

July 31, 2001

Mr. Alex Marion, Director  
Engineering Department  
Nuclear Generation Division  
Nuclear Energy Institute  
1776 Eye Street, NW, Suite 400  
Washington, D.C. 20006-3708

SUBJECT: ADOPTION OF NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 805  
"PERFORMANCE-BASED STANDARD FOR FIRE PROTECTION FOR LIGHT  
WATER REACTOR ELECTRIC GENERATING PLANTS" 2001 EDITION

Dear Mr. Marion:

During a public meeting with the Nuclear Energy Institute (NEI) staff and industry representatives, that was held on June 6, 2001, at NRC Headquarters in Rockville, Maryland, the Plant Systems Branch staff committed to provide to NEI, per its request, the following information: (1) the preliminary regulatory framework and process for the adoption of NFPA 805 through the rulemaking; (2) the staff's expectations for the implementing guidance; and (3) feedback on the NEI proposed exception to Section 3-1 of NFPA 805 presented at the June 6 meeting. The information requested by NEI concerning items 1 and 2 is provided for your use in the enclosure to this letter. With regard to NEI's proposed exception to Section 3-1 of NFPA 805 concerning deviations that have not received prior staff approval, the staff has concerns on the potential safety implications of this proposal. We want to work with you to resolve these concerns to our mutual satisfaction. We are prepared to meet with you to continue the dialogue on this topic and can invite senior NRC management, if necessary, to reach closure. Specific information regarding the staff's concerns with the NEI proposal is provided in the enclosure for your consideration. In order to enable the staff to revise its rulemaking plan (SECY 00-0009) and submit it to the Commission, we request that NEI provide a detailed schedule for the development of the implementing guidance, as discussed with your staff during the June 6 meeting. Your reply would be most useful if received within 30 days.

I look forward to future interaction as the rulemaking proceeds. Please contact Mr. Edward Connell of my staff at 301-415-2838 concerning questions regarding this response.

Sincerely,

*/RA/*

John N. Hannon, Chief  
Plant Systems Branch  
Division of Systems Safety and Analysis  
Office of Nuclear Reactor Regulation

Enclosure: As stated

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RESPONSE TO NEI REQUEST FOR INFORMATION  
CONCERNING THE RULEMAKING TO ADOPT NFPA 805

ITEM 1 - The preliminary regulatory framework for the revision of the fire protection regulations in 10 CFR Part 50:

- (a) (1) Each operating nuclear power plant must have a written fire protection plan that satisfies Criterion 3 of Appendix A of this part. The fire protection plan must describe the overall fire protection program for the facility and outline the plans for fire prevention, fire detection and fire suppression capability and the limitation of fire damage.

The objectives of the program are to -

- (ii) To reasonably prevent fires from occurring;
  - (ii) To rapidly detect, control, and extinguish those fires which do occur; and
  - (iii) To provide protection for structures, systems, and components (SSCs) important to safety so that a fire that is not promptly extinguished by the fire suppression activities will not prevent safe shutdown of the plant or result in a radiological hazard to the environment, public, or plant personnel.
- (2) The fire protection plan must contain a fire hazard analysis that describes the specific features necessary to implement the program described above, such as administrative controls and personnel requirements for fire prevention and manual fire suppression activities, and automatic and manually actuated fire detection and suppression systems.
- (3) The fire protection plan must be incorporated by reference into the final safety analysis report (as updated). A licensee may make changes to the fire protection plan without obtaining NRC approval only if these changes do not reduce the effectiveness of the fire protection program.
- (4) The licensee shall maintain in an auditable and retrievable form the records of all changes to the fire protection plan. These records must include a written evaluation which provides the bases for the determination that the change satisfies paragraph (1) above. The fire protection plan and each change to the fire protection plan must be maintained as a record until the Commission terminates the reactor license, and the licensee shall retain each superseded revision of the procedures referenced in the plan for 3 years from the date it was superseded.
- (b) Except as provided in paragraph (d) of this section, plants licensed to operate prior to January 1, 1979, shall comply with the specific requirements of Sections III.G, III.J, III.L (if applicable), and III.O, of Appendix R to this part, and those sections of Appendix R to this part relating to fire protection systems and/or features which had not been previously reviewed and approved by the NRC staff in a safety evaluation dated prior to February 19, 1981.

- (c) Licensees that have submitted the certifications required under 50.82(a)(1) shall maintain a fire protection program to address the potential for fires which could cause the release or spread of radioactive materials (i.e., which could result in a radiological hazard).
- (1) The objectives of the fire protection program are to -
- (i) Reasonably prevent such fires from occurring;
  - (ii) Rapidly detect, control and extinguish those fires which do occur and which could result in a radiological hazard; and
  - (iii) Ensure that the risk of fire-induced radiological hazards to the public, environment, and plant personnel is minimized.
- (2) The fire protection program must be assessed by the licensee on a regular basis and revised as appropriate throughout the various stages of facility decommissioning.
- (3) The licensee may make changes to the fire protection program without NRC approval if these changes do not reduce the effectiveness of fire protection for facilities, systems, and equipment which could result in a radiological hazard, taking into account the decommissioning plant conditions and activities.
- (d) (1) National Fire Protection Association (NFPA) Standard 805, "Performance-Based for Fire Protection for Light Water Reactor Electric Generating Plants," 2001 Edition (NFPA 805) which is referenced in this section, was approved for incorporation by reference by the Director of the Federal Register. A notice of any changes made to the material incorporated by reference will be published in the Federal Register. Copies of NFPA 805 may be purchased from the NFPA Customer Service Department, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101 and in PDF format through the NFPA Online Catalog ([www.nfpa.org](http://www.nfpa.org)) or by calling (800)344-3555 or (617)770-3000. They are also available for inspection at the NRC Library, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland 20852-2738. Copies are also available at the Office of the Federal Register, 800 N. Capitol Street, Suite 700, Washington, DC.
- (2) To satisfy the requirements of paragraph (a) of this section, and as an alternative to compliance with the requirements of paragraph (b) of this section, a licensee may voluntarily choose to comply with the provisions of NFPA 805 related to nuclear safety and radiological release, as defined in the standard. A licensee choosing to adopt NFPA 805 must submit an application requesting a license amendment, containing the implementation date for NFPA 805.
- (3) Proposed alternatives to the requirements specified in NFPA 805 may be used when authorized by the Director of the Office of Nuclear Reactor Regulation. The applicant shall demonstrate that the goals, performance objectives and performance criteria specified in NFPA 805 related to nuclear safety and radiological release is satisfied, and defense-in-depth is maintained.

ITEM 2 - NRC staff expectations for the implementing guidance:

The staff anticipates that the implementing guidance will identify the specific elements of NFPA 805 related to the achievement of the nuclear safety and radioactive release goals as defined in the standard, and as specified in the draft regulatory framework provided above. The guidance document should define the scope and level of the documentation required to demonstrate compliance with the standard so that it is readily apparent that the new program maintains safety without imposing any unnecessary regulatory burden. The guidance should provide detailed information to licensees concerning the documentation required to be submitted for NRC review and approval, and the documentation to be maintained on site for future NRC inspection by licensees that choose to adopt NFPA 805 on a voluntary basis as discussed in paragraph (d) above. For licensees that are taking no exceptions from NFPA 805, or the implementing guidance, the submittal can be limited to a request for a license amendment and the specification of a implementation date for NFPA 805. Guidance for licensees on the process for transitioning the plant from the current fire protection program to NFPA 805 should also be included in the implementing guide. The implementing guidance should also address the NRC staff significant issues provided to NEI in a letter dated April 6, 2001, from J. Hannon, NRC, to A. Marion, NEI, (ADAMS Accession No. ML010990346) and any industry issues that require clarification in order to ensure effective implementation by licensees.

ITEM 3 -Feedback on NEI proposed exceptions to Chapter 3 of NFPA 805:

NEI has proposed that Section 3-1 of NFPA 805 be revised to allow for performance-based approaches acceptable to the NRC to be used in lieu of the deterministic requirements specified in Chapter 3 of NFPA 805. We do not object to adoption of approved performance-based approaches in lieu of deterministic requirements. Nevertheless, at the time that the technical committee was developing the standard, no performance-based or risk-informed methods were proposed to the committee for addressing the defense-in-depth elements prescribed in Chapter 3, such as administrative controls, fire brigade organization, fire protection system design, fire endurance testing protocols, and water supply. The Commission's direction concerning this issue is provided in the staff requirements memorandum (SRM) of October 2, 1996, that stated: "Performance-based and risk-informed approaches for fire protection should only be utilized where the specifics are amenable to such methods," the SRM dated September 11, 1997, that stated: "the staff should not force-fit risk-informed, performance-based elements into areas that are not amenable to such approaches," and the SRM dated June 30, 1998, that stated: "ensure that the proper risk-informed, performance-based approach is maintained."

Consistent with the Commission's direction, the staff will support the use of technically sound performance-based and risk-informed methods for the elements specified in Chapter 3 of the standard when such methods have been validated and approved for use in nuclear power plant applications. Section 1-7 of NFPA 805 states "Nothing in this standard is intended to prevent the use of systems, methods or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this standard. Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency. The system, method or device shall be approved for the intended purpose by the authority having jurisdiction." The staff believes that this section of the standard is consistent with the Commission's direction, and provides an acceptable process for the approval by the NRC of performance-based and risk-informed methods in the future should they become available. Performance-based alternatives to the specified NFPA codes and standards in

NFPA 805 should be presented to the responsible NFPA technical committee for their consideration for incorporation into the specific standard, this would obviate the need for deviations from the requirements in NFPA 805, reducing unnecessary burdens on both the industry and the staff for those alternatives. The implementing guidance to adopt NFPA 805 should reflect the Commission's direction and the staff position concerning the use of performance-based and risk-informed alternatives to the Chapter 3 requirements. Therefore, we would expect that the NEI guidance would describe a process by which performance-based and risk-informed approaches could be adopted by licensees as alternatives to the deterministic requirements of Chapter 3 when they become available.

Based upon our recent meetings, we understand that NEI has a concern regarding the potential misinterpretation of NFPA 805, Section 3 in this regard and we have no objection to NEI addressing this issue in the implementing guidance. Specifically, we understand your concern with provisions in Section 3 that could be misinterpreted to preclude use of alternatives allowed by Section 1-7. We support NEI's effort to make the adoption of NFPA 805 efficient and practical. We believe the regulation to adopt NFPA 805 should have clear implementing guidance that brings stability to the nuclear operational and planning processes.

NEI has also proposed that Section 3-1 of the standard be revised to state: "Fire protection elements described in the existing docketed licensing basis take precedence over the requirements contained herein." Currently the standard states: "Previously approved alternatives from the fundamental protection program attributes of this chapter by the AHJ take precedence over the requirements contained herein." The change to the standard proposed by NEI would exempt licensees from the technical requirements specified in Chapter 3 for any deviations that are contained in their docketed current licensing basis even if those deviations had not received prior NRC review and approval. At the present time our limited data indicates that few such deviations exist on a plant specific basis. The staff is concerned that the parsing of the standard that may result from the NEI proposal may unintentionally render it ineffective to satisfy both the industry's and the NRC's objectives for fire safety.

Under the existing regulatory framework, the staff addresses unsafe deviations from the current regulatory requirements through the inspection and enforcement process. For example, findings identified during the Fire Protection Functional Inspection Program and the Baseline Fire Protection Inspection Program have resulted in corrective actions being taken by licensees. By accepting the NEI proposal, we would be removing the enforcement process from the new regulatory framework as a means of resolving unsafe conditions, and relying solely on the backfit process prescribed in 10 CFR 50.109. The staff believes that a more suitable alternative can be developed under the new regulatory framework to achieve the goal of maintaining plant safety while reducing unnecessary regulatory burden.