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PROPOSED RULE **PR 50**
(67FR 66578)

January 15, 2003

Ms. Annette L. Vietti-Cook
Secretary
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

ATTENTION: Rulemaking and Adjudications Staff

SUBJECT: Industry Comments on NRC Proposed Rule, "Voluntary Fire Protection Requirements for Light Water Reactors; Adoption of NFPA 805 as a Risk-Informed, Performance-Based Alternative," 67 FR 66578

PROJECT: 689

Dear Ms. Vietti-Cook:

The Nuclear Energy Institute¹ submits the enclosed comments on the NRC proposed rule, "Voluntary Fire Protection Requirements for Light Water Reactors; Adoption of NFPA 805 as a Risk-Informed, Performance-Based Alternative," as noticed in 67 FR 66578. These comments were developed from input provided by NEI member companies. Nevertheless we have encouraged other industry representatives to submit individual comments.

Please address any questions about these comments to Fred Emerson at 202-739-8086 or fae@nei.org, or me.

Sincerely,

Alex Marion

FAE/msb
Enclosure

- c: Mr. John Hannon, U.S. Nuclear Regulatory Commission
Mr. Eric Weiss, U.S. Nuclear Regulatory Commission
Mr. Joseph Birmingham, U.S. Nuclear Regulatory Commission

¹ NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

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NEI Comments on Fire Protection Rulemaking

Organization

The comments submitted below are organized by the fifteen sections (I through XV) of the Federal Register Notice (67 FR 66578, Nuclear Regulatory Commission) as listed below.

- I. Background and Rulemaking Initiation
 - II. Discussion
 - III. Analytical Processes for Plant-Wide Reviews
 - IV. Licensee Impact
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 - VI. Additional Issue for Public Comment
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 - IX. Plain Language
 - X. Voluntary Consensus Standards
 - XI. Environmental Assessment and Finding of No Significant Environmental Impact
 - XII. Paperwork Reduction Act Statement
 - XIII. Regulatory Analysis
 - XIV. Regulatory Flexibility Act Certification
 - XV. Backfit Analysis
- Text of Proposed 50.48

Detailed Comments

The actual comments are presented in italics to differentiate them from the background information preceding the comment.

I. Background and Rulemaking Initiation

General Comment 1: The NRC proposes to add the optional alternative to 10 CFR 50.48, "Fire Protection." Because the NRC is incorporating an industry standard into its regulations, they should consider as an alternative amending 10 CFR 50.55a, "Codes and Standards," to add a new paragraph referencing NFPA-805, which would be referenced in 10 CFR 50.48 as an optional alternative approach. Section 50.55a establishes a regulatory scheme for the use of industry codes and standards issued by the American Society of Mechanical Engineers ("ASME") and the Institute of Electrical and Electronic Engineers ("IEEE"). The NFPA organization is similar to these codes and standards bodies, and, therefore, the regulatory scheme should be consistent. The provisions of 10 CFR 50.55a(a)(3) would then apply when a licensee would seek NRC

approval of a proposed alternative to the requirements of the regulations and the NFPA-805 standard.

Whether the NRC implements the optional alternative to 10 CFR 50.48 or an amendment to 10 CFR 50.55a, the process for obtaining NRC approval for alternate methods should be the same, e.g., a license amendment should not be required.

Page 66580, first column:

FR Text for Comment 2: "The NFPA Standards Council approved 2001 Edition of NFPA 805 as a performance-based American National Standard for light water nuclear power plants, effective February 9, 2001. The NRC cooperatively participated in the development of NFPA 805. The standard specifies the minimum fire protection requirements for existing light water nuclear power plants during all modes ("phases" in NFPA 805) of plant operation, including, shutdown, degraded conditions and decommissioning."

Comment 2: Fires should not be postulated with degraded conditions unless the fire and the degraded condition have a common cause. We recommend the term "degraded conditions" be deleted.

Page 66580, 2nd column:

FR Text for Comment 3: "The electrical cable insulation safety hazard in nuclear power plants should be mitigated by successful completion of a cable insulation fire propagation test (or the application of a fire retardant coating or the installation of fixed, automatic fire suppression, as stated in the rule language). Therefore, the NRC cannot endorse the italicized exception contained in Section 3.3.5.3 of NFPA 805."

Comment 3: The italicized exception to Section 3.3.5.3 allowed existing cable in place prior to the adoption of the standard to remain as is. This italicized exception is consistent with the "safe today, safe tomorrow" principle agreed to by NRC (see Comment 5), with the understanding that the cable configuration is always subject to inspection by NRC. The exception should therefore be retained.

FR Text for Comments 4 and 5: "NEI submitted a number of other specific comments, which were endorsed as a group by the Tennessee Valley Authority (TVA), none of which resulted in the NRC choosing to make changes to the draft rule language. These comments regarded: (1) Appropriate radiological limits for fire suppression activities; (2) licensee freedom to establish secondary fire protected safe shutdown paths; (3) the standing of "docketed licensing-basis information" within Chapter 3 of NFPA 805;..."

Comment 4: Item 2 - Industry considers that feed and bleed is one available flow path to achieve and maintain safe shutdown. We agree that it should not be considered the "preferred" or "sole" path).

Comment 5: Item 3 - Senior NRC staff stated in writing during a meeting on August 30, 2001, "We agree that processes such as inspection and enforcement that existed for licensee commitments that were in effect under an existing licensing basis will continue under a new licensing basis i.e., anything that was unreviewed and unapproved remains so." This has been subsequently restated by NRC staff during later meetings as "safe today, safe tomorrow." Industry now understands that licensees can bring forward portions of their existing licensing basis or design configuration as alternatives to Chapter 3 fundamental elements when adopting NFPA 805. It is the licensee's responsibility to maintain the plant licensing basis. However, if the NRC suggests that the licensing basis was not previously approved, the burden of proof for demonstrating that fact remains with the NRC.

II. Discussion

Discussion of Proposed Rule, Page 66583, 1st column

FR Text for Comment 6: "Unnecessary Burden: The proposed rule is expected to reduce the need for licensee developed exemption requests targeted at relief from the existing deterministic, prescriptive fire protection requirements. Additionally, the proposed rule is expected to result in net reduced operating, training, and maintenance costs (through the elimination of conservatively required deterministic barriers and fire protection features) over the remaining life of the reactor plants and during their decommissioning."

Comment 6: We recommend replacing the text for "Unnecessary Burden" with the following:

"Licensee adoption of the proposed rule or use of the techniques in the rule is expected to reduce unnecessary regulatory burdens by enabling licensees to cost-effectively adopt safe alternatives to overly conservative deterministic requirements."

Page 66583, 2nd column

FR Text for Comment 7: "Licensee Implementation: Sufficient methodologies are provided in NFPA 805 and adequate risk, fire and nuclear safety data are available to implement them."

Comment 7: NFPA 805 does not include useful risk-informed methodologies such as NEI 00-01, so the rule language or implementing guidance should recognize the use of such methodologies to address the appropriate issues.

Page 66583, 3rd column

FR Text for Comment 8: "Appendices B, C, and D of NFPA 805 constitute methodologies for conducting nuclear safety circuit analyses, nuclear power plant fire hazard modeling, and fire probabilistic safety assessments, respectively."

Comment 8: Appendices C and D are not methodologies but descriptions of attributes of methodologies.

Page 66584, 1st column, Section 50.48(c)(2)(iii) Use of Feed-and-Bleed

FR Text for Comment 9: "This paragraph does not accept the use of a high-pressure charging/ injection pump coupled with the pressurizer PORVs as the sole fire protected shutdown path for maintaining reactor coolant inventory, pressure control, and decay heat removal capability (i.e., feed-and-bleed) for PWRs."

Comment 9: It should be considered one of the multiple methods when used in a risk informed analysis of safe shutdown capability.

Page 66584, 1st & 2nd columns, Section 50.48(c)(2)(vi) Water Supply and Distribution

FR Text for Comment 10: "The italicized exception to Section 3.6.4 is not endorsed.

This paragraph would not allow a standpipe/hose station system in place of seismically qualified standpipes and hose stations unless previously approved in the licensing basis."

Comment 10: The italicized exception to Section 3.6.4 required existing plants not capable of meeting the seismic qualification requirement to restore a water supply and distribution system following an SSE. This italicized exception is consistent with the "safe today, safe tomorrow" principle agreed to by NRC (see Comment 5), with the understanding that the capability for restoring water supply is always subject to inspection by NRC. The exception should therefore be retained.

FR Text for Comment 11: "Seismically qualified standpipes and hose stations have been in NRC guidance since 1976 (Appendix A to Branch Technical Position (BTP) APCS 9.5-1. The NRC is unaware of any licensees using a non-seismically qualified standpipe/hose station system in place of a seismically qualified standpipe/hose station system."

Comment 11: While it is true that the requirement for seismic hose stations was provided in 1976, the relevant section from Appendix A to BTP APCS 9.5-1 only applied this to those plants for which the "Application Docketed but Construction

Permit Not Received As Of 7/1/76". This requirement did not exist under the section for "Plants Under Construction and Operating Plants". This was also reflected in the response to Question 7.2 from Generic Letter 86-10:

"Where plant systems are designed to prevent the release of combustible materials caused by a seismic event, such as a dike around a fuel oil tank transformer, or seismic supports for hydrogen lines, then no fire need to be arbitrarily assumed to take place in the fire hazards analysis.

Because it is impossible to completely preclude the occurrence of a seismically induced fire, Section C.6.c(4) of CMEB 9.5-1 states:

'Provisions should be made to supply water at least to standpipes and hose connections for manual fire fighting in areas containing equipment required for safe plant shutdown in the event of a safe shutdown earthquake. The piping system serving such hose stations should be analyzed for SSE loading and should be provided with supports to ensure system pressure integrity. The piping and valves for the portion of hose standpipe system affected by this functional requirement should, as a minimum, satisfy ANSI B31.1, 'Power Piping.' The water supply for this condition may be obtained by manual operator actuation of valves in a connection to the hose standpipe header from a normal seismic Category I water system such as the essential service water system. The cross connection should be (a) capable of providing flow to at least two hose stations (approximately 75 gpm per hose station), and (b) designed to the same standards as the seismic Category I water system; it should not degrade the performance of the seismic Category I water system.'

The post-seismic procedures should include a damage survey, and a determination of whether any fires were initiated as a result of the seismic event. See also the response to Question 7.1 [in GL 86-10].

It should be noted that the guidelines cited above from BTP CMEB 9.5-1 are not applicable to plants reviewed and approved under BTP APCS 9.5-1."

As noted in the last sentence of the response, the NRC was aware of plants that did not have non-seismically qualified hose stations; this was not a requirement for the plants approved under BTP APCS 9.5-1. There are many licensees that do not have seismic fire hose stations, and this had previously been determined by the NRC to be acceptable.

Page 66584, 2nd column, Section 50.48 (c)(3)

FR Text for Comment 12: "For purposes of transitioning to NFPA 805, the NRC expects that licensees will be able to treat existing reactor plant fire protection

elements as “previously approved” for the purposes of the Chapter 3 delineation of fundamental program elements. This approach should normally be acceptable because licensees should either be in compliance with regulatory requirements or should have obtained approval from the NRC for exemptions or deviations from those requirements. Fire protection elements that have not been previously reviewed and approved would continue to be subject to normal NRC inspection and enforcement.”

Comment 12: Fire protection programs are subject to inspection and enforcement regardless of whether specific elements were previously approved. Treating existing reactor plant fire protection elements as “previously approved” for the purpose of Chapter 3 delineation of fundamental program elements is an acceptable approach. Industry understands that these will be subject to inspection and enforcement under the “old” regulations. It is the licensee’s responsibility to maintain the plant licensing basis. However, if the NRC suggests that the licensing basis was not previously approved, the burden of proof for demonstrating that fact remains with the NRC. This accomplishes the goal of not spending unnecessary regulatory and industry resources on discussions of whether elements were previously approved.

Page 66584, 3rd column, Section 50.48 (c)(3)(ii)

FR Text for Comment 13: “This requirement of the proposed rule has the effect of precluding licensees from implementing NFPA 805 on a partial or selective basis (e.g., in some fire areas and not others, or truncating the methodology within a given fire area).”

Comment 13: The proposed rule should not preclude licensees from using risk tools from NFPA 805. Use of these tools should not be limited to only those licensees who adopt NFPA 805. This is not the same as selective implementation.

Page 66585, 1st column

FR Text for Comment 14: “...and minimum design requirements identified in Chapter 3 of NFPA 805, in lieu of those methods and approaches specified in NFPA 805. The request must be in the form of an application for license amendment under Sec. 50.90.”

Comment 14: We request that the language in the rule be revised to eliminate the requirement for a license amendment to use alternative methods and analytical approaches. There is no legal basis for this in the light of the Perry decision (see NEI letter to Sam Collins, July 10, 2002). Using alternative methods to meet the objectives of NFPA 805 would not modify the terms of the license; it would simply implement the provisions of the regulation through different means. While prior NRC approval and a Safety Evaluation Report may be preconditions to using alternative methods, there is no legal basis for requiring a license amendment. Use of NRC-approved alternative

methods to NFPA 805 does not provide additional operating authority or otherwise modify the terms of the license.

This provision creates unnecessary burdens to licensees as well as NRC staff.

III. Analytical Processes for Plant-Wide Reviews

Page 66585, 1st column, A. Operating Reactors

FR Text for Comment 15: "Section 2.2.1: Licensee establishes fundamental fire protection elements in accordance with Chapter 3 of NFPA 805 on a plant-wide basis, taking credit for alternatives that have been "previously approved" by the authority having jurisdiction (AHJ) (NRC)."

Comment 15: "Previously approved" was addressed in Comment 5.

Page 66585, 2nd column

FR Text for Comment 16: "Section 2.2.9: In the event of a change to a fire protection program element during the above analytical steps, the licensee will evaluate the risk impact to ensure that the public risk associated with fire-induced nuclear fuel damage accidents is low, and that adequate defense-in-depth and safety margins are maintained."

Comment 16: "Element" should be changed to "attribute" to be consistent with language or terminology used in NFPA 805 section 3.1.

IV. Licensee Impact

FR Text for Comment 17: "The NRC anticipates that significant additional analysis, beyond that currently documented by licensees, may be elected by licensees that choose to adopt NFPA 805."

Comment 17: The primary impacts on licensees are expected to be:

- *Review of existing licensing basis*
- *Decisions on which current design elements or portions of the existing licensing basis to bring forward*
- *Decisions on alternate methods to be applied, and supporting analysis*
- *Decisions on new tools and analytical methods or representative fire testing results*

These impacts should be reflected in this section. The term "significant" is not appropriate and should be deleted.

V. Benefits

FR Text for Comment 18: "...a revised fire protection rule that would facilitate the use of alternative approaches may reduce the need for exemptions."

Comment 18: The rule as stated does not "facilitate" the use of alternative approaches because it requires the use of license amendments to obtain approval for these alternative approaches. A less burdensome approval process would facilitate their use.

VI. Additional Issue for Public Comment

Page 66586

FR text for Comments 19 and 20 (answers to questions): "Nevertheless, the NRC requests a response to the following specific questions:

(1) Is there any likelihood that licensees who are approved to use NFPA 805 would later decide that they would like to comply with paragraph (b) and the licensing basis that existed immediately prior to approval of NFPA 805?"

Comment 19 (Response): It is not likely that licensees, once having converted to a risk-informed, performance based licensing basis, would convert back without a significant regulatory or economic incentive. Since the regulatory framework is more flexible and the opportunities for cost saving more likely under the new regulatory environment, there would seem to be no incentive for a return to the previous regulatory environment unless the new environment proved less stable than the old one.

"(2) Do you agree that a license amendment would be required to revert to compliance with Section 50.48(b), and if not, why not?"

Comment 20 (Response): Yes, a license amendment is appropriate.

VII. Availability of Documents

No comments.

IX. Plain Language

No comments.

X. Voluntary Consensus Standards

No comments.

XI. Environmental Assessment and Finding of No Significant Environmental Impact

No comments.

XII. Paperwork Reduction Act Statement

Comments 21 through 24. We are also providing responses to the following questions:

1. "Is the proposed information collection necessary for the proper performance of the functions of the NRC, including whether the information will have practical utility?"

Comment 21 (Response): The information to be collected (proposed 10 CFR 50.48 (c)(3) and (c)(4)) consists of 50.90 submittals for initial compliance with NFPA 805 and for the use of alternate methods within NFPA 805. Other information to be developed but not collected includes the evaluations and analyses specified in proposed 10 CFR 50.48 (c)(3)(ii). As indicated above, a 50.90 license amendment is not necessary to obtain prior NRC approval of the use of alternate methods.

2. "Is the estimate of burden accurate?"

Comment 22 (Response): The total burden to initially adopt NFPA 805 consists of the submittals required and the analyses and evaluations to be performed, as noted in the response to Question 1. We request that the staff revise its estimates of 20,000 to 65,000 man-hours for each licensee to achieve initial implementation. These estimates appear too high by a factor of three.

3. Is there a way to enhance the quality, utility, and clarity of the information to be collected?

Comment 23 (Response): Prior approval of alternate methods should not require a license amendment. See also Comments 1 and 14.

4. How can the burden of the information collection be minimized, including the use of automated collection techniques?

Comment 24 (Response): See the response to Question 3 immediately above.

XIII. Regulatory Analysis

We have the following comments on the Regulatory Analysis.

Item 2, "Statement of the Problem"

Comment 25: This section states that the "alternative regulatory structure would potentially reduce the number and complexity of future licensee exemption or deviation requests..." This is inconsistent with the statement in Section 4, "Alternatives", which states that use of the 805 methods would preclude the need for exemptions or deviations. The text should be revised to reflect the proposed revision in Comment 6 above.

Item 6, "Estimated Consequences"

Comment 26: The cost of the one-time analysis is estimated at \$1 million. As previously stated, this estimate is too high by a factor of three. This estimate should be revised or deleted.

Comment 27: The analysis suggests that fire protection features no longer required will be removed. This is unlikely. They will probably either be "abandoned in place" if not necessary, or will continue to be used if the licensee determines it beneficial to do so.

XIV. Regulatory Flexibility Act Certification

No comments.

XV. Backfit Analysis

Comment 28: See the comment on this subject provided above for the Regulatory Analysis.

Text of Proposed Rule

Pages 66587, 3rd column, and 66588, 1st column

FR Text for Comment 29: "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...."

Comment 30: The industry believes that the proposed rule should allow for the voluntary adoption of later versions of NFPA 805, unless NRC notifies licensees that a specific revision to NFPA 805 is not to be used.

National consensus standards are drafted and approved by committees of experts from all sectors of the nuclear power industry: owners, operators, designers, architect-engineers, insurance companies, code inspectors and NRC personnel. An extensive review, comment, and disposition process is used to ensure the best technical position is derived based on available technical knowledge and operating experience. No one industry sector has an overall majority. Further, approval committees are made aware of any dissenting comments that have not been resolved. The same process is used whether it is the development of a new standard or a revision to an established standard. We believe that subsequent revisions of NFPA 805 can be endorsed by the NRC without rulemaking with the inclusion of the following proposed language (proposed change is underlined) in §50.48 (c)(1):

A notice of any changes made to the material incorporated by reference will be published in the Federal Register. A licensee may adopt subsequent revisions to NFPA 805, as determined through the application of the appropriate change control process, unless the NRC specifically precludes the adoption of such amendments. Copies of NFPA 805 may be purchased....”