Notice of Data Availability (NODA) titled ''Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Reconsideration of Beneficial Use Criteria and Piles; Notification of Data Availability'', that announced the release of new information and data related to its proposed rule published concerning CCR (85 FR 83478, December 22, 2020) (2020 CCR NODA). EPA sought public comments on whether this new data could influence the Agency's

reconsideration of the beneficial use definition and provisions for CCR accumulations. The Agency specifically requested comments on these two issues and invited additional data from the public to assist with its reconsideration. EPA clarified that it was not reopening other aspects of the proposal, CCR regulations, or previously available support documents. In addition to seeking public input, EPA shared information obtained during stakeholder meetings held between May and August 2020, which involved discussions with trade associations, utilities, environmental organizations, and state agencies.

6. Public Comments on the Fourth Beneficial Use Criterion and CCR Accumulations for the 2019 CCR Proposal and 2020 CCR NODA and EPA's Decision To Repropose

The Agency received about 130,000 total comments, including comments from a mass mailer campaign, with 60 substantively different sets of comments, on the 2019 CCR proposal reconsidering the beneficial use criteria and provisions for CCR accumulations. Generally, a few state agencies and a public interest group favored the various proposed options to revise the beneficial use criterion, but none of the options had universal support. Some states supported eliminating the mass-based threshold and replacing it with some of the specific location-based criteria to trigger an environmental demonstration which should apply to all unencapsulated uses; and an approach combining the location- and mass-based criteria. One state also suggested that an alternative criterion be allowed where state programs have location-based criteria coupled with chemical constituent limits. Other states suggested establishing a reasonable set-back distance to water supply, especially drinking water wells, by adopting a standard similar to North Carolina, which uses the seasonal high groundwater table. One state noted that removing the distinction between coal ash disposal and beneficial use could result in authorization requirements for beneficial use activities, such as permits or registrations; and suggested the Agency continue to encourage CCR beneficial use activities through self-implementing environmental protections with minimal to no permit requirements. Industry and environmental groups generally opposed the proposal to eliminate and replace the mass-based threshold with location-based criteria. The CCR users and utilities commented that the proposed revisions, including having to conduct an environmental demonstration, would discourage the beneficial use of CCR because of perceived liability concerns and financial burdens to the beneficial user. Industry also commented that changing to location-based standards from a mass-based approach shifts away from the Agency's original concern when the use of unencapsulated CCR on the land should require further demonstration that the use was not disposal and brings in smaller volume beneficial uses. The environmental groups commented that the proposed location-based criteria would weaken the current regulations by allowing any amount of unencapsulated CCR to be placed on the land as beneficial use.

Regarding EPA's 2019 CCR proposal to unify the regulatory mechanism for all temporary placements of CCR in piles, industry representatives, a state agency and the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) supported consistent regulatory treatment and a single set of requirements regardless of the location.

Regarding the requirement to control releases, utilities and CCR users expressed concern about subjecting all piles, regardless of size, to the same set of storage standards. However, they supported the flexibility to choose pollution control measures that are site-specific and appropriate for conditions at the site. In contrast, environmental groups disagreed with this flexibility, requesting instead prescriptive design standards, management controls and engineer certification.

Many commenters, including states, CCR users and utilities, agreed that long-term storage of CCR in lieu of disposal should not be allowed. Nonetheless, CCR users and utilities disagreed with the proposed record-keeping requirements to document the complete removal of CCR within a specific timeline. For storage sites not in proximity to end use, the industry requested that record-keeping be limited to gross annual receipts and shipments of CCR. For sites near working end-use locations, such as cement kilns, concrete plants, wallboard manufacturing facilities, commenters argued that locations should sufficiently indicate their active status. Some states and utilities argued that any temporal requirements should better reflect the rolling basis of storage activities or be modeled after RCRA subtitle C speculative accumulation requirements. Environmental groups argued for increased enforceability and specificity through enforcement of exact timeframes.

Regarding the enclosed structure, beneficial users argued that the proposed definition is not workable and should be revised to enable CCR to be received and removed easily while ensuring effective containment. Environmental groups supported the proposed requirement for enclosed structures but also requested additional requirements to containerize liquids and specific requirements for fugitive dust control. They argued that engineer certifications were also needed for enclosed structures and that owners must be required to conduct maintenance, inspections and repairs.

On the follow-up 2020 CCR NODA, the Agency received 33 total comments. Several commenters resubmitted comments previously submitted to the Agency's 2010 CCR proposal. Generally, industry groups representing different manufacturing or production industries commented that CCR is a valuable input—these include cement and concrete producers, gypsum panel product manufacturers, and agricultural sectors. Industry also commented on the absence of damage cases associated with piles, and any beneficial use that meets the first three beneficial use criteria, concluding the fourth criterion is unnecessary. Environmental groups and citizens commented generally that piles, fill, and other unencapsulated uses involving land placement and having substantial environmental and human health impacts, can be open dumping of CCR without applicable disposal regulations.

EPA has considered all significant and relevant comments related to revising the fourth criterion of the beneficial use definition, and other issues related to beneficial use, as well as comments related to the regulation of CCR accumulations on the land that were submitted in response to the 2019 CCR Proposal and the 2020 NODA and has taken those comments into account in developing this re-proposal. If any commenter believes their previous comments on the definition of beneficial use and CCR accumulations have not been adequately addressed by this re-proposal, EPA requests the commenter re-submit their comment to this docket.

IV. What is EPA proposing?

EPA is proposing to amend the federal regulations governing the disposal of CCR in landfills and surface impoundments and defining beneficial use for CCR in 40 CFR part 257. In response to the information EPA has received during the rulemaking for the Legacy Final Rule and since the rule's publication, EPA is proposing several revisions to the existing federal CCR

regulations, which are self-implementing or implemented under a participating-State CCR program. Specifically, EPA is exempting CCR dewatering structures from regulation under part 257 and modifying the legacy CCR surface impoundment and CCRMU provisions.

Additionally, EPA is proposing to establish a new compliance pathway that allows for site-specific considerations during permitting for CCR units complying with groundwater monitoring, corrective action, and closure requirements under a federal or participating-State CCR permit. Specifically, these provisions would allow a permit authority to make site-specific determinations regarding the appropriate point of compliance for the groundwater monitoring system, site-specific cleanup levels during corrective action for constituents without a federal MCL established under §§ 141.62 and 141.66 and referenced at § 257.95(h)(1), and appropriateness of certain closure requirements while still requiring the owner or operator to ensure the unit poses no reasonable probability of adverse effects on human health and the environment.

Lastly, EPA is proposing to revise the definition of beneficial use by eliminating the requirement for an environmental demonstration for the non-roadway use of more than 12,400 tons of unencapsulated CCR on land, as well as proposing a definition of CCR storage pile, and proposing to exclude specific beneficial uses from federal CCR regulations.

In addition to the proposals above, EPA is providing notice that in a future separate action, EPA will reopen the public comment period for the Federal CCR permit program proposed rule entitled *Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; Federal CCR Permit Program* (85 FR 9940) for a period of 30 days. The public comment period ended on that proposal on August 7, 2020. EPA will reopen the comment period in a future separate action under Docket ID No. EPA–HQ–OLEM–2019–0361 to provide the public with an opportunity to provide input on whether their views of the proposed Federal CCR Permit Program have altered in the intervening years, for example, in light of new information or considering the revisions proposed in this action.

A. Amendments to the Self-Implementing Regulations

As discussed in Units III.A. and III.D. of this preamble, the 2015 CCR Rule established national requirements for CCR disposal under a self-implementing regulatory structure. Since the promulgation of the 2015 CCR Rule, the 2016 WIIN Act authorized EPA to approve State CCR permit programs and implement a permit program for EPA to serve as the permit authority. 42 U.S.C. 6945(d). In accordance with RCRA sections 4005(d)(3)(A) and 4005(d)(6), in the absence of a permit issued under a participating-State program, the owner or operator of a CCR unit must continue to comply with the self-implementing Federal CCR regulations until a permit from a CCR permit authority (*i.e.,* an EPA-approved State CCR permit program or EPA) that includes these provisions is in effect. 42 U.S.C. 6945(d)(3)(A), (d)(6). For a State with an approved CCR permit program (*i.e.,* Oklahoma, Georgia, Texas, North Dakota), before the State can issue a permit or permit modification for a CCR unit that operates in lieu of the amended regulations from this rulemaking, the State must adopt either the federal standards or alternative technical standards that are at least as protective as the amended Federal CCR regulations, submit an application for approval of the new provisions to the Agency, and receive EPA approval for the new provisions. EPA will work closely with States throughout this process to expedite reapproval of amended provisions.

Since publication of the Legacy Final Rule, EPA received information from numerous companies and representatives of industry regarding the scope of the deferrals within the Legacy Final Rule, the scope of the CCRMU universe, challenges complying with the existing CCR requirements, and requests for regulatory changes. Based on this information provided to EPA, as described in greater detail below, and the conclusions described in Unit III.D., EPA is proposing several amendments to the existing CCR requirements. Specifically, EPA is proposing to: define and exempt CCR dewatering structures from regulation under part 257; broaden the criteria for the closure by removal certification for legacy CCR surface impoundments; broaden the deferral criteria for legacy CCR surface impoundments that have completed closure under a regulatory authority prior to November 8, 2024; amend the scope of the CCRMU regulations; and clarify the deadline for new CCR landfills, CCR surface impoundments, and lateral expansions to comply with the requirements to conduct background sampling. EPA is also soliciting comment on several provisions, including on the need to finalize the 2018 proposed performance standard for more specific slope protection requirements for existing and new surface impoundments.

1. CCR Dewatering Structures

EPA is proposing a definition for ''CCR dewatering structures'' at § 257.53 and making other clarifying edits to § 257.53 to explicitly state that a dewatering structure meeting this definition would not be classified as a CCR surface impoundment or a CCRMU. During implementation of the CCR program, questions have arisen as to the appropriate standards that should apply to certain concrete basins used as settling ponds for CCR.[5] Specifically, owners or operators have expressed uncertainty regarding whether dewatering structures are subject to the surface impoundment requirements in the existing federal CCR regulations and have argued that the surface impoundment regulations are unnecessary. While EPA previously took the position that, under the current regulations, these structures are surface impoundments,[6] EPA has reconsidered that position and believes that regulation as CCR surface impoundments is inappropriate based on a reevaluation of the risk these structures present. This proposal will provide greater flexibility by revising the regulation to provide that these structures: (1) Are not CCR surface impoundments and are CCR dewatering structures as defined in this proposal and (2) As CCR dewatering structures, are not regulated under the federal CCR regulations.

The containment structures in question are used for dewatering CCR to enable CCR solids to be landfilled and are commonly referred to as holding basins, scrubber drying basins, fly ash washdown basins, tanks, or settling ponds. Under the proposed definition, CCR dewatering structures are designed to *temporarily* contain an accumulation of CCR and therefore involve storage, rather than disposal, for the purposes of the CCR regulations. See definition of ''disposal'' in § 257.53, which states, ''For purposes of this subpart, disposal does not include the storage or the beneficial use of CCR.'' Based on the Agency's work with CCR, it is EPA's current understanding that the use of CCR dewatering structures is a common

[5] PacificCorp 2025a. Letter from Brett Shakespear, Director, Environmental Compliance and Remediation to Linda Jacobson, EPA Region 8 RCRA Enforcement Section. Re: NEIC Civil Investigation Report Hunter Power Plant, Castle Dale, Utah. October.

[6] See, for example, Electric Energy, 106 F.4th 31, 42 (2024).

practice across the industry. In fact, the use of dewatering structures is necessary if CCR is to be landfilled. The dewatering process, including the use of these structures, plays a critical role in efficiently managing CCR by reducing moisture content, thereby facilitating easier handling. Dewatering typically serves as an interim step, or steps, prior to disposal in a landfill or shipment for beneficial use. Dewatering structures are specifically engineered to allow for the CCR to dry and result in CCR being easier to handle when moving to disposal in a landfill or being beneficially used. Typically, these structures are made of concrete or other similar material. Their purpose is to dewater wet CCR, not to serve as long-term storage or disposal of CCR. Given this use and function, EPA is now concluding that CCR dewatering structures are different from surface impoundments due to the fundamental differences in their design and function. Surface impoundments usually involve the long-term containment of liquid waste, typically with a significant hydraulic head, which poses a higher risk of seepage and contamination of groundwater resources. Periodically, once sufficient dewatering has occurred, the CCR in these structures will be removed and transported to a CCR or permitted MSW landfill or beneficial use location—another key distinction from surface impoundments that was not fully recognized during the prior rulemaking. As such, clarifying the regulatory status of these dewatering structures is appropriate in this rulemaking.

To create a clear regulatory separation between these CCR dewatering structures and CCR surface impoundments, EPA is proposing to create a new definition for ''CCR dewatering structures'' in 40 CFR part 257. EPA proposes to define CCR dewatering structures as ''a stationary device, designed to temporarily contain an accumulation of CCR which is constructed of non-earthen materials (*e.g.,* concrete, steel, plastic). The device must be used primarily for dewatering CCR waste to facilitate disposal of CCR solids elsewhere.'' Accordingly, and to provide greater clarity, EPA also proposes to amend the definition of CCR surface impoundment to note that a containment structure meeting this newly proposed definition of a CCR dewatering structure is not a surface impoundment.

In addition to more appropriately calibrating the level of regulation that is appropriate for these structures, this proposed change enables more owner or operators to dewater their CCR prior to disposal (*i.e.* landfilling the CCR instead of disposal in surface impoundments). The landfill in which the CCR is ultimately disposed must meet all applicable part 257 or 258 requirements.

EPA expects this change would not produce a reasonable probability of adverse effects on health or the environment. This expectation is informed by a reconsideration of determinations in the initial 2014 Risk Assessment as well as EPA's understanding of the size and use of these structures. During the 2015 CCR Rule, EPA considered related issues which EPA has since reevaluated. First, EPA considered whether the definition of a CCR surface impoundment should include ''temporary'' units that are not designed to hold an accumulation of CCR such as downstream secondary and tertiary surface impoundments, such as polishing, cooling, wastewater and holding ponds. EPA reasoned, at the time, that those units are unlikely to ever be completely dredged of CCR and are likely to have large quantities of CCR impounded with water under a hydraulic head will be managed for extended periods of time. As such, EPA concluded, these units present the same risks as permanent disposal units. (50 FR 21357) Second, in the risk assessment supporting the 2015 CCR Rule, EPA modeled units with concrete liners as equivalent to unlined units because of the expectation that cracks could lead to uncontrolled leakage and the difficulties of repairing any issues with the concrete liner.

However, with specific real-world examples arising during implementation, EPA is reconsidering some of these conclusions. First, EPA notes that these conclusions do not account for the fact that concrete containment structures would, by design and function normally be much smaller than a CCR surface impoundment. The several examples of CCR dewatering structures of which EPA is currently aware range from approximately 0.02–2.2 acres in size. The average size of these structure is 0.77 acres with thea median size of 0.4 acres.[7] By comparison, the average and median size of CCR surface impoundments regulated under the 2015 CCR Rule is 54.2 and 24.0 acres, respectively. While surface impoundments do vary widely in size, on average they are considerably larger than a CCR dewatering structure.[8] The smaller amount of CCR that is accumulated in these structures along with the lower hydraulic head resulting from the significantly smaller unit size suggests the risk to be lower, with other conditions remaining the same. Further, the EPA acknowledges the previous determination that concrete containment structures were equivalent to unlined units was not based on actual data of leakage rates from concrete containment structures.

The information available to EPA indicates these structures are made of concrete and are enclosed on three sides with a concrete bottom liner. The bottom liner covers the entire surface that may come in contact with CCR containing liquid during the dewatering cycle. This fact distinguishes these structures from unlined units or units only partially lined with concrete (*e.g.,* employing a concrete revetment mat or employing only a concrete apron and vehicle ramp).

These concrete dewatering structures are designed for temporary accumulation and are periodically dredged, and CCR removed. As discussed above, the management practices typically conducted in these structures would not meet the definition of ''disposal'' and no long-term encapsulation or containment of CCR is expected to occur in these structures. Under the proposed definition of these units, only the temporary containment of an accumulation of CCR for ''for disposal elsewhere'' would occur. The structures are utilized in a process step (dewatering) critical to efficiently managing CCR by reducing moisture content, thereby facilitating easier handling. Dewatering in these structures serves as an interim step, or steps, prior to disposal in a landfill or shipment for beneficial use. Dewatering structures are specifically engineered to allow for the CCR to dry and result in CCR being easier to handle when moving to disposal in a landfill or being beneficially used. As such, at the end of their life no CCR should remain in the containment structures. EPA also expects the periodic dredging and emptying of the dewatering structures at the end of each dewatering cycle will provide an opportunity for some visual inspection of the structures to identify significant cracks or other failures in the engineered structure. Based on EPA's understanding, these distinctions suggest a lower risk for these structures than EPA estimated in the 2014 Risk Assessment.

Additionally, EPA now also has a greater appreciation for the various standards used in the concrete industry. For example, the American Concrete Institute has standards and commentary

[7] See Memo to record re: CCR dewatering structures. January 2026.

[8] See 89 FR 38958 for a discussion of available information on various CCR unit sizes.

for concrete structures used in environmental engineering. The standards cover the structural design, materials selection, and construction of environmental engineering concrete structures. The standards account for the fact that concrete structures used for conveying, storing, or treating liquid or solid wastes are subject to uniquely different loadings, more severe exposure conditions, and more restrictive serviceability requirements than non-environmental building structures.[9] While these standards are not legally binding, they illustrate the expertise in the concrete industry and the refinement of concrete formulations, and methods for specific applications. Notably, the commentary provides substantial guidance and best practices to assure liquid-tightness of concrete structures.[10]

Furthermore, developments in material science have yielded advancements in concrete technology. A 2023 review of available literature concluded that concrete technology had undergone remarkable advancements in the preceding decade, encompassing novel materials, sustainable practices, durability enhancements, and advanced manufacturing techniques. The review notes the developments offer improved performance, sustainability, and construction efficiency. The review also concluded that the introduction of novel materials, such as additives, fibers, and fillers, has led to enhanced properties in concrete, including increased strength, ductility, and crack resistance.[11] A 2025 study also found that self-healing concrete formulations improve concrete structure longevity. Specifically, the authors of the study found high crack healing efficiency in self-healing concrete that can also extend service life of concrete structures.[12] Based on its experience with these industries, EPA expects owners or operators will have incorporated recognized and generally accepted good engineering practices in the design and construction of these structures. Therefore, EPA likely overstated the risks in 2014 of these comparatively small units with concrete liners. EPA is thus proposing these containment structures be considered CCR dewatering structures, not CCR surface impoundments and that they are not subject to the requirements for surface impoundments in 40 CFR part 257, subpart D.

In implementation, the key to distinguishing these dewatering structures from surface impoundments would be whether the structure in question was: (1) Used for temporary accumulation of CCR for the primary purpose of dewatering the CCR and (2) Built with non-earthen materials. If the containment structure meets both criteria above, it is considered a CCR dewatering structure under 40 CFR part 257. If not, the structure would be a CCR surface impoundment as defined in § 257.53.

To develop a more comprehensive understanding of the prevalence and nature of structures that would meet the proposed definition of a CCR dewatering structure, EPA is soliciting comment on the number of structures that meet the proposed definition and their locations. EPA specifically requests information about: (1) the location of these structures, including the state, facility name, and precise location at the facility, (2) specifics about the design, including if professional engineer certified the designs, the size of the unit, and expected operational life, (3) specifics about the construction, including the date of construction and materials used, (4) specifics about the materials that were used, including any relevant standards or specifications for the material (*e.g.,* ASTM or ACI), (5) any expected or routine maintenance required to keep the structure operating as intended, including specifics regarding the maintenance performed and the frequency, and (6) specifics about the operation of these structures (*e.g.,* average dewatering cycle times, frequency of inspections conducted, or any other relevant information). Additionally, EPA requests information on the environmental regulation and impact of these structures, including any known incidents of leakage or contamination, state or local oversight of these units, or monitoring or reporting mechanisms in place. Further, EPA requests comment on what, if any, additional criteria should be incorporated into the proposed definition of CCR dewatering structures. For example, should the definition of CCR dewatering structure specify the structure be completely enclosed on three sides or that the non-earthen material have a hydraulic conductivity of no more than 1×10^{-7} cm/sec, as required for composite or alternative composite liners for new CCR units? See § 257.70(b) and (c). Should the definition require the unit be located in a location whereby any releases would be detected by the facility's groundwater monitoring system (*i.e.,* covered as part of a multi-unit system)? Should the definition include certain operational standards or practices that would need to be adhered to in order to be a CCR dewatering structure, such as: routine visual inspection of the concrete structure (*i.e.,* at the end of every dewatering cycle) to identify and address visually apparent cracks, spalls, or issues with sealants and joint condition to help ensure the liquid tightness of the concrete structure; daily inspections of ancillary equipment (*e.g.,* piping, valves, pumps) to help prevent leaks, spills or overtopping caused by equipment failure or human error; maintaining a minimum freeboard throughout the dewatering cycle to prevent overtopping and associated potential runoff; or biennial cleanouts of the structures including pressure washing to decontaminate the unit and allow for more detailed inspection and repair of the concrete slab and joints to ensure liquid tightness of the concrete and greatly reduce the risk of leaking? EPA requests comment on whether these operational requirements would be appropriate or necessary to ensure no adverse effect on health and the environment as part of exempting these units from regulation as CCR surface impoundments.

Finally, to provide as clear a definition as possible, EPA also requests comment on the proposed definition of CCR dewatering structure. EPA specifically solicits feedback regarding how to better distinguish between these temporary dewatering structures and composite lined surface impoundments, such as incorporating explicit parameters regarding what constitutes ''temporary'' containment of an accumulation of CCR. If so, EPA request input regarding the specifics of those parameters (*e.g.,* what length of time should constitute ''temporary'').

This information is anticipated to help the Agency validate or calibrate its proposed approach (*i.e.,* exempting these CCR dewatering structures from Federal regulation as a CCR surface impoundment). The Agency believes this is worthwhile given that most of the information EPA currently has on these structures are from a relatively small subset of facilities compared to the total universe. Gathering broader data will help ensure that the decision in the final

[9] American Concrete Institute. ''Code Requirements for Environmental Engineering Concrete Structures (ACI 350–06) and Commentary'' 2006.

[10] Ibid, pg. 350–3.

[11] Ajwad, A (2023) Concrete Evolution: An Analysis of Recent Advancements and Innovations. Fifth Conference on Sustainability in Civil Engineering (CSCE'23) Department of Civil Engineering Capital University of Science and Technology, Islamabad Pakistan. *https://csce.cust.edu.pk/archive/CSCE_23_conference_proceedings/2023-135.pdf.*

[12] Olaboye, O. S. (2025) Advancements in Self-Healing Concrete: Enhancing Durability and Reducing Maintenance Costs. *American Journal of Engineering Research,* Vol 14 (issue 2) pp 25–34.

rule considered a more comprehensive set of information.

2. Legacy CCR Surface Impoundments

Since publication of the Legacy Final Rule, EPA has received information from States and regulated entities about the adequacy of closures of legacy CCR surface impoundments and CCRMU completed prior to November 8, 2024.[13] These entities have stated that this information demonstrates that closures performed under State oversight are protective of human health and the environment. Therefore, EPA is proposing to create another option in § 257.100(g) for owners and operators to certify closures of legacy CCR surface impoundments by removal that have been completed prior to November 8, 2024 and to expand the deferral criteria in § 257.101(g) for legacy CCR surface impoundments and CCRMU that completed closure prior to November 8, 2024 under oversight by a regulatory authority (*i.e.,* State or federal program).

a. Certification of Closure by Removal for Legacy CCR Surface Impoundments

EPA is proposing to establish an additional option in § 257.100(g) for owners and operators to certify the closure of legacy CCR surface impoundments by removal, provided these closures were completed prior to November 8, 2024, under the oversight of a regulatory authority.

The Legacy Final Rule established a pathway for legacy CCR surface impoundments that closed by removal before November 8, 2024, allowing them to certify and document their closure as having met the performance standards in § 257.102(c) See § 257.100(g). Successfully documented and certified closures by removal would exempt these legacy surface impoundments from further requirements under 40 CFR part 257, subpart D. This decision was made to avoid requiring owners or operators of legacy surface impoundments that had completed closure in a manner that met the performance standards in § 257.102(c), to comply with additional subtitle D requirements which would not result in health or environmental benefits. Under the regulations promulgated at § 257.100(g), the following information is required to make the certification:

- The type and volume of CCR and all other materials in the unit prior to closure;
- The methods used to verify complete removal of all CCR and other contaminated materials from the unit, including any post-removal sampling and analysis;
- Documentation that all CCR and other contaminated materials were removed from the unit, including, the results of any post-removal sampling and analysis that was conducted;
- The methods used to verify complete decontamination of all areas affected by releases from the unit, including but not limited to post-decontamination sampling and analysis;
- Documentation that all areas affected by releases from the unit were decontaminated and that all groundwater affected by releases has achieved groundwater protection standards; and
- Documentation that groundwater monitoring data concentrations of each appendix IV constituent do not exceed the relevant groundwater protection standard, which would be either the federal MCL or background concentration, for two consecutive sampling events, consistent with §§ 257.95(e) and (h). Additionally, the owner or operator must include documentation that the system meets a subset of performance standards at §§ 257.91(a) through (e), 257.93(a) through (d), and 257.93(i) codified at §§ 257.100(g)(6)(i) through (vii).

This avenue to closure by removal certification for legacy impoundments is a viable path for some legacy surface impoundments, in particular, units that had groundwater monitoring systems and data to demonstrate constituent concentrations do not exceed the groundwater protection standard established at § 257.95(h). The Agency intends for this avenue to remain in effect and is not proposing to revise this provision. Maintaining this avenue avoids potential disruption for owners and operators that have already made such demonstrations.

However, several public comments on the Legacy Proposed Rule requested greater flexibility in closure by removal certification for legacy impoundments, specifically advocating for all closures by removal approved by a State or regulator under other authorities (*e.g.,* State solid waste programs) to also qualify for certification. During finalization of the Legacy Final Rule, EPA did not adopt this suggestion due to a lack of documented factual and legal basis for States' decisions, which prevented EPA from concluding that all State-approved closures by removal posed no reasonable probability of adverse effects on health or the environment, as mandated by RCRA section 4004(a). (89 FR 39009) While concluding all State-approved closure met the RCRA protectiveness standard was not appropriate, EPA acknowledges that additional flexibility in the closure by removal certification criteria may be warranted in certain instances.

Since publication, EPA has received information from members of the regulated community to support the expansion of the closure by removal certification criteria and the conclusion that closure performed under State oversight meets the RCRA protectiveness standard. Upon reconsideration, EPA reviewed pertinent information, including public comments on the Legacy Proposed Rule, and the information received post-finalization of the Legacy Final Rule, including examples of State-overseen closures in Kentucky, North Carolina, South Carolina, and Georgia.

In Kentucky, the State's Division of Waste Management (KDWM) oversaw the closure by removal of three legacy impoundments at the Dale power generation facility between 2014 and 2019. KDWM approved the closure plan, conducted at least 16 onsite inspections including three inspections of the units to verify ''clean closure'' down to native soils. KDWM spent over 350 hours overseeing the closure.

At Duke's Riverbend plant, North Carolina required and oversaw the closure by removal of 5.35 million tons of CCR between 2014 and 2019. The impoundments were dewatered, the ash excavated, and the area regraded and seeded with grass. The State also requires annual stability inspections, a groundwater monitoring program with over 140 wells, and a corrective action program to continue at the two now closed legacy impoundments. EPA independently verified that North Carolina's Coal Ash Management Act (CAMA) requires closure of all unlined impoundments, including those at inactive facilities that would qualify as legacy CCR surface impoundments. Further, review of publicly available documentation from Duke Energy, the owner of all legacy impoundments in the state, indicates the presence of state orders-on-consent requiring corrective action for these units.

Between 2012 and 2020, South Carolina oversaw the closure by removal of two CCR surface impoundments at the Granger facility. The owner or operator removed all the CCR along with an additional foot of underlying soil from both inactive impoundments. The removal of CCR from the two impoundments was performed under the supervision of the South Carolina Department of Health and Environmental Control (SCDHEC) and in accordance with the requirements established by a detailed CCR closure

[13] This is the effective date of the Legacy Final Rule.

plan also approved by SCDHEC. The closure plan also required comprehensive soil sampling to ensure the decontamination of the remaining soil across both impoundments. Post-closure groundwater monitoring—required by the State—will continue until all relevant constituents meet, and stabilize at or below, their applicable MCL, as established by SCDHEC. EPA's own research found that the legacy CCR surface impoundments in South Carolina are already undergoing or have undergone closure and, if needed, corrective action consistent with the requirements of the legacy rule.

In a fourth example of information provided to EPA regarding closure by removal of legacy CCR surface impoundments under State oversight, Georgia oversaw the closure by removal of an ash pond at the Kraft plant through the State's Response and Remediation Program between 2015 and 2021. The State approved the soil and groundwater at the unit as protective of human health and the environment in 2021. EPA also received comments on the Legacy Proposal that offered a few examples of closures that the commenters believed were substantially equivalent to closures completed in accordance with § 257.102, because they involved substantial regulatory oversight, a site-specific risk assessment, and general consistency between the programs on the standards to be applied. These included closures under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and an approved State's RCRA subtitle C program. Another commenter, Duke Energy, provided a copy of a 2020 Consent Order entered in State court governing the closure of CCR surface impoundments at seven sites across the State. The utility also provided copies of several human health and ecological risk assessments that were conducted to support the State's approval of the closures, along with various third-party reports. The commenter concluded that based on this record, it is unnecessary to subject CCR units that closed under any other regulatory programs to the existing closure criteria for CCR surface impoundments in §§ 257.101 and 257.102. While these examples aren't specific to closure by removal, the commenters were intending to illustrate that these other regulatory authorities provide detailed and meaningful oversight to address risk posed by the CCR units in a site-specific, tailored approach and therefore, additional Federal requirements are not necessary and would not result in health or environmental benefits.

As stated in the Legacy Final Rule, EPA agrees that closures conducted as part of a CERCLA or RCRA subtitle C response action would normally be expected to be consistent with the performance standards in § 257.102. The CCR closure regulations were based on the closure regulations for hazardous waste facilities, and the CCR regulations would normally be considered applicable or relevant and appropriate requirements (ARARs) under CERCLA for any closure of a CCR facility after 2015. EPA further acknowledged that these closures are not the only closures that may be equally as protective as those conducted under the Federal CCR requirements. (89 FR 39030).

In the Legacy Final Rule, EPA finalized requirements to monitor groundwater to ensure the closure fully addressed any risk to the groundwater. However, based on the information provided to EPA regarding the level of regulatory oversight during and after these previous closures, and the cases made by commenters regarding the ability of permit authorities to adequately address risk in a site-specific way, EPA now concludes that requiring groundwater monitoring is not the only way to assess potential risk to groundwater and ensure closures pose no reasonable probability of adverse effects to health and the environment. For example, a State may have overseen the closure by removal of a legacy surface impoundment and determined, based on state legislation, risk assessments, site-specific facts, or models, that groundwater monitoring was not necessary to conclude that the closure did not pose a reasonable probability of adverse effects to health or the environment. Such a unit would not be eligible to certify the closure by removal under the current regulations. However, EPA concludes that additional closure activities are not warranted as long as the impacts to groundwater were considered prior to or during the closure, even if the authority determined groundwater monitoring was not necessary.

This pathway to closure by removal certification ensures no reasonable probability of adverse effects on health or the environment, in part, by requiring state oversight of previously conducted closures by removal. State oversight of the closure by removal should ensure that all CCR were removed from the surface impoundment and, thus, no source of contamination would remain at the unit. This pathway thus ensures the sources of additional pollution were eliminated. The pathway, additionally, provides for consideration of groundwater and state oversight of any necessary corrective action. Identified existing contamination (*i.e.,* that originating prior to all CCR being removed) could be addressed by corrective action, as deemed necessary by the state.

Therefore, based on the above considerations and information, as well as the conclusions discussed in Unit III.D. regarding the ability of EPA to allow for non-uniformity in attainment of the baseline RCRA standard of protection, EPA is proposing to codify another option for owners and operators to certify closure of legacy CCR surface impoundments by removal at § 257.100(g).[14] Under this option, owners or operators must demonstrate the closure was completed under the oversight of another regulatory authority prior to November 8, 2024, the authority considered impacts to the groundwater, and oversaw any necessary corrective action. Adding a third avenue for certification of closure by removal for legacy surface impoundments that have completed closure by removal under state or Federal oversight prior to November 8, 2024, credits owners and operators' good faith efforts to comply with closure requirements for legacy surface impoundment imposed by other regulatory authorities prior to the Legacy Final Rule's effective date. Additionally, this avoids duplicative regulation that could cause uncertainty, delay, or require redoing closure work that was approved by another regulatory authority. The proposed change would address the state closure scenario described above and others where a State or other regulatory authority—during the active oversight of the legacy CCR surface impoundment closure—determined the closure by removal would not present a reasonable probability of adverse effects to health or the environment, even without requiring groundwater monitoring.

To effectuate this change, EPA is proposing to modify § 257.100(g) to provide another avenue to certify the closure by removal for legacy surface impoundments. This proposal would not affect those who completed the certification under the existing

[14] The regulations already contain two pathways for owners and operators of legacy surface impoundments to certify closure by removal (*i.e.,* § 257.100(g)(1)–(6) for those with available groundwater data and § 257.100(h) for those units that needed to conduct additional groundwater monitoring). This proposal would not affect these two existing certification avenues. The proposed third avenue for certification of closure by removal is an additional avenue not intended to disrupt, supersede, or otherwise alter the two existing avenues.

regulations no later than November 8, 2024. If finalized, this proposal would provide the option for an owner or operator of a legacy CCR surface impoundment that completed closure of the CCR unit by removal of waste prior to November 8, 2024, to complete a closure certification that includes information regarding a regulator-approved closure by removal and any necessary corrective action conducted pursuant to an enforceable requirement. The documentation would need to demonstrate that the regulator played in active role in overseeing and approving the closure by removal, considered impacts to groundwater, and oversaw and approved any necessary corrective action. The consideration of groundwater impacts is important to ensure that the potential risks to groundwater were evaluated by the State or other regulatory authority. This may take the form of site-specific information (*e.g.,* groundwater monitoring data, receptor surveys, groundwater modeling, or a risk assessment) or statewide decision that groundwater monitoring is not necessary (*e.g.,* state legislation stating as much). Instances of a regulatory authority providing active oversight and approval of a closure could include closure by removal conducted under a State or Federal permit, an administrative order, or consent order issued on after October 19, 2015 under CERCLA or by an EPA-approved RCRA State program.

The October 19, 2015 date is the effective date of the 2015 CCR Rule which established national standards for CCR management, including closure. EPA believes this date is appropriate as the owners and operators conducting these closures, and regulators overseeing the closures, would have been cognizant of the Federal CCR closure standards. Moreover, for orders issued under CERCLA after that date, the Federal CCR management standards would have been ARARs. As such, this date helps ensure that the closures conducted under these alternate programs are unlikely to result in a reasonable probability of adverse effects on health and the environment.

EPA is proposing to require the certification of closure by removal under the oversight of a regulatory authority including the supporting information, be completed within six months of the publication date of the final rule, if finalized. This compliance timeframe was used for the original closure by removal certification at § 257.100(g). EPA expects this will provide ample time for owners and operators to prepare the necessary documentation of State oversight of their closure by removal.

In acknowledgement of the additional information received, and to realize the benefits described above, this proposal allows owners and operators to rely on prior determinations of the State and other regulatory authorities to meet the federal standards. At the same time, due to the practical limitations and inherent uncertainty related to the record, EPA requests comment on the adequacy of the record for this aspect of the proposal, and, to the extent any gaps are identified, requests suggestions for sources of additional information. As described above, during the rulemaking for the Legacy Rule, the Agency had received information to demonstrate that previous closure decisions made under State or other regulatory authorities will protect human health and the environment. Since promulgation of the Legacy Final Rule, the Agency received additional information describing a handful of State programs and several individual, site-specific closure decisions. EPA requests comment on whether these closures are representative of closures performed at other sites and in other States. Specifically, EPA would like to know if there is additional information the Agency should consider, or other issues of which EPA should be aware. For example, EPA encourages commenters to submit specific case studies or examples where State or other regulatory authority decisions have been effective or ineffective in ensuring protective closures. Additionally, EPA seeks empirical data or studies that compare the effectiveness of State and federal CCR closure requirements or information describing specific elements of State regulatory frameworks that may differ from federal requirements and how these differences impact closure outcomes. EPA will consider such information submitted as it develops the final action.

Based on this additional information and the policy rationale described above, EPA is proposing to provide an additional option for owners and operators to certify closure of legacy CCR surface impoundments by removal, provided they were completed under the oversight of another regulatory authority.

Solicitation of comment. Additionally, EPA is requesting comment on whether the proposed additional certification of closure by removal avenue allows for legacy impoundments to have been closed under a sufficiently broad suite of scenarios. As described above, the proposed approach would require the owner or operator of a legacy impoundment to submit documentation that a regulatory authority played an active role in overseeing and approving the closure by removal and any necessary corrective action, pursuant to an enforceable requirement issued on or after October 19, 2015. This includes a State or Federal permit, an administrative order, or consent order under CERCLA or by an EPA-approved RCRA State program.

However, during the development of the proposed rule, EPA received input from a subset of utilities requesting a broader suite of former closures be eligible for this certification process. One utility requested EPA to remove the requirement that the closure and any necessary corrective action be pursuant to an enforceable requirement. This change would allow legacy impoundments conducted under voluntary cleanup programs to be eligible for this certification pathway. A second utility suggested removing the stipulation that the enforceable requirements have been issued after October 19, 2015. This would allow for closures conducted before the existence of the 2015 CCR Rule to be eligible for the closure by removal certification. Removing these restrictions on when the closure and corrective action were required and the types of programs that could have overseen the closure of these units would come with certain tradeoffs.

Benefits of this additional flexibility would include a greater number of legacy impoundments eligible for this certification and thus greater regulatory certainty and continuity. Units that were closed by removal in a protective manner—regardless of timing of the closures and whether they were closed under a voluntary program—would not be required to conduct additional closure activities that don't offer additional protection or benefits. The primary disadvantage is that some of those units closed pre-2015 and under a voluntary program may not have been closed in a comparable manner to that required under the Federal program and possibly with no meaningful oversight. As a practical matter, in such scenarios, there may be less documentation available as to the closure and corrective action activities performed. Relatedly, there may also be less assurance that all the closures previously conducted under such broad criteria would ensure there will be ''no reasonable probability of adverse effects on health or the environment.'' For example, the level of oversight under voluntary programs may vary between States and over time. In some States, the voluntary closure may entail significant oversight, (*e.g.,*

regulator review and approval of the closure and groundwater monitoring plans, review of groundwater monitoring data) but not necessarily in all States or in all time periods in which these closures were performed. At the same time, if the owner or operator could demonstrate there was meaningful oversight of the closure and corrective action activities conducted (which would still be required under this alternative), it may be reasonable to assume the closure would be protective.

EPA requests comment on whether the Agency's proposed criteria for State and other regulatory programs is appropriate and whether the two suggestions from commenters described here should be finalized. EPA is also seeking comment on specific criteria that voluntary programs should meet for units closed under their oversight to be eligible for this certification. The Agency also requests examples of successful closures under voluntary programs that could inform EPA's final decision. EPA also requests if any other documentation may be appropriate to require to demonstrate the protectiveness of closures conducted pre-2015 or under a voluntary program. EPA will consider public comments and, if the comments are sufficiently supportive, may finalize these additional closure by removal certification paths.

b. Deferral of Certain Legacy CCR Surface Impoundment Closures To Permitting

EPA is proposing changes to § 257.101(g) to expand the deferral criteria for legacy CCR surface impoundments that completed closure of the unit under state or federal regulatory authority prior to November 8, 2024. This expansion will allow owners and operators to rely on the decisions of State and other regulatory authorities regarding legacy impoundment closures conducted prior to the effective date of the Legacy Final Rule to meet the federal standards—until the CCR permitting authority can consider, on a site-specific basis, the need for additional closure measures to be taken. This expansion does not eliminate the requirements for groundwater monitoring and corrective action of releases from the unit.

In the Legacy Final Rule, EPA finalized provisions allowing owners and operators of legacy surface impoundments to defer compliance with the closure performance standard until the CCR permit authority could make a site-specific decision regarding the adequacy of the closure, provided the owner or operator could document that the unit closure met certain conditions. This provision allowed the permit authority to evaluate site-specific information and determine whether a closure performed before the effective date of the Legacy Final Rule met the appropriate part 257 closure standards. As explained in the Legacy Final Rule, EPA did not want to require facilities that had completed closure prior to November 8, 2024, to ''reclose'' if the closure conducted was protective of human health and the environment and requiring compliance with additional subtitle D requirements would not result in health or environmental benefits. At the time of the Legacy Final Rule, EPA recognized that some closures would have been done in a manner that achieved a similar outcome to the closure performance standards in § 257.102, while others would not have. At the same time, however, EPA did not believe that it could develop nationally applicable criteria that were sufficiently precise that regulated entities could determine whether the alternative requirements ultimately accomplish the same environmental goals and meet the same performance standards as the Federal requirements. Accordingly, the Legacy Final Rule provided the avenue at § 257.101(g) for owners and operators of legacy impoundments to defer closure determinations until the CCR permit authority could make a site-specific decision.

Specifically, the Legacy Final Rule provided that an owner or operator of a legacy CCR surface impoundment need not demonstrate compliance with the closure performance standards in § 257.102(c) or (d) provided they demonstrate that the closure of the CCR unit met a specified list of standards codified in § 257.101(g). These standards are:

(1) The owner or operator of the CCR unit must document that a regulatory authority played an active role in overseeing and approving the closure and any necessary corrective action, pursuant to an enforceable requirement. This includes a state or Federal permit, an administrative order, or consent order issued after 2015 under CERCLA or by an EPA-approved RCRA state program.

(2) The owner or operator of the CCR unit must document that the regulatory authority required or conducted a site-specific risk assessment prior to (or as part of) approving the closure and any necessary corrective action.

(3) The owner or operator of the CCR unit must document that it installed a groundwater monitoring system and performed groundwater monitoring that meets all of the following:

(i) Was capable of accurately representing background water quality;

(ii) Was capable of accurately representing the quality of water passing the waste boundary;

(iii) Was capable of detecting contamination in the uppermost aquifer; and

(iv) Monitored all potential contaminant pathways.

(4) Must document that the closed unit meets either:

(i) The performance standard in § 257.60; or

(ii) The performance standard in § 257.102(d)(2)(i).

(5) The owner or operator must also include a certification statement as to the veracity of the information.

These standards are intended to ensure protectiveness at least until the time a permit authority could evaluate the closure on a site-specific basis to determine if the closure is as protective as those conducted in accordance with § 257.102. The existing provisions require the owner or operator to submit a permit application to the permit authority with sufficient information, including groundwater data, to demonstrate the applicable closure standards had been met. Under the existing regulations, the permit authority will then review the information to determine whether the ''equivalency'' of the closure has been successfully demonstrated. If EPA or a Participating State Director determines that the closure has met the appropriate part 257 closure standard, the permit authority will issue a permit to require compliance with applicable post-closure requirements. If the permit authority determines that the closure does not meet the appropriate part 257 standards, the owner or operator will be required to submit a complete permit application and obtain a permit that contains the specific requirements necessary for the unit to achieve compliance with the closure requirements at § 257.102.

During the Legacy Rulemaking, EPA received public comment arguing that state programs had become significantly more robust over the past couple of decades, especially, since 2015 when EPA last conducted a review of state programs. For example, Duke Energy provided information on North Carolina's CCR program. The utility claimed that there are no gaps within the state program including with respect to legacy surface impoundments. Duke Energy further stated that the state's groundwater rules establish robust groundwater monitoring and corrective action programs. The company went on to describe aspects of the state's program that, it argues, as applied to

two of its facilities, (*i.e.,* the Riverbend and Cape Fear facilities), results in stringent oversight by North Carolina Department of Environmental Quality (NCDEQ).

Specifically, Duke Energy notes that with respect to Riverbend, the state's Coal Ash Management Act (CAMA) prescribed the closure method (*i.e.,* closure by removal), Sess. L. 2014–122, §§ 3.(b)(2), (c)(1), (2), and mandated that impacted groundwater be restored in accordance with the act's groundwater assessment and corrective action provisions. As for Cape Fear, the utility notes that CAMA required closure plans for all the company's impoundments not already subject to closure by removal under the legislation, including the basins at Cape Fear. N.C.G.S. § 130A–309–214(a)(4). The utility proceeded to describe many aspects of the program suggesting that the closure plans are comprehensive and subject to significant regulatory oversight and public participation. The key assertions are as follows:

- The closure plans, among other things, require the results of a hydrogeologic, geologic, and geotechnical investigation of the site; the results of groundwater modeling of the site; a description of the provisions for disposal of wastewater and management of stormwater; a description of the provisions for the final disposition of the CCR; and a description of the plan for post-closure monitoring and care for an impoundment for a minimum of 30 years.
- The closure plan approval process includes public participation components involving public notice and comment and public meeting(s) in county(ies) in which the site is located. After an opportunity for public comment, NCDEQ makes the final determination as to the protectiveness and adequacy of the closure plan.

The utility goes on to state that NCDEQ's Coal Combustion Residuals Surface Impoundment Closure Guidelines for Protection of Groundwater also sets out robust requirements to establish conformance with the state's closure-by-removal performance standards. Duke Energy notes that the guidelines establish clean-up levels commensurate with site-specific background concentrations. For soil, the clean-up level is either the site-specific background concentration or the lowest soil screening level protective of groundwater. To develop soil remediation goals and corresponding clean-up levels, facility owners or operators must develop an excavation soil sampling plan for each site and submit it to NCDEQ for a determination of whether the plan is sufficient in scope to meet the performance standards for closure. Determinations that CCR removal is complete, according to Duke Energy, rely on a visual confirmation that all CCR and commingled CCR and soil have been removed based on sampling of the material and analysis under polarized light microscopy utilizing American Standards for Testing and Measures D2488, Standard Practice for Description and Identification of Soils (Visual—Manual Procedure).

EPA's independent examination of state CCR programs applicable to legacy units did find that North Carolina's Coal Ash Management Act (CAMA) requires closure of all unlined impoundments, including those at inactive facilities that would qualify as legacy CCR surface impoundments. Further, review of publicly available documentation from Duke Energy, the owner of all currently identified legacy CCR surface impoundments in the state, indicates the presence of state orders-on-consent requiring corrective action for these units. All potential legacy CCR surface impoundments in North Carolina have been or are in the process of closure.

Since publication, several owners and operators of CCR units have provided EPA with additional information they believe demonstrates the adequacy of CCR unit closures performed under the oversight of other regulatory authorities (*e.g.,* state programs). For example, according to Vistra Corp, the Illinois EPA (IEPA) oversaw the closure of a former CCR surface impoundment at the shuttered Havana Power plant. The unit was dewatered and closed in December 1993, under a corrective action plan overseen by IEPA. Surficial water was removed and a three-foot thick cover of soil with vegetation was installed. Groundwater data provided by the utility showed a reduction of boron concentration and compliance with the groundwater standards. At the former Hennepin Power plant in Illinois, another legacy surface impoundment was closed under IEPA oversight. According to Vistra Corp, surficial water was removed, and the unit has been subject to groundwater sampling since 1996. Initial sampling demonstrated exceedances of the boron groundwater standard. In 2020, a final cover system was installed pursuant to the federal CCR rule, consisting of a compacted soil barrier layer with a minimum of 24 inches of earthen material with a maximum permeability of 1×10^{-7} centimeters per second. The utility states that in limited areas, CCR may be saturated with groundwater during higher flood events of the Illinois River. Vistra Corp contends that the groundwater data demonstrates that simply dewatering and taking this unit offline resulted in significant decreasing trends in boron since 1996, with several wells achieving compliance with the groundwater standard for boron well before the cover system was installed. Further, the utility suggests that the modeling conducted demonstrates that boron concentrations are expected to continue the downward trend even though some ash is saturated with groundwater.

Another utility, Tennessee Valley Authority (TVA), provided EPA with information about Tennessee's CCR program. TVA explained that this information suggests that site-specific human health and ecological risk assessments conducted in the program follow EPA protocols. According to the information provided, the risk assessments have found that there are no unacceptable risks related to CCR management identified for all receptors at most sites. Additionally, the utility stated that potential risk to future workers, where identified, would be mitigated by health and safety protocols. TVA explained that the information provided also speaks to how the state handles closure and corrective action. The state's closure decisions factor in ongoing operations, planned extraction of CCR for beneficial use, risk assessment results, qualitative impacts, and stability assessments. Tennessee's corrective action program incorporates risk assessment results and statistical evaluation of groundwater sampling data to assess regulatory requirements. TVA further explained that no corrective actions have been identified to address unacceptable risks, but localized groundwater corrective actions are required at some units to meet the groundwater protection standards.

The utility also provided specifics about the Tennessee-approved closures at the former John Sevier Fossil Plant. TVA stated that the information speaks to how the state closure and corrective action requirements will control and minimize infiltration, reduce flux from pore water and achieve compliance with groundwater protection standards. Post-closure care requirements are intended to maintain these conditions and the controls in place. The utility contended that the cumulative result is that there will be no unacceptable risks to offsite human or ecological receptors at the facility.

In a third example of relevant information provided to EPA since promulgation of the Legacy Final Rule, Xcel Energy shared details of a

previously conducted closure under the authority of the state of Minnesota. At the Black Dog Plant, the coal-fired generating units ceased operating in April 2015 and disposal of CCR in the onsite units ceased prior to October 19, 2015. The units were certified closed in February 2017. The utility contends that this is an example of a site that was successfully remediated under a rigorous state program and meets acceptable risk criteria. Xcel Energy further states that the quantities of CCR that remain onsite were subject to an extensive site evaluation, risk assessment and the implementation of state-approved remedial action that supported the conclusion that the site is not adversely impacting human health or the environment.

The utility provided documentation of the closure and the state's oversight including the risk assessment conducted, the state-approved remedial action plan, state-approved long-term monitoring plan, and the closure certification. The documentation provided suggests that, in total, the closure involved the removal of 117,300 cubic yards of CCR and impacted soils and the import of 717,000 cubic yards of clean fill material. At the ponds where removal of all non-native materials (including CCR) wasn't conducted, a 4-foot cap of clean imported fill material was utilized. Additionally, groundwater monitoring was conducted before and after the remedial action. The site now features a bike path along the Minnesota River.

EPA intends to maintain the general procedures in the existing regulations, whereby owners and operators of legacy surface impoundments may defer compliance with the CCR unit closure standards until a site-specific decision is made by the permit authority on the equivalence of the previously conducted closures. However, based on the information above as well as the considerations discussed in Unit III.D. regarding the benefit of regulatory oversight (*i.e.,* allowing a permit authority to evaluate risk and determine requirements based on site-specific considerations), the new tools provided to EPA as part of the WIIN Act, and the ability of EPA to allow for non-uniformity in attainment of the baseline RCRA standard of protection, EPA is proposing to modify § 257.101(g) to expand the deferral criteria. Specifically, EPA proposes to adjust the deferral criteria by removing three of the standards that currently must be met to be eligible for the deferral. EPA is proposing to remove: (1) The detailed technical requirements for a groundwater monitoring system, (2) The requirement that a facility document that the legacy CCR surface impoundment currently meets either the location standard in § 257.60 or the dewatering standard in § 257.102(d)(1)(i), and (3) The requirement that the regulatory authority conducted a site-specific risk assessment. EPA is instead proposing that the owner or operator would need to document that a regulatory authority played an active role in overseeing and approving the closure and any necessary corrective action, pursuant to an enforceable requirement issued on or after October 19, 2015, a groundwater monitoring system was installed, and groundwater monitoring was performed. The owner or operator would need to also provide the same certification as to the veracity of the documentation currently required under § 257.101(g)(5).

EPA anticipates that this amendment will lead to an increase in the number of closed legacy impoundments eligible for deferral. As a result, fewer legacy surface impoundments will be required to undertake additional closure activities before the CCR permit authority determines that such actions are indeed necessary. It is worth noting that all legacy surface impoundments eligible for the deferral would still, at the time of permitting, be required to submit a permit application with sufficient information, including groundwater data, to demonstrate the applicable closure standards had been met. In the meantime, the unit would be subject to groundwater monitoring and corrective action in the event any problems are identified that require remedial action. The CCR permit authority would then make a final determination as to whether the previously conducted closure achieved the applicable performance standards established in the Federal CCR regulations.

The proposed amendment ensures that previous decisions made by state or federal regulators remain unaffected until the CCR permitting program can conduct site-specific evaluations. This approach allows for greater continuity in the short term and ensures EPA does not require compliance with additional subtitle D requirements that may not result in benefits to human health or the environment unless and until it is determined that additional closure activities are indeed necessary. Furthermore, this change allows for greater implementation resources to be directed to site-specific permitting to address risks and away from evaluating compliance with a more complex set of deferral criteria. Finally, adding this flexibility comes with relatively little tradeoff. Most of these legacy CCR surface impoundments have been in place for decades. More recently, these units were closed under the oversight of a regulatory authority and now have controls in place to reduce risk. Delaying potential compliance with the federal closure requirement for a comparatively short period of time until a site-specific examination of the units and their completed closure can be completed by a permit authority is unlikely to significantly change the environmental conditions or risks at these facilities. The risk associated with the deferral is further attenuated by the ongoing requirement for groundwater monitoring and corrective action. While the units were already closed once under the oversight of a state or other authority and so environmental controls may be in place, if the unit contaminates groundwater, the groundwater monitoring system would identify it. The corrective action requirements would then require remediation to ensure no adverse effects to health and the environment.

At the time of permitting, the permitting authority would evaluate the unit more closely—with the benefit of site-specific information—to determine the ''equivalence'' of closure conducted under the state or alternate authority. EPA is not proposing to revise this process established under § 257.101(g)(6). At this stage, additional closure and/or post-closure requirements may be imposed by the permitting authority to achieve compliance with the Part 257 regulations including the closure performance standard. As such, the unit will ultimately achieve compliance with the Federal closure performance standard—just under the oversight of a permitting authority, rather than under a self-implementing framework.

Therefore, EPA is proposing that owners or operators of legacy CCR surface impoundments that have completed a closure prior to November 8, 2024, where a regulatory authority played an active role in overseeing and approving the closure and any necessary corrective action, pursuant to an enforceable requirement issued on or after October 19, 2015; a groundwater monitoring system has been installed; and groundwater monitoring has been performed would be eligible to defer compliance with the applicable closure performance standard until permitting. The owner or operator would need to document they meet the criteria in an owner-or-operator certified report. EPA is proposing to require this documentation be completed within six months of the effective date of the rule,

if finalized. This compliance timeframe was used for the original deferral certification at § 257.101(g). EPA expects this will provide ample time for the owners and operators to prepare the necessary documentation.

Solicitation of comment. EPA is also soliciting comments on an alternative to this proposal that would allow owners and operators of legacy surface impoundments to defer compliance with the closure performance standard until the CCR permit authority can make a site-specific determination regarding the 'equivalence' of the previously conducted closure. Specifically, EPA is soliciting comment on potential changes to § 257.101(g) to expand the deferral criteria for legacy CCR surface impoundments to owners and operators that completed closure of the unit under state or federal regulatory authority prior to November 8, 2024, where a regulatory authority played an active role in overseeing and approving the closure and any necessary corrective action, pursuant to an enforceable requirement issued on or after October 19, 2015. In this alternative, installation and operation of a groundwater monitoring system would not be required for an owner or operator to avail themselves of the deferral. This alternative approach would solely require that the owner or operator document that the closure of the unit, and any necessary corrective action, was actively overseen by a regulatory authority to qualify for the deferral. However, under this alternative, the same information as required under the proposed option would be required at the time of permitting.

EPA expects this option would allow a greater number of additional units to qualify for the deferral than the proposed approach. Similar to the proposed approach, all units for which closure decisions were deferred to permitting, would be required to comply with the groundwater monitoring, corrective action, and any applicable post-closure requirements at least until a permit authority permits the unit. The advantages of this alternative approach are the same as for the proposed approach but would likely be realized at a greater number of units. Much like the proposed approach, this alternative approach would ensure that previous decisions made by State or Federal regulators remain unaffected until the CCR permitting program can conduct site-specific evaluations. This alternative approach would also allow for greater continuity in the short term and would ensure EPA does not require compliance with additional subtitle D requirements that may not result in benefits to human health or the environment unless and until it is determined that additional closure activities are indeed necessary.

The disadvantage of this approach, relative to the proposed approach, is that it may result in delays and a greater burden on the CCR permit authority to determine the protectiveness of the completed closure without historic groundwater monitoring data for the units in question. Additionally, deferring compliance with the existing closure performance standards at a greater number of units until permitting, may result in a greater potential for adverse effects on human health or the environment in the interim at a greater number of facilities. Those potential impacts may be exacerbated by delays in permitting if more closure ''equivalency'' determinations are deferred to permitting and there isn't sufficient groundwater monitoring data to evaluate the protectiveness of the completed closures in a timely manner.

However, as noted and described above, EPA received information during the Legacy Rule development and since finalization from utilities and trade groups arguing that CCR unit closures performed under the oversight of other regulatory authorities (*e.g.,* state programs) are adequate. This information includes several examples of unit specific closures with oversight from state or other regulatory programs. Additionally, the descriptions of the regulatory programs provided to EPA note that risk assessments were conducted, the regulatory authorities conducted a variety of oversight activities, and groundwater monitoring and corrective action were required to help ensure the closures remain protective. Moreover, it's worth noting that these units would still be subject to the groundwater monitoring, closure and any necessary corrective action and post-closure care requirements. See § 257.100(f). As such, EPA is taking comment on this alternative approach and, if supported by sufficient factual comments, may finalize this approach.

If EPA were to finalize this approach, EPA would amend the criteria for deferral in § 257.101(g) to consist only of documentation that a regulatory authority played an active role in overseeing and approving the closure and any necessary corrective action, pursuant to an enforceable requirement, and the certification as to the veracity of the information. Specifically, EPA would remove the existing criteria in § 257.101(g)(2) through (4). The process for the CCR permitting program to make the ''equivalence'' determination or establish additional requirements for the legacy impoundment would remain unchanged.

Additionally, due to the practical limitations and inherent uncertainty related to the record, EPA requests comment on the adequacy of the record for the proposal and the alternative option upon which EPA is soliciting comment and, to the extent any gaps are identified, requests suggestions for sources of additional information. As described above, during the rulemaking for the Legacy Rule, the Agency had received information to demonstrate that previous closure decisions made under state or other regulatory authorities will protect human health and the environment. Since promulgation of the Legacy Final Rule, the Agency received additional information describing a handful of state programs and several individual, site-specific closure decisions. In acknowledgement of the additional information received, and to realize the benefits described above, this proposal offers greater deference to the state and other regulatory authorities that made these closure decisions previously. EPA expects that those authorities would not have approved of closures that presented a reasonable probability of adverse effects to human health and the environment.

However, the Agency lacks a record that unequivocally demonstrates that all closure decisions made by other regulatory programs will be similarly protective—in the near term—as applying the Federal CCR closure requirements immediately. Such a record would consist of a detailed review of all state CCR programs as well as other relevant regulatory programs that may have overseen legacy CCR unit closures. This review would need to provide a detailed understanding of the programs at the points in time the relevant closure decisions had been made. At present, EPA has information on a handful of state programs and several site-specific closure decisions. While meaningful, this information doesn't speak to every previous closure decision that had been made. For example, even for closures conducted under voluntary programs, the level of oversight of those programs may vary between states. In some states, the voluntary closure may entail significant oversight, (*e.g.,* regulator review and approval of the closure and groundwater monitoring plans, review of groundwater monitoring data) but not necessarily in all states. EPA will consider such information submitted as it develops the final action.

3. CCR Management Units

In the Legacy Final Rule, EPA established requirements to address the risks from exempt solid waste management that involves the direct placement of CCR on the land. EPA extended a subset of the existing requirements in 40 CFR part 257, subpart D to these units, which are CCR surface impoundments and landfills that closed prior to the effective date of the 2015 CCR Rule, inactive CCR landfills, and other areas where CCR is managed directly on the land. These additional requirements apply to all active CCR facilities, all inactive facilities with legacy CCR surface impoundments, and those active facilities (*i.e.,* facilities producing electricity for the grid as of October 19, 2015) that ceased placing CCR in onsite CCR units prior to the effective date of the 2015 CCR Rule (''other active facilities'').

In the preamble to the Legacy Final Rule, EPA discussed the rationale of the definition of ''CCR management unit'' and the scope of what would be considered a CCRMU under the final rule. See 89 FR 39044–39051. EPA finalized this definition based on damage cases, the 2024 risk assessment, and comments received on the Legacy Proposed Rule. Many of the Legacy Proposed Rule comments argued that the definition of CCRMU is overly broad and treats many different disposal areas as a worse-case scenario. Commenters further stated that the scope of the CCRMU universe ignores the risk profiles of different historic disposal areas and forces actions not tailored to the specific units. The comments also said a one-size-fits-all approach to CCRMU does not make sense given the widely variable risk profiles within this newly defined category of regulated units.

In 2025, EPA received several letters from the regulated community, including a coalition of regulated entities,[15] USWAG,[16] National Rural Electric Cooperative Association (NRECA),[17] Cross-Cutting Issues Group (CCIG),[18] Edison Electric Institute (EEI),[19] American Electric Power (AEP),[20] PacifiCorp,[21] Talen Energy via the National Energy Dominance Council,[22] and others that recommended changes to the CCRMU requirements. The letters suggested these changes were supported by several critiques of the Legacy Final Rule and the 2024 Risk Assessment, and recent Executive Orders, including ''Reinvigorating America's Beautiful Clean Coal Industry and Amending Executive Order 14241'' (April 8, 2025).

In many letters, the authors recommended rescinding the CCRMU provisions. In other letters, regulated entities recommend that EPA narrow the scope of CCRMU provisions and clarify certain requirements. Some commenters recommended that EPA: (1) Eliminate the requirement to identify CCRMU containing less than 1,000 tons of CCR; (2) Increase the CCRMU deferral threshold from 1,000 tons to an alternative quantity associated with acceptable beneficial use or to risk-based criteria for stability, groundwater, and dust; (3) Exempt past beneficial use placements and critical infrastructure sites; (4) Exempt areas of CCR accumulation regulated by State agencies, including units closed in accordance with State programs; (5) Establish a baseline to identify potential CCRMU (*e.g.,* facilities operating after a certain date); (6) Establish options to exempt areas listed in the Facility Evaluation Report (FER) as a CCRMU if the CCR material is removed from that area within a specified time period (*e.g.,* an area is exempt if the CCR is removed with one year of the FER Part 2 being published; and (7) Limit the CCRMU definition to past placements that pose identified present risks.

In response to the information presented in the above letters and based on the limitations of a national risk assessment, including the 2024 Risk Assessment, as discussed in Unit III.D. of this preamble, EPA is proposing to rescind all CCRMU requirements. In the alternative, EPA is soliciting comments on several potential revisions to the existing CCRMU regulations. Each of these potential revisions is intended to address one or more of the issues discussed above. Although the potential revisions are not intended to be mutually exclusive (*i.e.,* EPA may adopt several of them in the final rule), a single revision may address multiple issues. Consequently, it may not be necessary to adopt all the potential revisions to address all the issues that have been raised to the Agency. EPA therefore requests comment on whether all the various revisions discussed in Unit IV.A.3.b. of this preamble are necessary or useful. Commenters are encouraged to consider the combined effect of individual revisions in developing their comments. EPA also requests that, if commenters believe that individual alternatives would address the same issue, they provide views on whether (and why) one alternative is preferable.

Lastly, given that EPA may adopt one or more of the options discussed in Unit IV.A.3.b. of this preamble, EPA solicits comments on the appropriate scope of the FER given the commenter's preferred option(s). As explained in Unit III.C. of this preamble, the FER Part 1 documents the thorough review of readily and reasonably available records regarding where CCR was either routinely and systematically placed on land, or where facility activities otherwise resulted in measurable accumulations of CCR on land. The FER Part 2 documents the conclusions of a physical evaluation of the facility to address any data and information gaps identified in FER Part 1. Together, the FER Parts 1 and 2 are intended to provide a complete picture of the historic use, placement and the status of CCR at the facility, ultimately identifying any CCRMU of 1 ton or greater onsite. The FER Part 1 requirements regarding record review were based off EPA's understanding of what documentation would potentially hold information about historic placements that would meet the definition of CCRMU. However, EPA acknowledges that if the scope of the CCRMU universe is modified, the FER requirements, specifically with respect to review of readily and reasonably available records regarding where CCR was either routinely and systematically placed on land, or where facility activities otherwise resulted in measurable accumulations of CCR on land, may warrant modification too. Therefore, EPA solicits comment on the

[15] Duke Energy et al 2025. Letter co-signed by Duke Energy, Vistra Corp, Lower Colorado River Authority, City Utilities of Springfield, Southern Illinois Power Cooperative, Gavin Power, Talen Energy, Basin Electric Power Cooperative, Ohio Valley Electric Corporation, Indiana-Kentucky Electric Corporation, and Louisville Gas and Electric Company-Kentucky Utilities Energy to Lee Zeldin, EPA Administrator. RE: Coal Combustion Residuals Rules Impede U.S. Energy Production. January.

[16] USWAG 2025a. Letter from Daniel L. Chartier, Executive Director, Utility Solid Waste Activities Group to Lee Zeldin, EPA Administrator. Re: Actions for Regulations for CCR. January.

[17] NRECA 2025. Letter from Jim Matheson, Chief Executive Officer, National Rural Electric Cooperative Association to Lee Zeldin, EPA Administrator. January.

[18] CCIG 2025. White paper reflecting Recommendations Updating the Federal CCR Regulations. Cross-Cutting Issues Group. June.

[19] EEI 2025a. Comments on Site-Specific Closure Alternative Performance Standard. Edison Electric Institute. June.

[20] AEP 2025. Meeting handout to EPA's Office of Land and Emergency Management. American Electric Power. RE: Legacy CCR Rule Reform Regulations. June.

[21] PacifiCorp 2025. Letter from James Owen, Vice President of Environmental and Energy Resources, PacifiCorp to EPA Region 8. RE: PacifiCorp Priorities in EPA Region 8 States. April.

[22] NEDC 2025. Comments from NEDC with CCR Reform Guiding Principles. National Energy Dominance Council. August.

appropriate scope of the FER requirements as they are impacted by the options described below.

a. Rescind All CCR Management Unit Requirements

In response to the letters and requests that EPA has received since January 2025 and based on the limitations of a national risk assessment, including the 2024 Risk Assessment, as described in Unit III.D. of this preamble, EPA is reconsidering its decisions to regulate CCRMU. As stated above in Units III.D. and IV.A.3. of this preamble, EPA received questions about the risk assessment and other comments after the publication of the Legacy Final Rule that said the definition of CCRMU is overly broad.

Some of the information EPA received after publication of the 2024 Legacy Rule suggests that EPA should rescind the CCRMU requirements and is intended to show the infeasibility of the CCRMU requirements. CCIG provided specific examples of this infeasibility in their letter dated June 6, 2025,[23] including rail embankments or railroad roadbed constructed with CCR components that would pose logistical challenges for groundwater monitoring, CCR used as drainage layers above composite liners, CCR used in embankments, CCR used to construct over 10 miles of road at the facility, previously closed surface impoundments below plant infrastructure, an active landfill on top of a previously closed unit, CCRMU under a natural gas pipeline, CCR used as fill for the construction of the facility that processes and encapsulates CCR for beneficial use, and units that were near closure but would be considered CCRMU. CCIG also said that requiring the removal and replacement of the wide range of uses of CCR that fall under the broad CCRMU definition, including those described above, will end up causing cascading issues that potentially could impact reliability, force the use of virgin resources, and impose burdensome, unnecessary costs on energy companies and their customers. Therefore, based on the reasons above CCIG recommended EPA rescind the CCRMU requirements. Other commenters stated that rescinding the CCRMU provisions was justified as the court in the 2018 *USWAG* decision only required regulation of legacy CCR surface impoundment and not CCRMU. Many of these letters also state that CCRMU should be ''eliminated'' because: (1) The record has not been fully developed to support regulating CCRMU, and (2) Significant compliance costs outweigh any potential benefits to address unproven risks. Several of the entities also claim the CCRMU regulations impose infeasible, impracticable, and overly burdensome requirements on energy companies with significant costs that would eventually be placed on consumers.

Other letters stated that EPA's 2024 Risk Assessment does not support the overly broad CCRMU definition or demonstrate that all CCRMU pose a reasonable probability of adverse effects on health or the environment. The letters noted that the national risk assessment was based on high-end risks and did not accurate capture the variability of risk posed by units at many facilities. The authors conclude that EPA's Risk Assessments systematically overstate the risk from CCR disposal units and fills, and that it would be more effective and appropriate to assess risks on a site-specific basis. Furthermore, the commenters state that EPA did not justify the CCRMU regulations through a proper risk assessment.

As explained in Unit III.D. of this preamble, EPA uses a national risk assessment for a particular source or industry category to inform its decision concerning whether a regulatory program is needed or in need of revisions. Both the 2014 and 2024 Risk Assessments were designed to capture the full spectrum of potential disposal scenarios across the country with available data and decisions about the need for national regulations were based on high-end risks identified from across these scenarios, considered together with proven damage cases, to ensure that regulations would be consistently protective. The Agency acknowledges that these high-end risks may not manifest at every site and concurs that risks associated with individual CCR units may be lower. This is equally true for disposal units, fills, piles, and unencapsulated accumulations on the land for any other stated purpose.

In addition, EPA is proposing to find the current definition of CCRMU is overly broad, capturing units that under this proposal would not involve ''disposal.'' Specifically, EPA's proposed changes affecting beneficial use and storage of CCR would result in the existing definition of CCRMU encompassing some units that do not involve ''disposal'' as defined § 257.53. As explained in more detail in Unit IV.C., EPA is proposing to revise the definition of beneficial use to eliminate the distinction between on-site and off-site activities, and to eliminate the definition of a CCR pile. If those proposals are adopted, the current definition of a CCRMU as ''area of land on which any noncontainerized accumulation of CCR is received, is placed, or is otherwise managed,'' would also capture CCR storage units and beneficial use projects (other than roadbed and associated embankments, which are explicitly excluded from the definition) and consequently would not involve the disposal of CCR. See definition of ''disposal'' in § 257.53, which states ''For purposes of this subpart, disposal does not include the storage or the beneficial use of CCR.''

EPA acknowledges that this is a change in position from previous statements in the 2024 CCR Legacy Rule, which stated that direct placement of CCR on the land onsite of a utility, with nothing to control releases is, by definition, a CCR pile and therefore not beneficial use (while, in contrast, CCR that is beneficially used *off-site* is not a CCR pile), and then further referenced statements from the 2015 CCR Rule that CCR piles constitute disposal and are consequently subject to all regulatory criteria applicable to CCR landfills. (89 FR 39050).

However, as explained in more detail in Unit IV.C., EPA's proposed revisions would ensure consistency and clarity across all settings in accurately identifying which practices are beneficial use or storage, and not disposal.

Finally, EPA finds that the existing definition of CCRMU runs afoul of several recent executive orders: Executive Order 14154 ''Unleashing American Energy,'' 90 FR 8343 (January 29, 2025); Executive Order 14156 ''Declaring a National Energy Emergency,'' 90 FR 8433 (January 30, 2025); and Executive Order 14219 ''Ensuring Lawful Governance and Implementing the President's 'Department of Government Efficiency' Deregulatory Initiative,'' 90 FR 10583 (February 25, 2025). EPA is proposing to rescind the CCRMU provisions consistent with those directives.

Therefore, based on the information above, along with the conclusions stated in Unit III.D. of this preamble, EPA is proposing to remove the CCRMU regulations from 40 CFR part 257, subpart D. In particular, EPA is proposing to amend or remove the following regulatory text sections, such that CCRMU are no longer units regulated under 40 CFR part 257: §§ 257.50(d); 257.53: definitions of ''CCR management unit'', portion of ''CCR unit'', ''Closed prior to October 19, 2015'', ''Critical infrastructure'',

[23] CCIG 2025. White paper reflecting Recommendations Updating the Federal CCR Regulations. Cross-Cutting Issues Group. June.

''Inactive CCR landfill'', and ''Regulated CCR unit''; 257.75; 257.90(b)(3); a sentence from 257.90(e); change 257.95(b) back to 2015 CCR Rule language; references to CCRMU in 257.100(h)(2); 257.101(f); portions of 257.101(g); 257.101(h); title of 257.102; 257.102(b)(2)(iii) and (v) and renumber (iv) to (iii); 257.102(f)(1)(iii); 257.100(f)(2)(ii)(E) and (F), 257.104(d)(2)(iii); 257.105(f)(25) and (26); 257.106(f)(24) and (25); 257.107(f)(24) and (25).

b. Alternative Approaches for Comment

As stated above, EPA is soliciting comment on several alternative approaches to address the concerns laid out in Units III.D. and IV.A.3. of this preamble regarding the CCRMU regulations. Specifically, EPA is soliciting comment on: (1) Deferring all CCRMU requirements, other than the requirement to complete the facility evaluation, to permitting; (2) Establishing groundwater monitoring and corrective action zones for CCRMU; (3) Exempting past onsite CCR uses that meet the definition of beneficial use; (4) Expanding the roadbed exemption; (5) Expanding the deferral criteria for certain CCRMU closures to permitting; (6) Removing ''other active facilities'' from the regulated universe; and (7) Developing a new threshold for CCRMU. EPA will consider comments on the proposal and all these options before making a final decision. If EPA elects to not rescind all regulation of CCRMU, EPA may select one or several of the options to finalize. For example, EPA may choose to only finalize the option to defer all CCRMU requirements aside from the facility evaluation to permitting. Alternatively, EPA may choose to finalize the options to defer all CCRMU requirements aside from the facility evaluation to permitting, expand the roadbed exemption, and exempt past onsite CCR uses that meet the definition of beneficial use. If EPA were to finalize this combination of options, the result would be a much smaller CCRMU universe consisting primarily of inactive landfills and units closed prior to 2015, which would only be subject to the facility evaluation requirements in § 257.75 until such time that the permit authority could evaluate these units. Since EPA is soliciting comment on several other alternative approaches to amending the scope of the CCRMU universe, EPA is not including these regulatory changes in the proposed regulatory text in this rule, as it could cause confusion for the reader. However, EPA will describe the regulatory text changes these alternative approaches would have if finalized in the preamble below. EPA requests comment on the proposed regulatory text changes as well as these alternatives, as well as how EPA should revise the FER requirements considering the alternatives below.

i. Deferral of CCR Management Unit Requirements To Permitting

EPA is taking comment on an alternative approach to addressing the issues identified in Units III.D. and IV.A.3. of this preamble with the existing CCRMU regulation. Under this alternative approach, owners or operators of regulated CCR units would still be required to complete the two-part FER to identify and delineate CCRMU at the facility. However, the requirement to comply with the remaining CCRMU regulations would be deferred until a CCR permit authority is able to evaluate the risks posed by these units and determine which requirements are appropriate for the CCRMU. Essentially, under this alternative approach, all CCRMU would be treated the same as CCRMU containing between 1 and 1,000 tons are treated under the existing regulations.

In the Legacy Final Rule, EPA finalized facility evaluation, fugitive dust, groundwater monitoring, corrective action, closure, and post-closure care requirements for CCRMU. As a result of the Legacy Final Rule, owners or operators of regulated CCR units are required to conduct a facility evaluation to identify and delineate any CCRMU containing one ton (or more) at the facility and document the findings in two reports. In addition, owners or operators of a regulated CCR unit are required to ensure that all identified CCRMU containing 1,000 tons or more comply with the existing requirements in 40 CFR part 257, subpart D for groundwater monitoring, corrective action (where necessary), recordkeeping, notification, and internet posting and in certain cases, closure, and post-closure care requirements. Regulation of CCRMU between one and 1,000 tons is deferred until a subsequent permit authority can assess the risks posed by these smaller CCRMU, individually or in the aggregate, and determine which, if any, requirements are appropriate for the CCRMU. In addition, the Legacy Final Rule deferred the requirement to demonstrate compliance with § 257.102 for CCRMU that closed prior to the effective date of this rule in accordance with alternative, substantially equivalent requirements (§ 257.101(g)). EPA also deferred the requirement to initiate closure where the CCRMU is located beneath critical infrastructure, such as high power electric transmission towers, air pollution control or wastewater treatment systems, or an electrical substation, until whichever occurs first: (1) the infrastructure is no longer needed, (2) a permit authority determines closure is necessary to ensure that there is no reasonable probability of adverse effects on human health or the environment, or (3) the closure or decommissioning of the facility. See § 257.101(h).

However, as described in greater detail above, since finalization of the Legacy Rule, EPA has received many letters from regulated entities suggesting: (1) The record has not been fully developed to support regulating CCRMU, (2) Significant compliance costs outweigh any potential benefits to address unproven risks, (3) CCRMU regulations impose infeasible, impracticable, and overly burdensome requirements on energy companies with significant costs that would eventually be placed on consumers, and (4) the self-implementing structure is not appropriate to address the variability in risk posed by the broad scope of units regulated as CCRMU. As noted above, EPA is considering and requesting comment on an alternative regulatory structure which would help alleviate some of these concerns. Specifically, under this alternative approach, owners and operators of covered facilities would still be required to complete the two-part facility evaluation report to identify and delineate CCRMU at the facility. However, the application of additional CCR unit regulations would be deferred until the CCR permit program assess the risks posed by the identified CCRMU, individually or in the aggregate, and determine which, if any, requirements are appropriate for the CCRMU.

This alternative approach would address these concerns by allowing the CCR permit authority to make a site-specific, risk-based decision as to what requirements are appropriate to apply to any given CCRMU individually, or in aggregate, at a facility. Such an approach would leverage the expertise and judgement of the CCR permit authority while taking into account the variability in CCRMU and site-specific considerations. Allowing for greater site-specific decision-making would allow for risk-based decisions to result in potentially more efficient outcomes that could avoid unexpected complications and issues or require compliance with provisions that result in no benefit to health or the environment. For example, CCIG claimed that the current national standard requiring the removal and

replacement of the wide range of uses of CCR that fall under the CCRMU definition will end up causing cascading issues that potentially could impact reliability, force the use of virgin resources, and impose burdensome, unnecessary costs on energy companies. Additionally, this option would allow for impacts on infrastructure to be considered. For example, there are examples were energy, waste, water, transportation or other vital infrastructure have been built on top of previously closed CCRMU. The Legacy Rule attempted to address this situation at § 257.101(h) by providing national criteria for deferring the closure requirements for the CCRMU. However, this alternative option would provide a permit authority greater flexibility and ability to adapt regulatory requirements to the unique needs of the situation. Notably, this alternative approach would extend a permit writers' flexibility beyond just the closure requirements, allowing permit writers to adjust, within the standards set forth in the revised rule, the regulatory requirements in part 257 (*e.g.,* more appropriate groundwater monitoring requirements could be developed) on a case-by-case basis to account for individual site conditions. Since most of these CCRMU have been in place for decades, delaying potential compliance with the federal requirements for a comparatively short time until a permit authority evaluates these units is unlikely to dramatically change the environmental conditions or risks at these facilities.

Such an approach could still pose no reasonable risk of adverse effects to health or the environment. State permitting and waste programs have a comparatively long history of implementing state requirements at CCR units including CCRMU. EPA has received a substantial amount of information regarding CCR oversight and regulation by state programs to demonstrate that site-specific decisions made by these authorities are protective. See Units IV.A.2. and IV.B.2.a. of this preamble. This includes, in some instances, examples of state oversight of cleanups or closures of CCRMU.

For example, TVA provided EPA with information about Tennessee's CCR program. This information suggests that site-specific human health and ecological risk assessments conducted in the program follow EPA protocols. According to the information provided, the risk assessments have found that there are no unacceptable risks related to CCR management identified for all receptors at most sites across the TVA's portfolio. Additionally, potential risk to future workers, where identified, would be mitigated by health and safety protocols. The information provided also speaks to how the state handles closure and corrective action. The state's closure decisions factor in ongoing operations, planned extraction of CCR for beneficial use, risk assessment results, qualitative impacts, and stability assessments. Tennessee's corrective action program, meanwhile, incorporates risk assessment results and statistical evaluation of groundwater sampling data to assess regulatory requirements. The utility explains that no corrective actions have been identified to address unacceptable risks, but localized groundwater corrective actions are required at some units to meet the groundwater protection standards.

Talen Energy provided information pointing out that states, such as Pennsylvania, have had Residual Waste regulations that have been used to address CCR for decades. State-level Dam Safety regulations also exist and apply to certain CCR units. The utility stated that these regulations and associated oversight ensure the safe and environmentally-acceptable closure of CCR units. Talen Energy argued that the federal CCR program needs a better mechanism to recognize prior state approvals and regulatory requirements which may be equivalent or as protective as the federal CCR requirements.

Additionally, during the Legacy Rulemaking, EPA received public comments arguing that state programs had become significantly more robust over the past couple of decades and, specifically, since 2015 when EPA last conducted a review of state programs. For example, Duke Energy provided information on North Carolina's CCR program. The utility claims that there are no gaps within the state program and that the state's groundwater rules establish robust groundwater monitoring and corrective action programs. Duke Energy proceeded to describe aspects of the program's closure requirements suggesting that the closure plans are comprehensive and subject to significant regulatory oversight and public participation. The key assertions are as follows:

- The closure plans, among other things, require the results of a hydrogeologic, geologic, and geotechnical investigation of the site; the results of groundwater modeling of the site; a description of the provisions for disposal of wastewater and management of stormwater; a description of the provisions for the final disposition of the CCR; and a description of the plan for post-closure monitoring and care for an impoundment for a minimum of 30 years.
- The closure plan approval process includes public participation component involving public notice and comment and public meeting(s) in county(ies) in which the site is located. After an opportunity for public comment, NCDEQ makes the final determination as to the protectiveness and adequacy of the closure plan.

Moreover, Duke Energy provided several examples of CCRMU for which North Carolina has required closure activities through existing state authorities. Here is a description of the way in which North Carolina assessed and addressed CCRMU according to the information provided. First, in 2017, the state required the utility to assess and remediate or close what the state called ''primary sources'' and ''secondary sources''—not just the CCR surface impoundments—across 14 coal ash facilities in the state. These ''primary sources'' and ''secondary sources'' appear to meet the definition of CCRMU had EPA defined that concept in 2017 and would also capture contamination from CCRMU. In response, the utility developed a staged plan to address these CCRMU. The first stage involves CCRMU located near CCR surface impoundments so if there were any soil and groundwater contamination from the CCRMU, the impacts would be addressed along with the CCR surface impoundments. The second group involves CCRMU located where a groundwater divide or surface water area separate these potential primary sources from the CCR surface impoundments. These CCRMU were investigated independent of CCR surface impoundments, and assessment and corrective action is subject to a separate and distinct plan from the surface impoundments. The state later required Duke Energy to prepare updated comprehensive site assessments and updated corrective action plans to address the CCRMU identified by the utility in response to the 2017 request.

In total the utility identified 25 CCRMU. Based on the information provided, seven have already been fully excavated, six have excavation in progress, four are planned to be excavated, four have been closed and capped with a synthetic cover, two are in the process of being closed with a synthetic cover, and two are undergoing further investigation by NCDEQ. Duke Energy concluded that no CCRMU are being ignored, and the foregoing demonstrates that the actions being undertaken pursuant to strict state

oversight are sufficiently protective to not pose a reasonable probability of adverse effects to health or the environment.

Other commenters presented individual examples of CCRMU that had been closed in accordance with State requirements, which the commenters believed would demonstrate the State closures were equally as protective as those conducted in accordance with § 257.102. These included the following examples:

- A facility has an approximately 20-acre dry stack landfill with 20 plus years of groundwater monitoring that does not show groundwater exceedances, zero potential receptors downstream (from the direction of groundwater) that use wells for drinking water (also no potable wells within a two-mile radius). The landfill construction using best practices to minimize erosion potential, including only placement of stabilized material in the landfill, perimeter ditch surrounding the entire landfill to collect any runoff that is processed before discharge, and the unit is regulated by the Florida Department of Environmental Protection that includes semi-annual groundwater monitoring results review and yearly onsite regulatory inspections.
- Another facility had two CCRMU landfills that were closed prior to the effective date of the 2015 CCR Rule and were closed in accordance with the State of Florida's Chapter 62–701, F.A.C., for municipal and solid waste landfills. Neither landfill was built on top of a liner system. The closed landfills were subject to design criteria for cover systems and stormwater management, as well as long-term operations and maintenance provisions. The groundwater monitoring system requirements for landfills in Florida are similar to, but not the same as, those in the 2015 CCR rule. Both closed cells would be subject to corrective action if dictated by the monitoring program. Maintenance, inspections, and repair of the cover systems, as needed, are also part of the long-term care program.
- Another facility reported closing an inactive CCR landfill in the 1980s. The 20-acre site was used to dispose of bottom and fly ash, including scrubber sludge. The owner performed monitoring of a nearby spring to demonstrate whether any ponded water was leaking. Upon visual inspection, it was determined that the bentonite/clay-lined pond remained intact throughout the active operation of the landfill. However, because of the age of the site, groundwater monitoring wells were not required.

Since the finalization of the Legacy Rule, EPA also received a survey of a select set of state risk-based regulatory programs. This survey compared the components of some of these programs to CERCLA and RCRA Subtitle C and states that the risk-based programs are based on scientific principles supporting regulatory consistency, scientific integrity, and practical implementation. Additionally, the survey provided some additional information on certain state program examples which, the survey concludes, demonstrate their regulatory efficiency and effectiveness. The survey cited the Texas Risk Reduction Program, Colorado Voluntary Cleanup and Redevelopment Program, Michigan Part 201 Cleanup Program, Virginia Voluntary Remediation Program, Massachusetts Contingency Plan Waste Site Cleanup Program.[24]

As noted above in Unit III.D., the 2024 Risk Assessment is a national risk assessment and not representative of risk posed by all CCR units at all facilities. Additionally, as described in Unit III.D. of this preamble, EPA has the ability to rely on permit authority's oversight to tailor the CCR requirements and provide greater flexibility to owners or operators while ensuring there is no reasonable probability of adverse effects on health or the environment from the regulated units. Deferring the application of most of the CCRMU requirements to the CCR permitting program would allow for a greater understanding of the risk posed by these units and could result in more appropriate, tailored regulatory requirements being applied to the units. Moreover, the issuance of a CCR permit will involve public comment and are final actions that could be challenged administratively, and in federal or state court. In consideration of the information above and in Unit IV.A.2. of this preamble regarding state programs and the potential advantages of deferring application of most of the CCRMU requirements to the CCR permitting program, EPA is soliciting comment on this option.

After a review of submitted comments, EPA will determine if there is sufficient support to finalize this approach in its final action. If EPA were to finalize such an approach, EPA would amend § 257.50(d) to read: CCR management units located at active facilities or facilities with a legacy CCR surface impoundment are subject only to the requirements of the facility evaluation report in § 257.75 until a permit authority determines that regulation of these units, either individually or in the aggregate, is warranted and determines the applicable requirements. EPA would, accordingly, also rescind §§ 257.90(b)(3), 257.100(h)(v) through (ix), 257.101(f) and (h), 257.102(b)(2)(iii) and (v), 257.102(f)(1)(iii), 57.102(f)(2)(ii)(E) and (F), and 257.104(d)(2)(iii). EPA would also remove reference to CCRMU from § 257.101(g).

In addition to the alternative above and for the same reasons in Unit IV.A.2.b., EPA requests comment on the adequacy of the record for the alternative option upon which EPA is soliciting comment and, to the extent any gaps are identified, requests suggestions for sources of additional information. As several regulated entities have raised concerns with scope of the search required for information concerning historical CCR placement (*e.g.,* interviews of former employees, files in digital formats no longer supported), EPA is also seeking comment on whether the scope of the effort required to search for information concerning the location of CCRMU needs clarification.

ii. Establishing Groundwater Monitoring and Corrective Action Zones for CCRMU

EPA is soliciting comment on an option to establish the equivalent of a hazardous waste facility's ''area(s) of concern'' or ''solid waste management area(s)'' for facilities with CCRMU for compliance with groundwater monitoring and corrective action. Specifically, this would allow owners or operators of CCRMU to establish a CCRMU groundwater monitoring and corrective action zone that contains multiple CCRMU and would be monitored by a single groundwater monitoring system.

The existing regulations allow owners or operators of CCR units to monitor groundwater at multiple units with a single groundwater monitoring system (*i.e.,* a multiunit groundwater monitoring system). 40 CFR 257.91(d). A multiunit groundwater monitoring system must be equally capable of

[24] The regulations already contain two pathways for legacy impoundments to certify closure by removal (*i.e.,* § 257.100(g)(1)–(6) for those with available groundwater data and § 257.100(h) for those units that needed to conduct additional groundwater monitoring). These two paths are unchanged by this proposal. The third, proposed, avenue for certification of closure by removal is an additional avenue not intended to disrupt, supersede, or otherwise alter the two existing avenues.

Haley Aldrich. *Report on Joint Data Analysis to Support Revisions to Federal Regulation of Coal Combustion Residuals.* September 2025.

detecting background and groundwater contamination at the waste boundary as an individual monitoring system. The regulation further specifies that this determination must be based on the consideration of several factors, including the number, spacing, and orientation of the CCR units, the hydrogeologic setting, the site history and the engineering design of the CCR units. A qualified professional engineer must certify this demonstration. Whether a single or multi-unit system has been installed, the monitoring wells must be cased in a manner maintaining the integrity of the borehole and must be maintained to meet design specifications.

As discussed in the preamble to the Legacy Final Rule, the existing groundwater monitoring and corrective action requirements are essentially the same requirements that have been applied to both hazardous waste and municipal solid waste disposal units for decades. The preamble further states there is nothing about CCRMU that makes them distinct enough to warrant separate groundwater monitoring requirements from other CCR units. Therefore, EPA finalized the requirement that owners or operators of CCRMU comply with the existing groundwater monitoring and corrective action provisions in 40 CFR part 257.

However, since finalization of the 2024 Legacy Rule, members of the regulated community have continued to express the need for alternative groundwater monitoring requirements, such as expanded multiunit or facility-wide groundwater monitoring. These utilities have pointed to the difficulty of determining CCRMU boundaries and the prevalence of CCRMU across the facility. Specifically, commenters have stated that the widespread historic practice of placing non-containerized CCR across a facility coupled with lack of historical documentation results in uncertainty regarding the boundaries of CCRMU, even with the field sampling required as part of the facility evaluation. Some companies have expressed concern about finding CCRMU as a result of complying with the groundwater monitoring and corrective action requirements (*e.g.,* while determining the source of potential contamination) or through future development projects onsite (*e.g.,* encountering CCR while conducting earthwork for new infrastructure). Other utilities have raised concerns regarding the appropriateness of the existing groundwater monitoring requirements when the CCRMU being monitored is miles long (*e.g.,* a haul road or perimeter road) or quite numerous. Furthermore, members of industry have expressed that the Agency should allow facilities to adopt an area-wide or facility-wide groundwater monitoring and corrective action approach where: (1) the facility has a large number of CCRMU such that it is not practical to monitor and clean-up each CCRMU individually, or (2) the facility demonstrates that no contaminants are migrating offsite or otherwise causing off-site impacts. The commenters stated that an area-wide or facility-wide approach would allow facilities to address risk posed by CCRMU in a more holistic way, where appropriate.

Based on this information, the EPA is now aware of instances where the characteristics of the CCRMU, such as the size and shape (*e.g.,* lengthy roads), or the prevalence (*e.g.,* numerous CCRMU across the facility) justify a different approach to groundwater monitoring. Therefore, the Agency is soliciting comment on whether a more holistic approach, often referred to as either ''area(s) of concern'' or ''solid waste management area(s)''in hazardous waste facility permits or orders would be appropriate to apply to CCRMU. Under this approach, owners or operators of CCRMU would have greater flexibility to establish groundwater monitoring networks around multiple CCRMU. This approach would allow the owner or operator to designate an area of the facility where multiple CCRMU are present as a ''CCRMU groundwater monitoring and corrective action zone,'' essentially creating a single CCRMU for the purposes of groundwater monitoring and corrective action. This would allow a single groundwater monitoring system to be used in areas where it is difficult to determine exactly where the CCRMU waste boundaries are located, either due to historical CCR placements, the sheer number of co-located or nearby disposal areas, or any gaps in records related to past practices. As an example, if CCR was disposed of in multiple locations throughout the facility in a manner that makes it difficult to determine the precise waste boundaries of each CCRMU for the purposes of groundwater monitoring, the owner or operator could designate an area as a CCRMU groundwater monitoring and corrective action zone and utilize a single groundwater system around that area. In such cases, where CCRMU are located throughout the facility, the owner or operator could decide to combine some or all CCRMU, effectively creating a facility-wide groundwater monitoring network that encompasses all the CCRMU at the facility. When designating CCRMU groundwater monitoring and corrective action zones, the owner or operator must ensure the groundwater monitoring system is capable of readily detecting groundwater conditions in the uppermost aquifer that are representative of any potential contamination from CCRMU within the zone.

The Agency is requesting comment on the reasons owner or operators consider the existing multiunit approach to be infeasible or otherwise problematic to implement for CCRMU. Further, EPA is soliciting site-specific examples of the need for combining CCRMU into CCRMU groundwater monitoring and corrective action zones (*i.e.,* the equivalent of ''area(s) of concern'' or ''solid waste management area'') for the purpose of groundwater monitoring. EPA specifically requests examples where the owner or operator would need to combine CCRMU across the facility into a single CCRMU groundwater monitoring and corrective action zone, essentially creating a facility-wide groundwater monitoring network. Lastly, the Agency is requesting comment on whether this approach would be beneficial considering the other options EPA is soliciting comment on for CCRMU and which, if any, of the various other options under consideration that commenters believe should be combined with this option to make compliance with the groundwater monitoring regulations practically feasible.

iii. Exempt Past Onsite CCR Uses That Meet the Definition of Beneficial Use

As discussed in Unit IV.C. of this preamble, EPA is proposing a new definition of ''beneficial use'' at § 257.53, which would eliminate the fourth criterion, recognizing that the first three criteria in the beneficial use definition provide a sufficient framework for identifying when any placement of CCR on the land, whether encapsulated or non-encapsulated, roadway or non-roadway, constitutes a beneficial use rather than disposal for purposes of 40 CFR part 257. EPA also is proposing that this definition apply equally to all CCR beneficial use projects, whether conducted onsite at the generating utility or offsite.

However, EPA notes that the revised definition of beneficial use would not apply retroactively. Several stakeholders have raised the issue of exempting past CCR uses at utilities that meets the definition of ''beneficial use.'' Thus, EPA is requesting comment on including an exemption from the definition of CCRMU for

unencapsulated CCR uses, regardless of when such use occurred, that meet the definition of beneficial use, unless such a use is causing or contributing to a statistically significant level above the groundwater protection standard.

Such an exemption would encompass both the current and the proposed expanded roadbed exemption and would also apply to non-roadway beneficial uses of unencapsulated CCR, such as engineered structural fill, both past and present, if they meet the first three criteria in the beneficial use definition.

iv. Expand the Roadbed Exemption

Under the current regulations any CCR used in roadbed and associated embankments is not considered to be a CCRMU. See definition of ''CCR management unit'' at § 257.53. As EPA explained in the 2015 CCR Rule preamble, the methods of application, including the amounts and manner of CCR use, for roadbeds and associated embankments are sufficiently different from CCR landfills that EPA cannot extrapolate from the available risk information to determine whether these activities present similar risks. Roadways (*i.e.,* roadbed and associated embankments) are subject to engineering specifications and material requirements. For example, the engineering specifications for roadbeds generally specify CCR to be placed in a thin layer (*e.g.,* six to 12 inches) under a road. The placement of CCR under the surface of the road limits the degree to which rainwater can influence the leaching of the CCR. There are also significant differences between the way roadways and landfills can potentially impact groundwater, such as the nature of mixing in the media and the leaching patterns. First, CCR landfills can generally be represented as a homogenously mixed system. By contrast, roadways are generally constructed of several layers with different material properties (heterogeneity). This difference affects the hydraulic conductivity of a mass of CCR in a landfill, as compared to CCR placed in an embankment. Any potential leaching will tend to spread over the length of the embankment, as opposed to the leaching in a downward motion that would occur in a homogenously filled landfill. Furthermore, the construction of roadways is supervised and approved by State or Federal Department of Transportation (DOT) engineers who ensure compliance with engineering specifications. Finally, EPA is concerned that groundwater monitoring of a roadway may not be practicable. See 80 FR 21353 and 89 FR 32018.

Even though EPA considers that the available information does not demonstrate that use in roadway presents sufficient risk to warrant the suite of requirements applicable to CCRMU, that conclusion changes in the event the CCR in roadbed or associated embankments is contaminating groundwater. Accordingly, if an owner or operator subsequently determines that the CCR in onsite roadbed is contributing to contamination to the aquifer, the owner or operator is required to address the contamination. For example, if during an ongoing corrective action, an owner or operator identifies the roadbed as an additional source of contamination, it would be required to address that contamination as part of the ongoing remediation of the aquifer.

Since 2025, EPA received letters requesting that EPA expand the exemption of ''roadbed and associated embankments'' in the CCRMU definition in § 257.53 to interpret those terms to include all use of CCR in construction of roads, railbeds, and embankments and similar uses (unless, as is currently stated in the definition, ''the roadbed is causing or contributing to a statistically significant level above the groundwater protection standard''). See Merriam-Webster, *Roadbed, https://www.merriam-webster.com/dictionary/roadbed* (last visited September 17, 2025); general definition of ''roadbed'' includes ''the bed on which the ties, rails, and ballast of a railroad rest.'' According to members of industry, these clarifications are consistent not only with the regulatory text as currently drafted, but also RCRA generally and policy goals to reduce disposal and waste footprints.

Certain letters sent to EPA also included site-specific examples of CCR facilities with roadways or railbeds that would be impacted by the CCRMU regulations.[25] One letter described a utility with multiple sites with over 10 miles of roads that are entirely constructed of ash or blended with ash. Requiring the removal of such ash would significantly disrupt facility operations. Another company reported that regulation of roads creates a CCRMU that is 30 miles long. According to the utility, groundwater monitoring and replacement of existing embankments with other natural resources would be expensive, complicated, time-consuming, and resource-intensive, and would also risk contamination. Another utility stated that it potentially has an unknown volume of CCR material along a railroad, but only a portion of the railroad is within the facility boundary. Due to fencing, which emphasizes the plant's boundary line and obscures access to the rest of the railroad, it would be difficult not only to assess the presence of CCR in the area but also access the area the plant does not own.

EPA also received a request to clarify that the roadway or roadbed and associated embankments exemption applies regardless of whether there was oversight by a State agency and to extend the exclusion to all embankments.

Based on this information, EPA is soliciting comment on whether to expand the existing roadbed exemption in the definition of ''CCR management unit'' at § 257.53 to include roadbed, railbed, and all roadbed embankments. Under this alternative, the use of CCR in roadbed, railbed, and all roadbed embankments would be exempt from the CCRMU regulations, unless they are causing or contributing to a statistically significant level above the groundwater protection standard. As discussed above, the inclusion of railbed fall in the plain language meaning of the term ''roadbed'' as well. This exemption would apply regardless of if there was oversight by a State agency of the construction of the roadbed, railbed, and associated embankments. EPA specifically requests comment on codifying a definition of ''roadbed'' to mean ''the foundation of a road prepared for surfacing or surface on which or ties, rails, and ballast of a railroad rest''. EPA also requests comment on codifying a definition of ''roadbed embankment'' to mean ''material that is placed and compacted for the purpose of raising the grade of a roadbed above the level of the existing surrounding ground surface.'' [26]

v. Deferral of Certain CCR Management Unit Closures To Permitting

EPA is requesting comment on whether to make changes to § 257.101(g) to expand the deferral criteria for CCRMU that completed closure of the unit under state or federal regulatory authority prior to November 8, 2024. This expansion will provide greater deference to the decisions of state and other regulatory authorities regarding

[25] CCIG 2025. White paper reflecting Recommendations Updating the Federal CCR Regulations. Cross-Cutting Issues Group. June.

[26] This definition is based off information regarding embankments from the U.S. Department of Transportation Federal Highway Administration's User Guidelines for Waste and Byproduct Materials in Pavement Construction. (Publication Number: FHWA–RD–97–148)

CCRMU closures completed before the effective date of the Legacy Final Rule.

As explained in Unit IV.A.2.b. of this preamble, in the Legacy Final Rule, EPA finalized provisions allowing owners and operators of legacy surface impoundments and CCRMU to defer compliance with the closure performance standard until the CCR permit authority could make a site-specific decision, provided the owner or operator could document that the unit closure met certain conditions. This provision allowed for the permit authority to evaluate site-specific information and determine whether a closure performed before the effective date of the Legacy Final Rule met the appropriate part 257 closure standards. See § 257.101(g). Specifically, the Legacy Final Rule provided that an owner or operator of a legacy CCR surface impoundment or CCRMU need not demonstrate compliance with the closure performance standards in § 257.102(c) or (d) provided they demonstrate that the closure of the CCR unit met specific standards codified in § 257.101(g). These standards are:

(1) The owner or operator of the CCR unit must document that a regulatory authority played an active role in overseeing and approving the closure and any necessary corrective action, pursuant to an enforceable requirement. This includes a State or Federal permit, an administrative order, or consent order issued after 2015 under CERCLA or by an EPA-approved RCRA State program.

(2) The owner or operator of the CCR unit must document that the regulatory authority required or conducted a site-specific risk assessment prior to (or as part of) approving the closure and any necessary corrective action.

(3) The owner or operator of the CCR unit must document that it installed a groundwater monitoring system and performed groundwater monitoring that meets all of the following:

(i) Was capable of accurately representing background water quality;

(ii) Was capable of accurately representing the quality of water passing the waste boundary;

(iii) Was capable of detecting contamination in the uppermost aquifer; and

(iv) Monitored all potential contaminant pathways.

(4) Must document that the closed unit meets either:

(i) The performance standard in § 257.60; or

(ii) The performance standard in § 257.102(d)(2)(i).

(5) The owner or operator must also include a certification statement as to the veracity of the information.

These standards are intended to ensure protectiveness at least until the time a permit authority could evaluate the closure on a site-specific basis to determine if the closure is as protective as those conducted in accordance with § 257.102. The existing provisions require the owner or operator to submit a permit application to the permit authority with sufficient information, including groundwater data, to demonstrate the applicable closure standards had been met. Under the current regulations, the permit authority will then review the information to determine whether the ''equivalency'' of the closure has been successfully demonstrated. If EPA or a Participating State Director determines that the closure has met the appropriate part 257 closure standard, the permit authority will issue a permit to require compliance with applicable post-closure requirements. If the permit authority determines that the closure does not meet the applicable part 257 standards, the owner or operator will be required to submit a complete permit application and obtain a permit that contains the specific requirements necessary for the unit to achieve compliance with the closure requirements at § 257.102.

As discussed in Unit IV.A.2.b. of this preamble, during the Legacy Rulemaking, EPA received public comment arguing that state programs had become significantly more robust over the past couple of decades, specifically, since 2015 when EPA last conducted a review of state programs. Since publication, several owners and operators of CCR units have provided EPA with additional information they believe demonstrates the adequacy of CCR unit closures performed under the oversight of other regulatory authorities (*e.g.,* state programs). See Unit IV.A.2.b. for more information and examples of information provided by industry.

If the CCRMU provisions are not rescinded, EPA intends to maintain the general procedures in the existing regulations, whereby owners and operators of CCRMU may defer compliance with the CCR unit closure standards until a site-specific decision is made by the permit authority on the equivalence of the previously conducted closures. However, based on the information and rationale summarized in Unit IV.A.2.b. of this preamble, EPA is soliciting comment on extending the expanded legacy CCR surface impoundment deferral criteria, as described in Unit IV.A.2.b. of this preamble to CCRMU. Specifically, EPA is proposing to remove: (1) The detailed technical requirements for a groundwater monitoring system, (2) The requirement that a facility document that the CCRMU currently meets either the location standard in § 257.60 or the dewatering standard in § 257.102(d)(1)(i), and (3) The requirement that the regulatory authority conducted a site-specific risk assessment. Under this approach, the owner or operator would need to document that a regulatory authority played an active role in overseeing and approving the closure and any necessary corrective action, pursuant to an enforceable requirement issued on or after October 19, 2015, a groundwater monitoring system was installed, and groundwater monitoring was performed. The owner or operator would need to also provide the same certification as to the veracity of the documentation currently required under § 257.101(g)(5).

EPA anticipates that this option would lead to an increase in the number of CCRMU eligible for deferral. As a result, fewer CCRMU will be required to undertake additional closure activities before the CCR permit authority determines that such actions are indeed necessary. It is worth noting that all CCRMU eligible for the deferral would still, at the time of permitting, be required to submit a permit application with sufficient information, including groundwater data, to demonstrate the applicable closure standards had been met. The CCR permit authority would then make a final determination as to whether the previously conducted closure achieved the performance standards established in the Federal CCR regulations.

The alternative would ensure that previous decisions made by state or federal regulators remain unaffected until the CCR permitting program can conduct site-specific evaluations. Additionally, since most of these CCRMU have been in place for decades, delaying potential compliance with the federal closure requirements for a comparatively short time until a permit authority evaluates the completed closure is unlikely to dramatically change the environmental conditions or risks at these facilities.

Therefore, EPA is soliciting comment on the option to allow owners or operators of CCRMU that have completed a closure prior to November 8, 2024, where a regulatory authority played an active role in overseeing and approving the closure and any necessary corrective action, pursuant to an enforceable requirement issued on or after October 19, 2015; a groundwater monitoring system has been installed;

and groundwater monitoring has been performed to document they meet the criteria in an owner-or-operator certified report. If EPA finalizes this option, the required documentation will have a deadline of no later than six months after the effective date of the final rule, if finalized, consistent with the compliance timeframe for the original deferral certification at § 257.101(g). EPA expects this will provide ample time for the owners and operators to prepare the necessary documentation.

If EPA were to finalize this approach, EPA would apply the same deferral criteria to CCRMU as is proposed in Unit IV.A.2.b. for legacy CCR surface impoundments. The process for the CCR permitting program to make the ''equivalence'' determination or establish additional requirements for the CCRMU would remain unchanged.

Additionally, for the reasons described in Unit IV.A.2.b., EPA requests comment on the adequacy of the record for the alternative option upon which EPA is soliciting comment and, to the extent any gaps are identified, requests suggestions for sources of additional information. EPA specifically requests detailed information regarding state CCR programs as well as other relevant regulatory programs at the points in time that may have overseen CCRMU closures. For example, EPA encourages commenters to submit specific case studies or examples where state or other regulatory authority decisions have been effective or ineffective in ensuring protective closures. Additionally, EPA seeks empirical data or studies that compare the effectiveness of state and federal CCR closure requirements or information describing specific elements of state regulatory frameworks that may differ from federal requirements and how these differences impact closure outcomes. EPA will consider such information submitted as it develops the final action.

vi. Removing ''Other Active Facilities'' From the Regulated Universe

EPA is soliciting comment on limiting the applicability of the CCRMU requirements to facilities that meet the definition of an ''active facility'' and those with a legacy CCR surface impoundment.

In the preamble to the Legacy Final Rule, EPA explained its decision to extend regulation to certain other facilities currently generating power for the electrical grid that only have CCRMU onsite. (89 FR 39053). EPA explained that it was concerned that CCRMU (*e.g.,* inactive CCR landfills, closed CCR landfills, or closed CCR surface impoundments) are located at these facilities. The preamble described these facilities as ''other active facilities'' and defined them as those that: (1) On or after October 19, 2015, were producing electricity for the grid; (2) Had ceased placement of CCR in their onsite CCR units before the effective date of the 2015 CCR Rule (October 19, 2015); and (3) Had no inactive CCR surface impoundments. After promulgation of the Legacy Final Rule, EPA received several questions regarding the scope of the active facilities covered under § 257.50(d). On January 16, 2025, in response to these questions, EPA issued a direct final rule and companion proposed rule to define and clarify the scope of the intended ''other active facility'' universe (90 FR 4635 and 90 FR 4707). In the direct final rule, EPA acknowledged that as currently written the regulation could result in the inclusion of electric utilities or independent power producers that have not placed CCR onsite or operated an onsite coal-fired electric generating unit (EGU). Both the Legacy Final Rule preamble and the January 2025 direct final rule clearly stated this was never EPA's intent. Rather EPA intended the CCRMU regulations to only apply to facilities with a regulated CCR unit and to the small subset of active facilities described in the Legacy Final Rule preamble. Indeed, EPA specifically declined requests to extend coverage more broadly. See 89 FR 39053–39054. In response to adverse comment, EPA withdrew the direct final rule on March 14, 2025.

Several commenters on the direct final rule and companion proposal expressed greater confusion over EPA's attempt to clarify the provision. A few commenters expressed the opinion that the clarification went beyond the intended scope of the Legacy Final Rule and was overly broad. While others made comments to suggest the scope of ''other active facility'' was no different than the scope of ''active facility''. In light of the discussion in Unit III.D., the persistent confusion regarding the scope of the intended ''other active facility'' universe, and EPA's inability to clearly articulate the intended scope, EPA is soliciting comment on limiting applicability of the CCRMU requirements to facilities that meet the definition of ''active facility or active electric utilities or independent power producers'' and those inactive facilities with a legacy CCR surface impoundment (*i.e.,* those facilities with a regulated CCR unit onsite).

vii. New Threshold for CCRMU

In the Legacy Final Rule, EPA deferred decisions about the management of CCRMU between one and 1,000 tons to permitting and exempted placement less than one ton from further consideration. This framework was an outgrowth of the 2024 Risk Assessment, which identified potential for groundwater impacts at relatively small tonnages, but was unable to reliably identify a discrete point at which risks would consistently fall below levels of concern. This uncertainty was further compounded by the potential for discrete fills to be located in close proximity to other fills and disposal units, resulting in a larger effective mass. The promulgated national thresholds were intended to address these uncertainties while ensuring no reasonable probability of adverse effects to health and the environment.

As discussed in Unit IV.A.3., several members of industry critiqued the existing CCRMU deferral threshold and requested that EPA increase the threshold from 1,000 tons to an alternative quantity associated with acceptable beneficial use or to risk-based criteria for stability, groundwater, and dust. For example, CCIG said the one-ton threshold for identification of CCRMU in the FER should be increased as one ton of CCR amounts to what could fit in the back of a small pickup truck or a single front-end loader bucket. The organization stated there is no evidence that CCR in such a low amount poses a risk and imposing the regulatory burdens for such small amounts is thus not justified. Furthermore, as discussed previously in Unit III.D., EPA acknowledges that the high-end risks evaluated in the 2024 Risk Assessment may not manifest at every site and concurs that risks associated with individual CCRMU fills may be lower. There is potential for even greater variability among fills compared to disposal units (*e.g.,* thickness, area). The Agency has previously recognized that there are limits to the utility of a single mass-based thresholds.[27] A national limit based on any single variable has the potential to become overly restrictive, as that limit must simultaneously account for the effects of any other variables that could influence risk (*e.g.,* leachate concentration). Conversely, attempting to simultaneously control for multiple variables can quickly yield limits that are unwieldly to define and implement. As a result, to date, EPA has been

[27] 89 FR 38950, May 8, 2024.

unable to identify a less onerous threshold that is also reliably protective.

EPA is soliciting comment on alternate thresholds for exemption of CCRMU fills from regulation that would be applicable nationwide. EPA is specifically requesting comment on specific limits that could be established, numerical or otherwise, as well as the basis for why there would be no reasonable probability these placements would have an adverse effect on human health or the environment if no further action is taken to monitor or maintain these fills.

4. Initial Timeframes for Background Sampling for New CCR Landfills, CCR Surface Impoundments, and any Lateral Expansions

EPA is proposing to amend the existing regulations to clarify that the deadline by which new CCR landfills and CCR surface impoundments (which includes any lateral expansions) must comply with 40 CFR 257.90 through 257.94 is the deadline in § 257.90(b)(2) (''prior to initial receipt of CCR'') rather than the deadline in § 257.94(b). This proposed revision is consistent with EPA's original intent, as described in the final rule preamble. 80 FR 21408. This six-month deadline is also in tension with the requirement to obtain eight statistically independent samples, as six months can be too short a time to complete this task.

The current regulations contain an error. The first sentence of § 257.90(b)(2) provides that ''Prior to initial receipt of CCR by the CCR unit, the owner or operator must be in compliance with the groundwater monitoring requirements specified in paragraph (b)(1)(i) and (ii) of this section.'' The second sentence requires the owner or operator of the CCR unit to initiate the detection monitoring program ''to include obtaining a minimum of eight independent samples for each background well as required by § 257.94(b).'' Unfortunately, § 257.94(b) specifies that ''a minimum of eight independent samples for each background well must be collected and analyzed for the constituents listed in appendices III and IV to this part *during the first six months of sampling.*'' (emphasis added). The requirement that background sampling and analysis be conducted during the first six months was an error; as evidenced by the explanation in the 2015 final rule preamble, EPA did not intend to require anything more specific than that these tasks be completed prior to the initial receipt of CCR.

In the preamble to the 2015 CCR Rule, EPA provided an overview of all the new groundwater monitoring deadlines established in the rule. EPA specifically explained that ''new CCR units must comply with §§ 257.90 through 257.93, including the requirement under § 257.94(b) to collect and analyze eight independent samples from each well for the parameters listed in appendix III and IV to this part to determine background levels for all appendix III and IV constituents, *before commencing operation.*'' 80 FR 21408 (emphasis added). Notably, EPA never mentioned a requirement that the background sampling and analysis be conducted ''during the first six months of sampling,'' or explained the reason that these activities specifically need to be completed within the first six months, rather than before the facility begins using the new unit.

Moreover, the six-month deadline may not provide enough time to collect eight statistically independent samples. As discussed in the Legacy Final Rule regarding the compliance deadline for legacy CCR surface impoundments to comply with the groundwater monitoring requirements, EPA acknowledged that collecting eight statistically independent samples can be impacted by third-party availability and laboratory backlogs. Furthermore, EPA acknowledged the adverse impact of too frequent sampling on the validity of statistical analysis, the need to account for seasonal variability in groundwater flow, groundwater levels, and constituent concentrations and that providing insufficient time for the collection of baseline samples would likely result in ineffective groundwater monitoring programs that may fail to alert facilities to groundwater contamination coming from CCR units. 89 FR 39019.

Accordingly, EPA is proposing to revise § 257.90(b) to state that, ''In addition, prior to initial receipt of CCR, the owner or operator of the CCR unit must collect and analyze eight independent samples from each well for the parameters listed in appendix III and IV to this part to determine background levels for all appendix III and IV constituents, and initiate the detection monitoring program in § 257.94.'' EPA is further proposing to revise § 257.94(b) to reference § 257.90(b)(2).

5. Slope Stability Requirements for Vegetation

In 2015, EPA promulgated requirements for all CCR surface impoundments (except incised units) to install and maintain adequate slope protection. Specifically, the final rule required facilities to document that ''the CCR unit has been designed, constructed, operated, and maintained with . . . adequate slope protection to protect against surface erosion, wave action, and adverse effects of sudden drawdown.'' 40 CFR 257.73(d)(1)(ii); 257.74(d)(1)(ii). In developing the 2015 CCR Rule, EPA relied on existing dam safety technical literature, which universally recommends that vegetative cover not be permitted to root too deeply beneath the surface of the slope. Deep roots can potentially introduce internal embankment issues such as pathways for water intrusion and piping, precipitating erosion internally, or uprooting which is the disruption of the embankment due to the sudden uplifting of the root system. Based on these data, the final rule also required a vegetative cover height limitation to prevent the establishment of rooted vegetation, such as a tree, a bush, or a shrubbery, on the CCR surface impoundment slope (80 FR 21476, April 17, 2015), and to prevent the obscuring of the slope during routine and emergency inspection. Based on the available information, EPA concluded that a vegetative cover height limitation of six inches above the face of the embankment would prevent woody vegetation, while allowing inspectors adequate observation of the slope.

After the 2015 final rule was published, the six-inch vegetative height limitation was challenged on the ground that EPA had failed to provide adequate notice of this requirement in the proposal. See, *USWAG et al.* v. *EPA,* No. 15–1219 (D.C. Cir. 2015). In response, EPA agreed to reconsider this provision. This claim was settled, and the court vacated the requirement that vegetation on all slopes ''not . . . exceed a height of 6 inches above the slope of the dike'' within §§ 257.73(a)(4), 257.73(d)(1)(iv), 257.74(a)(4), and 257.74(d)(1)(iv).

In 2018, EPA proposed to expand on the existing general performance standard with more specific slope protection requirements for existing and new surface impoundments. EPA also proposed to establish distinct definitions and height limitations for grassy vegetation and woody vegetation to replace the vacated requirement. See 83 FR 11589–11592. EPA never finalized this requirement and the proposal remains pending. EPA is now soliciting comment on whether these proposed performance standards would still be necessary and useful or whether EPA should instead rely on a permit authority to establish the necessary terms and conditions to ensure slope protection.

B. New Compliance Pathway Allowing Site-Specific Considerations During Permitting

The majority of state and industry commenters on the proposal that resulted in the 2015 CCR rule preferred regulations that would allow site-specific approaches to establishing standards. (See 80 FR 21331–21234) Commenters argued that the prescriptive one-size-fits-all approach was overly stringent and inflexible and had the potential to greatly disrupt implementation of a state's regulatory programs, which have been tailored to provide for site specific conditions and situations. Moreover, commenters argued that because of the many state regulatory programs addressing CCR disposal, there would be many instances where state requirements could be in conflict with, in addition to, or separate from the federal requirements and it was unclear how these differences would be resolved.

Many commenters simply argued that a permitting program was the only viable approach for the regulation of CCR. Commenters argued that states should be allowed to enforce compliance through a traditional permitting system, and that solid waste operating permits are critical to ensuring coal ash disposal facilities design, construct, operate and close their waste facilities safely. Commenters argued that permits are important because they can dictate the use of specific operating practices and control technologies that may be essential for minimizing releases. Permits also provide an important enforcement vehicle, as well as a process by which the public can be informed and participate in the siting, operation and closure of the waste disposal unit.

In the 2015 CCR final rule, EPA expressed appreciation for commenters' attempts to craft alternative approaches to address the limitations in the proposed self-implementing subtitle D option and recognized that this regulatory structure gives rise to legitimate concerns about the potential for duplicative or conflicting state and federal regulatory systems. However, as EPA noted at the time, the Agency did not have the authority to pursue such alternative approaches.

However, the subsequent passage of the WIIN Act changed the landscape of EPA's authority. As explained in Units III.A. and III.D. of this preamble, the 2016 WIIN Act provided EPA new tools to pursue its regulatory goals. Namely, the WIIN Act empowered EPA to authorize states to implement the federal CCR rule through an EPA-approved permit program, and to act as the CCR permit authority, once a permit program is established, in Indian Country and in nonparticipating states. With regulatory oversight by a permit authority and the interpretation of section 4004(a) as requiring a baseline standard of protection without mandating uniformity in the manner of attainment, EPA is justified in moving away from the ''one-size-fits-all'' regulatory approach previously necessitated by the self-implementing rule structure and creating another pathway to compliance that incorporates regulatory provisions that allow permit authorities the ability to approve a different combination of technical standards for the owner or operator to comply with while still attaining the RCRA standard of ''no reasonable probability of adverse impacts''. These permit authority-approved flexibilities are necessary to accommodate site-specific conditions and are in line with EPA's interpretations of section 4004(a) to allow for non-uniformity in attainment of the statutory directive to prevent ''reasonable probabilities of adverse effects to health and the environment'' from the disposal of CCR.

When using the term permit flexibilities, EPA intends to convey the concept that the permit authority, whether a participating State or EPA, will be able to adjust or adapt certain technical requirements based on site-specific facts and risks. Such adjustments will still need to remain within the boundaries set by the regulatory standard and must support a determination by the permit authority that compliance with the permit terms will ''not result in a reasonable probability of adverse impacts to human health or the environment.''

While EPA is proposing and soliciting comment on several regulatory flexibilities for permit authorities to elect to apply to eligible owners or operators of CCR units, owners or operators of CCR units must still comply with all requirements in the existing regulations for which the permit authority does not approve flexibility for, in accordance with the proposed provisions below, this includes all recordkeeping, notification, and internet posting requirements in §§ 257.105 through 257.107. The new compliance pathway set forth in this proposed rule will take effect only once a final CCR permit that establishes the final technical requirements for the CCR unit is in effect. Until such time, the Agency will assess compliance with the existing applicable regulatory requirements and seek such compliance through appropriate enforcement action where necessary.

To be clear, the site-specific considerations in the new compliance pathway will apply to any facility only after a permit application is properly submitted, the permit authority determines the appropriate permit provisions, and a final CCR permit incorporating those provisions is in effect. For States with an EPA-approved CCR permit program and who wish to adopt the new compliance pathway (*i.e.,* permit flexibilities), the State will have to submit an updated application that includes the provisions in this rule and the Agency will have to grant updated approval of that State program. The State will then have to initiate the permitting process and then properly consider the applicability and appropriateness of any flexibility in this rule. For States without an approved program but are planning to submit a program application, that application must be approved, and the State then will consider the flexibilities through a permit process. For States that do not seek program approval, EPA will have to finalize the regulations establishing the Federal permit program and then consider the flexibilities in the context of facility specific permit decisions.

1. Groundwater Monitoring and Corrective Action Requirements

EPA is proposing to codify permit flexibilities for units under a federal or participating-state CCR permit. These revisions would allow the permit authority to establish: (1) An alternative point of compliance for the groundwater monitoring wells required to comply with the federal CCR groundwater monitoring and corrective action requirements in 40 CFR part 257, and (2) Alternative groundwater protection standards for constituents for which a federal MCL has not been established under the regulations referenced at § 257.95(h)(1) (*i.e.,* §§ 141.62 and 141.66).

a. Point of Compliance for Groundwater Monitoring and Corrective Action

EPA is proposing several revisions to allow the Participating State Director or EPA, when serving as the permit authority, to establish alternative points of compliance of no more than 150 meters from the waste boundary for locating groundwater monitoring wells and demonstrating compliance with the groundwater monitoring and corrective action standards in 40 CFR part 257. Additionally, EPA is soliciting comments on an alternative that would, under specific circumstances, allow the permit authority to establish points of

compliance for groundwater monitoring and corrective action no further from the unit than the facility boundary, while exploring ways in which this approach could be implemented in a manner that ensures early detection (*e.g.,* by installing additional wells) and minimizes groundwater contamination.

The existing groundwater monitoring and corrective action regulations require the installation of a system of monitoring wells and specify procedures for sampling these wells, along with methods for analyzing the collected groundwater data to detect the presence of hazardous constituents (*e.g.,* toxic metals) and other monitoring parameters (*e.g.,* pH, total dissolved solids) released from the units. These regulations establish a comprehensive groundwater monitoring program comprised of detection monitoring, assessment monitoring, and corrective action. Once a groundwater monitoring system and groundwater monitoring program have been established for a CCR unit, the owner or operator must conduct groundwater monitoring and, if the monitoring reveals an exceedance of a groundwater protection standard at a statistically significant level for any of the constituents listed in appendix IV, must initiate corrective action.

Specifically, the groundwater monitoring systems regulations in § 257.91 establish a general performance standard requiring that all CCR units have a groundwater monitoring system consisting of a sufficient number of wells, installed at appropriate locations and depths, to collect groundwater samples from the uppermost aquifer. This system must accurately represent both the quality of background groundwater and the quality of groundwater passing the waste boundary of the CCR unit. Its primary objective is to detect a release early, enabling timely corrective action before sensitive receptors are significantly affected. To achieve this, the regulations require that downgradient wells be placed at the waste boundary, which is defined as the vertical surface located at the hydraulically downgradient limit (*i.e.,* the edge) of the CCR unit, extending down into the uppermost aquifer. These downgradient wells are used to monitor for any contaminants leaking or seeping into the groundwater.

Additionally, under the existing regulations in § 257.91, each CCR unit must have its own groundwater monitoring system, unless the owner or operator chooses to install a multiunit groundwater monitoring system. The existing rule specifies that if a multiunit system is installed, it must be equally capable of detecting background and groundwater contamination at the waste boundary as an individual monitoring system, based on the consideration of several factors, including the number, spacing, and orientation of the CCR units, the hydrogeologic setting, the site history and the engineering design of the CCR units.

There are two main reasons why EPA is proposing increased flexibility in establishing the location of the groundwater monitoring systems and ensuring compliance with the groundwater and corrective action standards in 40 CFR part 257.

First, as discussed in Units III.D. and IV.B. of this preamble, the WIIN Act provided EPA with new tools, including critical oversight mechanisms while preserving the interpretation of section 4004(a) as requiring a baseline standard of protection without mandating uniformity in how it is achieved. Furthermore, as explained in Unit III.D. of this preamble, EPA maintains broad discretion to adopt performance-based criteria based on a record of protectiveness across various state instances. In developing the 2015 CCR Rule, EPA promulgated performance standards that provided only a limited degree of flexibility in line with a self-implementing regulatory structure to ensure that requested modifications are protective and technically appropriate.[28] EPA largely based the proposed groundwater monitoring requirements on those for MSWLFs in the 40 CFR part 258 criteria, albeit with certain modifications to tailor the requirements to the self-implementing CCR regulatory structure. In particular, EPA did not include some of the alternatives available in part 258, which establish alternative standards allowing a state, as part of its permit program, to tailor the default requirements to account for site-specific conditions at the individual facility.[29] Thus, EPA adapted the proposed requirements for CCR units by incorporating certain provisions from the 40 CFR part 265 interim status regulations, which operate in the absence of a permit, and by including, in several of the proposed requirements, a certification by an independent registered professional engineer that the rule's requirements had been met.[30]

With the new tools provided by the enactment of the WIIN Act, EPA now has the authority to issue permits, enforce the regulations, and approve state CCR permit programs; consequently, there are now regulatory-based oversight mechanisms to allow for alternative compliance pathways, such as an approved alternative boundary, while ensuring the actions pose no reasonable probability of adverse effects to health and the environment. Prior to the WIIN Act, the only enforcement mechanism was through filing a citizen suit under RCRA 7002 which would have been initially based on the information available on the facility's website.

Second, the Agency has received feedback from industry indicating that precisely defining the unit boundary of some units, particularly older legacy surface impoundments, can be challenging. In some instances, waste boundaries were established decades ago based on natural features that may now be obscured or have changed over time. According to industry, depending on the circumstances, location and physical characteristics of a unit, it may be beneficial to move the point of compliance downgradient to a distance where uncertainties along the waste boundary are minimized, including ensuring that monitoring wells are not inadvertently placed into the waste.

Furthermore, EPA is aware that, for certain facilities, the waste boundary may not always serve as the most effective point of compliance for groundwater monitoring. Accessibility issues may arise due to physical obstacles such as gas and power lines or site design constraints such as run-off controls and liner anchors. Additionally, perched water tables or other hydrogeologic phenomena may cause leachate from a CCR unit to travel laterally for a significant distance before reaching the uppermost aquifer. In such cases, a monitoring system installed solely at the waste boundary could potentially miss all or significant portions of a contaminant plume.

In considering the development of this proposal, EPA reviewed many state CCR and municipal solid waste regulatory programs, such as Florida, Illinois, North Dakota, Tennessee, North Carolina, and Wyoming, and identified several that have allowed monitoring points of compliance beyond the waste boundary. This element of a groundwater monitoring system is not surprising as a monitoring well placed

[28] The 2015 CCR Rule was designed to be self-implementing, meaning that the requirements allowed facilities to comply with the regulations without the need to interact with a regulatory authority.

[29] In both the proposal and the final 2015 CCR Rule, EPA indicated that in the absence of a mandated state oversight mechanism to ensure that suggested modifications are technically appropriate, these kinds of provisions could operate at the expense of safety and environmental protection. 80 FR 21398, April 17, 2015.

[30] 80 FR 21396, April 17, 2015.

near rather than at the boundary of a waste unit can detect a release from a broader area. When developing the self-implementing CCR rules, EPA determined that using the waste boundary location and qualified engineer certification represented a standard that was implementable without regulatory oversight or involvement. Now with the authority to both issue permits and enforce the technical standards and the ability of EPA to allow for non-uniformity in attaining the RCRA protectiveness standard, EPA is proposing a second approach to allow for the permit authority to adjust the technical standards (such as the alternative point of compliance for groundwater monitoring and corrective action).

Recognizing these site-specific situations and considering the additional authorities provided by the WIIN Act of 2016, EPA is proposing a regulatory amendment that would allow the Participating State Director or EPA, when serving as the permit authority, to establish alternative points of compliance that are no more than 150 meters from the waste boundary and located on the facility, only if the Director finds, based on specific criteria and a demonstration by the owner or operator, that the alternative point of compliance, together with location characteristics, will (1) Not materially delay detection of either a statistically significant increase over background levels for a constituent in appendix III or statistically significant levels above the groundwater protection standard of any of the constituents listed in appendix IV from that CCR unit and (2) Minimize the migration of any of those constituents from that CCR unit to the uppermost aquifer during the active life of the CCR unit and the post-closure care period based on specific criteria. Authorizing a permit authority to establish an alternate point of compliance within 150-meters of a CCR unit aligns with current regulations governing very small quantity generators (40 CFR part 257, subpart B, Disposal Standards for the Receipt of Very Small Quantity Generator Wastes at Non-Municipal Non-Hazardous Waste Disposal Units) and MSWLFs (40 CFR part 258, Criteria for Municipal Solid Waste Landfills). Additionally, while requiring a monitoring well at the waste boundary works well within a self-implementing program with no permit authority oversight, it results in a very limited zone of detection for each well. A single monitoring well placed at the very edge of the CCR unit is only capable of detecting a release from a small portion of the CCR unit and any release would need to be in close proximity to the well. Alternately, a well placed further away from the edge of the CCR unit can be capable of detecting releases from a larger portion of the CCR unit when the release migrates as it expands horizontally (*i.e.* spreads out). At the other end of the spectrum, placing a well a significant distance (*e.g.,* one mile) downgradient will be unlikely to detect many releases as the plume spreads out and its impacts are diluted over space. Consequently, having a limit is essential for avoiding the effects of delayed detection such as preventing large expanses of contamination, costly cleanups, and potential new Superfund sites. Delayed detection of a release or leak could increase the likelihood of contamination spreading over a larger area. When there is a significant distance between the source of contamination (*e.g.,* the CCR unit) and the point of detection (*e.g.,* monitoring wells), more land may become contaminated before the issue is identified. In extreme cases, large-scale contamination could result in the site being designated as a Superfund site.

By setting a maximum distance limit, EPA aims to enhance regulatory flexibility for CCR unit owners and operators, based on established criteria while still having a system that will timely identify a release. These criteria are designed to help the permit authority determine appropriate groundwater monitoring points of compliance (*i.e.,* groundwater monitoring well locations) to accommodate site-specific conditions while maintaining protection against adverse effects to health and the environment. The criteria are as follows:

- Consideration of the facility's hydrogeological features and surrounding land, including aquifer attenuation and dilution characteristics;
- Adherence to location restrictions as specified in §§ 257.61 through 257.64;
- Compliance with corrective action procedures outlined in §§ 257.96 through 257.98;
- Assessment of the volume and physical and chemical characteristics of the leachate;
- Evaluation of the quantity, quality, and direction of groundwater flow underlying the facility;
- Consideration of the proximity and withdrawal rates of groundwater users;
- Availability of alternative drinking water sources;
- Analysis of existing groundwater quality, including other sources of contamination and their cumulative impacts; and
- Evaluation of public health, safety, and welfare effects.

In developing this proposal, EPA reviewed various EPA regulations that authorize a permit authority to establish an alternative point of compliance. Historically, EPA has recognized that fixed compliance boundaries may not be universally applicable due to the diverse geological and operational characteristics of waste management facilities. For example, under the framework of 40 CFR part 257, subpart A (Criteria for Classification of Solid Waste Disposal Facilities and Practices), States with approved Solid Waste Management plans may establish an alternative boundary if, after thorough examination of the site-specific situation, a finding is made that an adjustment of the boundary would not result in contamination of groundwater needed or used for human consumption.

In the preamble to the 1979 final rule establishing this regulation, EPA evaluated various options for the point of compliance (*i.e.,* at what point in the aquifer does contamination from the facility or practice constitute non-compliance), including use of other distance specifications in lieu of the property boundary in order to try to respond to reviewers' concerns about the potential for contamination of large expanses of groundwater.[31] The proposal requested comments on alternative distances and the rationale for specification of such distances. Various distances were suggested in the public comments to the proposed rule; however, no basis was presented for selection of one distance over another at that time. While there was a rationale for limiting migration of contamination to within the designated waste disposal areas to protect neighbors who may use the untreated groundwater as drinking water supply, there was no rationale for limiting migration to any particular distance. In evaluating this issue EPA recognized that the point of compliance must be established at a point at which it is feasible to monitor. Ideally, the best way to protect present and future users of an aquifer is to ensure that drinking water standards are not violated anywhere in the aquifer, including the area immediately under the waste material. However, in the 1979 preamble EPA indicated that any attempt to monitor directly under the waste would present two major difficulties. First, an environmental risk may be posed by the installation of monitoring wells through the waste

[31] 44 FR 53447, September 13, 1979.

material or in areas where waste will be deposited. EPA was concerned that such wells may become conduits for direct flow of waste constituents (*e.g.,* leachate) into the aquifer. EPA also stated that, while it may be theoretically possible to construct a well that doesn't allow such infiltration, the technology for this had not been sufficiently demonstrated that EPA would want to encourage this practice on a national scale. Secondly, the immediate proximity of waste to the well, in conjunction with the ''conduit'' phenomenon, would undermine the utility of the monitoring well. Samples extracted would not be likely to be representative of the aquifer; rather, they would be likely to contain concentrated leachate, overestimating the contamination of the aquifer.

EPA also examined the possibility of other fixed distances from the center of the waste area.[32] This approach was rejected because it was impossible to establish a uniform distance that would be meaningful for the vast number of situations to which this standard applied. In some instances, a fixed distance would mean that monitoring wells would still be placed through waste material. A longer distance might, in some cases, put the point of compliance beyond the area of likely placement of drinking water wells.

After examining all these approaches, EPA concluded that the solid waste boundary was the appropriate point for application of the standard. With that as the point of compliance, groundwater contamination would be detected as soon as possible without presenting the risks inherent in monitoring under the waste. Likewise, it avoided the problem of guessing the distance at which a potentially affected party is likely to put a drinking water well.

However, in the 1979 final rule, EPA recognized the need for some flexibility to allow States with approved solid waste management plans to establish an alternative boundary if, after a thorough examination of the site-specific situation, it is determined that adjusting the boundary would not result in contamination of groundwater needed or used for human consumption. Accordingly, the existing Solid Waste Disposal regulations in § 257.3–4(b)(2) permit an approved State to set an alternative boundary for a facility, replacing the solid waste boundary, only if it is found that this change will not result in the contamination of groundwater intended for human consumption. This determination must be based on an analysis and consideration of factors outlined in § 257.3–4(b), including: (1) The hydrogeological characteristics of the facility and surrounding land, (2) The volume and physical and chemical characteristics of the leachate; (3) The quantity, quality, and direction of flow of groundwater underlying the facility; (4) The proximity and withdrawal rates of ground-water users; and (5) Public health, safety, and welfare effects.

The Agency also considered moving the point of compliance in 1991 when revisions were made to the Criteria for Classification of Solid Waste Disposal Facilities and Practices set forth in 40 CFR part 257, in response to the 1984 Hazardous and Solid Waste Amendments to RCRA. This action also introduced a new part 258, which established revised minimum federal criteria for MSWLFs, including requirements for groundwater monitoring.

In the 1991 final rule, EPA set a maximum distance from the MSWLF for establishing the alternative boundary or relevant point of compliance. During the public comment period of this rule, the Agency received a number of comments regarding the alternative boundary designation, which would allow groundwater monitoring wells to be placed at distances up to 150 meters from the waste management unit boundary.[33] Several commenters argued that the 150-meter boundary was overly conservative and inflexible. Several commenters suggested other alternative boundary locations including: the property boundary and unlimited locations, based on the risks posed by the facility. These arguments were countered, however, by other commenters who expressed concern that the allowable distance was excessive, would simply allow dilution of contamination, and would delay detection of contamination.

In the final rule, the Agency ultimately disagreed with commenters who argued that the proposed approach was unnecessarily stringent. In developing the proposed rule, EPA considered setting the alternative boundary at the property boundary or not stipulating any limit. These options obviously would provide the greatest flexibility in addressing the practicable capability of owners and operators of MSWLFs. However, due to the size of some MSWLF facilities, EPA was concerned that large expanses of groundwater could be contaminated before detection. Thus, the Agency believed it was essential to set a maximum distance limit for the alternative boundary (referred to in the MSWLF rule as the ''relevant point of compliance'') that would limit groundwater contamination yet still provide some flexibility to owners and operators of MSWLFs. The Agency also specified in the final rule that the alternative boundary (or the relevant point of compliance) must be located on property owned by the owner or operator to prevent contamination off site. The Agency believed this approach provided sufficient flexibility, while at the same time, limiting the area of contamination.

The existing MSWLF regulations in part 258 also specify that, in determining the point of compliance, the Director of an approved state shall consider several factors, including: (1) The hydrogeologic characteristics of the facility and surrounding land; (2) The volume and physical and chemical characteristics of the leachate; (3) The quantity, quality, and direction, of flow of groundwater; (4) The proximity and withdrawal rate of the groundwater users; (5) The availability of alternative drinking water supplies; and (6) The existing quality of the groundwater, including other sources of contamination and their cumulative impacts on the groundwater, and whether the groundwater is currently used or reasonably expected to be used for drinking water. Under part 258, subpart E, multiunit monitoring systems must consist of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples from the uppermost aquifer that represent the quality of background groundwater and the quality of groundwater passing the relevant point of compliance. Section 258.51(a)(2) requires that the downgradient monitoring system be installed at the relevant point of compliance (not to exceed 150 meters from the unit on land owned by the owner or operator) designated by an approved State. In determining where to place monitoring wells in a multiunit facility in compliance with § 258.51(a)(2), the approved State draws an imaginary line around all units at the facility. This line would constitute the relevant point of compliance for a multiunit system. Therefore, wells must be placed at this imaginary line. Of course, the approved State must first make the determination that it is appropriate and protective to use a multiunit monitoring system based on the factors described above.

Therefore, considering the information above, the ability of EPA to allow for non-uniformity in attaining the RCRA protectiveness standard, and the new tools provided to EPA by the

[32] 44 FR 53448, September 13, 1979.

[33] 56 FR 51068, October 9, 1991.

WIIN Act, EPA is proposing to allow the permit authority to establish alternative points of compliance for groundwater monitoring and corrective action of no more than 150 meters from the waste boundary, provided certain criteria are met. This approach is also similar to current regulations governing other solid waste disposal facilities.[34]

In developing this proposal, EPA is contending with two main considerations: site-specific flexibility, which would be approved by the permit authority based on criteria, and the need for early detection. Therefore, establishing a maximum distance from the waste boundary is essential to avoid delaying detection. However, EPA is soliciting comments on what set distance (other than 150 meters) may be most appropriate for CCR units.

Additionally, the Agency solicits comment on an alternative that would allow the permit authority to establish the alternative point of compliance for groundwater monitoring and corrective action no further from the CCR unit than the facility boundary (rather than the 150-meter limit). Specifically, EPA is seeking comments on how the facility-boundary approach could be implemented. In the preamble to the 1979 final rule establishing the § 257.3–4 (Criteria for Classification of Solid Waste Disposal Facilities and Practices) regulations, EPA initially considered setting the point of compliance at the facility property boundary.[35] However, concerns were raised about future property owners potentially using contaminated groundwater as a drinking source, the possibility of large expanses of groundwater contamination if the facility property was extensive, and the potential for owners purchasing additional property to delay corrective action.

Therefore EPA, seeks comments on strategies to prevent potential widespread groundwater contamination and to ensure early detection and timely corrective action in cases where the alternative point of compliance is located further away from the waste boundary, specifically when the facility property is extensive or if units are sold off or parceled before contamination is detected. For example, some state programs also authorize a buffer zone or a ''zone of discharge,'' which allows the facility to defer remediation of groundwater contamination for some period of time, usually until the contaminant plume has migrated to the facility site boundary. Florida, Illinois, North Dakota, and Tennessee are among those states with such a regulatory provision.

Further, EPA is soliciting comment on whether it would be beneficial to allow the permit authority to combine groundwater monitoring and corrective action systems for all types of CCR units into zones (*i.e.,* the equivalent of ''area(s) of concern'' or 'solid waste management area'') for the purpose of groundwater monitoring and corrective action. This flexibility would be especially relevant in situations where the CCR surface impoundment or CCR landfill is situated among CCRMU, a release has occurred, and both the regulated CCR unit and the CCRMU are likely contributors to the release (*i.e.,* commingled releases). EPA specifically requests examples where the permit authority may prefer to combine CCRMU with other types of CCR units, such as CCR surface impoundments, CCR landfills, and legacy CCR surface impoundments, across the facility into a single groundwater monitoring and corrective action zone, essentially creating a facility-wide groundwater monitoring network.

Lastly, EPA solicits comments on whether lateral expansions, new, or replacement CCR units should be ineligible for an alternate point of compliance for groundwater monitoring and corrective action. The Agency believes that owners and operators of these CCR units should be able to account for the presence of structures or obstacles during the planning process and should be able to place monitoring wells at the closest practical distance from the relevant waste boundary. However, this may not be true for existing units that were constructed without considering the need for groundwater monitoring well installation. Therefore, the Agency is requesting comment on whether the flexibility to establish an alternative boundary should be limited to existing CCR units.

b. Groundwater Protection Standards for Corrective Action

EPA is proposing two new provisions at § 257.111. The first provision would allow the permit authority to establish alternative groundwater protection standards, based on specific criteria, for constituents for which a federal MCL has not been established under §§ 141.62 and 141.66 as referenced at § 257.95(h)(1). The second provision would require the permit authority to consider additional factors when establishing alternative groundwater protection standards, including the presence and concentrations of other contaminants in the groundwater.

Under the existing regulations, if groundwater monitoring demonstrates an exceedance of the groundwater protection standards for constituents identified in appendix IV of part 257 above a statistically significant level, corrective action is required, as laid out in §§ 257.96 through 257.98. These requirements apply throughout the active life and any post-closure care period of the CCR unit.

As stated in the preamble to the 2010 CCR Proposed Rule, in EPA's view, the objectives of a groundwater monitoring and corrective action regime, along with the analytical techniques for evaluating groundwater quality, are similar regardless of the specific wastes in a disposal unit or whether the unit is a landfill or surface impoundment. Therefore, EPA largely modeled the 2010 proposed groundwater monitoring and corrective action requirements for CCR landfills and surface impoundments after those for MSWLFs in the 40 CFR part 258 criteria.[36] At the same time, however, EPA was mindful of the differences in the statutory authorities for establishing criteria for CCR landfills and surface impoundments versus MSWLFs and very small quantity generator (VSQG) facilities, and in particular, the possibility that a state may lack a permit program for CCR disposal units. Accordingly, EPA sought to tailor the CCR requirements to account for the self-implementing framework. EPA chose to include requirements for a certification by a qualified professional engineer or, in some cases, hydrologist, in lieu of the state approval mechanisms that are used in the 40 CFR part 258/257, subpart B criteria.

In the 2010 CCR Proposed Rule, EPA included a provision in § 257.95 allowing the owner or operator to establish an alternative groundwater protection standard for constituents for which federal MCLs have not been established under the Safe Drinking Water Act, provided that the alternative groundwater protection standard had been certified by a qualified professional engineer and the state had been notified that the alternative groundwater protection standard was placed in the operating record and on the owner's or operator's publicly accessible internet site. This provision had been adopted from the part 258

[34] Solid waste disposal facilities (40 CFR part 257, subpart A, Classification of Solid Waste Disposal Facilities and Practices), VSQGs (40 CFR part 257, subpart B, Disposal Standards for the Receipt of Very Small Quantity Generator Wastes at Non-Municipal Non-Hazardous Waste Disposal Units) and MSWLFs (40 CFR part 258, Criteria for Municipal Solid Waste Landfills).

[35] 44 FR 53445, September 13, 1979.

[36] 75 FR 35204, June 21, 2010.

regulations. However, it was not finalized in the 2015 CCR Rule because the Agency determined that it was inappropriate for a self-implementing rule, as it was unlikely that a facility would have the scientific expertise necessary to conduct a risk assessment, and it was too susceptible to potential abuse.[37] Additionally, numerous comments were received suggesting that only those constituents with federal MCLs be included in appendix IV because only federal MCLs would be enforceable under a self-implementing rule.

However, as discussed in Units III.A., III.D., and IV.B., now that EPA has the authority to issue permits, enforce the regulations, and review and approve state CCR permit programs, which can serve as oversight mechanisms to evaluate site-specific conditions. Furthermore, EPA maintains broad discretion to adopt performance-based criteria based on a record of protectiveness in various state instances under the interpretation of section 4004(a) as requiring a baseline standard of protection without mandating uniformity in the manner of attaining that baseline standard. Therefore, the Agency is proposing to adopt two provisions. These provisions would allow a permit authority (either the Participating State Director or EPA), to establish alternative groundwater protection standards, based on specific criteria, for constituents for which federal MCLs have not been established under the regulations referenced at § 257.95(h)(1) (*i.e.,* §§ 141.62 and 141.66) and to consider additional factors when establishing these standards. This proposal has one key change from the 2010 CCR Proposed Rule: the proposed language now allows the permit authority to make a determination on whether to allow alternative groundwater protection standards based on a set of criteria and factors, rather than relying solely on certification by a qualified professional certification. The alternative groundwater protection standards would have to be appropriate health-based levels that satisfy the following criteria:

- The level is derived in a manner consistent with Agency guidelines for assessing the health risks of environmental pollutants. For example, 51 FR 34006, Supplementary Guidance for Conducting Health Risk Assessment of Chemical Mixtures,[38] which supplements 51 FR 34014; the Guidelines for Developmental Toxicity Risk Assessment,[39] which amends 51 FR 34028; and the Guidelines for Carcinogen Risk Assessment,[40] which amends 51 FR 33992;
- For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level (due to continuous lifetime exposure) within the 1×10^{-4} to 1×10^{-6} range; and
- For systemic toxicants, the level represents a concentration to which the human population (including sensitive subgroups) could be exposed to on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime. For purposes of this subpart, systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.

In establishing the alternative groundwater protection standards, the permit authority must consider the following:

- The presence and concentrations of other contaminants in the groundwater;
- Exposure threats to sensitive environmental receptors; and
- Other site-specific exposure or potential exposure to groundwater.

EPA solicits comments on the criteria and factors that should be considered when establishing an alternative groundwater protection standard for constituents without established federal MCLs in the regulations referenced at § 257.95(h)(1) (*i.e.,* §§ 141.62 and 141.66). Additionally, EPA seeks input on any different approaches for determining these alternative groundwater protection standards and their merits. Specifically, EPA requests examples of state programs that utilize alternative groundwater protection standards and the methods, authority, and implementation of those programs.

2. Closure and Post-Closure Care Requirements

EPA is proposing to codify permit flexibilities for units undergoing closure or post-closure care under a federal or participating-State CCR permit. These revisions would allow the Participating State Director or EPA, when serving as the permit authority, to assess an owner or operator's closure plan and approve a unit closure that deviates from the existing standards in § 257.102(c) and (d) when the permit authority determines that the planned closure will have no reasonable probability of adverse effects to human health and the environment during the active life of the CCR unit and the post-closure care period. Additionally, EPA is proposing to allow the permit authority to extend closure timeframes for CCR units where CCR is being extracted from the unit for beneficial use during closure. EPA is also soliciting comment on whether to adopt an outstanding proposal from 2018 that would allow a permit authority to establish an alternative post-closure care period under certain conditions. Lastly, EPA is proposing to allow a permit authority to permit the disruption of the cap during the post-closure care period, commonly referred to as ''unzipping'' the cap, to provide access for the extraction of CCR for beneficial use.

a. Closure Method

In the 2015 CCR Rule, EPA finalized closure performance standards for two methods of closure, closure by removal of CCR from the unit and closure with CCR in place. Under § 257.102(c), closure by removal is considered complete when CCR has been removed; any areas affected by the releases from the CCR unit have been removed or decontaminated; and groundwater monitoring concentrations of the constituents listed in appendix IV of part 257 do not exceed groundwater protection standards established pursuant to § 257.95(h). The rule specifies that removal and decontamination activities include removing all CCR from the unit, CCR mixed with soils, and CCR included in berms, liners, or other unit structures, and removing or decontaminating all areas affected by releases from the CCR unit.

For an owner or operator to close a CCR unit in place, the closure performance standards in § 257.102(d) must be met. These closure performance standards require that the unit is closed in a manner that will: (1) Control, minimize, or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere; (2) Preclude the probability of future impoundment of water, sediment, or slurry; (3) Include measures that provide for major slope stability to prevent the sloughing or movement of the final cover system during the closure and post-closure care period; and (4) Be completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices. Additionally, § 257.102(d)(2)(i) requires that free liquids must be eliminated by removing

[37] 80 FR 21405, April 17, 2015.

[38] USEPA, ''Supplementary Guidance for Conducting Health Risk Assessment of Chemical Mixtures'', EPA/630/R–00/002, August 2000.

[39] USEPA, ''Guidelines for Developmental Toxicity Risk Assessment'', EPA/600/FR–91/001, December 1991.

[40] USEPA, ''Guidelines for Carcinogen Risk Assessment'', EPA/630/P–03/001F, March 2005.

liquid wastes or solidifying the remaining wastes and waste residues.

Free liquids is currently defined as ''*liquids that readily separate from the solid portion of a waste under ambient temperature and pressure.*'' This definition has resulted in significant comments from regulated entities, stating the definition is overly stringent and unnecessarily complicated. Commenters pointed to other EPA programs, such as RCRA subtitle C, claiming that facilities may close their units in place, fully saturated, provided the units do not release free liquids.

As discussed in Unit III.D. of this preamble, following publication of the Legacy Final Rule, EPA received many comments from members of industry on the risk assessment and risk associated with CCR units. Berkshire Hathaway (BH) notes that EPA's risk assessments ignore differences in regional and site-specific risk profiles. Instead of relying on a generic national-scale assessment, BH urged EPA to allow regulated facilities to submit individual risk assessments. USWAG stated in their comments on the Legacy Final Rule that ''the importance of risk assessment in the rule development process under RCRA cannot be overstated. A risk assessment, when properly done, identifies the specific risks potentially posed by a disposal practice and estimates the magnitude of those risks.'' In their January 2025 letter to EPA Administrator Lee Zeldin, USWAG states, ''the Rule could be vastly improved by moving away from one-size-fits-all self-implementing program to one that provides certainty through the issuance of permits and allows decisions to be made on risk and site-specific conditions.''

As described later in this section and in Unit IV.A.2. of this preamble, members of industry have identified cases in which state regulators approved the closure of CCR units after an evaluation of risk determined there were no unacceptable risks or threats to downstream receptors. Therefore, EPA is proposing to allow the permit authority to approve closures that vary from the existing performance criteria in § 257.102, based on site-specific considerations and criteria, to ensure facilities with complex challenges can close using tailored technical requirements that differ from the 2015 CCR Rule, while not posing a reasonable probability of adverse effects to human health and the environment. As stated in Unit III.D. of this preamble, the existing regulations were developed under a self-implementing framework with no oversight mechanisms to ensure site-specific modifications would be protective and technically appropriate. As a result, EPA did not include alternatives available in other programs under RCRA or CERCLA, which establish standards allowing a permit authority to tailor the baseline requirements for site-specific conditions. With the establishment of CCR permitting programs run by EPA or participating States, EPA is proposing to provide the opportunity for permit authorities to allow adjustments to the technical requirements of the 2015 CCR Rule that incorporate site-specific factors. As discussed in Units III.D. and IV.B. of this preamble and described next regarding the use of conceptual site models, the ability for regulatory oversight through permit issuance and enforcement enables EPA to create another compliance pathway to meet the RCRA protectiveness standard utilizing adjusted requirements tailored to the site-specific risks presented by each CCR unit.

Under the proposed flexibility to the closure standard, the permit authority may evaluate and approve a closure that differs from the requirements in § 257.102(c) or (d), based on a determination that the alternative closure achieves the standard of no reasonable probability of adverse effects to human health and the environment. Under this alternative, the permit authority's approval must be based on a site-specific conceptual site model (CSM) and risk assessment of the facility area in which the CCR unit is located. This assessment must include the following: field collected measurements, aquifer characteristics, waste characteristics, climatic conditions, leachate characteristics, engineered controls, fate and transport predictions, exposure pathways, and downgradient receptors.

CSMs are excellent tools to achieve, communicate, and maintain consensus between project partners. They are widely used throughout EPA programs such as Superfund, RCRA subtitle C, and subtitle D. A CSM is an iterative, 'living representation' of a site that summarizes and helps all parties understand available information. A CSM uses a concise combination of written and graphical work products to portray both known and hypothesized site information. Using CSMs is considered a best management practice for technical effectiveness and resource efficiency. To properly quantify and understand potential risk from a CCR unit, site-specific criteria would be required to be included within the creation and evolution of a CSM.

When working through the information to understand a unit, it is helpful to initially take a step back and look at the regional and locational geography and topography of an area to establish a foundation of understanding. However, EPA is proposing to require a CCR unit's CSM to have site-specific data to build off the initial foundation. Therefore, adequate characterization via field collected measurements must be utilized for the creation of a unit's CSM. Field measurements to understand the subsurface geology and stratigraphy are essential to understanding the subsurface forces at play within and below a CCR unit. Groundwater elevation, groundwater discharge and recharge, hydraulic conductivity, hydraulic gradient, effective porosity, and degree of saturation build the CSM to inform and define the aquifer(s). When looking at hydrogeology, it is imperative to not assume aquifer homogeneity. Many aquifers are heterogeneous and vary over lateral and vertical distance. Without a good understanding of the features such as degree of fracturing, secondary porosity, and geochemistry of the soils and bedrock, obtaining an accurate determination of fate and transport pathways to downgradient receptors is unlikely. Many times, these features and their characteristics are what provide the preferential pathways for the constituents listed in appendix III and IV of part 257. Innovative sampling or surveying may be useful for facilities with large CCR units or deep aquifers. Geophysical surveying can provide expenditure relief, but it is essential that the assumptions made during such surveys are corroborated with field hydrogeologic data.

In building the CSM, after the foundation and understanding of the subsurface is established, the evaluation and inclusion of the emplaced, or disposed material would need to be evaluated to understand the potential impacts that material may have on the surrounding environment. It is known that CCR consists of multiple types of material of varying characteristics. As an example, fly ash tends to have a much smaller grain size than bottom ash. Lower permeability materials, such as fly ash, will likely hold onto liquid, because of this common property of fly ash, members of industry have mentioned that it is very difficult to entirely dewater units. For example, in their *White Paper—Recommendations for Updating the Federal Coal Combustion (CCR) Regulations,* CCIG mentions a member who is closing a large impoundment. While the member has been dewatering the unit to provide a stable subgrade for final closure

construction, the fine-grained CCR materials yield water very slowly, making it impossible to remove all liquid prior to placing the cover system within the closure timeframe allowed under the existing regulations. CCIG urged EPA to revise the performance standards to account for practical and risk considerations. EPA understands that for older facilities, it may be difficult to know exactly what was emplaced and when. This criteria of the waste emplaced and its characteristics, such as composition, solubility, density, the presence of immiscible constituents, Eh and pH, must be evaluated, when feasible, as it provides information on how the CCR will interact with the surrounding environment.

After establishing an understanding of the regional area, site-specific hydrogeology, and emplaced CCR, the owner or operators should incorporate into the CSM any additional engineered controls that are currently ongoing at the site as these controls impact the surrounding and subsurface forces at play. One of the most common engineered controls that we see at CCR units is the cap or cover of the unit. If CCR is left in place, a final cover must be installed within the appropriate timeframe. In accordance with the existing regulations, a description of the final cover and the procedures to be used to install the final cover must be provided in the unit's closure plan. The owner or operator must also ensure the design of the final cover system meets the performance standards specified in the regulation. The final cover system must be designed to have a permeability less than or equal to the permeability of any bottom liner system or the natural subsoils present, or a permeability no greater than 1×10^{-5} centimeters per second (cm/sec), whichever is less.

Since the promulgation of the 2015 CCR Final Rule EPA has received inquiries about the potential of alternative covers, specifically regarding engineered turf covers. EPA reviewed documentation on the components and performance of engineered turf as a final cover system and considers it to be sufficient if it meets the performance standards in the regulation. Engineered turf as a final cover consists of a three-component system: a structured geomembrane, engineered turf, and specified infill. The structured geomembrane layer acts as a barrier layer minimizing, or more ideally eliminating, infiltration while also providing a drainage layer to minimize hydraulic head on the liner. The engineered turf portion provides protection from UV degradation and soil erosion. The specified infill layer provides a protection layer, both covering and underlying the geotextile backing and geomembrane from UV degradation. It additionally provides protection from wind uplift and protects the turf from fire. Documentation on engineered turf provided to the Agency identified that under the Hydrologic Evaluation of Landfill Performance (HELP) model, engineered turf outperforms prescriptive subtitle D-required covers with geocomposite drainage by an order of magnitude. That being said, it is imperative for the owner or operator to demonstrate the final cover system, even if engineered turf, meets the required performance standards and the permit authority must concur with the findings.

Additional engineered examples that should be evaluated and included in the CSM can range from pump-and-treat systems to barrier walls, and other remedial infrastructures. For example, if a unit is in corrective action and has an operating pump-and-treat system to capture the plume of an appendix IV constituent, the redirection or impact on the local groundwater may change previous understandings of preferential pathways or exposure pathways. It is important to understand the purpose and impact engineered control(s) have on a unit, and its intended lifespan and what were to happen if and when the engineered control(s) were to be removed. Contaminant fate and transport groundwater modeling is a common tool that can be utilized to understand an area, it's subsurface, and what influences and impacts an environment. For contaminant fate and transport or even a more simplistic groundwater flow model to be effective, it must have site-specific information imbedded in the model.

As a living representation, CSMs are not intended to be a one-and-done administrative task, rather they are an opportunity to take what we know of a unit, expand our knowledge, and ground-truth the information we have. It is a best practice to update CSMs as new information is obtained that improves our understanding of a facility or a unit. If a unit is not properly characterized, the CSM will be limited, data gaps will likely cause challenges down the line that ultimately led to higher expenditure for closure or remediation.

The second part of the assessment consists of a risk assessment. As mentioned above in this section and in Unit IV.A.2., members from industry have informed EPA that they have units previously closed in place, under state oversight, based on a determination of no unacceptable risk. As described in Unit III.D. of this proposal, the 2014 and 2024 Risk Assessments are based on high-end exposure levels. Many in the regulated community have stated that the one-size-fits-all solution does not accurately relate to their facilities and units and that a site-specific risk assessment should be allowed to provide flexibility and address challenges faced in the closure process. This is especially expressed by those in the regulated community that have previously closed their CCR unit under state oversight that required a risk assessment and state concurrence with any conclusion of no unacceptable risk to human health and the environment.

As noted in Unit IV.B. above, the majority of state and industry commenters on the proposal that resulted in the 2015 CCR rule preferred regulations that would allow site-specific approaches to establishing standards (See 80 FR 21331–21234). Commenters argued that the prescriptive one-size-fits-all approach was overly stringent and inflexible and had the potential to greatly disrupt implementation of a state's regulatory programs, which have been tailored to provide for site specific conditions and situations. As described in Unit III.D., EPA acknowledges that the CCR universe includes a variety of sites and site conditions and therefore, no single site can represent all regulated facilities. An example highlighting the uniqueness of sites and the need for site-specific approaches is Georgia Power's Grumman Road CCR Unit, located in Chatham County. This unit is owned and operated by Georgia Power and previously used for the disposal of CCR for Georgia Power's Plant Kraft. Additionally, all ongoing work on and related to this unit is overseen and regulated by the Georgia Environmental Protection Division (EPD). The unit being discussed here is separate to the unit previously discussed in Unit IV.A.2. of this preamble discussing the Kraft Legacy CCR unit closed under Georgia's Voluntary Remediation Program. The unit was retired in late 2015 and is regulated under the Federal Rule and Georgia's Solid Waste Management CCR Regulations 391–3–4.10.

The Grumman Road CCR unit has a monitoring well system, with lateral well spacings ranging from approximately 230 feet to 414 feet, with an average lateral well spacing on the order of 324 feet. This well network has been established for both detection and assessment monitoring of appendix III and appendix IV constituents. This unit has undergone many iterations of its CSM, with each revision growing in specificity to understand the

interworking of not only the immediate subsurface of the unit, but also the surrounding environmental and anthropogenic factors impacting the unit. Over the years, Georgia Power has worked alongside Georgia EPD, a State with a partially approved CCR program, to further develop the unit's CSM. Additionally, via fieldwork, sampling and bench tests, Georgia Power has developed many iterations of Hydrogeological Assessment Reports under the oversight of the state.

As mentioned earlier, a robust site-specific characterization is key in understanding any site including the surrounding environment in which it is located. The permit drawings of the Grumman Road CCR unit identify a small percentage of saturation for the southern portion of the unit, which is likely in contact with groundwater year-round. According to Georgia Power, another site-specific factor that influences decision making for this unit, are anthropogenic impacts from an adjacent landfill's release of leachate. Georgia Power states that the adjacent landfill's seep impacts the Grumman Road CCR Unit by changing the redox conditions of the aquifer, which is inducing mobilization of arsenic and molybdenum as dissolved constituents in groundwater. Such characterization details must be understood in order to evaluate releases from the CCR unit in the context of background and other factors. This does not change the fact that Grumman Road has an ongoing release and that it must be addressed via corrective action. In coordination with Georgia EPD, Georgia Power initiated an Assessment of Corrective Measures program for Grumman Road in December 2020.

As part of the Assessment of Corrective Measures, Georgia Power conducted a Risk Evaluation, which can be found in appendix B of the Remedy Selection Report. The provided report relies on risk approaches outlined in Georgia's Voluntary Remediation Program with components of the Risk Assessment Guidance for Superfund (RAGS). The Risk Evaluation considered potential transport pathways, exposure pathways, and both current and future receptors. Georgia Power reviewed the concentrations and statistics for wells of the unit, individually. Additionally, Georgia Power conducted modeling to estimate the current areal extent of the plume. Georgia Power concluded in their risk evaluation that the SSL-related constituents arsenic and molybdenum are not expected to pose a risk to human health or the environment.

It is understood that remedial investigations, feasibility studies, determinations of the most effective remedial technologies and implementation of those technologies take time. Additionally, there is the time for the remedial technology to influence, reduce, or eliminate source zones, which will in turn, impact whatever risk(s) may be present at a site. According to Georgia Power, the lack of immediate exposure allows for the comprehensive evaluation of remedial technologies and a deeper understanding of the geochemistry of the subsurface. This is detailed in Georgia Power's Assessment of Corrective Measures Report Appendix A, the Geochemical Site Model. While this site is still undergoing corrective action, it supports the use of regulatory flexibility based on site-specific information and risk evaluations. Aquifer geochemistry, anthropogenic impacts, and other site-specific conditions cannot be generically applied across all sites, which is why a robust CSM is critical for the purposes of decision-making. It is important to note that EPA recognizes that a remedy has not yet been selected and additional work is necessary in order to complete corrective action.

In another example, the state of Tennessee and its Department of Environment and Conservation (TDEC) issue a Commissioner's Order to TVA at seven coal-fired power plant facilities. This Order required TVA to conduct environmental investigations and assessments for all CCR disposal areas. One of the required deliverables from the Order was a risk assessment, to be included in the Corrective Action/Risk Assessment (CARA) Plan. TVA submitted a CARA for the Allen Fossil Plant West Ash Disposal Area, which according to TVA, was found to be acceptable by TDEC. This can be found on both TDEC's website, TVA's public website, and within docket of this proposal. TVA presented their findings from their Draft CARA for the John Sevier Fossil Plant to identify current challenges with the Rule. The John Sevier Draft CARA contained a CSM of the site and a risk assessment that evaluated risk both for human health and ecological risks.

Under this proposal, if Tennessee were to apply for CCR permit program, and if the program is ultimately approved, TDEC could approve TVA's proposed closure (*i.e.,* authorize TVA to close with saturated CCR in place), if TDEC concluded, based on an evaluation of the CARA, that the proposed closure does not pose a reasonable probability of adverse effects to human health or the environment based on the criteria set forth in this proposed regulation. EPA expects the permit authority to ensure all current and future human and ecological receptors are considered within the risk assessment and CSM. This would require the owner or operator to evaluate all current and any future planned land use, identify receptors, and exposure routes. If corrective action is ongoing or an engineered control is onsite, the potential risk should be evaluated if or when the acting life of the engineered control or corrective action is ceased.

Another example supporting this flexibility was provided by Vistra Corp. Vistra had a CCR unit that was taken out of service in 1996 and has been subject to groundwater sampling since that time. The utility closed the unit pursuant to state approval. Standing water was removed, and a final cover system was installed pursuant to the federal CCR Rule in 2020. The final cover consisted of a compacted soil barrier clay layer with a minimum of 24 inches of earthen material with a maximum permeability of 1×10^{-7} cm/s. According to Vistra, in limited areas, ash may be saturated with groundwater during higher flood events. While an exceedance of an appendix III constituent has been detected, the company states that the data demonstrates that simply dewatering and taking the unit offline resulted in significant decreasing trends of the appendix III constituent, with some wells now achieving compliance with the groundwater protection standard. Under this proposal, once the state's CCR permit program was approved, the state could approve the closure described above, if the state determined the closure posed no reasonable probability of adverse effects to health or the environment after conducting a review as discussed above.

A final example of the need for this flexibility is the East Ash Basin at Duke Energy's Roxboro Steam Electric Plant in North Carolina. During and after the Legacy Rulemaking, Duke provided information to EPA on past, present, and future activities at their facilities conducted under the oversight of the NCDEQ and pursuant to the 2020 Consent Order and under the oversight of North Carolina's CCR program. According to Duke Energy, there are two CCR surface impoundments at the Roxboro facility, the East Ash Basin and the West Ash Basin, and a CCR landfill, the Industrial Landfill. Neither of the impoundments receive CCR wastestreams anymore. The Industrial Landfill receives CCR from electrical production and for CCR consolidation from other CCR units at the facility. The

East Ash Basin was approximately 71 acres and contained approximately 7.1 million tons of CCR. The Industrial Landfill was constructed partially atop and adjacent to the East Ash Basin and is approximately 132 acres in size.

Duke Energy submitted a closure plan to NDEQ by the December 31, 2019 deadline set by the 2016 CAMA and in accordance with a 2019 settlement agreement between Duke and NCDEQ. NCDEQ subsequently approved the closure plan which included excavating approximately 15.4 million tons of CCR from surface impoundments at Roxboro. The closure plan also allowed the East Ash Basin to close with some saturated ash remaining in the unit underneath the overlying Industrial Landfill. According to Duke Energy, closure of the surface impoundments, under the oversight of NCDEQ, is ongoing at the facility with a completion deadline of December 2036, pursuant to the 2020 Consent Order. The primary activities are source removal and capping measures, with 1,116,988 tons of ash and soil excavated from the East Ash Basin and 4,153,402 tons from the West Ash Basin as of July 2025.

Duke submitted the Roxboro East Ash Basin Corrective Action Plan (CAP) to NCDEQ in December 2019 in accordance with CAMA. NCDEQ conditionally approved the CAP in April 2021. A pilot testing phase began in November 2021, followed by the full-scale system start-up in January 2023. Under the 2020 Consent Order which applies to the Roxboro surface impoundments among other surface impoundments in the state, groundwater standards for constituents of interest must be met by December 31, 2029, at the geographic limitation, 500 feet downgradient of the waste boundary. Pursuant to the conditions of the 2020 Consent Order, groundwater modeling updates are required every three years, with the first update submitted to NCDEQ in September 2023. The CAP system includes a pump-and-treat-system consisting of 41 extraction wells, 3 node boxes, and 29,390 linear feet of piping and an engineered liner on top of the East Ash Basin was installed to control contamination coming from the unit. According to Duke, the system's average flow rate decreased from 108 gallons per minute (gpm) to 80 gpm due to bedrock dewatering. Extracted water is treated before discharge through a permitted NPDES outfall. Duke has stated that hydraulic gradient reversal is occurring at the facility and thus prevents constituents of interest migration toward surface water receptors, ensuring no unacceptable risks to human health or the environment. The utility has provided data that it claims demonstrates that groundwater quality around the East Ash Basin has improved significantly, with 62 percent of all constituents of interest and 83 percent of primary constituents meeting compliance standards at or beyond the geographic limitation as of the fourth quarter of 2024. Duke contends that the high boron concentrations are attributed to non-ash basin sources, and trends show decreasing or stable levels for most constituents of interest.

Duke points to the CAP data, the risk assessment required under CAMA, the oversight of NCDEQ and the permanent alternative water sources that have been provided to nearby residents as a precautionary measure, as evidence that the closure of the East Ash Basin is protective of human health and the environment and as an example of both the need for site-specific considerations, especially with regard to closure, and the sufficiency of state-led compliance activities.

The NCDEQ-approved closure of the East Ash Basin would not meet the current federal CCR closure requirements; for example, the requirement to remove all free liquids prior to installing the final cover system. Under this proposal, the permit authority (either the state's CCR permit program once it was approved or the federal CCR permit program) could evaluate the NCDEQ closure and conclude the closure poses no reasonable probability of adverse effects to health or the environment and no further closure activities are required to comply with the federal CCR closure requirements.

As described in Unit III.D. of this preamble, such a site-specific determination was not available under the 2015 CCR Rule as EPA lacked permitting and enforcement authority. Now with the new tools provided by the WIIN Act, and EPA's broad discretion to adopt performance-based criteria based on a record of protectiveness, enable EPA to adopt provisions that create another pathway for compliance with the federal CCR regulations. Specifically, this provision would allow EPA or a participating-state permit authority to establish alternative closure requirements through the permitting process based on site-specific information.

Solicitation of comment. Although the current proposal applies exclusively to closure, many of the same issues were raised in the context of corrective action. EPA is therefore soliciting comment on whether to expand this provision to allow a permit authority to approve corrective action remedies that do not meet the requirements of § 257.97(b) based on the results of a site-specific risk assessment that meets the criteria discussed above. EPA is also soliciting comment on what, if any, change in burden the proposed provision or the expansion of the proposed provision to corrective action would have on state permitting authorities.

EPA is also soliciting comment on a provision in 85 FR 12456, which was proposed on March 3, 2020. In this 2020 proposal, EPA proposed to allow the use of CCR during the closure of a unit subject to closure for cause if such placement is conducted under an approved closure plan. The 2020 proposed alternative would be implemented as an exemption to the waste placement prohibition. It is unclear if this 2020 proposal should be finalized, as the new proposed permitting closure flexibility of closure would allow the permit authority to make site-specific determinations to allow for this utilization of CCR during closure. Therefore, EPA is soliciting comment on whether this provision should be finalized as proposed under the first option in the 2020 proposed rule.

Finally, EPA is soliciting comment on an alternative provision that would provide flexibility regarding the drainage and stabilization requirements for CCR units closing with waste in place at § 257.102(d)(2)(i). Under this alternative provision, owners or operators could close a unit with saturated CCR in place if a permit authority has determined that certain conditions were met. In order to obtain this flexibility, the permit authority must evaluate the closure plan and ensure the following: (1) To promote the workability and stability of the final cover for the CCR unit, standing liquid and sufficient subsurface liquid has been eliminated; (2) The hydraulic condition within the CCR unit will not adversely impact the stability of the final cover system or the ability for the remaining wastes to support the final cover system; (3) The hydraulic condition within the CCR unit will not adversely impact the ability to implement any corrective action(s) necessary to meet the requirements of §§ 257.96–257.98; and (4) The hydraulic condition within the CCR unit will not result in a reasonable probability of adverse effects to human health and ecological receptors as determined through a site-specific assessment that evaluates all potential exposure pathways. If the permit authority determines that all these conditions

have been met, the owner or operator can close with CCR in place in accordance with the provisions in § 257.102(d) aside from the requirement at § 257.102(d)(2)(i) (*i.e.,* any liquids remaining in the CCR unit need not be removed).

b. Closure Timeframes for CCR Units Extracting CCR for Beneficial Use During Closure

EPA is proposing to allow the permit authority to extend closure timeframes for CCR units where CCR is being extracted from the unit for beneficial use during closure. In the 2015 CCR Rule, EPA finalized closure timeframes that adopted the approach recommended by commenters of tiered timeframes based primarily on size of the surface impoundment, and the concept of a rebuttable presumption that the owner and operator of a CCR surface impoundment must complete closure of the CCR unit within five years of initiating closure activities. For CCR landfills, the owner or operator of the unit must normally complete closure within six months of initiating closure activities.

When reviewing comments on the 2010 CCR Proposed Rule regarding the closure timeframes and potential extensions, many of the regulated community identified concerns regarding the challenges in estimating closure timeframes. As a response, with the provided record at that time, EPA established a tiered approach for closure timeframe extensions which could be applied under the self-implementing regulatory framework.

The tiered approach adopted for the 2015 CCR Rule allows CCR surface impoundments additional time dependent on size of the unit, using surface area acreage of the CCR as the determining factor for defining the size of the unit. Smaller impoundments, defined as 40 acres or less have the maximum extension time of two years. Impoundments larger than 40 acres are allowed a maximum of five two-year extensions, with the requirement that the owner or operator must substantiate the factual circumstances demonstrating the need for each two-year extension. Closure extensions for CCR landfills do not vary dependent on size. Rather, all CCR landfills are allowed the maximum of two one-year extensions. Similarly to surface impoundment units, the owner or operator of the CCR landfill document the factual circumstances demonstrating the need for each one-year extension. The documentation must include the exact reason why additional time is needed. The regulation includes examples such as: complications stemming from climate and weather, time required to dewater a surface impoundment due to the volume of CCR or the CCR geotechnical characteristics, the geology and terrain surrounding the CCR, and the time required or delays caused by the need to obtain state permits or to comply with other state requirements.

With the record provided, EPA determined in the 2015 CCR Final Rule that the initial timeframes would be sufficient to close most, if not all CCR units and therefore, the extensions would accommodate for any potential delays caused by weather or other instances designated as ''force majeure.'' However, uncertainties within the provided record were identified and documented in the 2015 CCR Rule such as: the Agency mentioned it had no information on the geotechnical properties of the CCR that can affect the time needed to dewater a unit, the volumes of clays, soils, and other materials that would be needed for closure, and the information on the time to obtain state approvals. Further, EPA stated in the preamble that the level of uncertainty increases with impoundments larger than 40 acres. Some documentation in the record indicates that closure for units larger than 40 acres can be closed within the same timeframe but other case studies provided stated that closure was expected to take much longer than five years.

The Legacy Final Rule revised the closure timeframes set forth in the 2015 CCR Rule for owners or operators of landfills that were identified as having CCR in contact with groundwater and therefore, needed additional time to dewater the unit. The amount of time extended, similarly to surface impoundments, was dependent on the acreage of the landfill. Therefore, a landfill in this situation less than 40 acres may receive a maximum extension of two years and those greater than 40 acres may receive a maximum extension of 10 years, in two-year increments. Similarly to the provisions in the 2015 CCR Rule, documentation of the need for this extra time must be documented.

Commenters of the 2015 CCR Rule recommended another approach of allowing closure timeframes to be governed by an adequate state-approved closure process. In the 2015 Final Rule, EPA identified that under a self-implementing program, the Agency cannot rely on the existence of the state permit authority to implement subtitle D requirements. With the enactment of the WIIN Act, EPA now has ''new tools'' to achieve its regulatory goals, namely the authority to issue permits, enforce the regulations, and approve state CCR permit programs; with the oversight mechanisms provided by the ''new tools'' a permit authority is able to implement the criteria to ensure an extended closure timeframe still meets the required standard of no reasonable probability of adverse effects on health or the environment.

Since promulgation of the 2015 CCR Rule, states and members of the regulated community expressed concern or have provided EPA with information to demonstrate the infeasibility of the existing closure timeframes for CCR units who wish to excavate CCR for beneficial use during closure. For example, TVA stated that certain units could not complete extraction of CCR for beneficial use within the current closure deadlines. To support this claim, TVA pointed to larger volume units, units that start CCR extractions partway through the closure process, or units that have already completed closure.

Further, PacifiCorp has expressed concern that the existing CCR regulations do not provide sufficient time for closure by removal. According to PacifiCorp, the extension process and the maximum timeframe may still be inadequate to maximize excavation and beneficial use opportunities. PacifiCorp requested that EPA consider not requiring multiple timeline extension demonstrations for closure that involve extraction of CCR for beneficial use, provided that the initial extension schedule is appropriately supported by extraction and beneficial use contracts. In their request, it was suggested that industry could provide regular updates in the form of annual progress reports. By having the flexibility, PacifiCorp maintained that it would ultimately enhance environmental protection through source removal.

As another example, Talen Energy stated that there are challenges in finding a beneficial use provider capable of accepting millions of tons of CCR over many years. Further, the utility has claimed that removing, loading, and hauling of millions of tons of CCR from a single source and within the current timeframes is not always possible. According to Talen Energy, there are several conditions that pose challenges to meeting the existing deadlines when closing by removal with CCR extraction for beneficial use as a component, such as: lack of onsite space to build a new landfill, or available landfill capacity; local road impacts, due to the amount of trucks; bridge load restrictions; community opposition to increased truck traffic; demand for the end-product (*e.g.,* cement) or raw

materials, which limits the rate of outgoing CCR; safety concerns with basin excavation and specialized CCR product handling; additional volumes of CCR identified during closure; and non-CCR material identification and disposal. Accordingly, the utility suggested that EPA allow for flexibility regarding the closure timeframes when extracting CCR for beneficial use from the closing CCR unit.

Southern Company reached out to EPA to discuss their progress with projects involving the extraction of CCR for beneficial use. According to the company, all their extracted CCR is encapsulated in the form of either concrete block, as filler, or otherwise used in the cement or concrete manufacturing process. According to Southern Company, they have taken a market-driven approach to the extraction of CCR and strict adherence to the existing closure timeframe or certain closure activities could impact the ability of the CCR supply to continue to meet demand.

In addition to industry, States have also requested flexibility. For example, Tennessee has requested that EPA consider adjusting timeframes for closure to allow for CCR extraction of beneficial use. Further, the Agency has received input from states requesting EPA allow flexibility with respect to determining timeframes.

Recognizing these site-specific situations, and considering the new tools provided by the 2016 WIIN Act, EPA's ability to allow for non-uniformity in achieving the RCRA protectiveness standard, and EPA's discretion to adopt performance-based criteria based on a record of protectiveness, EPA proposes to allow flexibility for permit authorities to authorize adequate time to complete extraction of CCR for beneficial use from CCR units undergoing closure. The proposed amendment would authorize a permit authority to review and approve closures that include as, a component of the overall closure method, extraction of CCR for beneficial use, only if the Director finds, based on specific criteria and a demonstration by the owner or operator, that there would be no reasonable probability of adverse effects on health or the environment.

EPA is proposing to establish criteria for the closure flexibility assessment that will be conducted by the permit authority. Such an evaluation is unit-specific, so the permit application, which would include a detailed closure plan and any supporting documents such as detailed design drawings and schedules, must be adequate to support the evaluation. First, the permit authority must ensure measures for major slope stability are in place to prevent the sloughing or movement of the unit during the closure period. Second, the permit authority must determine the extraction of CCR and closure will be completed consistent with recognized and generally accepted good engineering practices. Third, the permit authority must consider whether all potential risks to human health and the environment during closure of the unit are adequately mitigated. Fourth, the permit authority must evaluate whether the facility is in substantial compliance with all other requirements of this subpart, including the requirement to conduct groundwater monitoring and any necessary corrective action. By ensuring that groundwater monitoring and corrective action activities continue throughout the extended closure timeframe, the permit authority will have the ability to require the facility to take action, if necessary, to ensure there will be no reasonable probability of adverse effects on health or the environment. Lastly, the owner or operator must proceed with closure activities of any portion of the CCR unit that is not related to the extraction of CCR for beneficial use within the existing timeframes in § 257.102 to the extent possible. Under this approach, the permit authority could extend the closure timeframe for owners or operators of units during which extractions of CCR will occur during the closures. It is important to note that any extension of the final closure date will occur under conditions where the unit has groundwater monitoring in place and corrective action requirements will be triggered should a release be detected—these requirements can be relied upon by the permit authority in making its protectiveness determination.

Solicitation of comment. The Agency is soliciting comment on whether to allow the permit authority to extend timeframes for all closures, regardless if the closure includes beneficial use activities. Additionally, the Agency requests comment if there should be a ''good cause'' condition, or whether there should be criteria to frame the discretion by the permit authority. Furthermore, EPA is requesting comment on specifying that the closure timeframe flexibility can also be applied to allow adequate time to complete extraction of CCR for critical mineral recovery activities. While the recovery of critical minerals from CCR is not a direct use of the CCR, it is a resource recovery activity (*i.e.,* an activity supported by RCRA statutory provisions) that has the potential to play a crucial role in maintaining technological advancement, economic growth, and national security. Critical minerals are a group of elements and compounds that are essential in the production of modern technologies and industries. Examples of these minerals include lithium, cobalt, nickel, graphite, manganese, and rare earth elements such as neodymium, praseodymium, and dysprosium. Their unique properties, such as conductivity, magnetism, and strength, make them indispensable for various technological applications.

The Department of Energy's National Laboratories have developed several technologies that focus on extracting critical minerals and rare earth elements from CCR. Each method has been tested at the lab scale and is ready for companies to further develop, refine, and scale into commercial systems.[41] However, these technologies are still at an early stage in development, and there are several barriers to overcome before full-scale commercial critical mineral extraction activities are feasible. EPA requests comment on using closure and post-closure flexibilities as a way of encouraging the development of this industry, and requests information on any other regulatory barriers to developing environmentally protective processes for critical mineral extraction from CCR. Information on commercialization would be particularly helpful, including a projected timeline and the specific barriers yet to be addressed, such as environmental and economic factors. EPA also requests information on likely commercialization models with their logistics, such as planned location for recovery operations, (*e.g.,* onsite at a utility or off-site at a regional center; types of activities necessary to prepare CCR for processing; expected amounts and management of CCR prior to critical minerals recovery; preferred technological processes to extract, purify and separate critical minerals; and residuals or wastes generated by the technologies, including the characteristics and the ultimate management of those wastes).

c. Post-Closure Care Flexibility for Units Undergoing Extraction for Beneficial Reuse

Following closure of a CCR unit, the owner or operator is required to conduct

[41] U.S. Department of Energy. *A new chapter for coal: Commercialization opportunities at DOE labs.* Retrieved November 12, 2025, from *https://www.energy.gov/technologycommercialization/articles/new-chapter-coal-commercialization-opportunities-doe-labs.*

post-closure care of any closed unit where CCR was left in place as part of closure. At a minimum, the owner or operator is required to comply with at least the following: (1) Maintain the integrity and effectiveness of any final cover system, including making repairs to the final cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover; (2) If the CCR unit is subject to the design criteria under § 257.70, maintain the integrity and effectiveness of the leachate collection and removal system and operate the leachate collection and removal system in accordance with the requirements of § 257.70; and (3) Maintain the groundwater monitoring system and monitoring the groundwater in accordance with the requirements of §§ 257.90 through 257.98. See § 257.104(b).

Additionally, the existing CCR regulations identify the minimum information necessary to include in the post-closure care plan. This information includes: (1) A description of the monitoring and maintenance activities required by § 257.104(b), and the frequency at which these activities would be performed; (2) The name, address, telephone number, and email address of the person or office to contact about the facility during the post-closure care period; and (3) A description of the planned uses of the property during the post-closure care period. The proposed rule further provided that the post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the post-closure monitoring systems unless necessary to comply with the requirements of the rule. As written, the existing regulations at § 257.104(d)(1)(iii) do allow for a disturbance if the owner or operator of the CCR unit can demonstrate that disturbance of the final cover, liner, or other component of the containment system, including any removal of CCR, would not increase the potential threat to human health or the environment. Such a demonstration is required to be certified by a qualified professional engineer or approved by the Participating State Director or EPA, where EPA is the permit authority. Additionally, a notification shall be provided to the State Director that the demonstration has been placed in the operating record and on the owners or operator's CCR website.

Since promulgation of the 2015 CCR Rule, states and members of the regulated community expressed concern that the current regulations could be interpreted in such a way as to prevent extraction of CCR for beneficial use during the post-closure care period. Specifically, there is concern that the requirement to maintain a cap over the unit would prevent access to the material beneath the cap for beneficial use projects. Members of industry has asked for an allowance for disturbing the cap to provide such access, commonly referred to as ''unzipping''. The Agency maintains that under the existing rules, the owner or operator of the CCR unit has the ability to demonstrate that disturbance of the final cover, liner, or other component of the containment system, including any removal of CCR, would not increase the potential threat to human health or the environment. A qualified professional engineer is required to certify such a demonstration. See § 257.104(d)(1)(iii). Nevertheless, to avoid any uncertainty EPA is proposing a new provision to explicitly allow a permit authority to have the flexibility to approve the extraction of CCR from a closed CCR unit during the post-closure care period under certain conditions. Under this approach, for extraction of CCR for beneficial use during the post-closure period, the permit authority may adjust the minimum criteria only if the authority finds, based on a demonstration by the owner or operator, that any extraction of CCR for beneficial use will not pose a reasonable probability of adverse effects to human health and the environment. In reaching this determination, the permit authority must conclude all of the following: the extraction of CCR will be completed consistent with recognized and generally accepted good engineering practices; potential risks to human health and the environment during post-closure are adequately mitigated; and the facility is in substantial compliance with all other requirements of this subpart, including the requirement to conduct post-closure care, groundwater monitoring and any necessary corrective action.

d. Modification of the Post-Closure Care Period

The current regulations at § 257.104(c)(1) state that the owner or operator of a closed CCR unit must conduct post-closure care for 30 years unless at the end of the 30 years corrective action is on-going, or the CCR unit is operating under assessment monitoring, in which case the owner or operator must continue to conduct post-closure care until the unit has returned to detection monitoring.

In 2018, following the enactment of the WIIN Act, EPA proposed to adopt a provision analogous to § 258.61(b), that would allow the Director of a participating state to decrease the length of the post-closure care period if the owner or operator demonstrates that the reduced period is sufficient to protect human health and the environment and this demonstration is approved by the Director. It also would allow the Director of the participating state to increase the length of the post closure period if the Director determines a lengthened period is necessary to protect human health and the environment. 83 FR 11584, 11603–604 (Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; Amendments to the National Minimum Criteria (Phase One)) EPA–HQ–OLEM–2017–0286; FRL–9973–31–OLEM).

Due to competing priorities EPA did not finalize that proposal and it remains pending. EPA is now again soliciting comment on whether to adopt those proposals.

C. Beneficial Use

EPA is proposing to revise the definition of beneficial use for CCR to recognize that the first three criteria in the beneficial use definition provide a sufficient framework for identifying when placement of CCR on the land, whether encapsulated or unencapsulated, roadway or non-roadway, constitutes a beneficial use rather than disposal under the RCRA statute. EPA is also proposing to remove the fourth criterion that currently requires that the ''user must demonstrate and keep records, and provide such documentation upon request, that environmental releases to groundwater, surface water, soil and air are comparable to or lower than those from analogous products made without CCR, or that environmental releases to groundwater, surface water, soil and air will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use'' for unencapsulated non-roadway uses on the land above the threshold of 12,400 tons, finding that: (1) The 12,400 ton threshold is based on faulty information, (2) The demonstration requirement poses an unacceptable barrier to beneficial use, and (3) The fourth criterion is not needed to prevent disposal of unencapsulated CCR that would present a reasonable probability of adverse effects on health or the environment. This change in the Agency's position in regard to the regulation of unencapsulated non-

roadway CCR use is based on an analysis of past damage incidents and the most recent industry standards for CCR used as structural fill.

EPA is also proposing new definitions of ''CCR storage pile'' and ''temporary accumulation'' to establish a single set of requirements applicable to all temporary placement of unencapsulated CCR on the land, whether managed onsite or off-site, and whether destined for beneficial use or disposal. These new proposed definitions are similar to those proposed in 2019,[42] with some adjustments to the previously proposed language to make the requirements clearer and less burdensome. EPA is also proposing to remove the definition of ''CCR pile'' found at § 257.53 and instead address CCR accumulations that do not meet the definition of CCR storage pile directly in the definition of CCR landfill.

In addition, recognizing the unique role CCR plays as an ingredient in cement manufacturing, EPA is proposing to add a provision at § 257.50(k) to exclude from the requirements of 40 CFR part 257 CCR at cement kilns that is destined for use as an ingredient in cement manufacturing. This proposed provision acknowledges the benefit CCR provides as an ingredient in cement manufacturing, and how this benefit incentivizes the management of CCR as a valuable commodity at the cement kiln and helps ensure it will be appropriately incorporated in an encapsulated beneficial use. EPA is also requesting comment on whether it would be helpful to include a regulatory clarification explaining that the current industry management practices for CCR fly ash that is used directly in concrete production as a substitute for Portland cement are not subject to the 40 CFR part 257 CCR requirements.

Finally, EPA is proposing a new provision at § 257.50(l) to exclude flue gas desulfurization (FGD) gypsum, when destined to be applied as an agricultural amendment at agronomically appropriate rates, and to exclude FGD gypsum destined for use as an ingredient in wallboard manufacturing.

The proposed categorical exclusions for these three beneficial uses are based on the specific circumstances of these uses which incentivize the management of the CCR as a valuable commodity prior to beneficial use, and on EPA's proposed determination that these uses categorically meet the definition of beneficial use.

[42] See 84 FR 40353, August 14, 2019.

1. Definition of Beneficial Use

a. The First Three Beneficial Use Criteria Provide a Sufficient Framework for Beneficial Use Determinations

EPA is proposing that the first three criteria of the beneficial use definition found at § 257.53 provide a sufficient regulatory framework for identifying when any placement of CCR on the land, whether encapsulated or non-encapsulated, roadway or non-roadway, constitutes a beneficial use and not disposal under the RCRA statute.

The first three beneficial use criteria currently apply to all CCR uses, whether encapsulated, unencapsulated, roadway, or non-roadway. When EPA proposed to revise the fourth beneficial use criterion in the 2019 CCR proposal, the Agency noted in the proposal that the first three criteria still remain as finalized in the 2015 CCR rule. (84 FR 40356)

As noted in the 2015 CCR Rule, the first criterion, that CCR must provide a functional benefit, is designed to ensure that the material performs a genuine function in the product or use. In other words, the user must be able to demonstrate a legitimate reason for using CCR in the product other than the fact that it is an alternative to disposal of the material. For example, CCR provides a functional benefit when used as a replacement for cement in concrete because the CCR increases the durability of the concrete and is also more effective against degradation from salt water. 80 FR 21349.

The second beneficial use criterion, which states that CCR must substitute for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices, such as extraction, is intended to demonstrate the use is truly ''beneficial'' from an environmental perspective. 80 FR 21349. CCR can be substituted for many virgin materials that would otherwise have to be mined and processed for use. These virgin materials include limestone to make cement, and Portland cement to make concrete; mined gypsum to make wallboard, and aggregate, such as stone and gravel for uses in concrete and roadbed. It is beneficial to use secondary materials that would otherwise be disposed of, rather than to mine and process virgin materials, simultaneously reducing waste and environmental footprints. 80 FR 21329.

The third criterion, that the use of CCR must meet relevant product specifications, regulatory standards, or design standards, when available, and where such specifications or standards have not been established, CCR may not be used in excess quantities, was intended to address both the legitimacy of the use and the potential environmental and human health consequences associated with the use of excess quantities of CCR, particularly unencapsulated CCR. 80 FR 21349–21350. The 2015 CCR final rule notes that this criterion can include a demonstration that relevant engineering specifications are met, such as the ASTM C 593 test for compaction, the ASTM D 560 freezing and thawing test, a seven-day compressive strength above 2760 kPa (400 psi), and ASTM Standard E2277–03,[43] which provides standard guidance and a methodology for using CCR in a structural fill. 80 FR 21350.

Design standards are particularly important in the case of placement of large quantities of unencapsulated CCR in a single concentrated location, which the 2015 CCR Rule identified as the use most likely to resemble disposal, and that the current fourth criterion in the beneficial use definition was designed to address.[44] ASTM Standard E2277, which outlines procedures for the design and construction of engineered structural fills using CCR, is particularly relevant for these cases. In defining beneficial use, the latest version of this standard states that one beneficial use defining factor is that CCR is used in a manner that protects human health and the environment, which directly speaks to the issue of disposal. The standard then goes on to discuss several environmental considerations; CCR engineering properties and behavior; CCR physical and engineering characteristics; design factors, such as site characterization and preparation, structural performance and compaction; and construction considerations, such as dust and erosion control and CCR placement.

All these provisions help ensure that unencapsulated CCR used as fill does not meet the statutory definition of disposal, *i.e.,* the standards prevent the CCR and any constituent thereof from entering the environment or being emitted to the air or discharged into any waters, including groundwater. RCRA section 1004(3). The standard also guides users to determine all applicable local or state guidance, policies or regulations. Moreover, in addressing the need for chemical characterization, it guides users to recognize that states may require specific testing, such as to determine total composition or leachability of specific metals or other

[43] The current version of the standard is ASTM Standard E2277–14, titled ''Standard Guide for Design and Construction of Coal Ash Structural Fills,'' reapproved in 2019.

[44] 80 FR 21351.

elements in CCR. This standard, therefore, defines technical procedures, includes an environmental scope, and emphasizes users' responsibility to also ensure compliance with jurisdictional requirements. In this way, product design and engineering standards ensure that the use is beneficial and not disposal and play a role in reducing the potential for environmental and human health consequences in general. EPA is asking for comment on whether to incorporate the ASTM E2277 standard by reference in the regulations.

Other types of non-roadway unencapsulated CCR uses include flowable fill; soil modification and stabilization; waste stabilization and solidification; aggregate; snow and ice control; and blasting grit. As noted in the 2015 CCR Rule, these additional unencapsulated uses, in contrast to structural fill, are not generally expected to be used in amounts requiring an environmental demonstration under the current fourth criterion in the beneficial use definition. Moreover, the use of CCR in these applications is generally not similar to the mounding that occurs in landfill situations, and several of these applications are structurally very different from landfills. 80 FR 21353. Like in the case of CCR structural fill, a number of standards are applicable to these uses.[45] EPA requests comment on whether additional standards or guidance for applying the third criterion to these non-fill unencapsulated uses would be useful.

b. Proposal To Eliminate the Fourth Beneficial Use Criterion

The fourth criterion in the definition of beneficial use at § 257.53 was intended to specially address the question of whether the placement of unencapsulated CCR on the land in non-roadway applications is appropriately considered to be ''beneficial use'' or ''disposal'', even when the first three criteria are met, and if so, whether that ''disposal'' warrants regulation. By focusing on non-roadway unencapsulated uses, the fourth criterion applies to uses that EPA identified in the 2015 CCR Rule as most likely to resemble disposal, *i.e.,* the placement of large quantities of CCR in a single concentrated location. However, in preamble to the 2015 CCR Rule, EPA also agreed with commenters that, ''if constructed correctly, large scale fill operations can meet all of the criteria for a beneficial use.'' 80 FR 21351.

This criterion can be used to identify when those types of fill operations that most resemble disposal are genuine beneficial use by imposing a regulatory requirement that the CCR user conduct an environmental demonstration that the CCR use does not result in environmental releases that are (1) Higher than those from analogous products made without CCR, or (2) Pose risk to human health and the environment, when that use involves unencapsulated CCR non-roadway uses on the land over 12,400 tons. This demonstration requirement applies regardless of whether the CCR use involves a well-constructed fill operation, meeting all relevant product specifications, regulatory standards, or design standards, including the ASTM standard E2277 for structural fill.

While EPA did not intend for the 12,400 ton threshold to be a bright line between beneficial use and disposal, based on comments from industry this appears to be how it has frequently operated.[46] Complicating the situation is the fact that the 12,400 ton threshold was found to be based on data that were calculated with the wrong unit conversion factor (assuming the original data were reported in cubic feet rather than cubic yards). Much of the effort to ''fix'' the fourth criterion focused on identifying a more defensible basis for a threshold that would trigger an environmental demonstration, eventually resulting in the 2019 CCR proposal to set the threshold through location-based criteria. However, as discussed in Unit III.E. of this preamble, commenters raised substantive issues with this proposed approach, as well as with the alternative approaches that the Agency requested comment on. In addition, EPA's request for more information via the 2020 NODA did not indicate a clear path forward to establish an updated threshold.

After reviewing the comments on the 2019 CCR proposal and 2020 CCR NODA, EPA has reached the conclusion that the operational flaw in the fourth criterion is not the specific threshold that sets the conditions for requiring an environmental demonstration, but rather the environmental demonstration requirement itself. EPA finds that the environmental demonstration requirement in the fourth criterion, as currently written, poses an unacceptable barrier to beneficial use.

EPA proposes to conclude, as several commenters on the 2019 CCR proposal and 2020 CCR NODA posited, that the first three criteria are sufficient in defining beneficial use and not disposal.[47] In considering these comments, EPA has analyzed damage incidents involving use of unencapsulated CCR as structural fill, and has not found evidence that CCR use as structural fill that meets the first three beneficial use criteria presents a reasonable probability of adverse effects on health or the environment.[48] Most of the incidents involve deposits of CCR in sand and gravel pits and quarries, which were explicitly defined as CCR landfills under the 2015 CCR rule, or sites that involve both CCR disposal and use as fill. The remaining seven cases do not clearly indicate compliance with the first three beneficial use criteria. When considering these incidents in the context of the past two decades of CCR beneficial use as engineered fill, involving millions of tons of CCR,[49] as well as the most recent ASTM standards for CCR in structural fill discussed earlier, EPA finds that these criteria adequately address the conditions that constitute disposal, and therefore EPA is proposing to delete the fourth criterion.

c. Applicability of the Revised Beneficial Use Definition

EPA notes that the revised definition of beneficial use would not apply retroactively. The revised definition, when also considered in conjunction with EPA proposal to eliminate the definition of CCR pile (as discussed below), would apply to all future CCR beneficial use projects that occur after the effective date, whether conducted onsite at the generating utility or offsite.

[45] See *Laboratory Testing and Other Relevant Standards and Guides for CCR Uses,* available in the docket.

[46] For example, the cement industry has commented on the current beneficial use definition saying that ''[t]his narrowly tailored definition and *the 12,400-ton threshold exemption from treatment as disposal* were key elements of the rule for cement manufacturers, as it allowed plants to inventory minimum quantities of CCPs for use as raw materials in clinker manufacturing, cement, and blended cements.'' Comment submitted by the Portland Cement Association on the 2020 NODA, February 22, 2021. EPA–HQ–OLEM–2020–0463–0035 (emphasis added).

[47] See, *e.g.,* comments from the Cross-Cutting Issues Group (CCIG) (EPA–HQ–OLEM–2018–0524–0165), National Mining Association (NMA) (EPA–HQ–OLEM–2018–0524–0161), American Coal Council (EPA–HQ–OLEM–2020–0463–0029); Utility Solid Waste Activities Group (USWAG) (EPA–HQ–OLEM–2020–0463–0032) and EPA–HQ–OLEM–2018–0524–0064; Oglethorpe Power Corporation (EPA–HQ–OLEM–2018–0524–0176); Berkshire Hathaway Energy Co. (EPA–HQ–OLEM–2018–0524–0146), Aurora Energy, LLC (EPA–HQ–OLEM–2018–0524–0175): and American Coal Ash Association (ACAA) EPA–HQ–OLEM–2020–0463–0027.

[48] EPA 2025 *Summary of Damage Incidents Associated with CCR Used as Structural Fill,* available in the docket.

[49] Based on data reported annually by the American Coal Ash Association, over the past 24 years, the total amount of CCR that has been used as structural fill and embankments is more than 85,000,000 tons (ACAA CCP Survey Results, 2000 to 2023).

This ensures consistency and clarity across all settings.

d. Interaction With State Beneficial Use Programs

i. Importance of the Role State Programs Play in Regulating Beneficial Use Under State Law

States have historically implemented programs related to beneficial use of industrial, non-hazardous secondary materials under their state laws, and EPA has been recommending entities consult with state environmental agencies to ascertain that the state considers their proposed application a beneficial use. As discussed earlier, EPA excluded beneficial use of CCR from federal regulation under its May 2000 regulatory determination, acknowledging that states bear the primary responsibility for CCR beneficial use programs under their existing state authorities. Surveys of state beneficial use programs conducted by the ASTSWMO have found that states use a variety of formal and informal decision-making processes or programs to make beneficial use determinations, and many state programs specifically address the use of CCR in such applications as cement manufacturing, concrete, construction projects, landfill cover, and structural fill.[50] [51] [52] State decision-making authorities come from statutes, regulations, policy memoranda and guidelines, and some states also use agency discretion to review requests and decide whether uses are approvable. Different segments of states' environmental agencies can make these decisions, either alone, or in collaboration with other state agencies, such as health, agriculture or transportation. Decisions can come in the form of permits, written authorizations, beneficial use determinations, or other methods stipulated in the state regulations or statutes.

The various approaches that states have adopted under state law to determine when a use of a material is beneficial or is disposal under state laws have allowed states to consider important regional issues and interests, and the specific geographic, geologic, hydrologic and climatic conditions at proposed sites. The importance of state flexibility in making these determinations is reflected in the official position of the ASTSWMO Board of Directors, which states ''ASTSWMO prefers beneficial use guidance to a regulatory approach. States need flexibility to implement procedures that work within their existing regulatory framework and for making site-specific technical decisions. ASTSWMO agrees that a proposed use of large quantities of CCR without a proven functional benefit should be thoroughly investigated, due to risks of environmental harm, and should not be necessarily viewed as a beneficial use. However, a ''one-size-fits-all'' regulatory approach is not practical or effective.''[53]

As noted in the 2015 CCR Rule, under the current regulations, EPA expects potential non-roadway users of unencapsulated CCR below the 12,400-ton threshold to work with the states to determine the potential risks of the proposed use at the site and to adopt the appropriate controls necessary to address the risks. 80 FR 21353 With the proposed elimination of the 12,400-ton threshold, EPA would likewise expect all CCR users of unencapsulated CCR to continue to work with their state to ensure that the use is considered beneficial under the state requirements. EPA requests comment on whether the definition of beneficial use should include a requirement in the regulations to document state approval of the beneficial use under the state law.

ii. EPA Technical Assistance on Beneficial Use Determinations

Over the years, EPA has issued a number of documents to provide states technical assistance on making beneficial use determinations, including the type of site-specific technical decisions that may apply to certain CCR beneficial uses, including a Beneficial Use Methodology, Beneficial Use Compendium, national-level beneficial use evaluations, updates to Industrial Waste Management Evaluation Model, and the development of Leaching Environmental Assessment Framework (LEAF) Test Method.[54] EPA requests comment on whether and what sort of additional guidance documents would be helpful to states making CCR beneficial use decisions under their state authority.

2. Revisions Related to CCR Accumulations

a. Overview of Proposed Changes Related to CCR Accumulations

EPA is proposing new definitions of ''CCR storage pile'' and ''temporary accumulation'' to establish a single set of requirements applicable to all temporary placement of unencapsulated CCR on the land, whether managed onsite or off-site, and whether destined for beneficial use or disposal. Rather than characterizing such placements as either disposal or beneficial use, EPA considers that these activities are better characterized as ''storage,'' with criteria established pursuant to the authority in RCRA section 1008(a)(3) to control releases. These proposed standards are similar to the definitions that EPA proposed in the 2019 CCR rule, with some adjustments to make the requirements clearer and less burdensome.

As discussed in the 2019 CCR proposal, under the current regulations, CCR piles are defined as any ''non-containerized accumulation of solid, non-flowing CCR that is placed on the land. CCR that is beneficially used off-site is not a CCR pile.'' See § 257.53. The first part of this definition mirrors the RCRA definition of disposal, which is defined in part as the ''placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.'' See 42 U.S.C. 6903(3). Thus, CCR piles are considered disposal units and therefore are currently included in the definition of CCR landfill. See § 257.53.

CCR accumulations that are containerized (*i.e.,* that are subject to measures that the facility has taken to control releases), are not considered ''CCR piles'' under the current regulations, even if they otherwise meet the conventional description of a ''pile'' (*i.e.,* an accumulation or mound of CCR). Examples of containerization measures include placement of CCR on an impervious base such as asphalt, concrete or geomembrane; leachate and run off collection; and walls or wind barriers.

[50] ASTSWMO (2007). *2006 Beneficial Use Survey Report.* Association of State and Territorial Solid Waste Management Officials, November 2007.

[51] ASTSWMO (2012). *Beneficial Use of Coal Combustion Residuals Survey Report.* Association of State and Territorial Solid Waste Management Officials, September 2012.

[52] ASTSWMO (2021), *Beneficial Use of Fill-Like Materials Survey Report,* Association of State and Territorial Solid Waste Management Officials, February 2021.

[53] ASTSWMO. (2023). 2023 ASTSWMO statement on coal combustion residuals program implementation. Retrieved from *https://astswmo.org/2023-astswmo-statement-on-coal-combustion-residuals-program-implementation/.*

[54] These tools and other technical assistance documents that address barriers to the beneficial use of non-hazardous secondary materials, including CCR, which can be found at *https://www.epa.gov/smm/sustainable-management-industrial-non-hazardous-secondary-materials#04* and on the Agency's CCR Reuse web page at *https://www.epa.gov/coal-combustion-residuals/coal-combustion-residuals-reuse.*

In addition, off-site non-containerized accumulations of CCR that meet the definition of beneficial use are also not considered ''CCR piles'', while onsite non-containerized accumulations of CCR (at an electric utility or independent power producer site) are CCR piles, even if they would otherwise meet the definition of beneficial use. See § 257.53 (definition of CCR pile); 80 FR 21356 (April 17, 2015). This regulation of onsite CCR accumulations as CCR piles applies to all onsite non-containerized CCR accumulations, including CCR that has been used as structural fill onsite. As stated in the Legacy Final Rule, ''under the existing regulations, the direct placement of CCR on the land on site of a utility, with nothing to control releases is, by definition, a CCR pile and therefore not beneficial use. The examples of historical [CCRMU] discussed in the proposal, structural fill and CCR placed below currently regulated CCR units onsite of a utility also clearly fit that definition.'' 89 FR 39050.

Thus, in summary, under current regulations, the following CCR accumulations on the land are CCR piles and therefore regulated as CCR landfills: any non-containerized CCR accumulation onsite at an electric utility and any non-containerized CCR accumulation off-site that does not meet the definition of beneficial use.

This regulatory approach has been the source of confusion, and stakeholders have also raised concerns over the inconsistency of this approach. In the 2019 CCR proposal, EPA proposed a definition of ''CCR storage pile'' in order to establish a single set of requirements applicable to all temporary placement of unencapsulated CCR on the land, whether managed onsite or off-site, and whether destined for beneficial use or disposal, to ensure that such accumulations are designed and managed to control releases of CCR to the environment. Rather than characterizing such activities as either disposal or beneficial use, EPA proposed that these activities are better characterized as ''storage,'' with criteria established pursuant to the authority in section 1008(a)(3) to control releases. In addition, as discussed earlier, EPA is proposing to apply the definition of ''beneficial use'' equally to onsite and off-site beneficial uses.

After considering the public comments on the 2019 CCR proposal, EPA is proposing several revisions to § 257.53 and conforming changes in § 257.2 to address the management of temporary CCR accumulations. Specifically, EPA is proposing to define a CCR storage pile as ''any temporary accumulation of solid, non-flowing CCR placed on the land that is designed and managed to control unpermitted releases of CCR to the environment.'' In addition, EPA is proposing to define ''temporary accumulation'' to mean ''an accumulation on the land that is neither permanent nor indefinite. To demonstrate that the accumulation on the land is temporary, the CCR must be removed from the pile at the site. The entity engaged in the activity may use ordinary business records to document that the CCR in the pile will be removed according to a specific timeline.''

The requirement to control unpermitted releases in the definition of CCR storage pile is intended to be consistent with the definition of disposal in 42 U.S.C. 6903(3). As stated in that definition, disposal includes the ''placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including groundwaters.'' When significant and persistent volumes of unencapsulated CCR are present, similarities exist in the potential risks posed to human health, groundwater resources, or the air between the placement of CCR in piles and placement in CCR landfills, if inappropriately managed. See 80 FR 21356.

Examples of measures that might be used to control releases from a CCR storage pile include: periodic wetting, application of surfactants, tarps or wind barriers to suppress dust; tarps or berms for preventing contact with precipitation and controlling run-on/runoff; and impervious storage pads, geomembrane liners or tarps for soil and groundwater protection. EPA is not proposing to impose a specific set of control measures, as the amount of CCR stored, the location of storage, and the prevailing weather conditions may affect which controls are appropriate. Therefore, EPA intends to provide the entities engaged in the activity with flexibility to determine the control measures most appropriate to meet the requirement to control releases at a given site. This flexibility also ensures that EPA's requirements do not contradict any state or local requirements for the use of prescribed controls.

In addition, limiting the definition of CCR storage pile to temporary accumulations prevents the CCR being stored in lieu of disposal, and also effectively limits the amount of unencapsulated CCR that will be placed and persist in one location. Due to these factors, EPA considers that it is not necessary to impose on CCR storage piles the same set of technical requirements as for CCR landfills, and that meeting the requirement to control releases of CCR in the definition of a CCR storage pile, combined with meeting the definition of temporary accumulation, adequately addresses the conditions that would otherwise constitute disposal of CCR, either onsite or off-site.

EPA is also proposing a conforming change to the definition of a CCR landfill to remove ''CCR pile'' from the list of units considered to be a landfill and instead include ''accumulations of CCR on the land that do not meet the definition of a CCR storage pile'' in the definition of CCR landfill. This proposed change would apply to the definition of CCR landfill in §§ 257.2 and 257.53. In addition, EPA is proposing a technical correction to the definition of CCR landfill in § 257.2 so that definition conforms to the definition of CCR landfill in § 257.53, including changes related to the January 16, 2025 CCR direct final rule and companion proposed rule. See 90 FR 4639.

b. Proposed Changes as Compared to the 2019 CCR Proposal and Requests for Comment

While the changes proposed in this rule are similar to those proposed in the 2019 CCR rule, EPA has made some adjustments to make the requirements more clear and less burdensome. These adjustments include: (1) Removing the definition of ''CCR pile'' and the designation of ''CCR pile'' from the definition of landfill, (2) Not including designation of ''enclosed structure'' in the regulation of CCR, (3) Not listing the specific examples of control measures for CCR storage piles in the regulations, and (4) Clarifying in the definition of ''temporary accumulation'' that ordinary business records are sufficient for documenting that the CCR has been completely removed from the pile.

EPA is proposing to remove the definition of ''CCR pile'' and the designation of ''CCR pile'' from the definition of landfill because of the possible confusion between ''CCR pile'' and ''CCR storage pile'', and the redundancy of the ''CCR pile'' definition with the proposed revision to the definition of CCR landfill, which proposes to add ''any accumulation of CCR on the land that does not meet the definition of a CCR storage pile''. This added language to the landfill definition covers any unit that would be considered a ''CCR pile'' under the current regulations, and therefore it is

no longer necessary to have a separate term for this type of accumulation.

EPA is also making adjustments to the definitions of ''CCR storage pile'' and ''temporary accumulation'' that were originally proposed in 2019 to increase the flexibility of these requirements and remove unnecessary burdens. The definition of CCR storage pile is proposed to require the unit is designed to control unpermitted releases of CCR in order to account for the fact that such units are often subject to permitting requirements that directly affect the management of CCR. In addition, EPA is proposing to not include the specific examples of controlling releases from CCR piles that were proposed to be included in the definition in 2019, namely periodic wetting, application of surfactants, tarps or wind barriers to suppress dust; tarps or berms for preventing contact with precipitation and controlling run-on/runoff; and impervious storage pads or geomembrane liners for soil and groundwater protection. While all these practices remain valid examples of controlling unpermitted releases, including them in the regulatory language gave some commenters the false impression that EPA intended these specific controls were always required, when in some circumstances they may not be. As noted earlier, EPA intends to provide the entities engaged in the activity with flexibility to determine the control measures most appropriate to meet the requirement to control releases at a given site.

Similarly, EPA is not proposing the definition of ''enclosed structure'' and its designation as a management unit that would not be a CCR storage pile because this definition caused some commenters to conclude that management in an enclosed structure would be a requirement of the rule. While enclosed structures would continue to be one method to ensure that unpermitted releases are controlled, such a structure is not required and including it in the regulation is unnecessary and potentially confusing.

Finally, EPA is proposing to remove language from the 2019 CCR Proposal definition of ''temporary accumulation'' that stated the ''entity engaged in the activity must have a record in place, such as a contract, purchase order, facility operation and maintenance, or fugitive dust control plan'' and instead has clarified that the entity ''may use ordinary business records to demonstrate that the CCR in the pile will be removed according to a specific timeline.'' The specific types of business records would depend on the beneficial use and the pile location, but some examples may include sales and transportation contracts, invoices and sales receipts, inventory logs, or shipment records demonstrating that the CCR storage pile will be removed within a specific timeline.

EPA requests comments on the adjustments to the 2019 CCR Proposal language, as well as on the option to keep the current structure of regulating non-containerized CCR piles that do not meet the definition of beneficial use as disposal units and simply removing the distinction between onsite and off-site piles.

EPA is also requesting comment on the types of business records that would best demonstrate that a CCR storage pile is ''temporary'' and whether a pile custodian could demonstrate that the pile will be removed according to a specific timeline by issuing a certification. For example, in cases where pile custodians are not able to provide business records to demonstrate that piles are temporary due to existence of proprietary business information, a custodian's certification may be an appropriate alternative way to show that the CCR in the pile will be removed according to a specific timeline.

EPA is also requesting comment on adding a provision within the proposed definition of a temporary accumulation to allow CCR to be removed from CCR storage piles on a rolling basis. This provision would expand the proposed definition to cover cases in which storage piles are supporting established, ongoing operations, and not just the piles for which removal of a final amount of CCR is expected within a specific timeframe. The purpose of the provision would be to enable facilities to continue their operation while also ensuring that the CCR is continuously getting beneficially used or transferred for disposal, in lieu of being stored indefinitely in lieu of disposal. The provision would be similar to how the speculative accumulation requirements that apply to hazardous secondary materials that are destined for recycling work. See § 261.1(c)(8). Specifically, entities would demonstrate that their CCR is not being stored in lieu of disposal by removing at least 75% of the material from the storage pile each calendar year. The proximity of the pile to established, ongoing operation could help demonstrate that the provision is appropriate for the operation. In addition, EPA is requesting comment on whether to establish a provision that would authorize a one-time pile that would not be subject to speculative accumulation limits, provided that all CCR was removed within a specific time, *e.g.,* 9 months. For example, such a provision could potentially apply to one-time, short-term piles primarily set up to meet construction demands where a timeframe of 9 months, which covers the entirety of the construction season, is sufficiently long for CCR to be removed.

3. Exclusions for Specific Beneficial Uses

a. Exclusion for CCR Used in Cement Manufacturing at Cement Kilns

EPA is proposing to add a provision at § 257.50(k) to exclude CCR at cement kilns that is destined for use as an ingredient in cement manufacturing from the requirements of 40 CFR part 257. This proposed categorical determination recognizes the benefit CCR provides as an ingredient in cement manufacturing, and how this benefit incentivizes its management as a valuable commodity at the cement kiln and helps ensure it will be appropriately incorporated in an encapsulated beneficial use. This proposed change would remove regulatory uncertainty for both the cement kilns and the regulatory authorities, simplify implementation, and reduce burden. EPA is also requesting comment on whether it would be helpful to include a regulatory clarification explaining that the current industry management practices for CCR fly ash that is used directly in concrete production as a substitute for Portland cement are not subject to the 40 CFR part 257 CCR requirements.

An encapsulated beneficial use is one that binds the CCR into a solid matrix that minimizes mobilization into the surrounding environment, such as the addition of CCR in cement manufacturing at cement kilns and incorporation in concrete. In general, encapsulated uses of CCR must comply with the first three criteria in the definition of beneficial use found at § 257.53: (1) The CCR used must provide a functional benefit, (2) The CCR must substitute for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices such as extraction, and (3) The use of CCR must meet relevant product specifications, regulatory standards, or design standards when available, and when such standards are not available, CCR are not used in excess quantities.

EPA has determined that CCR used as an ingredient in cement manufacturing satisfies these three criteria. CCR used in cement manufacturing provides a functional benefit in that it increases the durability of concrete and is more effective in combating degradation from

salt water. CCR is also directly used as a substitute for virgin materials, such as silica, iron, clay, shale, and bauxite in kiln feed, gypsum in finished portland cement, and clinker in blended cement products, reducing the need for mining, processing, and transport of virgin materials and the further disturbance of the environment. Lastly, when CCR is used as a commercial product, the amount of CCR used is controlled by meeting careful product specifications.

Several decades of record support that the current beneficial use of CCR as a replacement for industrial raw materials (*e.g.,* Portland cement, virgin stone aggregate, lime, gypsum) provides substantial annual life cycle environmental benefits for these industrial applications. Cement is a critical ingredient in the production of concrete, and cement and concrete manufacturing has proven to be among the highest value encapsulated use of CCR, providing economic and environmental benefits. Cement kilns have shown to treat CCR as a high-value feedstock, the same as other raw materials, as it is carefully inventoried and stored at onsite facilities as valuable commodities in accordance with the applicable standards, practices, and conditions in a manner analogous to natural raw materials or other industrial byproducts used as raw materials.[55] In 2020, EPA estimated that the environmental and human benefit of using one ton of CCR in lieu of virgin materials in the production of portland cement is $69.90 compared to using one ton of virgin fill materials at $2.28. This puts cement manufacturing among the highest value encapsulated uses of CCR, providing economic and environmental benefits far greater than those provided by other uses, and offering further economic incentive for it to be treated as a valuable commodity. Cement manufacturing also uses a tightly controlled and precise chemical combination in its complex systems process where extensive and carefully calibrated environmental controls are used. Cement kilns will require or conduct laboratory testing to ensure that supplied CCR meet the applicable specifications for use in cement or it is rejected.[56] Cement kilns will also retain safety data sheets (SDSs) for CCR materials procured for use in the cement manufacturing process, including fly ash, bottom ash, and synthetic gypsum, to ensure the health and safety of its employees and visitors.[57]

In 2014, EPA evaluated the risks and benefits of using CCR in cement and concrete and based on the findings of the evaluation, concluded that environmental releases of constituents of potential concern during use by the consumer are comparable to or lower than those from analogous non-CCR products or are at or below relevant regulatory and health-based benchmarks for human and ecological receptors.[58] Furthermore, the cement industry already complies with stringent air and water permitting requirements to control releases from CCR stored in piles at cement kilns before its use in cement manufacturing. Cement kilns must comply with dust suppression measures under their Title V Permits by which they are subject to visible emissions limits for all CCR storage piles and requirements to control and minimize fugitive dust. They also must comply with stormwater control requirements under National Pollutant Discharge Elimination System (NPDES) Permits to mitigate environmental impacts of CCR storage and all other material stored in piles.[59] EPA requests comment on the exclusion of CCR beneficially used at cement kilns from regulation.

Fly Ash Used in Concrete

EPA is also requesting comment on whether it would be helpful to include a regulatory clarification explaining that CCR fly ash that is used directly in concrete production as a substitute for Portland cement is not subject to the CCR requirements of 40 CFR part 257.

As a practical matter, it is EPA's understanding that the current handling of fly ash is already not subject to part 257 CCR requirements because fly ash that is substituting for Portland cement is not placed on the land before being incorporated into concrete. As explained in the 2019 CCR proposal, fly ash marketed for beneficial use in concrete production is consistent across the industry; fly ash is collected in a dry powder form, stored in silos, domes, or buildings and transferred pneumatically via truck or rail transportation in a self-contained system from start to end. The reason for the containment is that fly ash provides mechanical and chemical benefits when used in concrete, making it a valuable ingredient and fully warranting the protection of its properties through handling and storage. 84 FR 40363–44. In addition, the incorporation of fly ash in concrete is a well-established beneficial use, and EPA has concluded that environmental releases of constituents of potential concern during use by the consumer are comparable to or lower than those from analogous non-CCR products or are at or below relevant regulatory and health-based benchmarks for human and ecological receptors.[60] Thus, current practices for managing the fly ash for use in concrete production are already functionally not subject to part 257 CCR requirements and a categorical exclusion in the regulations is not strictly necessary.

However, given that EPA is proposing categorical exclusions for other high-value beneficial uses, the Agency does not want to introduce any confusion regarding the regulatory status of CCR fly ash used in concrete production, and requests comment on whether a regulatory clarification to that effect would be helpful.

b. Exclusion for FGD Gypsum Beneficially Used in Agriculture

EPA is also proposing to add a provision at § 257.50(l) to exclude flue gas desulfurization (FGD) gypsum from the requirements of 40 CFR part 257 when destined to be applied as an agricultural amendment at agronomically appropriate rates. FGD gypsum is a type of CCR generated from the pollution control technologies designed to reduce sulfur gas emissions from electric utilities and is the largest source of synthetic gypsum in the United States. As with the exclusion for CCR beneficially used in cement kilns, this proposed change would also remove regulatory uncertainty for both the agricultural industry and the regulatory authorities, simplify implementation, and reduce burden for beneficially used FGD gypsum applied as an agricultural amendment at agronomically appropriate rates.

Under current regulations, FGD gypsum, when used for agricultural purposes, must comply with all four criteria in the beneficial use definition found at 40 CFR 257.53: (1) The CCR

[55] EPA–HQ–OLEM–2020–0463, Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Reconsideration of Beneficial Use Criteria and Piles; Notification of Data Availability. PCA Response to EPA Request for Supplemental Documentation. *February 2021.*

[56] *Id.*

[57] *Id.*

[58] EPA 2014. *Coal Combustion Residual Beneficial Use Evaluation: Fly Ash Concrete and FGD Gypsum Wallboard. https://www.epa.gov/sites/default/files/2014-12/documents/ccr_bu_eval.pdf. February 2014.*

[59] EPA–HQ–OLEM–2020–0463, Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Reconsideration of Beneficial Use Criteria and Piles; Notification of Data Availability. PCA Response to EPA Request for Supplemental Documentation. *February 2021.*

[60] EPA 2014. *Coal Combustion Residual Beneficial Use Evaluation: Fly Ash Concrete and FGD Gypsum Wallboard. https://www.epa.gov/sites/default/files/2014-12/documents/ccr_bu_eval.pdf. February 2014.*

used must provide a functional benefit, (2) The CCR must substitute for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices such as extraction, (3) The use of CCR must meet relevant product specifications, regulatory standards, or design standards when available, and when such standards are not available, CCR are not used in excess quantities, and (4) For uses over 12,400 tons, must provide an environmental demonstration that environmental releases to groundwater, surface water, soil and air are comparable to or lower than those from analogous products made without FGD gypsum, or that environmental releases will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use.[61]

For the first criterion, FGD gypsum acts in several beneficial ways in agricultural soil applications, such as nutrient amendments for calcium and sulfur deficiencies, soluble phosphorus and aluminum toxicity adverse effects reduction, the amelioration of sodic soils, and the supportive aggregation of clay soil, which improves water infiltration. The primary crops that benefit from the application of gypsum include peanuts, cotton, corn, wheat, and alfalfa.[62] For the second criterion, FGD gypsum can substitute for mined gypsum, which is a mineral that occurs naturally in sedimentary rock formations, because both materials are composed primarily of calcium sulfate. EPA has previously concluded that many of the constituents in FGD gypsum are comparable to those in mined gypsum.[63] For the third criterion, under U.S. Department of Agriculture (USDA) standards, amendment provider has the responsibility to provide chemical analysis documentation of the FGD gypsum which must include the calcium and sulfur content and content of heavy metals, and all other potential contaminants, and concentrations of potential contaminants cannot exceed maximum allowable concentrations.[64] The USDA stipulates that annual application rates should not exceed 5 tons/acre for the purposes defined in the Amending Soil Properties with Gypsum Products (Ac.) (333) Conservation Practice Standard.[65] Thus, when applied as an agricultural amendment at agronomically appropriate rates, FGD gypsum meets the first three beneficial use criteria.

In addition, in 2023 EPA conducted a beneficial use evaluation of FGD gypsum to demonstrate how an analytical framework can be used to evaluate the potential for adverse environmental impacts from a wide range of industrial materials and their proposed beneficial uses, specifically the use of FGD gypsum as an agricultural amendment.[66] Based on the results of this study, EPA concluded that all potential risks resulting from soil treated with FGD gypsum are likely to fall below level of concern under actual use scenarios, and determined the beneficial use of FGD gypsum can provide meaningful benefits to agricultural fields while remaining protective of human health and the environment.[67]

EPA's proposed exemption from the requirements of 40 CFR part 257 also applies to the storage of FGD gypsum while waiting at agricultural retail facilities before being applied in agricultural fields. As discussed above, FGD gypsum is a valuable resource to farmers, and agricultural retailers have an incentive to manage it in a way that avoids unpermitted releases to the environment, ensuring that this resource will be used. FGD gypsum is stored at agricultural retail facilities typically for only a three- to four-month period during growing season in piles at around 10,000 tons.[68] Generally, FGD gypsum comes via truck from power plants in April, May, and June of each year. Once FGD gypsum arrives, it is placed on a compressed dirt area. It is then compressed in stacks using a front-end loader. When runoff occurs, it is scooped back in and mixed with the existing material. A holding pond is used to capture gradually declining material. As needed, the pile is re-shaped and re-graded to maintain integrity. The pile is typically emptied by the end of June. Weight measures are used for inventory tracking, to accurately record how much FGD gypsum comes in and how much is sent out. The Agricultural Retailers Association (ARA) emphasizes the importance of controlling ''shrinkage'' of the FGD gypsum to minimize loss and indicates that these management practices are generalizable and applied everywhere.[69]

The proposed exemption recognizes that the FGD gypsum as an agricultural amendment at agronomically appropriate rates is a well-established beneficial use practice that provides environmental benefits and raises minimal health or environmental concerns. This proposed exemption also incentivizes the continuation of management practices at agricultural retail facilities that prevent loss of the material and ensure it will in fact be incorporated as an agricultural amendment.

c. Exclusion for FGD Gypsum Beneficially Used in Wallboard

In addition, EPA is proposing an exclusion in § 257.50(l) for FGD gypsum that is destined for use as an ingredient in wallboard manufacturing. This proposed regulatory revision provides regulatory certainty by codifying EPA's current position on FGD gypsum managed as a valuable commodity and used in wallboard, as expressed in the preamble to the 2015 CCR rule and subsequent guidance.[70] [71] Several circumstances factor into this proposal. Firstly, the use of FGD gypsum as replacement for mined gypsum in wallboard, is significant at around 75% of all FGD gypsum being beneficially used.[72] FGD gypsum serves exactly the same function in wallboard as mined gypsum and meets all commercial specifications. Its use decreases the need to mine natural gypsum, conserving the natural resource and energy that would otherwise be needed to mine natural gypsum. Thus, the use of FGD gypsum in place of mined

[61] While EPA is proposing to remove the fourth criterion from the definition of beneficial use, the Agency is including in this discussion a reference to the fourth criterion both because it reflects the current regulations and because the specific beneficial use evaluation that was performed for the use of FGD gypsum in agriculture is relevant to this specific proposed exemption.

[62] EPA–HQ–OLEM–2020–0463, Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Reconsideration of Beneficial Use Criteria and Piles; Notification of Data Availability. Agricultural Retailers Association Comment. *October 2019.*

[63] U.S. EPA, US Department of Agriculture, RTI International. Beneficial Use Evaluation: Flue Gas Desulfurization Gypsum as an Agricultural Amendment. March 2023.

[64] USDA. Conservation Practice Standard Amending Soil Properties with Gypsum Products. June 2015.

[65] *Id.*

[66] *U.S. EPA, US Department of Agriculture, RTI International. Beneficial Use Evaluation: Flue Gas Desulfurization Gypsum as an Agricultural Amendment. March 2023.*

[67] *Id. While the study identifies some limited potential for risk from release of selenium to surface water when FGD gypsum is applied across every available field at the highest rates and frequencies, even in this extreme and unlikely scenario, identified risks can be mitigated through minor limits on application practices.*

[68] USDA. Conservation Practice Standard Amending Soil Properties with Gypsum Products. June 2015.

[69] EPA meeting with Agricultural Retailers Association, held on May 27, 2020. EPA–HQ–OLEM–2020–0463–0003.

[70] 80 FR 21348.

[71] *https://www.epa.gov/coal-combustion-residuals/frequent-questions-about-beneficial-use-coal-combustion-residuals#t2q5.*

[72] ACAA 2023 CCR Survey Results, *https://acaa-usa.org/wp-content/uploads/2025/05/2023-Production-and-Use-Survey-Results-FINAL.pdf.*

gypsum can offer significant environmental benefits.

Secondly, EPA evaluated this use in 2014, and, based on FGD gypsum wallboard that meets relevant physical and performance standards, conforms to standard design specifications, and incorporates FGD gypsum from pollution control devices used in the United States, concluded that FGD gypsum wallboard is an appropriate beneficial use.[73]

Finally, synthetic gypsum is a product of the FGD process at coal-fired power plants. The utility designs and operates its air pollution control devices to produce an optimal product, including the oxidation of the FGD to produce synthetic gypsum. After its production, the utility treats FGD gypsum as a valuable input into a production process, protecting the inventory so the material can in fact be incorporated into wallboard. Moreover, wallboard plants are frequently sited in close proximity to power plants for access to raw material, with a considerable investment involved. Thus, the proposed codification recognizes that the FGD gypsum use as an ingredient in the manufacture of wallboard is a well-established and widely accepted practice that provides environmental benefits while raising minimal health or environmental concerns. The proposed codification incentivizes the continuation of management practices for FGD gypsum that prevent loss of the material and ensure it will in fact be incorporated into wallboard.

D. Federal CCR Permitting Rule–Reopening the Comment Period

On February 20, 2020, EPA proposed a rule (85 FR 9940) entitled *Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; Federal CCR Permit Program* (Federal CCR permit program proposed rule), that would establish a Federal CCR permit program that will operate in Indian country and in nonparticipating States. The proposal describes how EPA will implement a Federal CCR permit program in accordance with the requirements of the WIIN Act, and includes the requirements and procedures EPA intends to use to issue Federal permits for disposal and associated solid waste management of CCR in 40 CFR part 257, subpart E. The public comment period for the proposed Federal CCR permit rule ran from February 20, 2020, through August 7, 2020.

Given that it has been over five years since the proposal was published, EPA intends to reopen the comment period on the Federal CCR permit program proposed rule in a subsequent notice to provide the public with another 30 days to comment on the proposal. To effectuate this, EPA will publish a separate document in the **Federal Register** announcing that the comment period has been reopened and that comments need to be submitted to Docket ID No. EPA–HQ–OLEM–2019–0361.[74]

V. The Projected Economic Impact of This Action

A. Introduction

EPA estimated the costs and benefits of this action in a Regulatory Impact Analysis (RIA), which is available in the docket for this action.

B. Affected Universe

The universe of units and facilities affected by this action includes four categories. The first is comprised of CCR landfills and surface impoundments at facilities actively producing power and placing CCR into onsite units on or after October 19, 2015. These units were first regulated under the 2015 CCR Final Rule. The RIA identifies 783 units at 303 facilities. The second category consists of CCR surface impoundments at facilities that stopped producing power and placing CCR into onsite unites on or before October 19, 2015. These units were first regulated under the 2024 Legacy Final Rule. The RIA identifies 97 surface impoundments at 49 facilities. The third category consists of CCRMU at regulated facilities. These units were first regulated under the 2024 Legacy Final Rule. The RIA identifies 195 CCRMU at 104 facilities. The fourth category consists of businesses who purchase and store CCR and other byproducts of coal combustion onsite as inputs for industrial purposes (*i.e.,* for beneficial use). Beneficial use of CCR was first defined under the 2015 CCR Final Rule. The RIA identifies a range of 816 to 1,256 businesses that use CCR as an industrial input.

Note that since many of the provisions of this action grant flexibilities to permitting authorities or apply based on site-specific characteristics or practices, the total number of CCR units and facilities affected by each provision my differ from the totals listed in this section. The RIA estimates and details the number of facilities and units affected by each provision in Chapter 2.

C. Baseline Costs

The baseline costs of this rule consist of all costs associated with actives required to comply with the existing suite of CCR regulations. These regulations include the 2015 CCR Final Rule, the 2020 Part A Final Rule, and the 2024 Legacy Final Rule. The RIA also includes cost savings attributable to the 2025 CCRMU Deadline Extension Proposed Rule in the baseline. The difference between these baseline compliance costs and compliance costs under the provisions of this action are estimated and presented as cost savings in the RIA and summarized in the following section.

D. Costs and Benefits of the Proposed Rule

This proposed rule modifies the existing regulatory framework of the CCR program with four broad categories of changes that result in cost savings. The first set of changes broadens eligibility criteria for closure-by-removal certifications and deferrals for Legacy CCR SIs previously closed under state or federal oversight. The annualized cost savings associated with these changes are estimated to be approximately $9–$10 million per year when discounting at 3% and to be approximately $15–$17 million per year when discounting at 7%.

The second set of changes rescinds all CCRMU provisions from the 2024 Legacy Final Rule. The annualized cost savings associated with this change is estimated to be approximately $86–$100 million per year when discounting at 3% and approximately $117–$139 million per year when discounting at 7%.

The third set of changes allows state-authorized and federal permitting authorities to make certain site-specific determinations regarding groundwater monitoring points of compliance, groundwater protection standards, closure performance standards, closure timelines, and post-closure requirements. The annualize cost savings associated with these changes is estimated to be approximately $74–$78 million per year when discounting at 3% and approximately $96–$101 million per year when discounting at 7%.

The fourth set of changes amend the beneficial use regulations by removing demonstration requirements, changing definitions regarding accumulations of

[73] U.S. Environmental Protection Agency. 2014 Coal combustion residual beneficial use evaluation: Fly ash concrete and FGD gypsum wallboard. *https://www.epa.gov/coal-combustion-residuals/coal-combustion-residual-beneficial-use-evaluation-fly-ash-concrete-and.*

[74] To submit comments on the proposed Federal CCR permit program rule, search Docket ID No. EPA–HQ–OLEM–2019–0361, online at *https://www.regulations.gov.*

CCR, and exempting certain uses from regulatory requirements. The annualized cost savings associated with these changes is estimated to be approximately $6 million per year when discounting at 3% and approximately $6 million per year when discounting at 7%.

Overall, the proposed rule results in annualized cost savings of approximately $174 to $194 million per year when discounting at 3% and approximately $232 to $262 million per year when discounting at 7%.

The proposed rule modifies the existing regulatory framework of the CCR program with two broad categories of changes that result in impacts to the baseline benefits. The first set of changes eliminates or delays closure and corrective action requirements for specific units that are subject to regulation in the baseline. Specifically, the provision rescinding all requirements for CCRMU eliminates the closure and corrective action requirements for those units, while the provision allowing a permit authority to extend closure timeframes for CCR units where CCR is being extracted from the unit for beneficial use during closure delays closure for a subset of CCR units. These changes result in negative or dis-benefits when compared to the baseline. EPA has quantified these dis-benefits for three categories of benefits. These three categories are the avoided risk of CCR release events, the avoided impairment of human health, and avoided ecological harms. The annualized dis-benefits attributable to these provisions are approximately $9 to $21 million per year when discounting at 3% and approximately $8 to $18 million per year when discounting at 7%.

The second set of changes encourages the beneficial use of CCR by provide permitting flexibilities to encourage extraction of CCR during the closure of CCR units, and after closure of CCR units that close with waste in place. Extracted CCR can be beneficially used as an ingredient in, or substitute for, portland cement. CCR can also be beneficially used as a road base or construction fill, where it replaces virgin materials such as sand or gravel. The RIA estimates the positive annualized benefits associated with increased beneficial use of CCR at approximately $4 to $16 million per year when discounting at either 3% or 7%.

Overall, the proposed rule will result in annualized changes in benefits of approximately:

- A $5 million decrease when discounting at 3%; and
- A $4–$2 million decrease when discounting at 7%.

Overall, the RIA estimates that the net annualized cost savings and benefits, net of disbenefits, of this action will be $169–$189 million per year when discounting at 3%, and $229–$260 million when discounting at 7%.

E. What analysis of children's health did we conduct?

This action is subject to the EPA's Policy on Children's Health because the proposal has considerations for human health. However, EPA does not believe there are disproportionate risks to children because the populations living near CCR disposal facilities do not contain a disproportionate number of children relative to national averages. Please see the RIA (Section 5.1.2 Human Health Risk Assessment for Chronic Exposure Pathways) in the docket.

VI. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at *https://www.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 a significant regulatory action as defined under section 3(f)(1) of Executive Order 12866. Accordingly, it was submitted to the Office of Management and Budget (OMB) for review. Any changes made in response to OMB recommendations have been documented in the docket. The EPA prepared an analysis of the potential costs and benefits associated with this action. This analysis, ''Regulatory Impact Analysis; Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Legacy/CCRMU Amendments'' is available in the docket, and is briefly summarized in Unit V. of this proposed rule.

B. Executive Order 14192: Unleashing Prosperity Through Deregulation

This action is expected to be an Executive Order 14192 deregulatory action. This proposed rule is expected to provide burden reduction by streamlining and reducing regulatory requirements for owners and operators of CCR surface impoundments and CCRMUs.

C. Paperwork Reduction Act (PRA)

The information collection activities in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the PRA. The Information Collection Request (ICR) documents that the EPA prepared have been assigned EPA ICR numbers 2609.04 (OMB control no. 2050–0223) and 2761.03 (OMB control no. 2050–0231). You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here.

ICR number 2609.04 is the base ICR for the CCR program and covers all information collection activities required for CCR disposal units regulated under the 2015 final rule. ICR number 2761.03 is a temporary ICR which EPA requested to cover the information collection activities required under the 2024 Legacy final rule. EPA requested this temporary ICR due to the concurrent timing of the Legacy rule's finalization and the renewal of the base ICR. EPA will submit a request to merge the Legacy rule ICR (2761.03) into the base ICR (2609.04) at a later date. The information collection requirements are not enforceable until OMB approves them.

ICR Number 2609.04

For ICR 2609.04 (OMB control no. 2050–0223), the prior ICR supporting statement had included sections on information collection related to beneficial use, even though that ICR estimated zero users would demonstrate and keep records of beneficial use. Regardless, ICR 2609.04 (OMB control no. 2050–0223) has been updated to remove the sections on beneficial use information collection which corresponds with the proposed requirements of this action.

Respondents/affected entities: Electric utility facilities and independent power producers that fall under the NAICS code 221112 (Fossil Fuel Electric Power Generation).

Respondent's obligation to respond: Mandatory under RCRA Subtitle D, 40 CFR part 257.

Estimated number of respondents: 300 coal-fired electric utility plants with 723 disposal units. There is no change in number of respondents resulting from the proposed rule.

Frequency of response: Includes one-time, annual, and incidental/recurring responses.

Total estimated burden: 173,083 hours (per year). There is no change in number of hours from the proposed rule.

Total estimated cost: $26,168,233 (per year), comprised of $10,656,807 in annual labor costs and $15,511,426 in annual operation & maintenance costs. There is no change in the annual costs

per year resulting from the proposed rule.

ICR Number 2761.03

The changes made for ICR 2761.03 (OMB control no. 2050–0231) correspond with facilities no longer needing to complete the Facility Evaluation Report, required under 40 CFR 257.73(c) and (d).

Respondents/affected entities: Electric utility facilities and independent power producers that fall under the NAICS code 221112 (Fossil Fuel Electric Power Generation) and electric utilities and independent power producers that fall under the NAICS code 22111 (Electric Power Generation) whose facilities formerly burned coal to produce electricity and disposed of CCR onsite in legacy surface impoundments, CCRMU, and CCRMU at other active facilities.

Respondent's obligation to respond: Mandatory under RCRA Subtitle D, 40 CFR part 257.

Estimated number of respondents: 2,044 coal-fired electric utility. This is a reduction from the 2,083 respondents estimated in ICR 2761.03 based on a more recent accounting of the affected universe. There is no change in number of respondents resulting from the proposed rule.

Frequency of response: Includes one-time, annual, and incidental/recurring responses.

Total estimated burden: 211,717 hours (per year). There is a 55,406 reduction in hours resulting from the proposed rule.

Total estimated cost: $29,401,324 (per year), comprised of $12,610,186 in annual labor costs and $16,791,138 in annual operation & maintenance costs. There is a $3,489,105 reduction in costs, including $3,136,867 in annual labor costs and $352,238 in annual operation & maintenance costs resulting from the proposed rule.

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, any suggested methods for minimizing respondent burden, EPA's plan to merge the Legacy rule ICR (2761.03) into the base ICR (2609.04), and other aspects of these collections to the EPA using the docket identified at the beginning of this rule. The EPA will respond to any ICR-related comments in the final rule. You may also send your ICR-related comments to OMB's Office of Information and Regulatory Affairs using the interface at *https://www.reginfo.gov/public/do/PRAMain.* Find this information collection by selecting ''Currently under Review—Open for Public Comments'' or by using the search function. OMB must receive comments no later than May 13, 2026.

D. 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, EPA concludes that the impact of concern for this rule is any significant adverse economic impact on small entities and that the agency is certifying that this rule will not have a significant adverse economic impact on a substantial number of small entities because the rule relieves regulatory burden on the small entities subject to the rule. This proposed rule is a deregulatory action and does not add any additional burden beyond the 2024 Legacy Final Rule, while relieving some burdens imposed by that rule, and potentially relieving some burdens imposed by the 2015 CCR Final Rule, leading to cost savings for small entities. Specific relief to small entities includes removal of CCRMU regulations, which affects up to seven small entities affected by the 2024 Legacy Final Rule. Other relief includes regulatory flexibilities that may apply to Legacy CCR surface impoundments, which may affect up to five small entities affected by the 2024 Legacy Final Rule, and regulatory flexibilities that may apply to units regulated under the 2015 CCR Final Rule. Additional information on the cost savings can be found in the Regulatory Impact Analysis, which is available in the docket, and is summarized in Unit V. of this proposed rule. We have therefore concluded that this action will relieve regulatory burden for all directly regulated small entities.

E. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local or Tribal governments or the private sector. This action relieves regulatory burden.

F. 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.

G. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action does not have Tribal implications as specified in Executive Order 13175. This action does not impose new requirements on Tribal governments. Thus, Executive Order 13175 does not apply to this action.

H. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

Executive Order 13045 directs federal agencies to include an evaluation of the health and safety effects of the planned regulation on children in federal health and safety standards and explain why the regulation is preferable to potentially effective and reasonably feasible alternatives. This action is not subject to Executive Order 13045 because the EPA does not believe the environmental health risks or safety risks addressed by this action present a disproportionate risk to children. EPA does not believe there are disproportionate risks to children because the populations living near CCR disposal facilities do not contain a disproportionate number of children relative to national averages. However, EPA's *Policy on Children's Health* applies to this action. Information on how the Policy was applied is available under ''What Analysis of Children's Environmental Health Did We Conduct?'' in the Supplementary Information section of this preamble.

I. Executive Order 13211: Actions Concerning Regulations 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. This is a deregulatory action.

J. National Technology Transfer and Advancement Act (NTTAA)

This rulemaking does not involve technical standards.

List of Subjects in 40 CFR Part 257

Environmental protection, Beneficial use, Coal combustion products, Coal combustion residuals, Coal combustion

waste, Disposal, Hazardous waste, Landfill, Surface impoundment.

Lee Zeldin,

Administrator.

For the reasons set out in the preamble, EPA proposes to amend 40 CFR part 257 as follows:

PART 257—CRITERIA FOR CLASSIFICATION OF SOLID WASTE DISPOSAL FACILITIES AND PRACTICES

■ 1. The authority citation for part 257 continues to read as follows:

Authority: 42 U.S.C. 6907(a)(3), 6912(a)(1), 6927, 6944, 6945(a) and (d); 33 U.S.C. 1345(d) and (e).

Subpart A—Classification of Solid Waste Disposal Facilities and Practices

■ 2. Amend § 257.2 by revising the definition ''CCR landfill'' to read as follows:

§ 257.2 Definitions.

* * * * *

CCR landfill means an area of land or an excavation that contains CCR and which is not a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground or surface coal mine, or a cave. For purposes of this subpart, a CCR landfill also includes sand and gravel pits and quarries that receive CCR, any practice that does not meet the definition of a beneficial use of CCR, and any accumulation of CCR on the land that does not meet the definition of a CCR storage pile.

* * * * *

Subpart D—Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments

■ 3. Amend § 257.50 by adding paragraphs (j), (k), and (l) to read as follows:

§ 257.50 Scope and purpose.

* * * * *

(j) The requirements of this subpart do not apply to CCR dewatering structures as defined in § 257.53.

(k) This subpart does not apply to CCR at cement kilns before use as an ingredient in cement manufacturing.

(l) This subpart does not apply to flue gas desulfurization gypsum that is:

(1) Destined to be applied as an agricultural amendment at agronomically appropriate rates, or

(2) Destined for use as an ingredient in wallboard manufacturing.

■ 4. Amend § 257.53 by:

■ a. Revising the definition ''Beneficial use of CCR'';

■ b. Adding in alphabetical order the definition ''CCR dewatering structure'';

■ c. Revising the definition ''CCR landfill or landfill'';

■ d. Removing the definition ''CCR pile or pile'';

■ e. Adding in alphabetical order the definition ''CCR storage pile'';

■ f. Revising the definition ''CCR surface impoundment or impoundment''; and

■ g. Adding in alphabetical order the definition ''Temporary accumulation''.

The revisions and additions read as follows:

§ 257.53 Definitions.

* * * * *

Beneficial use of CCR means the CCR meets all of the following conditions:

(1) The CCR must provide a functional benefit;

(2) The CCR must substitute for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices, such as extraction; and

(3) The use of the CCR must meet relevant product specifications, regulatory standards or design standards when available, and when such standards are not available, the CCR is not used in excess quantities.

* * * * *

CCR dewatering structure means a stationary device, designed to temporarily contain an accumulation of CCR which is constructed of non-earthen materials (*e.g.,* concrete, steel, plastic). The device must be used primarily for dewatering CCR waste to facilitate disposal of CCR solids elsewhere.

* * * * *

CCR landfill or *landfill* means an area of land or an excavation that contains CCR and which is not a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground or surface coal mine, or a cave. For purposes of this subpart, a CCR landfill also includes sand and gravel pits and quarries that receive CCR, any practice that does not meet the definition of a beneficial use of CCR, and any accumulation of CCR on the land that does not meet the definition of a CCR storage pile.

* * * * *

CCR storage pile means any temporary accumulation of solid, non-flowing CCR placed on the land that is designed and managed to control unpermitted releases of CCR to the environment.

* * * * *

CCR surface impoundment or *impoundment* means a natural topographic depression, man-made excavation, or diked area, designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR. A unit meeting the definition of a CCR dewatering structure as defined in § 257.53 is not a CCR surface impoundment.

* * * * *

Temporary accumulation means an accumulation on the land that is neither permanent nor indefinite. To demonstrate that the accumulation on the land is temporary, the CCR must be removed from the pile at the site. The entity engaged in the activity may use ordinary business records to demonstrate that the CCR in the pile will be removed according to a specific timeline.

* * * * *

■ 5. Amend § 257.90 by revising paragraph (b)(2) to read as follows:

§ 257.90 Applicability.

* * * * *

(b) * * *

(2) *New CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units.* Prior to initial receipt of CCR by the CCR unit, the owner or operator must be in compliance with the groundwater monitoring requirements specified in paragraphs (b)(1)(i) and (ii) of this section. In addition, prior to initial receipt of CCR, the owner or operator of the CCR unit must collect and analyze eight independent samples from each well for the parameters listed in appendix III and IV to this part to determine background levels for all appendix III and IV constituents, and initiate the detection monitoring program in § 257.94.

* * * * *

■ 6. Amend § 257.94 by revising paragraph (b) to read as follows:

§ 257.94 Detection monitoring program.

* * * * *

(b) Except as provided in paragraph (d) of this section, the monitoring frequency for the constituents listed in appendix III to this part shall be at least semiannual during the active life of the CCR unit and the post-closure period. For existing CCR landfills and existing CCR surface impoundments, a minimum of eight independent samples from each background and downgradient well must be collected and analyzed for the constituents listed in appendix III and IV to this part no later than October 17, 2017. For new CCR landfills, new CCR surface

impoundments, and all lateral expansions of CCR units, a minimum of eight independent samples for each background well must be collected and analyzed for the constituents listed in appendices III and IV to this part by the deadline in § 257.90(b)(2).

* * * * *

■ 7. Amend § 257.100 by:

■ a. Revising the introductory text of paragraph (g); and

■ b. Adding paragraph (g)(7).

The revision and addition read as follows:

§ 257.100 Inactive CCR surface impoundments and Legacy CCR surface impoundments.

* * * * *

(g) For owners and operators of legacy CCR surface impoundments that completed closure of the CCR unit by removal of waste prior to Friday, November 8, 2024, no later than Friday, November 8, 2024, complete a closure certification that contains the supporting information in paragraphs (g)(1) through (6) of this section or by [DATE SIX MONTHS AFTER DATE OF PUBLICATION OF THE FINAL RULE IN THE **FEDERAL REGISTER**] complete a closure certification that contains the information in paragraph (g)(7) of this section:

* * * * *

(7) Documentation that a regulatory authority played an active role in overseeing and approving the closure by removal and any necessary corrective action, pursuant to an enforceable requirement issued on or after October 19, 2015. Impacts to groundwater must have been considered prior to or as part of the closure. This enforceable requirement includes a State or Federal permit, an administrative order, or consent order under CERCLA or by an EPA-approved RCRA State program.

* * * * *

■ 8. Amend § 257.101 by revising paragraph (g) to read as follows:

§ 257.101 Closure or retrofit of CCR units.

* * * * *

(g) *Deferral of previous closures of legacy CCR surface impoundments.* Deferral to permitting for closures conducted under substantially equivalent regulatory authority. Notwithstanding the provisions of paragraphs (e) and (f) of this section, the owner or operator of a legacy CCR surface impoundment need not demonstrate compliance with the performance standards in § 257.102(c) or (d) provided they demonstrate that the closure of the CCR unit met the standards specified in paragraphs (g)(1) through (4) of this section.

(1) The owner or operator of the CCR unit must document that a regulatory authority played an active role in overseeing and approving the closure and any necessary corrective action, pursuant to an enforceable requirement issued on or after October 19, 2015. This enforceable requirement includes a State or Federal permit, an administrative order, or consent order under CERCLA or by an EPA-approved RCRA State program.

(2) The owner or operator of the CCR unit must document that it installed a groundwater monitoring system and performed groundwater monitoring.

(3) The owner or operator must include the following statement, signed by the owner or operator or an authorized representative, in the applicability report for legacy CCR surface impoundments specified in § 257.100(f)(1) along with all information required by paragraphs (g)(1) through (3) of the section:

> I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

(4) Closure equivalency determination at permitting. The owner or operator must submit the following documentation to the permit authority.

(i) A permit application that contains sufficient information, including data on contaminant levels in groundwater, to demonstrate that the applicable § 257.102 or § 257.112 standards have been met.

(ii) The permit authority will review the information to determine whether the ''equivalency'' of the closure has been successfully demonstrated. If the permit authority determines that the closure has met the relevant part 257 closure standard, the permit authority will issue a permit to require compliance with applicable post-closure requirements. If EPA or a Participating State Director determines that the closure does not meet the relevant part 257 standard the owner or operator will be required to submit a complete permit application and obtain a permit that contains the specific requirements necessary for the closed unit to achieve compliance with § 257.102 or § 257.112.

* * * * *

■ 9. Add an undesignated center heading and § 257.110 to read as follows:

Flexibilities for Owners or Operators of CCR Units Operating Under CCR Permits

§ 257.110 Groundwater monitoring under a CCR permit authority.

(a) *Applicability.* The Participating State Director or EPA, where EPA is the permit authority, may elect to establish alternative points of compliance, pursuant to this section, for CCR units complying with the groundwater monitoring requirements in § 257.91 under a CCR permit, in lieu of those in §§ 257.91(a)(2), (c)(2), and (d)(1) and 257.94(e).

(1) The owner or operator of a CCR unit must comply with all requirements in § 257.91, except as provided for in paragraphs (b) through (e) of this section.

(2) For purposes of this section, *point of compliance* means the vertical surface located hydraulically downgradient of the CCR unit at which the owner or operator of the CCR unit must monitor the uppermost aquifer [to comply with the detection monitoring program and assessment monitoring program in §§ 257.94 and 257.95 or § 257.111. The vertical surface extends down into the uppermost aquifer.

(b) *Establishing alternative points of compliance.* Notwithstanding the requirement to monitor the waste boundary in § 257.91(a)(2), (c)(2), and (d)(1), the permit authority, may establish an alternative point of compliance to be used in lieu of the waste boundary of the CCR unit in accordance with the requirements of this paragraph (b).

(1) The alternative point of compliance must be no more than 150 meters from the waste boundary and located at the facility.

(2) The permit authority, may only establish an alternative point of compliance if the Participating State Director or EPA determines, based on a demonstration by the owner or operator, that the point of compliance, together with the location characteristics, will:

(i) Not materially delay detection of any statistically significant amounts of any of the constituents listed in appendices III and IV to this part from that CCR unit; and

(ii) Will minimize the migration of any of those constituents from that CCR unit to the uppermost aquifer during the active life of the CCR unit and the post-closure care period.

(3) In determining the alternative point of compliance, the permit authority, must analyze and consider the following factors:

(i) Compliance with the location restrictions specified in §§ 257.61 through 257.64;

(ii) Compliance with the corrective action procedures specified in §§ 257.96 through 257.98;

(iii) The hydrogeological characteristics of the facility and surrounding land, including any natural attenuation and dilution characteristics of the aquifer;

(iv) The quantity, quality, and direction of flow of groundwater underlying the facility;

(v) The proximity and withdrawal rates of groundwater users;

(vi) The availability of alternative drinking water supplies;

(vii) The existing quality of the groundwater, including other sources of contamination and their cumulative impacts on the groundwater;

(viii) The volume and physical and chemical characteristics of the leachate; and

(ix) Public health, safety, and welfare effects.

(c) *Performance standard.* When establishing the alternative point of compliance under paragraph (b) of this section, the permit authority, must ensure the groundwater monitoring system accurately represents the quality of groundwater passing the CCR unit. The downgradient monitoring system must be installed at the point of compliance specified by paragraph (b), that ensures detection of groundwater contamination in the uppermost aquifer. All potential contaminant pathways must be monitored.

(d) *Multiunit groundwater monitoring systems.* Notwithstanding the provisions at § 257.91(d)(1), the permit authority, may establish alternative points of compliance pursuant to paragraph (b) of this section for multiunit groundwater monitoring systems. The multiunit groundwater monitoring system must be equally as capable of detecting monitored constituents from the CCR unit as the individual groundwater monitoring system established in accordance with this subpart based on the following factors:

(1) Number, spacing and orientation of each CCR unit;

(2) Hydrogeologic setting;

(3) Site history; and

(4) Engineering design of the CCR unit.

(e) *Detection and assessment monitoring programs.* When the permit authority, has established an alternative point of compliance in lieu of the waste boundary, the owner or operator of the CCR unit(s) must comply with the detection monitoring program and assessment monitoring program requirements in §§ 257.94 through 257.95 but must substitute the established alternative point of compliance for all requirements associated with the monitoring wells at the waste boundary.

(f) *Recordkeeping, notification, and internet requirements.* The owner or operator must comply with the applicable recordkeeping requirements specified in § 257.105(h), notification requirements specified in § 257.106(h), and internet requirements specified in § 257.107(h).

■ 10. Add § 257.111 to read as follows:

§ 257.111 Alternative groundwater protection standards for corrective action under a CCR permit authority.

(a) *Applicability.* In lieu of the groundwater protection standards in § 257.95(h)(2), the Participating State Director or EPA, where EPA is the permit authority, may elect to establish alternative groundwater protections standards as provided in this section.

(b) *Alternative groundwater protection standards.* Notwithstanding the groundwater protection standards in § 257.95(h)(2), for constituents for which an MCL has not been established under the regulations referenced in § 257.95(h)(1), the permit authority, may establish alternative groundwater protection standards. These groundwater protection standards shall be appropriate health-based levels that satisfy the following criteria:

(1) The level is derived in a manner consistent with Agency guidelines for assessing the health risks of environmental pollutants, such as the Guidelines for Mutagenicity Risk Assessment, Supplementary Guidance for Conducting Health Risk Assessment of Chemical Mixtures; the Guidelines for Developmental Toxicity Risk Assessment; and the Guidelines for Carcinogen Risk Assessment;

(2) For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level, due to continuous lifetime exposure, within the 1×10^{-4} to 1×10^{-6} range; and

(3) For systemic toxicants, the level represents a concentration to which the human population, including sensitive subgroups, could be exposed to on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime. For purposes of this subpart, systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.

(c) *Permit authority considerations.* In establishing groundwater protection standards under paragraph (b) of this section, the Participating State Director or EPA, where EPA is the permit authority, must consider the following:

(1) The presence and concentrations of other contaminants in the groundwater;

(2) Exposure threats to sensitive environmental receptors; and

(3) Other site-specific exposure or potential exposure to groundwater.

(d) *Groundwater monitoring and corrective action annual report.* The owner or operator must indicate the use of alternative groundwater protection standards in the annual groundwater monitoring report required at § 257.90(e) and include the specific groundwater protection standard for each constituent.

(e) *Recordkeeping, notification, and internet requirements.* The owner or operator must comply with the applicable recordkeeping requirements specified in § 257.105(h), notification requirements specified in § 257.106(h), and internet requirements specified in § 257. 107(h).

■ 11. Add § 257.112 to read as follows:

§ 257.112 Closure method under a CCR permit authority.

(a) *Applicability.* The Participating State Director or EPA, where EPA is the permit authority, may elect to use the following closure criteria when approving CCR unit closure plans in lieu of those in § 257.102(c) and (d).

(b) *Closure method.* Notwithstanding § 257.102(c) and (d), the permit authority, may permit the closure of a unit under alternative performance standards provided the permit authority assesses the closure and concludes that closure in accordance with the alternative performance standards will result in no reasonable probability of adverse effects to human health and the environment during the active life of the CCR unit and the post-closure care period. This assessment must be based upon all of the following criteria:

(1) A site-specific conceptual site model and risk assessment of the location in which the CCR unit is located. This assessment must include field collected measurements, sampling, and analysis of physical, chemical, and biological processes affecting contaminant fate and transport, including a minimum, the information necessary to evaluate or interpret the effects of the following properties or processes on contaminant fate and transport:

(i) Aquifer characteristics, including hydraulic conductivity, hydraulic gradient, effective porosity, aquifer thickness, degree of saturation, stratigraphy, degree of fracturing and secondary porosity of soils and bedrock, aquifer heterogeneity, groundwater

discharge, and groundwater recharge areas;

(ii) Waste characteristics, including quantity, type and origin;

(iii) Climatic conditions, including annual precipitation, leachate generation estimates and effects on leachate quality;

(iv) Leachate characteristics, including leachate composition, solubility, density, the presence of immiscible constituents, Eh and pH; and

(v) Engineered controls, including but not limited to liners, cover systems, and aquifer controls (*e.g.,* lowering the water table). These must be evaluated under design and failure conditions to estimate their long-term residual performance.

(2) Contaminant fate and transport predictions that maximize the contaminant migration and consider impacts on human health and the environment.

(3) The identification, proximity, and potential current and future pathways of exposure to nearby human and ecological receptors. The assessment must consider current and future land use when evaluating the potential exposure pathways. If complete pathways are identified, the assessment must include a plan to mitigate potential exposure.

(c) *Recordkeeping, notification, and internet requirements.* The owner or operator must comply with the applicable recordkeeping requirements specified in § 257.105(i), notification requirements specified in § 257.106(i), and internet requirements specified in § 257.107(i).

■ 12. Add § 257.113 to read as follows:

§ 257.113 Closure completion timeframes under a CCR permit authority.

(a) *Applicability.* The Participating State Director or EPA, where EPA is the permit authority, may establish the closure completion timeframes for CCR units in lieu of those in § 257.102(f)(1) and (2).

(b) *Extraction of CCR during closure.* Notwithstanding § 257.102(f)(1) and (2), for closure with extraction of CCR for beneficial use as a component of the overall closure method, the permit authority, may extend the timeframe for completing closure of a CCR unit specified in § 257.102(f) only if the permit authority finds, based on a demonstration by the owner or operator, that the extended timeframe will pose no reasonable probability of adverse effects on health or the environment. The assessment must be based upon all of the following criteria:

(1) Measures for major slope stability are in place to prevent the sloughing or movement of the unit during the closure period;

(2) The extraction of CCR and closure must be completed consistent with recognized and generally accepted good engineering practices;

(3) Potential risks to human health and the environment during closure of the unit are adequately mitigated; and

(4) The facility is in substantial compliance with all other requirements of this subpart, including the requirements to conduct groundwater monitoring and any necessary corrective action.

(c) *Closure plan.* The owner or operator must submit an updated closure plan pursuant to § 257.102(b)(3).

(d) *Ongoing closure.* The owner or operator must proceed with closure activities of any portion of the CCR unit that is not related to the extraction of CCR for beneficial use to the extent possible within the specified timeframes of § 257.102.

(e) *Recordkeeping, notification, and internet requirements.* The owner or operator must comply with the applicable recordkeeping requirements specified in § 257.105(i), notification requirements specified in § 257.106(i), and internet requirements specified in § 257.107(i).

■ 13. Add § 257.114 to read as follows:

§ 257.114 Post-closure care under a CCR permit authority.

(a) *Applicability.* The Participating State Director or EPA, where EPA is the permit authority, may allow for extraction of CCR from a closed CCR unit during the post-closure care period in accordance with this section.

(b) *Extraction of CCR during post-closure care.* The permit authority may allow the owner or operator of a closed CCR unit to extract CCR for beneficial use during the post-closure care period only if the permit authority finds, based on a demonstration by the owner or operator, that any extraction of CCR for beneficial use will not pose a reasonable probability of adverse effects to human health and the environment. The assessment must be based upon all of the following criteria:

(1) The extraction of CCR for beneficial use must be completed consistent with recognized and generally accepted good engineering practices;

(2) Potential risks to human health and the environment during post-closure are adequately mitigated; and

(3) The facility is in substantial compliance with all other requirements of this subpart, including the requirements to conduct post-closure care, groundwater monitoring, and any necessary corrective action.

(c) *Recordkeeping, notification, and internet requirements.* The owner or operator must comply with the applicable recordkeeping requirements specified in § 257.105(i), notification requirements specified in § 257.106(i), and internet requirements specified in § 257.107(i).

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