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

U.S. Nuclear Regulatory Commission

December 2025

[ML24353A325]

Introduction

The U.S. Nuclear Regulatory Commission (NRC) is releasing this unofficial, informal redline to assist industry and other stakeholders in reviewing the changes that the proposed rule titled "Incorporation by Reference of Institute of Electrical and Electronics Engineers Standard 603 2018" makes to the regulatory text of Title 10 of the *Code of Federal Regulations* (CFR) at 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities."

The underlying (unmarked) text in this document reflects the existing text of the regulations. The changes that the final rule makes to NRC's regulations are marked in **red** for deletions and **blue** for additions.

This redline is not a substitute for reviewing the final rule. If any conflicts exist between this redline and the text of the final rule, the documents published in the *Federal Register* are the controlling documents. This redline is meant to capture only the net changes for ease of reading.

Based on eCFR (https://www.ecfr.gov) as of 9/12/2025 for the proposed rule.

PART 50—DOMESTIC LICENSING OF PRODUCTION AND UTILIZATION FACILITIES

* * * * *

§ 50.55a Codes and standards.

(a) ***Documents approved for incorporation by reference.*** The standards listed in this paragraph (a) have been approved for incorporation by reference by the Director of the Federal Register pursuant to 5 U.S.C. 552(a) and 1 CFR part 51. The standards are available for inspection, by appointment, at the NRC Technical Library, which is located at Two White Flint North, 11545 Rockville Pike, Rockville, Maryland 20852; telephone: 301-415-7000; email: *Library.Resource@nrc.gov;* or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fr.inspection@nara.gov* or go to *www.archives.gov/federal-register/cfr/ibr-locations.html*.

* * * * *

(2) ***Institute of Electrical and Electronics Engineers (IEEE) Service Center,*** 445 Hoes Lane, Piscataway, NJ 08855; telephone: 1-800-678-4333; *http://ieeexplore.ieee.org*.

(i) ***IEEE standard 279-1968.*** (IEEE Std 279-1968), "Proposed IEEE Criteria for Nuclear Power Plant Protection Systems" (Approval Date: August 30, 1968), referenced in paragraph (h)(2) of this section. (Copies of this document may be purchased from IHS Global, 15 Inverness Way East, Englewood, CO 80112; *https://global.ihs.com*.)

(ii) ***IEEE standard 279-1971.*** (IEEE Std 279-1971), "Criteria for Protection Systems for Nuclear Power Generating Stations" (Approval Date: June 3, 1971), referenced in paragraph (h)(2) of this section.

(iii) ***IEEE standard 603-1991.*** (IEEE Std 603-1991), "Standard Criteria for Safety Systems for Nuclear Power Generating Stations" (Approval Date: June 27, 1991), referenced in paragraphs (h)(2) and (h)(3) of this section. All other standards that are referenced in IEEE Std 603-1991 are not approved for incorporation by reference.

(iv) ***IEEE standard 603-1991, correction sheet.*** (IEEE Std 603-1991 correction sheet), "Standard Criteria for Safety Systems for Nuclear Power Generating Stations, Correction Sheet, Issued January 30, 1995," referenced in paragraphs (h)(2) and (h)(3) of this section. (This correction sheet is available from IEEE at *http://standards.ieee.org/findstds/errata/*).

(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.

(1) [Reserved]

(2) ***Protection systems.***

(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, 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

* * * * *

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

* * * * *

(b) ***Applicability and scope of risk-informed treatment of SSCs and submittal/approval process.***

* * *

(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).

* * * * *

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

Footnotes – Appendix E to Part 50

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