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United States Nuclear Regulatory Commission
Protecting People and the Environment

Proposed Rule: Incorporation by Reference of Institute of Electrical and Electronics Engineers Standard (IEEE) 603-2018, Criteria for Safety Systems

February 3, 2026

90 FR 59402

Denise Edwards – Rulemaking Project Manager

Gilberto Blas Rodriguez – Technical Lead

Meeting Logistics

- Sound/Audio/Video
- Slides
- Raise Hand Functionality
- Teams Chat
- Meeting Transcription

Agenda

- Welcome/Introduction/Logistics
- Opening Remarks
- Purpose of Meeting
- Rulemaking Schedule
- Proposed Rule – IEEE Std 603-2018
  - Background
  - Overview of the Proposed Rule
- Draft Guide (DG) – 1251 (Revision 2 to RG 1.153)
- Questions

Purpose of Meeting

- Explain the status of the ongoing rulemaking.
- Discuss the NRC staff's position regarding incorporation by reference (IBR) of IEEE.
- This meeting is intended to allow stakeholders to ask questions related to the proposed rule, such that they can understand the proposed rule, and submit well informed and specific comments. Comments can be submitted through regulations.gov.

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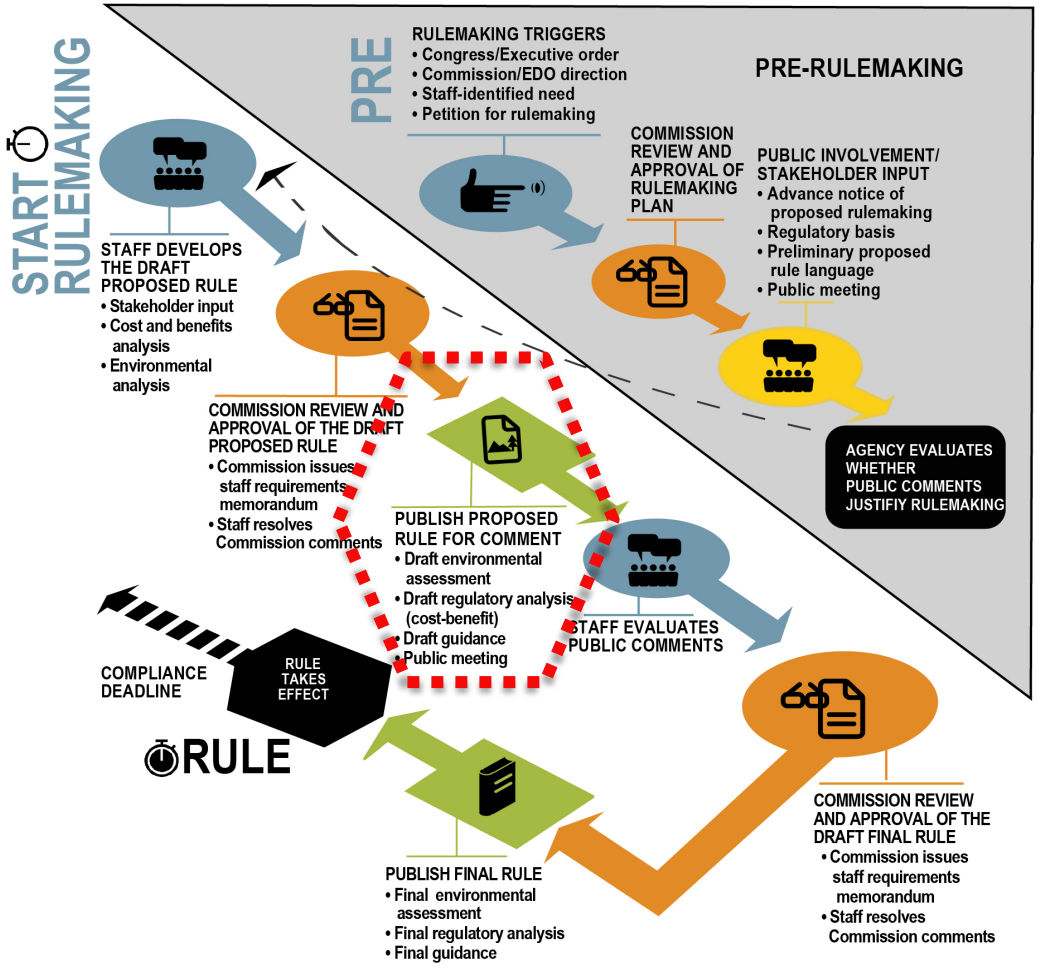
Comments on the Proposed Rule

- Go to https://www.regulations.gov/docket/NRC-2024-0045/document, then "CLICK" on the blue comment button, to submit comments.
- The comment period closes **February 17, 2026.**
- We are not accepting comments on the proposed rule during this meeting.
- There will be no formal responses to discussions during this meeting, but the staff may post additional information on https://www.regulations.gov.
- No regulatory decisions will be made during this meeting.

General Rulemaking Process

Federal Register Notice 90 FR 59402 published on December 19, 2025 (proposed rule and draft guide)



https://www.nrc.gov/about-nrc/regulatory/rulemaking/rulemaking-process

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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. / FEDERAL REGISTER CITATION
Proposed Rule	
Proposed Rule: Incorporation by Reference of Institute of Electrical and Electronics Engineers Standard 603-2018 - FRN	• 90 FR 59402 • https://www.regulations.gov/docket/NRC-2024-0045/documents • ML24353A318
Draft Guidance Document	
DG-1251, Revision 1, Guidance for Protection and Safety Systems for Nuclear Power Plants	• ML25114A021
Unofficial Redline	
Unofficial Redline of the NRC's Proposed Rule: Incorporation by Reference of Institute of Electrical and Electronics Engineers Standard 603-2018 NRC 2024-0045; RIN-3150-AL06	• ML24353A325

Rulemaking Process & Milestones

Proposed Rule		Final Rule (Estimated)	
Rule Commencement	*8/15/2024*	Publication in the Federal Register	7/24/2026
Publication in the Federal Register	*12/19/2025*	Rule Becomes Effective	8/23/2026
Public Comment Period	**12/19/2025 - 2/17/2026 60-day comment period**		
Public Meeting	**2/3/2026**		

For more information on NRC's rulemaking process click here: https://www.nrc.gov/about-nrc/regulatory/rulemaking/rulemaking-process.html

For updates regarding this rulemaking click here: https://www.nrc.gov/reading-rm/doc-collections/rulemaking-ruleforum/active/ruledetails.html?id=2203

IEEE Std-603-2018 Rule

Background

- Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 contains requirements for the design of protection and safety systems for nuclear power plants.
  - 10 CFR 50.55a(h), Protection and safety systems, provides requirements for the design of protection and safety systems for nuclear power reactors.
  - IEEE Std. 279-1968, 279-1971, and 603-1991 are IBR into 10 CFR 50.55a(h).
- 10 CFR 50.55a(h) currently references IEEE Std 603-1991 "IEEE Standard Criteria for Safety Systems for Nuclear Power Generating Stations".
  - IEEE Std 603 has subsequently been updated (1998, 2009, 2018).

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Scope IEEE Std 603-2018 Rulemaking

- Overview
  - The proposed rulemaking incorporates by reference IEEE 603-2018 into 10 CFR 50.55a(h).
    - Incorporates IEEE 603-2018 to reflect the latest IEEE standard.
  - IEEE Std 603-2018 would be required for new licenses and applications coming in under Part 50 and 52.
    - Commencing 30 days after date of publication of the final rule in the Federal Register.
    - The rule is ***not*** intended to change the scope of the systems covered in the final safety analysis report (FSAR) for currently operating nuclear power plants.

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Scope IEEE Std 603-2018 Rulemaking (Cont.)

- This is not a backfit for existing licensees and can choose to use IEEE Std 603-2018.
- Consistent with previous IBR of IEEE Std 603-1991:
  - Secondary references are guidance. If a standard is endorsed in a regulatory guide, it is considered an acceptable method by the NRC for meeting the requirement stated in that guide.

Clause 5.16 Common Cause Failure

- The first sentence of Clause 5.16 states “The safety system design and development shall address common-cause failures (CCF) that create a potential to degrade or defeat the safety system function.”
- The remaining statements within Clause 5.16 describe guidance regarding how CCF could be addressed.
  - While these methods may be acceptable to address CCF in appropriate circumstances, this list is not comprehensive and does not include all of the flexibilities the Commission directed to staff, in SRM-SECY-22-0076.
  - NRC staff would review such applications on a case-by-case basis.

Clause 5.16 Common Cause Failure (Cont.)

- IEEE Std 603-2018 includes Clause 5.16 on Common-Cause Failure.
  - The first sentence of this clause is consistent with the existing requirement in Appendix A to 10 CFR Part 50, Introduction to the General Design Criteria:

    "(4) Consideration of the possibility of systematic, nonrandom, concurrent failures of redundant elements in the design of protection systems and reactivity control systems. (See Criteria 22, 24, 26, and 29.)"

Clause 5.16 Common Cause Failure (Cont.)

- 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.

Protection and Safety Systems

- 10 CFR 50.55a(h) uses the terms “protection systems” and “safety systems”.
  - IEEE Std 279 uses the term “protection systems” to define its scope.
  - IEEE Std 603 uses the term “safety systems” to define its scope.

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Protection and Safety Systems (Cont.)

- 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.
- The proposed rule is consistent with how applicants licensed to IEEE Std 279 currently have the flexibility to use IEEE Std 603-1991.

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DG-1251 (Revision 2 to RG 1.153)

- The purpose of DG-1251 is to provide supplemental guidance and clarifying information for implementing certain criteria in IEEE Std 603-2018.
  - Provides background information on key items regarding clauses found in the standard.
  - Provides direction to stakeholders on available relevant guidance on certain key areas and Clauses.
  - Provides staff regulatory position and guidance on certain clauses.
- The NRC requests public comment on the draft regulatory guide.

DG-1251 (Revision 2 to RG 1.153) (Cont.)

- Supplemental and clarifying guidance for implementing certain criteria in IEEE Std 603-2018 are identified:
  1. Clause 5.5 “System integrity”
  2. Clause 5.6 “Independence”
  3. Clause 5.9 “Control of Access”
  4. Clause 5.16 “Common-cause failure”
- Table 1. – Identifies relevant additional guidance applicable to certain clauses of IEEE Std 603-2018.

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Questions?

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- The comment period closes **February 17, 2026.**

Meeting Adjourned