

July 14, 1999

FOR: The Commissioners

FROM: William D. Travers /s/  
Executive Director for Operations

SUBJECT: PROPOSED RULE: "ELIMINATION OF THE REQUIREMENT FOR NONCOMBUSTIBLE FIRE BARRIER PENETRATION SEAL MATERIALS AND OTHER MINOR CHANGES" (10 CFR PART 50) (WITS 199800128)

## PURPOSE:

To obtain Commission approval to publish a proposed rule in the *Federal Register* that would eliminate the noncombustibility requirement for fire barrier penetration seal materials and make other minor changes.

## BACKGROUND:

In response to concerns regarding licensee compliance with NRC requirements and guidance, the Office of Nuclear Reactor Regulation (NRR) conducted a technical assessment of fire barrier penetration seals. The staff documented the results of its assessment in SECY-96-146, "Technical Assessment of Fire Barrier Penetration Seals in Nuclear Power Plants," July 1, 1996; in NUREG-1552, "Fire Barrier Penetration Seals in Nuclear Power Plants," July 1996; and in NUREG-1552, Supplement 1, January 1999. In these reports, the staff stated that the penetration seal programs in industry remained satisfactory and that it had found neither plant-specific problems nor generic problems of safety significance. On the basis of its findings, the staff also stated that the noncombustibility criterion for penetration seal materials that is specified in the NRC fire protection regulation and review guidance does not contribute significantly to safety, and recommended that this noncombustibility criterion be deleted. In a staff requirements memorandum dated June 30, 1998, the Commission directed the staff to amend Section III.M of Appendix R to Part 50 of Title 10 of the *Code of Federal Regulations* (Appendix R) to eliminate the noncombustibility requirement for penetration seal material and to make other minor changes to the fire protection regulations.

## DISCUSSION:

The proposed change to eliminate the noncombustibility requirement for penetration seal material constitutes a burden reduction. The other changes do not constitute a burden reduction.

The proposed change is described in detail in the attached *Federal Register* notice (Attachment 1). In summary, the proposed change would remove the requirement from Section III.M of Appendix R that fire barrier penetration seal materials be noncombustible. In addition, the proposed rule would make the following minor changes: 1) delete references that no longer reflect accurately the guidance documents published by the NRC in notes 3 and 4 of § 50.48, 2) delete scheduler requirements that have been implemented in §§ 50.48(c), (d), and (e), 3) correct a grammatical error in note 2 to section III.G.3 of Appendix R, and 4) make editorial changes to comply with the "Plain Language in Government Writing" requirements.

## RESOURCES:

Resources needed for this rulemaking are included in the current budget.

## COORDINATION:

The Office of the General Counsel has reviewed this Commission paper and the proposed rule change and has no legal objection.

The Office of the Chief Financial Officer has reviewed this Commission paper for resource implications and has no objection.

The Office of the Chief Information Officer has reviewed this proposed rule for information technology and information management implications and has no objection.

The Committee to Review Generic Requirements has determined it will review this rulemaking after public comments are received and evaluated.

## RECOMMENDATIONS:

That the Commission:

1. Approve the notice of proposed rulemaking for publication ([Attachment 1](#)).
2. Certify that this rule, if promulgated, will not have a significant economic impact on a substantial number of small entities to satisfy requirements of the Regulatory Flexibility Act, 5 U.S.C. 605(b).
3. Note:
  1. The rulemaking would be published in the *Federal Register* for a 75-day public comment period.
  2. The chief counsel for advocacy of the Small Business Administration will be informed of the certification regarding economic impact on small

entities and the reasons for it, as required by the Regulatory Flexibility Act.

3. Copies of the *Federal Register* ([Attachment 1](#)) notice of proposed rulemaking will be distributed to all affected licensees. The notice will be sent to other interested parties upon request.
4. The appropriate Congressional committees will be informed ([Attachment 2](#)).
5. A press release will be issued ([Attachment 3](#)).
6. The staff has determined that this action, if adopted as a final rule, would not constitute a major rule as defined by the Small Business Regulatory Enforcement Fairness Act. The staff will verify this determination with the Office of Management and Budget before submitting the final rule for signature.

William D. Travers  
Executive Director for Operations

Attachments:           1. *Federal Register notice*  
                              2. Congressional letters  
                              3. Press release

CONTACT: Daniele Oudinot, SPLB/DSSA/NRR

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## Table of Contents

- Federal Register Notice
  - SUPPLEMENTARY INFORMATION
    - I. Background:
    - II. Proposed Action
    - III. Discussion
      - 1. Fire Barrier Penetration Seals
      - 2. Footnotes 3 and 4 in §50.48
      - 3. Implementation Requirements in §50.48(c), (d), and (e)
      - 4. Grammatical Correction
    - IV. Plain Language
    - V. Finding of No Significant Environmental Impact: Environmental Assessment
      - 1. The Proposed Action
      - 2. Need for the Rulemaking Action
      - 3. "No Regulatory Action" Alternative
      - 4. Environmental Impacts of the Proposed Amendment and the Alternative
      - 5. List of Agencies and Persons Consulted
    - VI. Paperwork Reduction Act Statement
      - Public Protection Notification
    - VII. Regulatory Analysis
      - 1. Statement of the Problem
      - 2. Objectives of the Rulemaking
      - 3. Alternative
      - 4. Consequences
      - 5. Value Impact Analysis
      - 6. Decision Rationale
    - VIII. Regulatory Flexibility Act Certification
    - IX. Backfit Analysis
    - X. List of Subjects in 10 CFR Part 50
    - XI. Voluntary Consensus Standards
  - Part 50 - DOMESTIC LICENSING OF PRODUCTION AND UTILIZATION FACILITIES
  - CONGRESSIONAL LETTERS
  - DRAFT PRESS RELEASE
    - *NRC PROPOSES ELIMINATING NON-COMBUSTIBILITY REQUIREMENT FOR FIRE BARRIER PENETRATION SEALS AT NUCLEAR PLANTS*

NUCLEAR REGULATORY COMMISSION  
10 CFR Part 50  
RIN 3150-AG22

Elimination of the Requirement for Noncombustible Fire Barrier Penetration Seal Materials and Other Minor Changes

AGENCY:

Nuclear Regulatory Commission.

ACTION:

Proposed rule.

SUMMARY:

The Nuclear Regulatory Commission (NRC) is proposing to amend its fire protection regulations to remove the requirement that fire barrier penetration seal materials be noncombustible, and to make other minor changes that remove Footnote 3 from §50.48(a) and Footnote 4 from §50.48(b); remove paragraphs (c), (d), and (e) from §50.48; correct an error in Footnote 2 to Section III.G.3 of Appendix R; and make editorial changes to comply with the Presidential memorandum dated June 1, 1998, entitled, "Plain Language in Government Writing."

DATES:

Submit comments by (insert date 75 days after publication date). Comments received after this date will be considered if it is practical to do so, but the Commission is able to assure consideration only for comments received on or before this date.

ADDRESSES:

Mail comments to The Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC, 20555-0001. Attention: Rulemakings and Adjudication Staff, Mail Stop O-16C1.

Deliver comments to One White Flint North, 11555 Rockville Pike, Rockville, Maryland, 20852, between 7:30 a.m. and 4:15 p.m. on Federal workdays.

Copies of comments received may be examined at NRC Public Document Room, 2120 L Street, NW. (Lower Level), Washington, DC.

You may also submit comments via the NRC's interactive rulemaking Web site through the NRC home page <<http://www.nrc.gov>>. This site provides the availability to upload comments as files (any format), if your Web browser supports that function. For information about the interactive rulemaking site, contact Ms. Carol Gallagher at 301-415-5905; or by e-mail at [CAG@nrc.gov](mailto:CAG@nrc.gov). Comments received may also be viewed and downloaded electronically at this Web site.

Single copies of NUREG-1552, "Fire Barrier Penetration Seals in Nuclear Power Plants," and NUREG-1552, Supp. 1, which are related to this rulemaking, may be obtained by writing to U.S. Nuclear Regulatory Commission, Reproduction and Distribution Services Section, OCIO, Washington, DC 20555-0001; or by fax at 301-415-5272.

FOR FURTHER INFORMATION CONTACT:

Daniele Oudinot, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone 301-415-3731; e-mail [DHO@nrc.gov](mailto:DHO@nrc.gov).

SUPPLEMENTARY INFORMATION

I. BACKGROUND:

The NRC conducted a technical assessment of fire barrier penetration seals. The NRC documented the results of its assessment in SECY-96-146, "Technical Assessment of Fire Barrier Penetration Seals in Nuclear Power Plants," July 1, 1996; in NUREG-1552, "Fire Barrier Penetration Seals in Nuclear Power Plants," July 1996; and in NUREG-1552, Supplement 1, January 1999. In these reports, the NRC stated that, on the basis of its findings, the noncombustibility criterion for penetration seal materials that is specified in the NRC fire protection regulation and review guidance does not contribute significantly to safety, and recommended that this noncombustibility criterion be deleted.

II. PROPOSED ACTION

The NRC is proposing to amend the regulations governing fire protection in §50.48, and Appendix R to Part 50 of Title 10 of the *Code of Federal Regulations* (Appendix R). The proposed amendments would: (i) remove the words "shall utilize only noncombustible materials and" in 10 CFR Part 50, Appendix R, Section III.M, "Fire Barrier Cable Penetration Seal Qualification;" (ii) remove Footnote 3 from §50.48(a); (iii) remove Footnote 4 from §50.48(b); remove §§50.48(c), (d), and (e); correct a spelling error in Footnote 2 of Appendix R, Section III.G., "Fire Protection of Safe Shutdown Capability;" and make editorial changes.

III. DISCUSSION

**1. Fire Barrier Penetration Seals**

Appendix R, Section III.M currently states: "Penetration seal designs shall utilize only noncombustible materials and shall be qualified by tests that are comparable to tests used to rate fire barriers." The NRC is proposing to amend Appendix R, Section III.M, by removing the words "shall utilize only

noncombustible materials and..."

The technical basis for removing the noncombustibility requirement for fire barrier penetration seal materials is documented in NUREG-1552 and NUREG-1552, Supplement 1. A summary of the technical basis for this action follows.

NRC requirements and guidelines for penetration seals appear in a number of documents. In 1971, the NRC promulgated General Design Criterion (GDC) 3, "Fire protection," and subsequently developed specific guidance for implementing GDC 3; Branch Technical Position (BTP) Auxiliary Power Conversion Systems Branch (APCSB) 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants," May 1, 1976; and Appendix A to BTP APCSB 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants Docketed Prior to July 1, 1976," February 24, 1977. Most licensees complied with most of the implementing guidance. To resolve the contested issues, the NRC published the final fire protection rule (§50.48) and Appendix R to 10 CFR Part 50 on November 10, 1980 (45 FR 76602). It is important to note that Appendix R is not a set of generically applicable fire protection requirements and applies only to plants that were operating before January 1, 1979.

The record for Appendix R does not disclose technical basis for including the noncombustibility criterion in Appendix R. The noncombustibility criterion is not included in BTP APCSB 9.5-1, Appendix A to BTP APCSB 9.5-1, or in the industry fire endurance test standards. Also, §50.48 does not address the use of combustible materials. Although GDC 3 states that noncombustible and heat-resistant materials must be used wherever practical, GDC 3 does not preclude the use of combustible materials. In fact, a large number of combustible materials are installed in nuclear power plants. In general, when these materials are incorporated as integral components of the plant fire protection program, including the fire hazard analysis, they are acceptable.

Fire barrier penetration seals are one element of the defense-in-depth concept at nuclear power plants. The objectives of the defense-in-depth concept are to:

1. Prevent fires from starting;
2. Promptly detect, control, and extinguish those fires that do occur; and
3. Protect structures, systems, and components important to safety so that a fire that is not extinguished promptly will not prevent the safe shutdown of the plant.

To achieve defense in depth, each operating reactor maintains an NRC-approved fire protection program. Nuclear power plants are divided into separate areas by structural fire barriers, such as walls and floor-ceiling assemblies whose fire-resistance rating, typically 1, 2, or 3 hours, is determined by testing. The function of these structural barriers is to prevent a fire that starts in one area from spreading to another area. Penetration seals are used to close openings through the structural fire barriers. The intended design function of the penetration seal is to confine a fire to the area in which it started and to protect important equipment within the area from a fire outside the area. As for other fire barriers, the fire-resistance rating of the penetration seals is determined by testing.

The ability of a particular penetration seal to achieve its intended design function (i.e., to contain a fire), as determined by a fire endurance test conducted in accordance with an industry standard, is the foremost design consideration. In the report documenting the results of the fire barrier penetration seal reassessment, the NRC concluded the following:

1. There are no reports of fires that challenged the ability of nuclear power plant fire-rated penetration seals to confine a fire.
2. A large body of fire endurance tests had established the fire-resistive capabilities of the penetration seal materials, designs, and configurations installed in nuclear power plants.
3. If penetration seals are properly designed, tested, configured, installed, inspected, and maintained, there is reasonable assurance that they will provide the fire resistance of the tested configuration, maintain the fire-resistive integrity of the fire barriers in which they are installed, and confine the fire to the area of origin.

The NRC evaluated silicone-based penetration seal materials that are combustible and are the most widely used materials for penetration seals throughout industry. In presenting the results of its evaluation in NUREG-1552 and in NUREG-1552, Supplement 1, the NRC concluded the following:

1. Properly tested, configured, installed, and maintained silicone-based penetration seals are not credible fire hazards.
2. Despite the fact that a silicone-based penetration seal could contribute some fuel to a fire, its relative contribution to overall fire severity would be negligible.
3. Qualified silicone-based fire barrier penetration seals can accomplish their intended design function; and
4. The benefits of the silicone-based penetration seal materials outweigh any potential concerns regarding material combustibility.

## **2. Footnotes 3 and 4 in §50.48**

Footnote 3 in §50.48(a) states that basic fire protection guidance for nuclear power plants is contained in two NRC documents: Branch Technical Position (BTP) Auxiliary Power Conversion System Branch (APCSB) 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants" (for new plants docketed after July 1, 1976), dated May 1976, and Appendix A to BTP APCSB 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants Docketed Prior to July 1,

1976" (for plants that were operating or in various stages of design or construction before July 1, 1976), dated August 23, 1976. Footnote 3 also refers to Footnote 4 in §50.48(b), which lists four additional documents related to permissible alternatives to satisfy Appendix A to BTP APCS 9.5-1. The six documents that are referred to in Footnotes 3 and 4 no longer reflect accurately the guidance documents published by the NRC.

Footnotes 3 and 4 were not intended to be rulemaking requirements but rather statements of fact. The footnotes reflected the Commission's approval of the staff's practice, as reflected in Branch Technical Position (BTP) APCS 9.5-1 and in its Appendix A, that the date of the docketing of the construction permit would determine the staff's review criteria for verifying compliance with General Design Criterion (GDC) 3, and that compliance with the guidance of BTP APCS 9.5-1 or its Appendix A and the other listed guidance documents would establish compliance with GDC 3. The NRC has completed its review of the fire protection programs at all operating reactors and has issued license conditions that establish the licensing bases for each reactor. The licensing bases may include the documents listed in Footnotes 3 and 4 but typically include a number of other guidance documents that the NRC issued after it promulgated §50.48. In addition, the licensees included the fire protection licensing basis for each reactor in the Updated Final Safety Analysis Report for the facility. Footnotes 3 and 4 have served their purpose and are not needed by the NRC or the licensees to maintain the fire protection licensing bases for the reactors.

The proposed rule change will not affect or change the licensing basis for any plant. However, it will accomplish the following. It will make 10 CFR 50.48 consistent with other reactor regulations, which do not identify guidance documents. It will also eliminate the need to update the footnotes to include the large number of guidance documents that the NRC has issued since it promulgated §50.48 and to conduct future rulemaking to add new guidance documents as they are issued. The proposed change will also resolve an inconsistency between the information in Footnote 3 to §50.48 and the regulatory requirements of §50.34(g)(1)(ii). Specifically §50.34(g)(1)(ii) states, in part, that "Applications for light water cooled nuclear power plant construction permits, manufacturing licenses, and preliminary or final design approvals for standard plants docketed after May 17, 1982, shall include an evaluation of the facility against the SRP..." whereas, Footnote 3 indicates that the fire protection portions of such applications would be reviewed against BTP APCS 9.5-1.

### **3. Implementation Requirements in §50.48(c), (d), and (e)**

Paragraphs (c) and (d) of §50.48 currently list schedule requirements that were added to the *Code of Federal Regulations* when Appendix R became effective on February 17, 1981. These requirements apply to nuclear power plants licensed before January 1, 1979, and involve fire protection installation modifications, revisions of administrative controls, manpower changes, and training. These requirements were to be completed on a schedule determined by the provisions specified in §50.48(c) and (d). All schedular requirements of §50.48(c) and (d) have been implemented and need not be retained.

Paragraph (e) of §50.48 currently specifies that nuclear power plants licensed after January 1, 1979, shall complete all fire protection modifications needed to satisfy criterion 3 of Appendix A to Part 50 in accordance with the provisions of their licenses. License conditions pertaining to fire protection have been implemented at all plants. Therefore, §50.48(e) has been implemented and need not be retained.

### **4. Grammatical Correction**

Footnote 2 to Section III.G.3 of Appendix R currently reads, "Alternative shutdown capability is provided by rerouting, relocating, or modifying of existing systems; dedicated shutdown capability is provided by installing new structures and systems for the function of post-fire shutdown." This amendment would replace the words "modifying of" with "modifying."

## **IV. PLAIN LANGUAGE**

The Presidential memorandum dated June 1, 1998, entitled, "Plain Language in Government Writing," directed that the Federal Government's writing be in plain language (63 FR 31883, June 10, 1998). In compliance with this directive, editorial changes have been made in these proposed amendments to improve the readability of the existing language of the provisions being revised. These types of changes are not discussed further in this document. The NRC requests comments on this proposed rule specifically with respect to the clarity and effectiveness of the language used in this notice. Comments on the language used should be sent to the NRC as indicated under the ADDRESSES heading.

## **V. FINDING OF NO SIGNIFICANT ENVIRONMENTAL IMPACT: ENVIRONMENTAL ASSESSMENT**

The NRC has determined, in accordance with the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in Subpart A of 10 CFR Part 51, that the proposed amendments, if adopted, would not be a major Federal action significantly affecting the quality of the human environment; therefore, an environmental impact statement is not required.

### **1. The Proposed Action**

The NRC is proposing to amend its regulations that require fire barrier penetration seal materials to be noncombustible and to make minor changes to §50.48 and to Appendix R.

These minor changes are to remove Footnote 3 from §50.48(a) and Footnote 4 from §50.48(b); remove paragraphs (c), (d), and (e) from §50.48; correct a grammatical error in Footnote 2 to Section III.G.3 of Appendix R; and make editorial changes.

### **2. Need for the Rulemaking Action**

The technical basis for removing the noncombustibility requirement for fire barrier penetration seal materials is documented in NUREG-1552, "Fire Barrier Penetration Seals in Nuclear Power Plants," July 1996; and in NUREG-1552, Supplement 1, January 1999. In these reports, the staff stated that the noncombustibility criterion for penetration seal materials that is specified in the NRC fire protection regulation and review guidance does not contribute significantly to safety, and recommended that this noncombustibility criterion be deleted. In a staff requirements memorandum dated June 30, 1998, the Commission directed the staff to amend Section III.M of Appendix R to Part 50 of Title 10 of the *Code of Federal Regulations* (Appendix R) to eliminate the noncombustibility requirement for penetration seal material and to make other minor changes to the fire protection regulations. These minor changes include 1) the deletion of references that no longer reflect accurately the guidance documents published by the NRC in Footnotes 3 and 4 of § 50.48, 2) the deletion of schedular requirements that have been implemented in § 50.48(c) and (d), and 3) a grammatical correction in Footnote 2 to section

III.G.3 of Appendix R. The NRC is also taking advantage of this rulemaking to make editorial changes to comply with the Presidential memorandum dated June 1, 1998, entitled, "Plain Language in Government Writing." The proposed change would remove a requirement that does not contribute significantly to safety. It constitutes a burden reduction for the NRC and for the licensees.

### **3. "No Regulatory Action" Alternative**

No regulatory action would continue the regulatory burden on licensees and on the NRC. Silicone-based material is currently the material of choice for fire barrier penetration seals and is combustible. The NRC has performed an assessment of silicone-based penetration seal materials and concluded that the benefits of the silicone-based materials in penetration seals, such as high-temperature stability, flexibility, and resistance to the effects of radiation exposure and aging, outweigh any potential concerns regarding material combustibility. In the past, licensees using silicone-based penetration seal materials have requested and been granted exemptions from the requirement of Section III.M of Appendix R to Part 50, regarding the use of noncombustible materials, provided the seals are qualified by fire endurance tests conducted in accordance with an industry standard. Under the current rule, licensees who choose penetration seals made of silicone-based materials for the replacement of existing seals or the installation of new seals must request exemptions from the requirement of Section III.M of Appendix R to the extent that the silicone-based material is combustible. These requests for exemption would increase the regulatory burden on both the NRC and on the licensees, and would present no safety benefit. No regulatory action regarding the removal of Footnote 3 in §50.48(a), Footnote 4 in §50.48 (b), and §§50.48 (c), (d), and (e) would have a negative regulatory impact for the following reasons: 1) Footnotes 3 and 4 in §50.48 are inaccurate and incomplete. In addition, the information in Footnote 3 is inconsistent with the regulatory requirements contained of §50.34(g)(1)(ii); 2) the requirements in §§50.48 (c), (d), and (e) have been implemented and need not be retained. No regulatory action regarding the correction of a grammatical error in Footnote 2 to Section III.G.3 of Appendix R, which is administrative in nature, would not have any regulatory impact.

### **4. Environmental Impacts of the Proposed Amendment and the Alternative**

The environmental impacts of the proposed amendment, as well as the alternative, are considered negligible by the NRC. The NRC has determined that the ability of a particular penetration seal to achieve its intended design function (i.e., to contain a fire), as determined by a fire endurance test conducted in accordance with an industry standard, is the foremost design consideration. The proposed amendment would not impact the ability to shut down the plant safely in the event of a fire and would provide a level of safety equivalent to that attained by compliance with Section III.M of Appendix R to Part 50. There is no environmental impact associated with the other changes which are administrative in nature. On this basis, the NRC concludes that there are no radiological environmental impacts associated with this proposed amendment. If no regulatory action were taken in regard to the noncombustibility requirement of Section III.M of Appendix R there would be no radiological environmental impact, the same as the proposed action. No regulatory action regarding the changes in §50.48 (and the correction of an error in Footnote 2 to Section III.G.3 of Appendix R, which is administrative in nature) would have no radiological impact on the environment.

With regard to potential nonradiological impacts the proposed amendment does not affect nonradiological plant effluents and has no other environmental impact. Therefore, the NRC concludes that there are no significant nonradiological environmental impacts associated with the proposed amendment.

### **5. List of Agencies and Persons Consulted**

Much of the technical information required for this rulemaking was obtained directly from technical experts within the NRC. No other agencies were consulted in preparing this environmental assessment.

### **VI. PAPERWORK REDUCTION ACT STATEMENT**

This proposed rule does not contain a new or amended information collection requirement subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing requirements were approved by the Office of Management and Budget, approval number 3150-0011.

### **Public Protection Notification**

If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

### **VII. REGULATORY ANALYSIS**

The NRC has prepared the following regulatory analysis for the proposed rule.

#### **1. Statement of the Problem**

The NRC is proposing to amend its regulations regarding the requirement for fire barrier penetration seal materials to be noncombustible and is also proposing to make minor changes to §50.48 and to Appendix R to Part 50. The proposed changes would remove Footnote 3 from §50.48(a) and Footnote 4 from §50.48(b); remove paragraphs (c), (d), and (e) from §50.48; correct a grammatical error in Footnote 2 to Section III.G.3 of Appendix R; and make editorial changes to comply with the Presidential memorandum dated June 1, 1998, entitled, "Plain Language in Government Writing."

#### **2. Objectives of the Rulemaking**

The main objective of the rulemaking is to remove the requirement of Section III.M of Appendix R that fire barrier penetration seal materials be noncombustible. In addition, this rulemaking would remove certain parts of §50.48, correct a grammatical error in Appendix R, and make editorial changes.

#### **3. Alternative**

The alternative of no regulatory action would continue the unnecessary regulatory burden on licensees and on the NRC.

#### **4. Consequences**

Removing the requirement that fire barrier penetration seal materials be noncombustible from Section III.M of Appendix R to Part 50 would lessen the unnecessary regulatory burden on licensees and on the staff. It would allow licensees to use combustible materials in penetration seals without

requesting an exemption from the requirement in Section III.M of Appendix R regarding the noncombustibility of penetration seal materials, provided the seals are qualified by fire endurance tests comparable to those used to rate fire barriers and conducted in accordance with an industry standard. The other minor changes are administrative and would not affect the regulatory burden on licensees.

## 5. Value Impact Analysis

The value (benefit) and impact (cost) of the proposed changes are estimated below. Section III.M of Appendix R to Part 50 applies to the plants that were operating before January 1, 1979, and had open items when Appendix R was published. As detailed in NUREG-1552, Supplement 1, Section III.M of Appendix R applies to 5 operating reactors. In order to estimate the benefit of the proposed change, the NRC assumed that the licensees for these plants may replace some of their penetration seals with penetration seals made of silicone-based combustible material and that these licensees request an exemption from the technical requirements of Section III.M of Appendix R. Labor cost is \$145/hr for a power reactor licensee and \$75/hr for NRC. The change to Section III.M of Appendix R would save licensees the cost of preparing an exemption request and would save the NRC the cost of preparing a safety evaluation and processing the request. Assuming a cost saving of approximately \$7500 for licensees and approximately \$2500 for NRC for each exemption request, the total cost saving from the change to Section III.M would be approximately \$50,000. There would be no benefit or cost associated with the other proposed changes.

## 6. Decision Rationale

The NRC reviewed the requirement of Section III.M of Appendix R during its reassessment of fire barrier penetration seals and determined that this requirement does not contribute significantly to safety. The removal of the requirement of Section III.M would reduce the regulatory burden on the licensee without reducing safety. In addition, the proposed rule would make the following minor changes: remove Footnote 3 from §50.48(a) and Footnote 4 from §50.48(b); remove paragraphs (c), (d), and (e) from §50.48; correct an error in Footnote 2 to Section III.G.3 of Appendix R; and make editorial changes to comply with the Presidential memorandum dated June 1, 1998, entitled, "Plain Language in Government Writing." The other changes as discussed above would not change the regulatory burden on the licensees and do not affect safety.

## VIII. REGULATORY FLEXIBILITY ACT CERTIFICATION

As required by the Regulatory Flexibility Act of 1980 (5 U.S.C. 605(b)), the Commission certifies that this proposed rule if adopted would not have a significant impact on a substantial number of small entities. Nuclear power plant licensees do not fall within the definition of small businesses as defined in Section 3 of the Small Business Act (15 U.S.C. 632) or the Commission's size standards at 10 CFR 2.810 (60 FR 18344; April 11, 1995).

## IX. BACKFIT ANALYSIS

The NRC has determined that these amendments do not involve any provisions that would impose backfits because it does not meet the definition of backfit contained in §50.109(a)(1) for the following reasons. The removal of the requirement that fire barrier penetration seals be noncombustible is a permissive relaxation of an existing requirement and therefore does not constitute imposition of a new requirement. The removal of Footnotes 3 and 4 from §50.48 does not affect the licensing basis for existing plants, does not constitute a change in design requirements for existing plants, and is not applicable to future plants. The schedular requirements contained in paragraphs (c) and (d) of §50.48 apply to plants licensed before February 17, 1981, and have been implemented at these plants. The requirements contained in paragraph (e) of §50.48 apply to existing plants and have been implemented at all applicable plants. Therefore, the removal of paragraphs (c), (d), and (e) from §50.48 does not affect the licensing basis and does not constitute a change in design or optional requirements for these plants. The correction of a grammatical error in Footnote 2 to Section III.G.3 of Appendix R and the changes in the language of §50.48 in accordance with the Executive Order on Plain English are administrative changes which do not change any requirement and therefore need not be considered in this backfit determination. For the reasons stated above, a backfit analysis need not be prepared.

## X. LIST OF SUBJECTS IN 10 CFR PART 50

Antitrust, Classified information, Criminal penalties, Fire protection, Intergovernmental relations, Nuclear power plants and reactors, Radiation protection, Reactor siting criteria, Reporting and recordkeeping requirements.

## XI. VOLUNTARY CONSENSUS STANDARDS

The National Technology Transfer Act of 1995, Pub. L. 104-113, requires that Federal agencies use technical standards that are developed or adopted by voluntary consensus standards bodies unless the use of such a standard is inconsistent with applicable law or otherwise impractical. The NRC proposes to delete the Government-unique standard in 10 CFR Part 50, Appendix R, Section III. M, which requires that fire barrier penetration seals utilize only noncombustible materials. The NRC is not aware that deletion of this requirement is inconsistent with any voluntary consensus standard. The NRC will consider using a voluntary consensus standard if an appropriate standard is identified. If a voluntary consensus standard is identified for consideration, the submittal should explain how the voluntary consensus standard supports retention of the Government-unique standard or is otherwise inconsistent with deletion of the requirement and why the voluntary consensus standard should be used in lieu of implementing the action to delete the identified Government-unique standard.

For the reasons given in the preamble and under the authority for the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and 5 U.S.C. 553, the NRC is proposing to adopt the following amendments to 10 CFR Part 50.

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## Part 50 - DOMESTIC LICENSING OF PRODUCTION AND UTILIZATION FACILITIES

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

AUTHORITY: Secs. 102, 103, 104, 105, 161, 182, 183, 186, 189, 68 Stat. 936, 937, 938, 948, 953, 954, 955, 956, as amended, sec. 234, 83 Stat. 444, as amended, (42 U.S.C. 2132, 2133, 2134, 2135, 2201, 2232, 2233, 2236, 2239, 2282); secs. 201, as amended, 202, 206, 88 Stat. 1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846).  
Section 50.7 also issued under Pub. L. 95-601, sec. 10, 92 Stat. 2951 (42 U.S.C. 5851). Section 50.10 also issued under secs. 101, 185, 68 Stat. 955 as amended (42 U.S.C. 2131, 2235), sec. 102, Pub. L. 91-190, 83 Stat. 853 (42 U.S.C. 4332). Sections

50.13, 50.54(dd), and 50.103 also issued under sec. 108, 68 Stat. 939, as amended (42 U.S.C.2138). Section 50.23, 50.35, 50.55, and 50.56 also issued under sec. 185, 68 Stat. 955 (42 U.S.C. 2235). Sections 50.33a, 50.55a, and Appendix Q also issued under sec. 102, Pub. L. 91-190, 83 Stat. 853 (42 U.S.Q. 4332). Sections 50.34 and 50.54 also issued under sec. 204, 88 Stat. 1245 (42 U.S.Q. 5844). Sections 50.58, 50.91, and 50.92 also issued under Pub. L. 97-415, 96 Stat. 2073 (42 U.S.Q. 2239). Section 50.78 also issued under sec. 122, 68 Stat. 939 (42 U.S.Q. 2152). Sections 50.80-50.81 also issued under sec. 184, 68 Stat. 954, as amended (42 U.S.Q. 2234). Appendix F also issued under sec. 187, 68 Stat. 954 (42 U.S.Q. 2237).

2. In Section 50.48, paragraphs (a), (b), and (f) are revised to read as follows:

§50.48 Fire Protection

- (a) (1) Each operating nuclear power plant must have a fire protection plan that satisfies Criterion 3 of appendix A to this part. This fire protection plan must:
- (i) Describe the overall fire protection program for the facility;  
Identify the various positions within the licensee's organization that are responsible for the program;  
State the authorities that are delegated to each of these positions to implement those responsibilities; and  
Outline the plans for fire protection, fire detection and suppression capability, and limitation of fire damage.
- (2) The plan must also describe specific features necessary to implement the program described in paragraph (a) (1) of this section such as --
- (i) Administrative controls and personnel requirements for fire prevention and manual fire suppression activities;  
Automatic and manually operated fire detection and suppression systems; and  
The means to limit fire damage to structures, systems, or components important to safety so that the capability to shut down the plant safely is ensured.
- (3) The licensee shall retain the fire protection plan and each change to the plan as a record until the Commission terminates the reactor license. The licensee shall retain each superseded revision of the procedures for 3 years from the date it was superseded.
- (b) Appendix R to this part establishes fire protection features required to satisfy Criterion 3 of appendix A to this part with respect to certain generic issues for nuclear power plants licensed to operate before January 1, 1979.
- (1) Except for the requirements of Sections III.G, III.J, and III.O, the provisions of appendix R to this part do not apply to nuclear power plants licensed to operate before January 1, 1979, to the extent that --
- (i) Fire protection features proposed or implemented by the licensee have been accepted by the NRC staff as satisfying the provisions of appendix A to Branch Technical Position (BTP) APCS 9.5-1 reflected in NRC fire protection safety evaluation reports issued before the effective date of February 19, 1981; or  
Fire protection features were accepted by the NRC staff in comprehensive fire protection safety evaluation reports issued before appendix A to Branch Technical Position (BTP) APCS 9.5-1 was published in August 1976.
- (2) With respect to all other fire protection features covered by appendix R, all nuclear power plants licensed to operate before January 1, 1979, must satisfy the applicable requirements of appendix R to this part, including specifically the requirements of Sections III.G, III.J, and III.O.

\* \* \* \* \*

- (f) Licensees that have submitted the certifications required under §50.82(a)(1) shall maintain a fire protection program to address the potential for fires that could cause the release or spread of radioactive materials (i.e., that 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 that do occur and that 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 licensee shall assess the fire protection program on a regular basis. The licensee shall revise the plan 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 that could result in a radiological hazard, taking into account the decommissioning plant conditions and activities.

3. In Appendix R, footnote 2 to Section III.G.3 and Section III.M are revised to read as follows:

APPENDIX R TO PART 50 - FIRE PROTECTION PROGRAM FOR NUCLEAR POWER FACILITIES OPERATING BEFORE JANUARY 1, 1979

\* \* \* \* \*

III. SPECIFIC REQUIREMENTS. \* \* \*

G. \* \* \*

1. Alternative of dedicated shutdown capability and its associated circuits<sup>(1)</sup>, independent of cables, systems or components in the area, room, zone under consideration should be provided: \* \* \*

\* \* \* \* \*

- M. *Fire barrier cable penetration seal qualification.* Penetration seal designs must be qualified by tests that are comparable to tests used to rate fire barriers. The acceptance criteria for the test must include the following:



1. The cable fire barrier penetration seal has withstood the fire endurance test without passage of flame or ignition of cables on the unexposed side for a period of time equivalent to the fire resistance rating required of the barrier;
2. The temperature levels recorded for the unexposed side are analyzed and demonstrate that the maximum temperature is sufficiently below the cable insulation ignition temperature; and
3. The fire barrier penetration seal remains intact and does not allow projection of water beyond the unexposed surface during the hose stream test.

\* \* \* \* \*

Dated at Rockville, Maryland, this \_\_\_\_\_ day of \_\_\_\_\_ 1999.

For the Nuclear Regulatory Commission.

\_\_\_\_\_  
Annette Vietti-Cook,  
Secretary of the Commission.

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## CONGRESSIONAL LETTERS

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The Honorable James M. Inhofe, Chairman  
Subcommittee on Clean Air, Wetlands, Private  
Property and Nuclear Safety  
Committee on Environment and Public Works  
United States Senate  
Washington, DC 20510

Dear Mr. Chairman:

Enclosed for the information of the subcommittee is a proposed amendment to 10 CFR Part 50 regarding elimination of a requirement that permitted the use of only noncombustible material for fire barrier penetration seals and other minor changes. The proposed amendment will be published in the *Federal Register* for a 75-day public comment period.

The proposed amendment is based on the results of a comprehensive assessment of fire barrier penetration seals as documented in NUREG-1552 and NUREG-1552, Supplement 1. This amendment and the other minor changes respond to the Commission's directives contained in the staff requirements memorandum of June 30, 1998.

The proposed rule eliminates a requirement that does not contribute significantly to safety and makes other minor changes to the NRC fire protection regulations.

Sincerely,  
Dennis K. Rathbun, Director  
Office of Congressional Affairs

Enclosure: Proposed amendment to 10 CFR Part 50

cc: Senator Bob Graham

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The Honorable Joe L. Barton, Chairman  
Subcommittee on Energy and Power  
Committee on Commerce  
United States House of Representatives  
Washington, DC 20510

Dear Mr. Chairman:

Enclosed for the information of the subcommittee is a proposed amendment to 10 CFR Part 50 regarding elimination of a requirement that permitted the use of only noncombustible material for fire barrier penetration seals and other minor changes. The proposed amendment will be published in the *Federal Register* for a 75-day public comment period.

The proposed amendment is based on the results of a comprehensive assessment of fire barrier penetration seals as documented in NUREG-1552 and NUREG-1552, Supplement 1. This amendment and the other minor changes respond to the Commission's directives contained in the staff requirements memorandum of June 30, 1998.

The proposed rule eliminates a requirement that does not contribute significantly to safety and makes other minor changes to the NRC fire protection regulations.

Sincerely,  
Dennis K. Rathbun, Director  
Office of Congressional Affairs

Enclosure: Proposed amendment to 10 CFR Part 50

cc: Representative Ralph M. Hall

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## DRAFT PRESS RELEASE

### ***NRC PROPOSES ELIMINATING NON-COMBUSTIBILITY REQUIREMENT FOR FIRE BARRIER PENETRATION SEALS AT NUCLEAR PLANTS***

The Nuclear Regulatory Commission is proposing to amend its regulations to eliminate a requirement that nuclear power plant fire barrier penetration seal material be non-combustible, because the requirement is not believed to contribute significantly to safety. Other minor changes also have been proposed.

As part of the NRC's defense-in-depth philosophy for protecting nuclear power plants through the use of multiple safety barriers, the plants are divided into separate fire areas by fire-rated structural barriers designed to contain a fire and prevent its spread to other areas. Special fire barriers consisting of silicone foam are used to seal openings between fire barriers. The seals provide reasonable assurance that a fire will be confined to the area in which it starts and are designed to stop a fire long enough for it to be extinguished and for safety systems to activate.

Testing has shown that if fire barrier penetration seals are properly designed, tested, configured, installed, inspected and maintained, they are capable of preventing the spread of fire for several hours thus performing their intended safety function. Therefore, the NRC's technical staff and Advisory Committee on Reactor Safeguards - an independent body of technical experts that provides guidance to the Commission - agreed that the requirement in Title 10 of the Code of Federal Regulations, Part 50, Appendix R, be amended to eliminate the non-combustibility requirement for the seals.

Details of the proposed rule changes will be published in an upcoming edition of the *Federal Register*. The proposed rule will be posted to the NRC's homepage at:

<http://ruleforum.llnl.gov>

Interested persons are invited to submit written comments on the proposed rule within 75 days of its publication in the *Federal Register*. Comments should be sent to the Secretary, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001, Attention: Rulemakings and Adjudications Staff. Comments may also be submitted electronically via the NRC's interactive rulemaking web site at <http://ruleforum.llnl.gov>.

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1. Alternative shutdown capability is provided by rerouting, relocating, or modifying existing systems; dedicated shutdown capability is provided by installing new structures and systems for the function of post-fire shutdown.