Proposed Rules

Federal Register
Vol. 90, No. 242
Friday, December 19, 2025

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

NUCLEAR REGULATORY COMMISSION

10 CFR Part 50

[NRC–2024–0045]

RIN 3150–AL06

Incorporation by Reference of Institute of Electrical and Electronics Engineers Standard 603–2018

AGENCY: Nuclear Regulatory Commission.

ACTION: Proposed rule and draft guidance; request for comment.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is proposing to amend its regulations to incorporate by reference the Institute of Electrical and Electronics Engineers (IEEE) Standard (Std) 603–2018, ''IEEE Standard Criteria for Safety Systems for Nuclear Power Generating Stations.'' The IEEE Std 603–2018 is the most recent version of IEEE Std 603 that addresses the power, instrumentation, and control safety systems for nuclear power reactors. This amendment also incorporates editorial changes that do not change the technical information. The NRC plans to hold a public meeting to promote full understanding of the proposed rule and facilitate public comments.

DATES: Submit comments by February 17, 2026. Comments received after this date will be considered if it is practical to do so, but the Commission is able to ensure consideration only for comments received before this date.

ADDRESSES: You may submit comments by any of the following methods; however, the NRC encourages electronic comment submission through the Federal rulemaking website:

- *Federal Rulemaking Website:* Go to *https://www.regulations.gov* and search for Docket ID NRC–2024–0045. Address questions about NRC dockets to Helen Chang; telephone: 301–415–3228; email: *Helen.Chang@nrc.gov.* For technical questions contact the individuals listed in the **FOR FURTHER INFORMATION CONTACT** section of this document.
- *Email comments to: Rulemaking.Comments@nrc.gov.* If you do not receive an automatic email reply confirming receipt, then contact us at 301–415–1677.
- *Fax comments to:* Secretary, U.S. Nuclear Regulatory Commission at 301–415–1101.
- *Mail comments to:* Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, ATTN: Rulemakings and Adjudications Staff.
- *Hand deliver comments to:* 11555 Rockville Pike, Rockville, Maryland 20852, between 7:30 a.m. and 4:15 p.m. eastern time, Federal workdays; telephone: 301–415–1677.

You can read a plain language description of this proposed rule at *https://www.regulations.gov/docket/NRC-2024-0045.* For additional direction on obtaining information and submitting comments, see ''Obtaining Information and Submitting Comments'' in the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: Denise Edwards, Office of Nuclear Material and Safeguards, telephone: 301–415–7204, email: *Denise.Edwards@nrc.gov,* and Gilberto Blas Rodriguez, Office of Nuclear Reactor Regulation, telephone: 301–287–9260, email: *Gilberto.BlasRodriguez@nrc.gov.* Both are staff of the U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001.

SUPPLEMENTARY INFORMATION: This rulemaking is separate from NRC's comprehensive review and reform of its regulations in accordance with Executive Order (E.O.) 14300, ''Ordering the Reform of the Nuclear Regulatory Commission'' (90 FR 22587; May 29, 2025). The rulemakings associated with that effort will comprehensively reexamine NRC requirements. While there could be additional revisions as a result of these future rulemakings, the NRC is moving forward with publication of this proposed rule at this time because it is an action of high interest for stakeholders that was in progress before the issuance of E.O. 14300.

Executive Summary

A. Need for Regulatory Action

The IEEE periodically revises and updates its codes for nuclear power plants by issuing new editions; this proposed rule is in accordance with the NRC's practice to incorporate new editions into the NRC's regulations. This proposed rule allows nuclear power plant applicants to take advantage of the latest IEEE Std, enhancing efficiency for applicants and the NRC without affecting safety. The NRC's use of the IEEE Std is consistent with applicable requirements of the National Technology Transfer and Advancement Act (NTTAA). See also Section XII of this document, ''Voluntary Consensus Standards.''

B. Major Provision

The primary effect of this proposed rule is the incorporation by reference of IEEE Std 603–2018 into title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a, ''Codes and standards,'' and to provide for its use for nuclear power reactors of all types. This proposed rule also includes a conforming amendment to paragraph (b)(1)(v) of section 50.69, ''Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors,'' of 10 CFR, which would extend that provision to allow risk-informed alternatives to Clauses 5.3 and 5.4 of IEEE 603–2018 for certain systems, structure, and components.

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I. Obtaining Information and Submitting Comments

A. Obtaining Information

Please refer to Docket ID NRC–2024–0045 when contacting the NRC about the availability of information for this action. You may obtain publicly available information related to this action by any of the following methods:

- *Federal Rulemaking Website:* Go to *https://www.regulations.gov* and search for Docket ID NRC–2024–0045.
- *NRC's Agencywide Documents Access and Management System (ADAMS):* You may obtain publicly available documents online in the ADAMS Public Documents collection at *https://www.nrc.gov/reading-rm/adams.html.* To begin the search, select ''Begin ADAMS Search.'' For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1–800–397–4209, at 301–415–4737, or by email to *PDR.Resource@nrc.gov*. For the convenience of the reader, instructions about obtaining materials referenced in this document are provided in the ''Availability of Documents'' section.
- *NRC's PDR:* The PDR, where you may examine and order copies of publicly available documents, is open by appointment. To make an appointment to visit the PDR, please send an email to *PDR.Resource@nrc.gov* or call 1–800–397–4209 or 301–415–4737, between 8:00 a.m. and 4:00 p.m. eastern time, Monday through Friday, except Federal holidays.
- *Technical Library:* The Technical Library, which is located at Two White Flint North, 11545 Rockville Pike, Rockville, Maryland 20852, is open by appointment only. Interested parties may make appointments to examine documents by contacting the NRC Technical Library by email at *Library.Resource@nrc.gov* between 8:00 a.m. and 4:00 p.m., eastern time, Monday through Friday, except Federal holidays.

B. Submitting Comments

The NRC encourages electronic comment submission through the Federal rulemaking website (*https://www.regulations.gov*). Please include Docket ID NRC–2024–0045 in your comment submission.

The NRC cautions you not to include identifying or contact information that you do not want to be publicly disclosed in your comment submission. The NRC will post all comment submissions at *https://www.regulations.gov* as well as enter the comment submissions into ADAMS. The NRC does not routinely edit comment submissions to remove identifying or contact information.

If you are requesting or aggregating comments from other persons for submission to the NRC, then you should inform those persons not to include identifying or contact information that they do not want to be publicly disclosed in their comment submission. Your request should state that the NRC does not routinely edit comment submissions to remove such information before making the comment submissions available to the public or entering the comment into ADAMS.

II. Background

It has been the NRC's practice to establish requirements for the protection systems and safety systems in nuclear power plants by incorporating by reference certain standards published by the IEEE into 10 CFR 50.55a, ''Codes and standards.''

Paragraph 50.55a(h)(2), ''Protection systems,'' currently requires that the protection systems in nuclear power plants with construction permits issued after January 1, 1971, but before May 13, 1999, meet the requirements stated in either IEEE Std 279, ''Criteria for Protection Systems for Nuclear Power Generating Stations,'' or with the requirements in IEEE Std 603–1991, ''IEEE Criteria for Safety Systems for Nuclear Power Generating Stations,'' including the correction sheet dated January 30, 1995. For nuclear power plants with construction permits issued before January 1, 1971, 10 CFR 50.55a(h)(2) requires that protection systems must be consistent with their licensing basis or meet the requirements of IEEE Std 603–1991 including the correction sheet dated January 30, 1995.

Paragraph 50.55a(h)(3), ''Safety systems,'' currently requires that applications filed on or after May 13, 1999, for construction permits and operating licenses under 10 CFR part 50, as well as standard design approvals, standard design certifications, and combined licenses under 10 CFR part 52, meet the requirements for safety systems stated in IEEE Std 603–1991 including the correction sheet dated January 30, 1995.

The IEEE superseded the previous standards with IEEE Std 603–2018. This proposed rule would update the NRC's regulations to incorporate by reference and specify the requirements for using this latest version of IEEE Std 603 on the basis of license date, construction permit date, and type of protection system or safety system modification. This proposed rule would apply to (1) reactor design applications for a license, construction permit, design approval, or design certification, and (2) applications for license amendments for nuclear power plants. The NRC is proposing to make the final rule effective 30 days after its publication in the **Federal Register**.

This proposed rule would incorporate voluntary consensus standard IEEE Std 603–2018 into the NRC's regulations to establish functional and design requirements for power, instrumentation, and control safety systems for nuclear power plants. This action would be consistent with the provisions of the NTTAA, which encourage Federal regulatory agencies to consider adopting voluntary consensus standards as an alternative to agency development of government-unique standards.

The NRC staff held two public meetings on IEEE Std 2018 before this rulemaking was initiated: one on September 14, 2023, and one on September 19, 2024. The NRC appreciates the feedback received through these public meetings, which contributed to the development of this proposed rule.

III. Discussion

A. IEEE 603–2018

The NRC proposes to update 10 CFR 50.55a to incorporate by reference IEEE Std 603–2018. When applying IEEE Std 603–2018, the first sentence within Clause 5.16, ''Common-cause failure,'' captures the only regulatory requirement of Clause 5.16, that the safety system design and development shall address common-cause failures (CCFs) that create a potential to degrade or defeat the safety system function.

IEEE Std 603–2018 references several industry codes and standards that are not proposed for incorporation by reference in this rulemaking. These referenced standards are not mandatory NRC requirements, and if a referenced standard has been endorsed in a regulatory guide, the standard constitutes a method acceptable to the NRC for meeting a regulatory requirement.

This proposed rule also includes a conforming amendment to paragraph (b)(1)(v) of 10 CFR 50.69, ''Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors,'' which would extend that provision to allow risk-informed alternatives to Clauses 5.3

and 5.4 of IEEE 603–2018 for certain systems, structure, and components.

B. Discussion of Clause 5.16 Regarding CCF and Existing Commission Policy

IEEE Std 603–2018 includes Clause 5.16, which provides criteria for evaluating the potential for safety system CCF. As this Clause 5.16 does not exist in IEEE Std 603–1991, it is not in the currently incorporated by reference version. In the 2018 version, Clause 5.16 applies to any source of vulnerability to CCF.

The first sentence in Clause 5.16 states that—the safety system design and development shall address CCFs that create a potential to degrade or defeat the safety system function. This statement is consistent with the NRC's position on CCF, which is why it is proposed to be included as part of this proposed rule. The Commission's policy on addressing CCF is found in Staff Requirements Memorandum (SRM)–SECY–22–0076, ''Expansion of Current Policy on Potential Common-Cause Failures in Digital Instrumentation and Control Systems,'' dated August 10, 2022. As noted in the Commission's policy, before a nuclear generating station safety system is considered ready for implementation at the facility, developers must demonstrate that vulnerabilities to CCF have been adequately identified and addressed.

The NRC staff considers the remainder of Clause 5.16 of IEEE Std 603–2018 as guidance on how CCF could be addressed. The methods included in Clause 5.16 may be acceptable for licensees or applicants to address CCF as part of their overall defense-in-depth and diversity (D3) analyses, in appropriate circumstances; however, the list is not comprehensive and does not include flexibilities the Commission recently directed the NRC staff to incorporate into its licensing reviews. In its direction to the NRC staff in SRM–SECY–22–0076, the Commission approved expanded acceptance of risk-informed approaches in performing the defense-in-depth and diversity assessment and in determining the adequacy of design techniques, prevention measures, and mitigation measures, other than diversity, to address a postulated digital instrumentation and controls CCF. This policy provides additional flexibility in addressing CCFs beyond the methods described in Clause 5.16. Therefore, licensees or applicants may use the methods described in Clause 5.16 and other methods referenced in Draft Regulatory Guide (DG) DG–1251, Revision 1, ''Guidance for the Power, Instrumentation, and Control Portions of Safety Systems for Nuclear Power Plants,'' in their overall D3 analyses. The NRC staff guidance for evaluation of defense in depth and diversity to address CCF is found in NUREG–0800, ''Standard Review Plan,'' Chapter 7, Branch Technical Position 7–19 (BTP 7–19), Revision 9, ''Guidance for Evaluation of Defense in Depth and Diversity to Address Common-Cause Failure Due to Latent Design Defects in Digital Instrumentation and Control Systems,'' and the Design Review Guide, ''Design Review Guide (DRG): Instrumentation and Controls for Non-Light-Water Reactor (Non-LWR) Reviews,'' as applicable. Further, regarding the last paragraph in Clause 5.16, the NRC staff agrees that if a determination concludes that the consequences of a CCF are low or a determination concludes that the CCF has a very low likelihood of occurrence, then that conclusion could be credited in a plant-specific analysis toward justification of the proposed safety system design in a risk-informed approach. However, a risk-informed approach requires that risk insights are considered together with other factors to establish requirements that better focus licensee and regulatory attention on design and operational issues commensurate with their importance to public health and safety, consistent with SRM–SECY–98–144, ''Risk-informed and Performance Based Regulation,'' and SRM–SECY–22–0076. Finally, the NRC staff agrees that each identified source of CCF should be evaluated on a case-by-case basis.

Therefore, the NRC proposes to update 10 CFR 50.55a to incorporate by reference IEEE Std 603–2018. When applying IEEE Std 603–2018, the first sentence within Clause 5.16, ''Common-cause failure,'' captures the only regulatory requirement of Clause 5.16, that the safety system design and development shall address CCF that create a potential to degrade or defeat the safety system function.

C. Protection Systems and Safety Systems

The NRC's understanding of ''protection systems'' and ''safety systems'' as used in 10 CFR 50.55a(h) remains the same as described in the 1999 rulemaking to incorporate IEEE Std 603–1991 by reference into 10 CFR 50.55a (64 FR 17944; April 13, 1999). Currently, 10 CFR 50.55a(h) specifies that ''protection systems'' for plants with construction permits issued after January 1, 1971, but before May 13, 1999, must meet the requirements in IEEE Std 279–1968, ''Proposed IEEE Criteria for Nuclear Power Plant Protection Systems,'' or the requirements in IEEE Std 279–1971, ''Criteria for Protection Systems for Nuclear Power Generating Stations,'' or the requirements in IEEE Std 603–1991, ''Criteria for Safety Systems for Nuclear Power Generating Stations, and the correction sheet dated January 30, 1995. IEEE Std 279–1971 states that a ''protection system'' encompasses all electric and mechanical devices and circuitry (from sensors to actuation device input terminals) involved in generating those signals associated with the protective function. These signals include those that actuate reactor trip and that, in the event of a serious reactor accident, actuate engineered safety features, such as containment isolation, core spray, safety injection, pressure reduction, and air cleaning. In turn, ''protective function'' is defined in IEEE Std 279–1971 as the sensing of one or more variables associated with a particular generating station condition, signal processing, and the initiation and completion of the protective action at values of the variables established in the design bases.

IEEE Std 603–2018 uses the term ''safety systems'' rather than ''protection systems'' to define its scope. A ''safety system'' is defined in IEEE Std 603–2018 as a system that is relied upon to remain functional during and following design basis events to assure one of the following: (a) The integrity of the reactor coolant pressure boundary, (b) the capability to shut down the reactor and maintain it in a safe shutdown condition, or (c) the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to regulatory guidelines. A ''safety function'' is defined in IEEE Std 603–2018 as one of the processes or conditions (for example, emergency negative reactivity insertion, post-accident heat removal, emergency core cooling, post-accident radioactivity removal, and containment isolation) essential to maintain plant parameters within acceptable limits established for a design basis event.

The NRC recognizes that ''protection systems'' are a subset of ''safety systems.'' Safety system is a broad-based and all-encompassing term, embracing the protection system in addition to other electrical systems. Thus, the term ''protection system'' is not synonymous with the term ''safety system.'' This proposed rule would not change the scope of the systems covered in the final safety analysis report for currently operating nuclear power plants.

IV. Section-by-Section Analysis

The following paragraphs describe the specific changes proposed by this rulemaking.

Section 50.55a Codes and Standards

This proposed rule would revise paragraphs (a) and paragraphs (h)(2) and (h)(3) to include the IEEE standard 603–2018 and revise introductory text to paragraph (h) to align for readability.

Section 50.69 Risk-Informed Categorization and Treatment of Structures, Systems and Components for Nuclear Power Reactors

This proposed rule would revise paragraph (b)(v) to extend that provision to allow risk-informed alternatives to Clauses 5.3 and 5.4 of IEEE 603–2018 for certain systems, structure, and components.

Appendix E to 10 CFR Part 50—Emergency Planning and Preparedness for Production and Utilization Facilities

This proposed rule would correct the title, from ''Protection Systems'' to ''Protection and safety systems,'' referenced in footnote 7 of appendix E to 10 CFR part 50.

V. Regulatory Flexibility Certification

As required by the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the NRC certifies that this rule, if adopted, will not have a significant economic impact on a substantial number of small entities. This proposed rule affects only the licensing and operation of nuclear power plants. The companies that own these plants do not fall within the scope of the definition of ''small entities'' set forth in the Regulatory Flexibility Act or the size standards established by the NRC (10 CFR 2.810).

VI. Regulatory Analysis

The NRC has prepared a draft regulatory analysis on this proposed regulation. The analysis examines the costs and benefits of the alternatives considered by the NRC. The NRC requests public comment on the draft regulatory analysis. The regulatory analysis is available as indicated in the ''Availability of Documents'' section of this document. Comments on the draft analysis may be submitted to the NRC as indicated under the **ADDRESSES** caption of this document.

VII. Backfitting and Issue Finality

The NRC's Backfit Rule in 10 CFR 50.109 states that the NRC shall require the backfitting of a facility only when it finds the action to be justified under specific standards stated in the rule. Section 50.109(a)(1) defines backfitting as the modification of or addition to systems, structures, components, or design of a facility; the design approval or manufacturing license for a facility; or the procedures or organization required to design, construct, or operate a facility. Any of these modifications or additions may result from a new or amended provision in the NRC's rules or the imposition of a regulatory position interpreting the NRC's rules that is either new or different from a previously applicable NRC position after issuance of the construction permit or the operating license or the design approval.

This rulemaking proposes to incorporate by reference the IEEE 603–2018. This proposed rule would not change requirements for existing licensees or applicants. If existing licensees or applicants request changes to their power and instrumentation control systems, this proposed rule would allow them to voluntarily comply with IEEE Std 603–2018 instead of other existing requirements. The proposed rule would require applicants and holders of new construction permits, new operating licenses, new final design certifications, and new combined licenses to meet IEEE Std 603–2018 after the effective date of the rule. However, changes in requirements for new applicants or licensees do not constitute backfitting. Therefore, this proposed rule, if finalized, would not constitute ''backfitting'' as defined in 10 CFR 50.109(a)(1).

VIII. Plain Writing

The Plain Writing Act of 2010 (Pub. L. 111–274) requires Federal agencies to write documents in a clear, concise, and well-organized manner. The NRC has written this document to be consistent with the Plain Writing Act as well as the Presidential Memorandum, ''Plain Language in Government Writing,'' published June 10, 1998, (63 FR 31885). The NRC requests comment on this document with respect to the clarity and effectiveness of the language used.

IX. Environmental Assessment and Proposed Finding of No Significant Environmental Impact

The Commission has determined under the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in subpart A of 10 CFR part 51, that this rule, if adopted, would not be a major Federal action significantly affecting the quality of the human environment, and therefore an environmental impact statement is not required.

The proposed rule does not significantly increase the probability or consequences of accidents, no changes are being made in the types of effluents that may be released off-site, and there is no significant increase in public radiation exposure. This proposed rule does not involve non-radiological plant effluents and has no other environmental impact. Therefore, no significant non-radiological impacts are associated with this proposed action.

The determination of this environmental assessment is that there will be no significant effect on the quality of the human environment from this action. Public stakeholders should note; however, that comments on any aspect of this environmental assessment may be submitted to the NRC as indicated under the **ADDRESSES** caption.

X. Paperwork Reduction Act

This proposed rule does not contain any new or amended collections of information subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). Existing collections of information were approved by the Office of Management and Budget (OMB), approval numbers 3150–0011, 3150–0264, and 3150–0151.

Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

XI. Executive Orders

The following are Executive orders that are related to this proposed rule:

A. Executive Order 12866: Regulatory Planning and Review (as Amended by Executive Order 14215, Ensuring Accountability for All Agencies)

This action is not a significant regulatory action and therefore was not submitted to the Office of Management and Budget (OMB) for review.

B. Executive Order 14154: Unleashing American Energy

The NRC has examined this proposed rule and has determined that it is consistent with the policies and directives outlined in E.O. 14154.

C. Executive Order 14192: Unleashing Prosperity Through Deregulation

This action is a regulatory action as defined by E.O. 14192. Details on the estimated costs of this proposed rule can be found in Section VI of this document, ''Regulatory Analysis.''

D. Executive Order 14270: Zero-Based Regulatory Budgeting To Unleash American Energy

E.O. 14270, ''Zero-Based Regulatory Budgeting to Unleash American Energy,'' requires the NRC to insert a conditional sunset date into all new or amended NRC regulations provided the regulations are (1) promulgated under the Atomic Energy Act of 1954, as amended (AEA), the Energy Reorganization Act of 1974, as amended (ERA), or the Nuclear Waste Policy Act of 1982, as amended (NWPA); (2) not statutorily required; and (3) not part of the NRC's permitting regime. The NRC determined that the regulatory changes proposed in this rule are part of the NRC's regulatory permitting scheme authorized by the AEA. Therefore, the NRC views this rulemaking to be outside the scope of Executive Order 14270 and did not insert conditional sunset dates for the regulatory changes in this proposed rule.

XII. Voluntary Consensus Standards

The National Technology Transfer and Advancement Act of 1995, Public Law 104–113, requires that Federal agencies use technical standards that are developed or adopted by voluntary consensus standards bodies unless using such a standard is inconsistent with applicable law or is otherwise impractical. In this proposed rule, the NRC would incorporate the following voluntary consensus standard: IEEE Std 603–2018, Institute of Electrical and Electronics Engineers, September 27, 2018. The NRC invites comment on the applicability and use of other standards.

XIII. Incorporation by Reference—Reasonable Availability to Interested Parties

The NRC proposes to incorporate by reference the IEEE Std 603–2018. When applying IEEE Std 603–2018, the first sentence within Clause 5.16, ''Common-cause failure,'' captures the only regulatory requirement of Clause 5.16, that the safety system design and development shall address CCFs that create a potential to degrade or defeat the safety system function. As described in the ''Background'' and ''Discussion'' sections of this document, the material contains standards for establishing the minimum functional and design criteria for the power, instrumentation, and control portions of safety systems for nuclear power generating stations.

The NRC is required by law to obtain approval for incorporation by reference from the Office of the Federal Register (OFR). The OFR's requirements for incorporation by reference are set forth in 1 CFR part 51. On November 7, 2014, the OFR adopted changes to its regulations governing incorporation by reference (79 FR 66267). The OFR regulations require an agency to include in a proposed rule a discussion of the ways that the material the agency proposes to incorporate by reference are reasonably available to interested parties or how it worked to make the material reasonably available to interested parties. The discussion in this section complies with the requirement for proposed rules as set forth in 1 CFR 51.5(a)(1).

The NRC considers ''interested parties'' to include all potential NRC stakeholders and not only the individuals and entities regulated or otherwise subject to the NRC's regulatory oversight. These NRC stakeholders are not a homogenous group but vary with respect to the considerations for determining reasonable availability. Therefore, the NRC distinguishes between different classes of interested parties for the purposes of determining whether the material is ''reasonably available.'' The NRC considers the following to be classes of interested parties in NRC rulemakings with regard to the material to be incorporated by reference:

- Individuals and small entities regulated or otherwise subject to the NRC's regulatory oversight (this class also includes applicants and potential applicants for licenses and other NRC regulatory approvals) and who are subject to the material to be incorporated by reference by rulemaking. In this context, ''small entities'' has the same meaning as a ''small entity'' under 10 CFR 2.810.
- Large entities otherwise subject to the NRC's regulatory oversight (this class also includes applicants and potential applicants for licenses and other NRC regulatory approvals) and who are subject to the material to be incorporated by reference by rulemaking. In this context, ''large entities'' are those that do not qualify as a ''small entity'' under 10 CFR 2.810.
- Non-governmental organizations with institutional interests in the matters regulated by the NRC.
- Other Federal agencies, States, local governmental bodies (within the meaning of 10 CFR 2.315(c)).
- Federally-recognized and State-recognized [1] Indian Tribes.
- Members of the public (*i.e.,* individual, unaffiliated members of the public who are not regulated or otherwise subject to the NRC's regulatory oversight) who may wish to gain access to the material that the NRC proposes to incorporate by reference by rulemaking in order to participate in the rulemaking process.

The IEEE 603–2018 Standard may be viewed, by appointment, at the Technical Library, which is located at Two White Flint, 11545 Rockville Pike, Rockville, Maryland 20852. You may submit your request to the Technical Library via email at *Library.Resource@nrc.gov* between 8:00 a.m. and 4:00 p.m. eastern time, Monday through Friday, except Federal holidays. In addition, as described in Section XVI of this document, documents related to this proposed rule are available online in the NRC's ADAMS Public Documents collection at *https://www.nrc.gov/reading-rm/adams.html.*

Interested parties may purchase a copy of the IEEE material at the IEEE Standards Association website, *https://standards.ieee.org/.* The material also is accessible through a third-party subscription service such as Accuris IHS (15 Inverness Way East, Englewood, CO 80112; *https://store.accuristech.com/publishers/ieee*).

The material is available to all interested parties in multiple ways and in a manner consistent with their interest in this proposed rule. Therefore, the NRC concludes that the material the NRC proposes to incorporate by reference in this proposed rule is reasonably available to all interested parties.

XIV. Availability of Guidance

The NRC is issuing draft guidance in conjunction with this proposed rule. Draft Regulatory Guide (DG)DG–1251, Revision 1, ''Guidance for the Power, Instrumentation, and Control Portions of Safety Systems for Nuclear Power Plants'' (Regulatory Guide 1.153, Revision 2; ADAMS Accession No. ML25114A021), would provide additional guidance for implementing the requirements of the rule. DG–1251 is based upon the discussion in this proposed rule and does not modify the scope of paragraph 50.55a(h) of 10 CFR part 50. The NRC requests public comment on the draft regulatory guide. Comments on the draft guidance may be submitted by the methods provided in Section I, ''Obtaining Information and Submitting Comments,'' of this document.

[1] State-recognized Indian Tribes are not within the scope of 10 CFR 2.351(c). However, for purposes of the NRC's compliance with 1 CFR 51.5, ''interested parties,'' includes a broad set of stakeholders, including State-recognized Indian Tribes.

XV. Public Meeting

The NRC will conduct a public meeting on the proposed rule for the purpose of describing the incorporation by reference of the 2018 version of the IEEE 603 standard. The NRC staff will be available to answer questions from the public regarding this proposed rule.

The NRC will publish a notice of the location, time, and agenda of the meeting in the **Federal Register**, on *Regulations.gov*, and on the NRC's public meeting website within at least 10 calendar days before the meeting. Stakeholders should monitor the NRC's public meeting website for information about the public meeting at: *https://www.nrc.gov/public-involve/public-meetings/index.cfm.*

XVI. Availability of Documents

The documents identified in the following table are available to interested persons through one or more of the following methods, as indicated.

Document	ADAMS accession No./ web link/ **Federal Register** citation
Proposed Rule Documents	
Proposed Rule—Regulatory Analysis for Incorporation by Reference of Institute of Electrical Engineers Standard 603–2018, November 14, 2025.	ML24353A321.
Proposed Rule—Unofficial Redline Strikeout of the NRC's Proposed Rule: Incorporation by Reference of Institute of Electrical Engineers Standard 603–2018, November 26, 2025.	ML24353A325.
Draft Regulatory Guide DG–1251, Revision 1, ''Guidance for the Power, Instrumentation, and Control Portions of Safety Systems for Nuclear Power Plants,'' December 2025 (Regulatory Guide 1.153, Revision 2).	ML25114A021.
Related Documents	
NUREG–0800, ''Standard Review Plan,'' Chapter 7, Branch Technical Position 7–19 (BTP 7–19), Revision 9, ''Guidance for Evaluation of Defense in Depth and Diversity to Address Common-Cause Failure Due to Latent Design Defects in Digital Instrumentation and Control Systems,'' May 2024.	ML24005A077 BTP.
Public Meeting Summary—Summary of September 19, 2024, Public Meeting to Discuss Proposed Path Forward for Industry's Use of Institute of Electrical and Electronics Engineers Standard (IEEE) 603–2018, Criteria for Safety Systems, October 17, 2024.	ML24289A230 summary, ML24289A210 package.
Public Meeting Presentation—Proposed Path Forward for Industry's Use of Institute of Electrical and Electronics Engineers Standard (IEEE) 603–2018, Criteria for Safety Systems, September 19, 2024.	ML24262A141.
SRM–S22–0076–1—Final Revision to Standard Review Plan Branch Technical Position 7–19, Guidance for Evaluation of Defense in Depth and Diversity to Address Common-Cause Failure Due to Latent Design Defects in Digital Instrumentation and Control Systems, April 25, 2024.	ML24005A119 package.
Letter from Nuclear Energy Institute (NEI), ''NEI Recommendations for IEEE 603–2018, IEEE Standard Criteria for Safety Systems for Nuclear Power Generating Stations, Path Forward,'' November 3, 2023.	ML23307A127.
Public Meeting Presentation—Proposed Path Forward for Industry's Use of Institute of Electrical and Electronics Engineers Standard (IEEE) 603–2018, Criteria for Safety Systems, September 14, 2023.	ML23240A399.
SRM–SECY–22–0076, Expansion of Current Policy on Potential Common-Cause Failures in Digital Instrumentation and Control Systems, May 25, 2023.	ML23145A176.
SECY–22–0076, Expansion of Current Policy on Potential Common-Cause Failures in Digital Instrumentation and Control Systems, August 10, 2022.	ML22164B003.
Final Rule—Codes and Standards: IEEE National Consensus Standard, April 13, 1999	64 FR 17944.
SRM–SECY–98–144, White Paper on Risk-informed and Performance Based Regulation, March 1, 1999.	ML003753601.
Final Rule—Incorporation by Reference, November 7, 2014	79 FR 66267.
Plain Language in Government Writing, June 10, 1998	63 FR 31885.
Design Review Guide (DRG): Instrumentation and Controls for Non-Light-Water Reactor (Non-LWR) Reviews, February 26, 2021.	ML21011A140.
Executive Order 12866, ''Regulatory Planning and Review,'' October 4, 1993	58 FR 51735.
Executive Order 14154, ''Unleashing American Energy,'' January 29, 2025	90 FR 8353.
Executive Order 14192, ''Unleashing Prosperity Through Deregulation,'' February 6, 2025	90 FR 9065.
Executive Order 14270, ''Zero-Based Regulatory Budgeting to Unleash American Energy,'' April 15, 2025.	90 FR 15643.
IEEE Standard	
Institute of Electrical and Electronics Engineers (IEEE) Standards Association, Standard (Std) 603–2018, ''IEEE Standard Criteria for Safety Systems for Nuclear Power Generating Stations,'' September 27, 2018.	*https://standards.ieee.org/.*
Accuris Standards Store (Formerly IHS)	*https://store.accuristech.com/publishers/ieee.*

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List of Subjects in 10 CFR Part 50

Administrative practice and procedure, Antitrust, Backfitting, Classified information, Criminal penalties, Education, Emergency planning, Fire prevention, Fire protection, Incorporation by reference, Intergovernmental relations, Nuclear power plants and reactors, Penalties, Radiation protection, Reactor siting criteria, Reporting and recordkeeping requirements, Whistleblowing.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; and 5 U.S.C. 552 and 553, the NRC is proposing to amend 10 CFR part 50.

PART 50—DOMESTIC LICENSING OF PRODUCTION AND UTILIZATION FACILITIES

■ 1. The authority citation for part 50 continues to read as follows:

Authority: Atomic Energy Act of 1954, secs. 11, 101, 102, 103, 104, 105, 108, 122, 147, 149, 161, 181, 182, 183, 184, 185, 186, 187, 189, 223, 234 (42 U.S.C. 2014, 2131, 2132, 2133, 2134, 2135, 2138, 2152, 2167, 2169, 2201, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2239, 2273, 2282); Energy Reorganization Act of 1974, secs. 201, 202, 206, 211 (42 U.S.C. 5841, 5842, 5846, 5851); Nuclear Waste Policy Act of 1982, sec. 306 (42 U.S.C. 10226); National Environmental Policy Act of 1969 (42 U.S.C. 4332); 44 U.S.C. 3504 note; Sec. 109, Pub. L. 96–295, 94 Stat. 783.

■ 2. In § 50.55a:
■ a. In paragraph (a)(2), add paragraph (v);
■ b. Revise introductory text to paragraph (h) and paragraphs (h)(2) and (3);

The revision and addition read as follows:

§ 50.55a Codes and standards.

* * * * *

(v) IEEE standard 603–2018. (IEEE Std 603–2018), ''Standard Criteria for Safety Systems for Nuclear Power Generating Stations'' (Approval date: September 27, 2018), referenced in paragraphs (h)(2) and (h)(3) of this section. All other standards that are referenced in IEEE Std 603–2018 are not approved for incorporation by reference.

* * * * *

(h) *Protection and safety systems.* Protection and safety systems of nuclear power reactors of all types must meet the requirements specified in this paragraph. Each combined license for a utilization facility is subject to the following conditions. * * *

(2) * * *

(i) For nuclear power plants with construction permits issued after January 1, 1971, but before May 13, 1999, protection systems must meet the requirements in IEEE Std 279–1968, ''Proposed IEEE Criteria for Nuclear Power Plant Protection Systems,'' or the requirements in IEEE Std 279–1971, ''Criteria for Protection Systems for Nuclear Power Generating Stations,'' or the requirements in IEEE Std 603–1991, ''Criteria for Safety Systems for Nuclear Power Generating Stations,'' and the correction sheet dated January 30, 1995, or the requirements in IEEE Std 603–2018, ''Criteria for Safety Systems for Nuclear Power Generating Stations.'' When applying IEEE Std 603–2018, the first sentence within Clause 5.16, ''Common-cause failure,'' captures the only regulatory requirement of Clause 5.16, that the safety system design and development shall address common-cause failures (CCFs) that create a potential to degrade or defeat the safety system function.

(ii) For nuclear power plants with construction permits issued before January 1, 1971, protection systems must be consistent with their licensing basis or may meet the requirements of IEEE Std 603–1991 and the correction sheet dated January 30, 1995, or the requirements in IEEE Std 603–2018, dated September 27, 2018. When applying IEEE Std 603–2018, Clause 5.16, ''Common-cause failure,'' the first sentence within Clause 5.16, ''Common-cause failure,'' captures the only regulatory requirement of Clause 5.16, that the safety system design and development shall address CCFs that create a potential to degrade or defeat the safety system function.

(3) Safety systems.

(i) Applications filed on or after May 13, 1999, but before [DATE 30 DAYS AFTER DATE OF PUBLICATION OF THE FINAL RULE IN THE **FEDERAL REGISTER**], for construction permits and operating licenses under this part, and for design approvals, design certifications, and combined licenses under part 52 of this chapter, must meet the requirements for safety systems in IEEE Std 603–1991 and the correction sheet dated January 30, 1995, or the requirements in IEEE Std 603–2018. When applying IEEE Std 603–2018, the first sentence within Clause 5.16, ''Common-cause failure,'' captures the only regulatory requirement of Clause 5.16, that the safety system design and development shall address CCFs that create a potential to degrade or defeat the safety system function.

(ii) Applications filed on or after [DATE 30 DAYS AFTER DATE OF PUBLICATION OF THE FINAL RULE IN THE **FEDERAL REGISTER**], for construction permits and operating licenses under this part, and for design approvals, design certifications, and combined licenses under part 52 of this chapter, must meet the requirements for safety systems in IEEE Std 603–2018, dated September 27, 2018. When applying IEEE Std 603–2018, the first sentence within Clause 5.16, ''Common-cause failure,'' captures the only regulatory requirement of Clause 5.16, that the safety system design and development shall address CCFs that create a potential to degrade or defeat the safety system function.

* * * * *

■ 3. In § 50.69, revise paragraph (b)(1)(v) to read as follows:

§ 50.69 Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors.

* * * * *

(b) * * *

(1) * * *

(v) The inservice testing requirements in 10 CFR 50.55a(f); the inservice inspection, and repair and replacement (with the exception of fracture toughness), requirements for ASME Class 2 and Class 3 SSCs in 10 CFR 50.55a(g); and the electrical component quality and qualification requirements in Sections 4.3 and 4.4 of IEEE 279, Clauses 5.3 and 5.4 of IEEE 603–1991, and Clauses 5.3 and 5.4 of IEEE 603–2018 as incorporated by reference in 10 CFR 50.55a(h).

* * * * *

■ 4. In appendix E to 10 CFR part 50, revise footnote 7 in appendix E to read as follows:

Appendix E to 10 CFR Part 50

* * * * *

VI. * * *

1. * * *

2. * * *

a. * * *

[7] See 10 CFR 50.55a(h), Protection and safety systems.

* * * * *

Dated: December 1, 2025.

For the Nuclear Regulatory Commission.

Michael King,

Acting Executive Director for Operations.

[FR Doc. 2025–23428 Filed 12–18–25; 8:45 am]

BILLING CODE 7590–01–P