

(B) Swine: African swine fever, hog cholera, pseudorabies, rinderpest, swine vesicular disease, or vesicular stomatitis.

\* \* \* \* \*

(7)(i) Not less than 30 days nor more than 120 days after embryo collection, the donor dam was examined by an official veterinarian and found free of clinical evidence of the following diseases:

(A) Ruminant: Bovine spongiform encephalopathy, brucellosis, contagious bovine pleuropneumonia, foot-and-mouth disease, Rift Valley fever, rinderpest, tuberculosis, and vesicular stomatitis; or

(B) Swine: African swine fever, brucellosis, foot-and-mouth disease, hog cholera, pseudorabies, rinderpest, swine vesicular disease, tuberculosis, and vesicular stomatitis.

\* \* \* \* \*

(8)(i) Between the time the embryos were collected and all examinations and tests required by this subpart were completed, no animals in the embryo collection unit with the donor dam, or in the donor dam's herd of origin, exhibited any clinical evidence of:

(A) Ruminant: Bovine spongiform encephalopathy, brucellosis, contagious bovine pleuropneumonia, foot-and-mouth disease, Rift Valley fever, rinderpest, tuberculosis, and vesicular stomatitis; or

(B) Swine: African swine fever, brucellosis, foot-and-mouth disease, hog cholera, pseudorabies, rinderpest, swine vesicular disease, tuberculosis, and vesicular stomatitis.

\* \* \* \* \*

#### § 98.16 [Amended]

6. § 98.16 would be amended as follows:

a. In the introductory paragraph, the first sentence, the word "Cattle" would be removed and the words "Ruminant and swine" would be added in its place.

b. In paragraph (b), in the first sentence, the word "cattle" would be removed and the words "embryo donors" would be added in its place.

Done in Washington, DC, this 30th day of May 1995.

**Terry L. Medley,**

*Acting Administrator, Animal and Plant Health Inspection Service.*

[FR Doc. 95-13667 Filed 6-5-95; 8:45 am]

BILLING CODE 3410-34-P

## NUCLEAR REGULATORY COMMISSION

### 10 CFR Part 50

[Docket No. PRM-50-61]

#### Nuclear Energy Institute, Receipt of a Petition for Rulemaking

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Petition for rulemaking; Notice of receipt.

**SUMMARY:** The Nuclear Regulatory Commission (NRC) has received and requests public comment on a petition for rulemaking filed by the Nuclear Energy Institute (NEI) on behalf of the nuclear power industry. The petition has been docketed by the Commission and has been assigned Docket No. PRM-50-61. The petitioner requests that the NRC amend its regulations governing fire protection at nuclear power plants. The petitioner believes such an amendment would provide a more flexible alternative to the current requirements and permit nuclear power plant licensees more discretion in implementing fire protection requirements that would be site-specific without adversely affecting a licensee's ability to achieve the safe shutdown of a facility in the event of a fire.

**DATES:** Submit comments by September 29, 1995. Comments received after this date will be considered if it is practical to do so, but assurance of consideration cannot be given except as to comments received on or before this date.

**ADDRESSES:** Submit comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555. Attention: Docketing and Services Branch.

Deliver comments to 11555 Rockville Pike, Rockville, Maryland, between 7:45 am and 4:15 pm on Federal workdays.

For a copy of the petition, write: Rules Review Section, Rules Review and Directives Branch, Division of Freedom of Information and Publications Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

Comments may be submitted electronically, in either ASCII text or WordPerfect format (version 5.1 or later), by calling the NRC Electronic Bulletin Board (BBS) on FedWorld. The bulletin board may be accessed using a personal computer, a modem, and one of the commonly available communications software packages, or directly via Internet. Background documents on this rulemaking are also available for downloading and viewing on the bulletin board.

If using a personal computer and modem, the NRC rulemaking subsystem on FedWorld can be accessed directly by dialing the toll free number (800) 303-9672. Communication software parameters should be set as follows: parity to none, data bits to 8, and stop bits to 1 (N,8,1). Using ANSI or VT-100 terminal emulation, the NRC rulemaking subsystem can then be accessed by selecting the "Rules Menu" option from the "NRC Main Menu." Users will find the "FedWorld Online User's Guides" particularly helpful. Many NRC subsystems and data bases also have a "Help/Information Center" option that is tailored to the particular subsystem.

The NRC subsystem on FedWorld can also be accessed by a direct dial phone number for the main FedWorld BBS, (703) 321-3339, or by using Telnet via Internet: fedworld.gov. If using (703) 321-3339 to contact FedWorld, the NRC subsystem will be accessed from the main FedWorld menu by selecting the "Regulatory, Government Administration and State Systems," then selecting "Regulatory Information Mall." At that point, a menu will be displayed that has an option "U.S. Nuclear Regulatory Commission" that will take you to the NRC Online main menu. The NRC Online area also can be accessed directly by typing "/go nrc" at a FedWorld command line. If you access NRC from FedWorld's main menu, you may return to FedWorld by selecting the "Return to FedWorld" option from the NRC Online Main Menu. However, if you access NRC at FedWorld by using NRC's toll-free number, you will have full access to all NRC systems, but you will not have access to the main FedWorld system.

If you contact FedWorld using Telnet, you will see the NRC area and menus, including the Rules Menu. Although you will be able to download documents and leave messages, you will not be able to write comments or upload files (comments). If you contact FedWorld using FTP, all files can be accessed and downloaded but uploads are not allowed; all you will see is a list of files without descriptions (normal Gopher look). An index file listing all files within a subdirectory, with descriptions, is available. There is a 15-minute time limit for FTP access.

Although FedWorld also can be accessed through the World Wide Web, like FTP, that mode only provides access for downloading files and does not display the NRC Rules Menu.

For more information on NRC bulletin boards call Mr. Arthur Davis, Systems Integration and Development Branch,

NRC, Washington, DC 20555, telephone (301) 415-5780; e-mail AXD3@nrc.gov.

**FOR FURTHER INFORMATION CONTACT:**

Monideep K. Dey, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC 20555. Telephone: 301-415-6443. Michael T. Lesar, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555. Telephone: 301-415-7163 or Toll Free: 800-368-5642.

**SUPPLEMENTARY INFORMATION:**

**Background**

The Nuclear Regulatory Commission (NRC) received a petition for rulemaking dated February 2, 1995, submitted by the Nuclear Energy Institute (NEI). The petition was docketed as PRM-50-61 on February 2, 1995. The petitioner requests that the NRC amend the regulations in 10 CFR part 50 that govern fire protection at nuclear power plants. Specifically, the petitioner is seeking an amendment to 10 CFR 50.48 and the addition of a new appendix that it believes will provide a more flexible alternative to the current fire protection requirements in 10 CFR part 50, Appendix R, that the petitioner considers to be overly prescriptive.

The petitioner believes that significant strides have been made in the fire sciences and that licensees' fire protection programs have matured during the period after the current NRC fire protection requirements in 10 CFR 50.48 and 10 CFR Part 50, Appendix R, were adopted. The petitioner also notes that the NRC has gained nearly two decades of experience in reviewing licensee fire protection programs and requests that NRC adopt a more current approach to fire protection that builds on the defense-in-depth concept used to establish the existing requirements.

NEI cites the "NRC Program for Elimination of Requirements Marginal to Safety," published on November 24, 1992 (57 FR 55157), and a separate initiative entitled, "Reducing the Regulatory Burden on Nuclear Licensees," published on June 18, 1992 (57 FR 27187), as examples in which the NRC proposed amending its regulations to continue efforts to eliminate requirements that are marginal to safety and to reduce the regulatory burden when the benefit realized is not commensurate with the resulting cost. The petitioner also notes that the NRC's Regulatory Review Group (RRG) identified the existing rule on fire protection as one of the regulations that should be improved.

The NRC's general fire protection requirements for nuclear power plants

were published on February 20, 1971 (36 FR 3255), and are contained in 10 CFR part 50, Appendix A, General Design Criterion (GDC) 3. The current fire protection requirements contained in 10 CFR 50.48 and 10 CFR part 50, Appendix R, were adopted several years after a 1975 fire at the Browns Ferry Nuclear Power Plant following considerable interaction between the NRC staff, the nuclear industry, and other interested parties. The petitioner notes that the NRC used a defense-in-depth approach to fire protection for nuclear power plants that includes key elements of protection, detection, and suppression within a fire protection program to attain the required objective of protecting the safe shutdown capability of the plant. However, the petitioner believes that the current requirements are too prescriptive because they apply equally in all plant areas without providing a mechanism for determining the actual fire hazard in each area.

NEI acknowledges that a prescriptive rule was necessary in 1980 because nuclear power plant fire protection technology was relatively new at that time. However, the petitioner believes that those fire protection standards have been difficult to implement consistently for nuclear power plants and notes that the NRC has granted more than 1,200 exemptions after the inception of the rule. The petitioner believes that the difficulty in implementing the standards results not only from the prescriptiveness of the current rule but also because fire protection standards in other industries are directed primarily toward protection of life and property, whereas fire protection at nuclear power facilities focuses on preserving the plant's safe shutdown capability to adequately protect the public health and safety.

The petitioner states that the proposed rule is based upon fire protection programs already in place at operating power plants and recognizes the expertise developed by the NRC staff and the industry over the past 20 years. The petitioner notes that other Federal agencies, such as the General Services Administration (GSA), have enhanced their fire protection regulations based on recent advances in fire modeling techniques. GSA uses fire modeling to identify fire safety risks and develop performance-based approaches to achieving adequate levels of protection.

The petitioner also notes that the Advisory Committee on Reactor Safeguards has briefed the Commission on the development of performance-based approaches to fire protection at nuclear power plants in the United

Kingdom and Canada. NRC is currently participating in a Federal interagency task force to assess the potential implementation of performance-based regulations, which include fire protection. The RRG has specifically recommended that probabilistic safety assessment (PSA) techniques be used to develop fire protection regulations that are more performance-based. The petitioner believes that the proposed rule is consistent with the general philosophy of focusing on key objectives related to measurable performance in order to permit resources to be applied to and attention centered on activities most directly related to protection of the public health and safety.

The petitioner believes that the overall approach of the proposed rule may be characterized as performance-based because its ultimate goal is to adequately maintain the safe shutdown equipment function. NEI states that the proposed rule, unlike the current requirements, requires licensees to establish appropriate measurable parameters to ensure that the adequacy of the plant fire protection features in protecting the safe shutdown capability can be demonstrated based on the actual plant-specific fire risk. The petitioner asserts that rather than focusing on the details of the protective features, the criteria for assessing acceptable performance would be based on the effectiveness of these features in achieving the goal of the current fire protection regulation, the successful protection of the safe shutdown function.

The proposed rule is similar to the current rule in that it would require licensees to perform a fire hazards analysis (FHA). The petitioner states that the proposed rule, however, provides licensees with the flexibility to determine the relative value of various protective measures by supplementing the FHA with insights derived from other sources, such as a fire modeling analysis or a PSA. The petitioner believes that the proposed rule would allow licensees to implement alternative, more effective fire protection measures without compromising plant safety and, therefore, would provide greater flexibility than the current requirements while achieving the same objective.

The petitioner claims that the proposed rule would give licensees the option of demonstrating that they provide adequate protection against postulated fire hazards without having to resort to the more costly and time-consuming exemption process. The petitioner states that the current

language in 10 CFR part 50, Appendix R, would be retained and an alternative way to meet the requirements in 10 CFR 50.48 would be provided by the proposed Appendix S. The petitioner explains that licensees need not implement the proposed Appendix S in its entirety but may substitute, in whole or in part, the specific sections corresponding to Appendix R, as appropriate, in order to provide an equivalent degree of protection. The petitioner believes that the proposed rule provides an alternative means of complying with the fire protection requirements contained in GDC 3.

The proposed rule does not distinguish between older plants and those licensed to operate after January 1, 1979. The petitioner believes that the revised regulation can be applied equally to all plants because the newer plants were licensed pursuant to Branch Technical Position (BTP) 9.5-1, which is contained in NUREG-0800, and because 10 CFR part 50, Appendix R, which applied to older plants, reflects BTP 9.5-1.

The petitioner indicates that the proposed rule amends 10 CFR 50.48 by removing the schedule requirements that are no longer applicable. The proposed rule would also permit licensees to relocate the fire protection program from their technical specifications to the Final Safety Analysis Report as suggested in Generic Letter 88-12, "Removal of Fire Protection Requirements from Technical Specifications" (August 2, 1988). The petitioner envisions that the proposed changes would include the development of a new guidance document by the nuclear industry concurrent with the proposed promulgation of the rule. NRC would accept this guidance and issue a regulatory guide describing acceptable methods of compliance. Although the petitioner notes that licensees would be able to adopt other approaches to comply with the proposed rule, it realizes that the burden of demonstrating the adequacy of an alternative approach would be on the licensee.

The petitioner indicates that many of the prescriptive requirements in Appendix R, such as administrative controls, fire barrier penetration seals, and fire doors, would be removed. Also, the distinction between hot and cold shutdown ability and the requirement for 72-hour cold shutdown would be removed because the petitioner believes these requirements would no longer be applicable. The term "safe shutdown" as applied in the proposed rule would apply to both hot and cold shutdown functions. The petitioner believes that

the proposed rule provides an opportunity for licensees to incorporate the advances in fire protection technology that have occurred after the current rule was enacted. As an example, the petitioner provides the requirements for fire hose materials and testing that cannot be altered under the current rule without a specific exemption granted by the NRC. The petitioner believes that the proposed rule provides an opportunity to revise fire hose testing to take into account material improvements.

The petitioner states that under the proposed rule, the licensee would maintain, in auditable form, all supporting analyses of alternatives to its fire protection programs instead of requiring the NRC staff to review and approve the alternatives. The petitioner believes that this type of approach would result in substantial reduction of required reviews by the NRC staff. The petitioner has concluded that under the proposed rule, NRC can effectively satisfy its responsibility of ensuring the public health and safety by monitoring licensee performance.

The petitioner has included an appendix entitled "Supplementary Analyses in Support of the Petition for Rulemaking," which contains analyses of issues that the NRC must consider, including the effect of the proposed action on the environment and small business entities, the paperwork required of those affected by the change, whether a regulatory analysis must be performed, and whether the backfit rule applies to this action.

The NRC is soliciting public comment on the petition submitted by NEI that requests the changes to the regulations in 10 CFR part 50 as discussed below.

#### **The Petitioner**

The petitioner is the Nuclear Energy Institute (NEI), the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry. 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.

#### **Discussion of the Petition**

The petitioner has submitted this petition for rulemaking because it believes the current fire protection regulations for nuclear power plants are overly burdensome and prescriptive. The petitioner believes that the proposed Appendix S is more flexible in

its application than the current Appendix R and fully meets the requirements in 10 CFR part 50, Appendix A, GDC 3. Under the proposed rule, rather than a blanket requirement for the capability to shut down the plant within 72 hours, the licensee is required to have a cold shutdown capability or to demonstrate the ability to achieve and maintain hot shutdown until a cold shutdown path can be made available. The petitioner believes that the intent of the current fire protection requirement has been to ensure that plant operators can maintain control during a fire and safely shut down the plant. The petitioner states that the proposed rule preserves this intent without imposing an unnecessarily restrictive time limitation by recognizing the success of operating history and accumulated operator training and experience.

The petitioner states that other prescriptive distinctions in the current regulation, such as the distinction between exposure and direct fires and between normal, alternate, and dedicated shutdown systems, are removed. Under the proposed rule, licensees must consider the plant fires that may be credible based on actual plant-specific conditions in demonstrating that the plant could be safely shut down in the event of a fire. The petitioner believes that this action could be achieved through any available means by utilizing either redundancy in safe shutdown equipment or diversity of shutdown methods. The petitioner has concluded that this approach is more flexible than the current requirements and is consistent with the intent of the current regulation.

The petitioner states that the general requirements section of the rule remains essentially unchanged because the goals of the licensee's fire protection program are the same. The reference to "alternative or dedicated shutdown" is removed because the petitioner believes that the overall intent to provide redundancy or diversity in shutdown methods is reflected throughout the revised rule.

The petitioner states that the proposed rule describes the fire main as a "system" instead of a "fire loop." The petitioner believes that this distinction allows licensees to provide water for fire suppression in the most practical manner without a requirement for a specific loop design. The petitioner has concluded that as a general principal the imposition of specific design requirements is overly prescriptive. The petitioner believes that by placing the discussion of appropriate design features in a guidance document, the

licensee will have the flexibility to design new systems or modify current systems to more effectively meet the same performance criteria. The proposed rule replaces the current 2-hour supply requirement with a requirement to demonstrate the availability of a water supply sufficient to protect the safe shutdown capability, as determined by the fire hazards analysis. The petitioner believes that this change provides flexibility in selecting water sources while ensuring that these sources are functionally available.

The petitioner has proposed that the current language describing "outside" hydrants be clarified by replacing the term with "exterior plant" to reflect the requirement that valves be installed for hydrants located outside plant buildings. The petitioner believes that this emphasis on performance capability is consistent with NRC staff positions in Generic Letter 86-10 and exemptions granted to date, as well as the Statement of Consideration in the original rulemaking of Appendix R. Also, the limitations of the current rule to "exposure fire hazards" are removed because the petitioner believes that the proposed rule addresses all fires, not just exposure fires. The petitioner indicated that specific detailed requirements for testing manual fire suppression systems are also removed because they are more properly dealt with in the proposed guidance document.

The petitioner believes that the flexibility provided by the proposed alternatives to the current requirements allows licensees to direct their resources more efficiently and is expected to result in an appreciable economic benefit to licensees while maintaining adequate protection. The petitioner claims that accounting for material improvements in design and manufacture of fire hoses can substantially reduce the frequency of hose testing and will result in a \$16,000-per-year cost reduction at a two-unit plant. The petitioner states that because detailed provisions for hydrostatic hose tests are more properly included in the proposed guidance document, no need exists for an explicit requirement in the proposed rule.

The petitioner states that the focus of the current regulation on automatic detection "systems" is made more flexible by specifying automatic detection "capability" where determined necessary by the fire hazards analysis. However, the petitioner also indicates that the requirement for detection capability with or without offsite power has been

retained in the proposed rule. The petitioner indicates that the guidance document is expected to identify pertinent National Fire Protection Association (NFPA) codes and standards for the design, installation, maintenance, testing, and power supplies for automatic detection systems.

The petitioner states that the section on protecting the safe shutdown capability from fire in the current rule has been to ensure that the safe shutdown capability is not lost as a result of a single fire. The petitioner also notes that three alternative requirements in the current rule, including physical separation, provision of a 3-hour barrier, or provision of a 1-hour barrier with automatic suppression, were established to achieve this goal. The petitioner states that the focus of fire protection for the safe shutdown capability is broadened to the protection of the safety function rather than maintaining the narrow focus on prescribed fire barrier ratings. The petitioner believes that the proposed language allows a licensee to satisfy Section III.G. of Appendix S by demonstrating the adequacy of its defense-in-depth program rather than satisfying the prescriptive requirements of the current regulation. The prescriptive requirements are replaced by the requirement to perform an engineering analysis or use the combination of engineering and probabilistic assessments to demonstrate that adequate time is available to complete the safety function of bringing the facility to a safe shutdown condition.

The petitioner believes that the net effect of making this type of approach part of a licensee's fire protection program is that the proposed rule removes the resource demand on licensees and the NRC staff to prepare and review, respectively, as an exemption any alternative proposed to the 1-hour and 3-hour barrier requirements. Under the proposed rule, the licensee would perform the appropriate evaluation using current analytical tools to demonstrate functionality rather than filing an exemption request based on a deterministic evaluation of the installed defense-in-depth features.

The petitioner states that the original rule adopted the design-basis protection feature because the initiation and propagation of fire was still believed to be so unpredictable at that time that the design-basis fire approach was considered to be impractical. However, today various fire modeling techniques, such as those used in the EPRI FIVE methodology and those developed by

the National Institute of Standards and Technology and by the Factory Mutual Research Center, are available to predict the initiation and propagation of fires with a reasonable degree of confidence. The petitioner believes that the proposed rule allows licensees flexibility in evaluating anticipated fire loadings in an area because of the awareness of the existing fire hazards and the determination of fire barrier performance requirements by recognized competent fire initiation and propagation models. The petitioner claims that instead of focusing on a specific aspect such as fire barrier rating, under the proposed rule, the licensee will be able to more effectively utilize these fire protection features to protect the safe shutdown capability. The petitioner has concluded that installing a 1-hour or 3-hour rated fire barrier becomes less important in terms of the effectiveness of the fire protection program because it is only one factor that will be considered in a more comprehensive program than currently exists.

The petitioner states that in many circumstances automatic suppression, along with 1-hour barriers, may not be necessary in some existing plant designs for protection of the safe shutdown capability. The petitioner notes that the in situ combustible loading in an area might be so low that any fire that might occur would be of limited duration, extent, and magnitude. The petitioner believes that existing protective features other than automatic suppression might be capable of protecting the safe shutdown equipment until a suitable manual response could be provided. The proposed rule would permit removal of the requirements for surveillance, maintenance, and testing of unnecessary suppression systems, which the petitioner believes would save approximately \$12,000 a year for a typical two-unit plant.

The petitioner also notes that the probability for core damage as a result of various events is being assessed by licensees under the Individual Plant Examination for External Events (IPEEE) programs. Under these programs, licensees must address plant vulnerabilities, including the detrimental effects of fires. The petitioner believes that the current rule severely restricts a licensee's ability to effectively address these effects under the IPEEE programs in stating that the proposed rule would provide needed flexibility to allow these vulnerabilities to be effectively addressed. The petitioner has concluded that Section III.G. of Appendix S is not limited to defining specific fire barrier

effectiveness in isolation from the overall consideration of system functional availability. The petitioner claims that the proposed rule provides additional measures to achieve the overall performance objective of ensuring protection of the safe shutdown function in the event of a single fire, consistent with the intent of the current regulation.

The petitioner recognizes that fire brigade training must still include initial and routine practical training and drills. However, the petitioner believes that the proposed rule removes the detailed prescriptive requirements and addresses those matters in the proposed guidance document to provide flexibility to licensees in the implementation of the proposed rule. The petitioner has concluded that the cost savings of using alternative fire brigade training methods rather than following the specific training requirements of the current rule would be about \$12,000 a year at a two-unit plant.

The petitioner notes that the current requirements for emergency lighting specify the same lighting for all areas, no matter how little the lighting is used. The proposed rule would require the licensee to evaluate what lighting would be necessary for achieving safe shutdown and to provide sufficient lighting capacity to support that safe shutdown if the postulated fire could credibly result in the loss of normal and essential lighting consistent with previously granted exemptions. The petitioner believes that implementation of the proposed rule would result in appreciable cost savings to licensees of about \$17,000 a year for a two-unit plant.

Although the proposed rule does not contain the detailed administrative requirements of the current rule, the petitioner states that it outlines the scope of the controls to include use, storage, and disposal of combustible and flammable materials and ignition sources, review of work activities, inspections, and emergency planning. The petitioner believes that the proposed rule would provide a more resource-efficient method of area monitoring and estimates that the cost savings from removing the need for currently required work permits would be about \$45,000 a year.

The petitioner states that the proposed rule differs from the current rule with respect to shutdown path capability in that it permits the licensee to take advantage of the extensive operational experience with fire protection, prior NRC determinations, and the significant developments in fire

sciences in providing appropriate fire protection for the equipment. The proposed rule follows the guidance of Generic Letter 86-10 and previously granted exemptions to Appendix R in order to allow licensees greater flexibility in satisfying 10 CFR Part 50, Appendix A, GDC 3. The petitioner states that because a licensee selecting an alternative under the revised rule must demonstrate the adequacy of the alternative selected, the NRC staff would continue to evaluate the shutdown path capability through audits of licensee programs.

The petitioner believes that the current requirement to categorically assume a loss of offsite power either concurrently with or within 72 hours of a fire anywhere in the plant is overly conservative and unnecessarily prescriptive. Because the petitioner has concluded that only a relatively small set of postulated plant fire scenarios could result in or occur with a simultaneous loss of power, the proposed rule requires that licensees demonstrate their ability to safely shut down the plant without offsite power for only those postulated fires. The petitioner claims that the NRC staff has acknowledged that the 72-hour requirement is somewhat arbitrary and has granted an exemption if a licensee demonstrated the capability to achieve cold shutdown in more than 72 hours utilizing only offsite power. The petitioner believes that the proposed rule satisfies the safe shutdown objective by placing the plant in a controlled and stable condition as defined in the technical specifications until cold shutdown can be achieved. The petitioner has concluded that the flexibility incorporated into the proposed rule would allow a licensee to safely shut down the plant in an orderly manner by using familiar, tested procedures. The petitioner has also concluded that the revised requirements would allow licensees to adopt alternatives that would result in potential cost savings.

The petitioner states that the proposed rule provides an alternative to the detailed penetration seal test acceptance criteria contained in the current rule. The proposed rule would require licensees to demonstrate that the penetration seal either meets the same endurance rating as the barrier in which it is contained or is adequate to withstand the fire hazards in the area for the time necessary for the equipment to perform its safety function. The petitioner has also concluded that the current regulation contains an unnecessarily prescriptive requirement to inspect fire doors semiannually to

verify their operability. The proposed rule would remove the inspection schedule and criteria from the rule and provide licensees the flexibility to choose the most appropriate method for a particular fire door. The petitioner believes that although protection against fire in the reactor coolant pump lubricating oil system in a noninerted containment is to be maintained, even considering the possibility of a safe shutdown earthquake, measures to ensure this protection should be based on the licensee's hazards assessment.

#### The Petitioner's Proposed Amendment

The petitioner requests that 10 CFR Part 50 be amended to overcome the problems the petitioner has itemized and recommends the following revisions to the regulations:

1. The petitioner proposes that § 50.48 be amended by deleting paragraph (e) and by revising paragraphs (b), (c), and (d) to read as follows:

#### Section 50.48 Fire Protection Requirements

\* \* \* \* \*

(b) Appendix R to this part, as promulgated on November 19, 1980, and amended May 27, 1988, established 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. Except for the requirements of Sections III.G., III.J., and III.O., the provisions of Appendix R to this part did not apply to nuclear power plants licensed to operate before January 1, 1979, to the extent that 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 APCSB 9.5-1<sup>1</sup> reflected in staff fire protection safety evaluation reports issued before the effective date of this rule, or to the extent that fire protection features were accepted by the staff in comprehensive fire protection safety evaluation reports issued before

<sup>1</sup> Clarification and guidance with respect to permissible alternatives to satisfy Appendix A to BTP APCSB 9.5-1 has been provided in five other NRC documents:

"Supplementary Guidance on Information Needed for Fire Protection Evaluation," dated October 21, 1976.

"Sample Technical Specification," dated May 12, 1977.

"Nuclear Plant Fire Protection Functional Responsibilities, Administrative Control and Quality Assurance," dated June 14, 1977.

"Manpower Requirements for Operating Reactors," dated May 11, 1978.

"Generic Letter 85-01, Fire Protection Policy Steering Committee Report," dated January 9, 1985.

Appendix A to Branch Technical Position BTP APCS 9.5-1 was published in August 1976. With respect to all other fire protection features covered by Appendix R, all nuclear power plants licensed to operate before January 1, 1979, have been required to satisfy the applicable requirements of Appendix R to this part, including specifically the requirements of Sections III.G., III.J., and III.O.

(c) Nuclear power plants licensed to operate after January 1, 1979, meet the requirements of Appendix R, as promulgated on November 19, 1980, and amended May 27, 1988, and satisfy Criterion 3 of Appendix A to this part by providing fire protection programs in accordance with the provisions of their licenses.

(d) Appendix S to this part provides an alternative method to satisfy fire protection requirements. Licensees may continue to comply with Appendix R, or they may utilize, in whole or in part, the requirements of Appendix S for any matter for which there is a corresponding specific topic in the licensee's fire protection program. This substitution may be exercised by all licensees regardless of the issuance date of their license to operate. Any alteration of a plant's existing fire protection program pursuant to this regulation shall be documented to demonstrate that the changes adopted do not alter the ability of the fire protection program to provide the capability to safely shut down and maintain the plant in a safe shutdown condition in the event of a single fire. The licensee shall document adoption of any substitution provided by Appendix S, where applicable, in the licensee's fire protection program documentation package. All exemptions to Appendix R previously granted to licensees apply in full under the terms of Appendix S.

2. The petitioner proposes that a new Appendix S be added to 10 CFR Part 50 to read as follows:

### **Appendix S to Part 50—Fire Protection Performance at Nuclear Power Facilities**

#### **I. Introduction and Scope**

This appendix applies to all licensed nuclear power electric generating stations as set forth in § 50.48. This appendix sets forth the objectives and criteria which constitute a fire protection program adequate for meeting GDC 3 of Appendix A to this part. The specific paragraphs of this appendix have been formatted to parallel those of Appendix R to this part, with corresponding paragraph

headings. Paragraphs E. and I. have been intentionally left blank and are reserved because there is no provision in this appendix that corresponds to these sections in Appendix R to Part 50.

Criterion 3 of Appendix A to Part 50 specifies that "Structures, systems, and components important to safety shall be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions."

This regulation applies to equipment and functions designated as necessary to achieve and maintain safe plant shutdown in the event of a single fire in the plant. The terms "as needed" and "as necessary" are used interchangeably throughout this appendix. The phrase "safe shutdown" will be used throughout this appendix as applying to safely shutting the plant down and maintaining it in a safe shutdown condition at either a hot or cold shutdown condition.

Because fire may affect safe shutdown systems, and because the loss of function of systems used to mitigate the consequences of design-basis accidents under post-fire conditions does not per se impact public safety, the need to limit fire damage to systems required to achieve and maintain safe shutdown conditions is greater than the need to limit fire damage to those systems required to mitigate the consequences of design-basis accidents.

The licensee shall ensure that a safe shutdown path is or can be made available to bring the plant to cold shutdown in the event of a single fire in the plant. If a cold shutdown condition cannot be reached, it must be demonstrated that a hot shutdown can be achieved and maintained until a cold shutdown path is available. The terms "trains" and "paths" are used throughout this regulation to signify any method of shutdown.

Repairs and/or replacements may be instituted to either hot or cold shutdown paths as long as it can be demonstrated, for example, through procedures that such repairs and/or replacements can be conducted within a timeframe commensurate with assuring safe shutdown of the plant and consistent with the plant's technical specifications. Redundant systems used to mitigate the consequences of design-basis accidents but not necessary for safe shutdown may be lost to a single fire.

#### **II. General Requirements**

A. *Fire protection program.* A fire protection program shall be established at each nuclear power plant to provide reasonable assurance that structures,

systems, and components necessary to safely shut the plant down are capable of fulfilling their intended functions in the event of a single fire. The program shall establish the fire protection policy for the protection of structures, systems, and components that are necessary to achieve and maintain safe shutdown in the event of a single fire, and the procedures, equipment, and personnel required to implement the program at the plant.

The fire protection program shall be under the direction of an individual who has been delegated authority commensurate with the responsibilities of the position and who has available personnel knowledgeable in both fire protection and nuclear safety. Appropriate combinations of fire protection features should be provided to ensure the functional availability of the required safe shutdown equipment located in a fire area. The fire protection program shall extend the concept of defense-in-depth to fire protection areas important to safety, with the following objectives:

- To prevent fires from starting;
- To detect rapidly, control, and extinguish promptly those fires that do occur; and

- To provide protection for structures, systems, and components needed for safe shutdown so that a single fire in the plant that is not promptly extinguished by the fire suppression activities will not prevent the safe shutdown of the plant.

B. *Fire hazards analysis.* A fire hazards analysis shall be performed by fire protection and reactor systems engineers, as necessary, to:

1. Consider potential *in situ* and transient fire hazards;
2. Determine the consequences of fire in any location in the plant on the ability to safely shut down the reactor or on the ability to minimize and control the release of radioactivity to the environment; and

3. Specify measures for fire prevention, detection, suppression, and containment and shutdown capability as required for each fire area containing structures, systems, and components necessary to achieve and maintain safe shutdown.

C. *Fire protection features.* Fire protection features shall meet the following general requirements for all fire areas that contain or present a fire hazard to structures, systems, or components that are necessary to ensure that safe plant shutdown in the event of a fire can be achieved and maintained:

1. *In situ* fire hazards shall be identified and suitable protection provided.

2. Transient fire hazards associated with normal operation, maintenance, repair, or modification activities shall be identified and eliminated where possible. Those transient fire hazards that cannot be eliminated shall be controlled and suitable protection provided.

3. Surveillance procedures shall be established to ensure that fire barriers are in place and that fire suppression systems are capable of performing their intended functions, as necessary to support safe plant shutdown in the event of a fire.

### III. Specific Requirements

**A. Water supplies for fire suppression systems.** Two redundant water supplies shall be provided to furnish necessary water volume and pressure to the fire main system. Either redundant suction from a single large body of water or redundant water storage tanks may be employed in meeting this requirement. These supplies shall be situated such that a failure of one supply will not result in failure of the other supply. Each supply of the fire water distribution system shall be capable of providing the maximum expected water demands as justified by an assessment of the fire hazards in the area. Other water systems used as one of the two fire water supplies shall be permanently connected to the fire main system and shall be capable of automatic alignment to the fire main system. The use of other water systems for fire protection shall not be incompatible with their functions required for safe plant shutdown. Failure of the other system shall not degrade the fire main system.

**B. Sectional isolation valves.** Sectional isolation valves shall be installed in the fire main system to permit isolation of portions of the fire main system for maintenance or repair without interrupting the entire water supply.

**C. Hydrant isolation valves.** Valves shall be installed to permit isolation of exterior plant hydrants from the fire main for maintenance or repair without interrupting the water supply to automatic or manual fire suppression systems in any area containing or presenting a fire hazard to safe shutdown equipment, to the extent that it can be assured that the plant can be safely shut down in the event of a single fire.

**D. Manual fire suppression.** Standpipe and hose systems shall be installed and maintained so that at least one effective hose stream will be able to reach any location that contains or presents a fire hazard to structures, systems, or components as necessary to

ensure safe plant shutdown. Access to permit effective functioning of the fire brigade shall be provided to all areas that contain or present a fire hazard to structures, systems, or components that could impact successful safe plant shutdown.

E. *[Reserved]*

F. *Automatic fire detection.*

Automatic fire detection capability shall be installed in areas of the plant that contain or present any fire hazard to safe shutdown systems or components, as determined by fire hazard analyses of these areas. These fire detection capabilities shall be capable of operating with or without offsite power.

G. *Fire protection of safe shutdown capability.* A fire protection program shall be instituted to ensure the functional availability of necessary and sufficient equipment to provide for safe shutdown in the event of a single fire in the plant. Engineering analysis or a combination of engineering and probabilistic safety assessments should be used to provide a technical understanding of fire hazards in a particular area. Appropriate combinations of fire barriers, physical separation, fire detection, fixed or automatic fire suppression, manual actions, repairs or replacements, administrative controls, and other means, as necessary, to ensure the functional availability of the required safe shutdown equipment located in that fire area should be provided. The effects of damage from fire suppression activities or rupture or inadvertent operation of fire suppression systems shall be considered for redundant shutdown paths.

H. *Fire brigade.* A site fire brigade trained and equipped for fire fighting shall be established to ensure adequate manual fire-fighting capability for all areas of the plant containing structures, systems, or components important to safety, as necessary, to assure safe plant shutdown in the event of a fire. Training shall include initial and routine practical training, drills, and demonstrations on how to fight live fires.

I. *[Reserved]*

J. *Emergency lighting.* Emergency lighting units shall be provided with sufficient capacity to allow for any necessary manual operation of safe shutdown equipment and for access and egress routes thereto, where the postulated fire may result in the loss of normal and essential lighting.

K. *Administrative controls.* Administrative controls shall be established to minimize fire hazards in areas containing structures, systems, and components necessary to achieve

and maintain safe shutdown in the event of a fire. Measures shall be established to govern the use, storage, and disposal of *in situ* and transient combustible and flammable materials, control the use of ignition sources, review proposed work activities to identify potential fire hazards and assure appropriate fire prevention is applied, perform periodic fire prevention inspections, and plan for fire emergencies.

L. *Shutdown Path Capability.* 1.

Shutdown path equipment shall be able to (a) Achieve and maintain subcritical reactivity conditions in the reactor; (b) maintain reactor coolant inventory; (c) achieve and maintain hot standby conditions for a PWR or hot shutdown conditions for a BWR, as defined in the plant's Technical Specifications, until cold shutdown path equipment can be made available; (d) achieve cold shutdown conditions; and (e) maintain cold shutdown conditions thereafter. During the post-fire shutdown, the reactor coolant system process variables shall be controlled commensurate with parameters in the plant's emergency operating procedures, and the fission product boundary integrity shall not be affected (i.e., there shall be no fuel clad damage, rupture of any primary coolant boundary, or rupture of the containment boundary). Support equipment necessary to assure control of these capabilities shall also be addressed in the plant's safe shutdown analysis.

2. The shutdown capability shall be demonstrated to provide its required function and shall accommodate anticipated post-fire conditions. When fire in the area may cause interruption of the offsite power supply, safe shutdown capability shall be demonstrated using onsite power not affected by the fire in the area. Procedures shall be in effect to implement this capability.

3. If the capability to achieve and maintain cold shutdown will not be available because of fire damage, the equipment and systems comprising the means to achieve and maintain the hot standby or hot shutdown conditions shall be capable of maintaining such conditions until cold shutdown can be achieved. If such equipment and systems will not be functionally capable of being powered by either onsite or offsite electric power systems, as deemed necessary by the specific scenarios considered, because of fire damage, an independent onsite power system shall be provided. The number of operating shift personnel, exclusive of fire brigade members, required to operate such equipment and systems

shall be available in accordance with the site emergency plan.

4. Equipment and systems comprising the means to achieve and maintain cold shutdown conditions shall not be functionally damaged by fire; or the fire damage to such equipment and systems shall be limited so that the systems can be made operable and cold shutdown can be achieved. Materials for such repairs shall be readily available and procedures shall be in effect to implement such repairs. If such equipment and systems used after the fire will not be capable of being powered by either onsite (when conditions warrant) or offsite electric power systems because of fire damage, an independent onsite power system shall be provided.

5. Shutdown systems installed to ensure post-fire shutdown capability need not be designed to meet seismic Category I criteria, single-failure criteria, or other design-basis accident criteria, except where required for other reasons (e.g., because of interface with or impact on existing safety systems).

6. The safe shutdown equipment and systems for each fire area shall be known to be isolated from associated circuits in the fire area so that hot shorts, open circuits, or shorts to ground in the associated circuits will not prevent operation of the safe shutdown equipment.

7. For those fire scenarios that do not result in or from a loss of offsite power (LOOP), plant shutdown may rely on available offsite power sources. Since a relationship could be defined between fire scenarios and a LOOP, the LOOP time duration would reflect appropriate repair/replacement times associated with the scenario.

*M. Fire barrier cable penetration seal qualification.* Penetration seals, when deemed necessary for installation, shall have fire resistance duration ratings comparable to that of the fire barriers they penetrate or adequate to withstand the fire hazards in the area as determined by engineering analysis.

*N. Fire doors.* Fire doors shall be ensured to be closed when necessary during a fire.

*O. Associated scenarios.* Postulated fires or fire protection system failures need not be considered concurrent with other plant accidents or the most severe natural phenomena. However, the effects of a Safe Shutdown Earthquake (SSE) on the reactor coolant pump in a containment that is not inerted during normal plant operation shall be addressed in accordance with paragraph III.G.

### The Petitioner's Conclusion

The petitioner has concluded that fire protection requirements specified in 10 CFR 50.48 and Appendix R should be modified because the current requirements are overly burdensome and prescriptive. The petitioner believes that the past 20 years of expertise gained by the NRC and the nuclear industry in fire protection for nuclear power plants will permit licensees to implement more flexible, site-specific alternatives to the current requirements. The petitioner has proposed an amendment to the current regulations in 10 CFR Part 50 that it believes will permit more flexible and cost-effective fire protection requirements at nuclear power plants without adversely affecting the ability of the licensee to bring the plant to a safe shutdown condition in the event of a fire.

### Specific Areas for Public Comment

In addition to commenting on the petition for rulemaking (petition) presented above, the NRC staff is soliciting specific comments on the issues presented below. Because the NRC staff has not yet developed its positions on the petition, it is soliciting these comments to obtain information that it will use in to develop its regulatory positions and approaches for a performance-oriented, risk-based fire protection rulemaking.

#### 1. Scope

(a) Petition's focus only on the overall safety objective to safely shut down the plant in the event of a fire.

The current safety objective of the NRC's fire protection regulations is focused on providing reasonable assurance that damage from a single fire is limited such that one train of systems necessary to achieve and maintain safe shutdown (hot shutdown) is free from fire damage, and damage to other important safety structures, systems, and components is minimized. The petitioner has proposed a fire protection rule which focuses only on the safety objective to achieve and maintain safe plant shutdown in the event of a single fire, and proposed that other safety functions not related to safe shutdown in the event of a fire be addressed elsewhere in NRC regulations. The NRC staff is seeking public comment on the petitioner's proposal to limit the proposed rule to provide fire protection to only those systems necessary to achieve and maintain safe plant shutdown, and address other safety functions for fires (those not addressing safe shutdown) elsewhere in NRC regulations or through industrial safety

standards and requirements from nuclear insurers that provide for protection against property loss, or whether the proposed rule should include requirements for all safety functions related to fire protection. If other safety functions should be addressed elsewhere in NRC regulations, what are these safety functions, and where in NRC regulations and how should they be addressed? If some safety functions are addressed through industrial safety standards, and requirements from nuclear insurers, should and how will NRC enforce these requirements?

The current NRC fire protection regulations are based on extending the concept of defense-in-depth to fire protection in areas that contain structures, systems, and components not required for safe shutdown but are important to safety. The defense-in-depth objectives are:

- (1) To prevent fires from starting;
- (2) To detect rapidly, control, and extinguish promptly those fires that do occur; and
- (3) To provide protection for structures, systems, and components important to safety so that a fire that is not promptly extinguished by the fire suppression activities will not prevent the safe shutdown of the plant.

Current NRC regulations specifies the minimum requirements for each of these objectives. These objectives establish diversity in fire safety. Strengthening any one of these objectives can compensate for known weaknesses or uncertainties in plant fire protection features and program controls. The proposed rule limits the defense-in-depth concept to only those plant areas needed to shutdown the reactor from full power conditions. The NRC staff is seeking public comments whether the limitations of the petitioner's proposed rule is justified or if a revised regulation should establish a fire protection program based on the defense-in-depth concept for all plant areas that are important to safety.

The petitioner states that the proposed rule provides for licensees and NRC resources to be better focused to those activities most directly related to protection of the public health and safety. This can be accomplished by focusing resources toward the objective of achieving and maintaining safe shutdown in the unlikely event of a fire. Also, the use of a PRA allows the determination of protection features in each fire area as opposed to equal treatment of fire areas without consideration of risk significance. The NRC staff solicits further details, with specific examples, on the extent

elimination or relaxation of requirements marginal to safety in the fire area and if the use of a PRA will result in better focus and coherence in NRC's regulations.

(b) Exclusion of new requirements beyond the scope of the current regulations.

The proposed rule does not consider current fire safety issues that are beyond the scope of the current NRC fire protection regulations. For example, the proposed rule does not address the lessons learned from the results of individual plant external event examinations (IPEEE) and research, or concerns regarding personnel life safety, resolution of fire protection related generic safety issues (e.g., earthquake induced fires), operating experience (nuclear and related industries), performance criteria for compensatory measures, quality assurance, and consideration of fire-related risks during shutdown conditions and plant decommissioning.

Given the history of difficulty and low success rate for attempts to resolve new safety issues simultaneously with improvements to regulatory efficiency, the Commission approved an NRC staff policy for separating regulatory actions for new safety issues from those for improving regulatory efficiency. (See SECY-94-090, "Institutionalization of Continuing Program for Regulatory Improvement," March 31, 1994). Specifically, the Commission approved a plan for fire protection rulemaking in which new safety issues that may arise as a result of implementing the Fire Protection Task Action Plan, would be evaluated, and backfit requirements developed, separate and independent from efforts to improve regulatory efficiency in the fire protection area. If necessary and appropriate, performance-based approaches would be used to promulgate new requirements justified by a backfit analysis.

The NRC staff is soliciting public comment on the above Commission-approved policy, and whether the policy should be maintained in the fire protection area, or if the staff should seek Commission approval to deviate from the established policy to simultaneously promulgate modifications to improve the efficiency of the regulation, and new requirements in the same rulemaking. If the commenter believes the NRC should promulgate new requirements, separately or simultaneously with modifications to improve regulatory efficiency, which of the areas cited above or others should the NRC address? Technical justifications or

bases that support the recommendation for NRC to address specific issues are also requested.

2. Safety-Neutral: Demonstration that the proposal is "safety-neutral."

The petitioner claims that the proposed rule will reduce the regulatory burden on licensees without in any way reducing the protection to the public health and safety that the NRC's regulations provide. Because the guidance documents are not yet available, it is not clear how the petition, if accepted, would impact risk. The petition does not include a demonstration of how the proposed rule achieves an equivalent level of fire safety to that currently established by plants having a current NRC-approved fire protection program that meets the current regulations. The NRC staff is seeking public comments on details on the implementation of the proposed rule and the mechanism for licensees to demonstrate that alternative fire protection approaches allowed by the proposed rule, while reducing burden, will have no significant adverse effect on plant risk compared to that achieved by current NRC fire protection regulations. Specifically, the NRC staff is soliciting a supporting technical demonstration, including risk-based analysis, that justifies exclusions or relaxations in its fire protection requirements. For example, how will the focus of requirements for safe shutdown in the proposed rule and exclusion of requirements for structures, systems, and components (SSCs) important to safety result in an overall equivalent level of safety?

3. Implementation Guidance: Extent that judgement can be made on petition given the absence of an industry guideline, and the demonstration of the application of advanced methods in the fire sciences and PRA.

The proposed rule allows the use of fire modeling and risk assessment techniques, but does not include regulatory requirements or a guidance document that would specify methods and criteria for verifying and validating these methods. Experimental data that supports models that predict fire growth in large compartments and the corresponding potential for damage to nuclear power plant SSCs are not cited. In addition, a verification and validation or approval process for these fire models for application at nuclear power plants has not been proposed as yet by the petitioner.

The petition contends that the proposed rule would provide an opportunity for licensees to incorporate the advances in fire sciences and Probabilistic Risk Analysis (PRA)

technology that have occurred since the current rule was promulgated. The NRC solicits information on details and specific examples of these advances in fire sciences and PRAs in the nuclear and other industries in the United States and other countries, and how these could be utilized in the U.S. nuclear power industry to increase innovation and the efficiency of NRC's regulations for fire protection. Comments on the applicability of the methods cited in the petition, e.g., EPRI FIVE methodology, and information and examples of application in specific areas of nuclear power plant fire protection regulations is requested. Also, to what extent should prior review and approval of these techniques by the NRC staff be required before application by a licensee, and to ensure consistent application, should a licensee's compliance with these alternatives be reviewed and approved by the NRC before implementation? Alternatively, is licensee certification of the verification, validation, and applicability of these new methods for the intended application sufficient to ensure quality of the techniques utilized in the analysis? In view of the fact that the proposed rule allows the use of new fire modeling and risk assessment techniques, to what extent should the methods and criteria for verifying, validating, and applying these models and methods be specified in the new performance-oriented, risk-based regulation rather than a guidance document?

4. Process for Burden Relief: Extent to which the rule revision is the preferred mechanism for providing the burden relief sought by the petitioner compared to moving the fire protection program to a Safety Analysis Report.

Currently, by implementing the guidance provided in Generic Letter (GL) 86-10, "Implementation of Fire Protection Requirements" (April 24, 1986), licensees can, under 10 CFR 50.59 accomplish many of the items specified in the proposed rule. As examples, licensees who have adopted the standard fire protection license condition specified in GL 86-10, can:

(1) Change surveillance testing of fire suppression and detection systems, fire hose testing, etc., without prior NRC approval provided the changes do not have an adverse impact on safety; and

(2) Evaluate the adequacy of fire area boundaries by assessing the fire hazards in the area.

The NRC staff is seeking public comments regarding the benefits of a new fire protection rule to realize the objectives stated by the petitioner. Specifically, what would be the benefits

and advantages of a revised regulation for providing the regulatory relief sought by the petitioner when compared to mechanisms such as those cited above, that are already available? Detailed and specific information on the added flexibility in the different areas of NRC fire protection regulations, and the resulting benefits and cost savings as a result of a performance-based fire regulation is solicited.

The petitioner states that no significant NRC staff resources are expected to be necessary for the proposed rule to ensure continued acceptability of licensee fire protection programs. The proposed rule would allow licensees to have the option of demonstrating that they provide adequate protection against postulated fire hazards without having to submit an exemption and the resultant of consumption of NRC staff and licensee resources. The NRC staff is seeking public comments regarding if and how this proposed rule will reduce the regulatory resources needed to evaluate an alternative approach's safety equivalency and ensure its proper implementation.

5. Content of Performance-Oriented and Risk-Based Regulation: Level of detail and the inclusion of risk-based safety objectives in a revised regulation.

The petitioner proposes an alternative 10 CFR Part 50, Appendix S, which replaces most of the prescriptive fire protection features presently specified in 10 CFR Part 50, Appendix R, with functional safety objectives and acceptance criteria in each area of Appendix R which would be accompanied with guidance documents. Could the same intent be gained by modifying 10 CFR 50.48 to be performance-based with higher level safety objectives than those specified in Appendix S, providing guidance, and disposing of both Appendix R and Appendix S in their entirety, or are the functional safety objectives and acceptance criteria proposed in Appendix S accurate and at the right level for a performance-based regulation? Is an evolutionary approach which maintains the same structure of the regulation as in Appendix R, as proposed by the petitioner, preferred to a more comprehensive modification of NRC fire protection regulations and a high level performance-oriented, risk-based fire protection regulation.

In SECY-94-090, the NRC staff stated that a performance-oriented approach establishes regulatory safety objectives which, to the extent feasible, will be risk-based. Petitioner contends that the proposed rule is performance-based in that the functionality of the safe

shutdown equipment is the ultimate goal. Although the proposed rule, allows the use of PRA for determining fire protection features, it does not appear to have been developed from risk considerations and does not contain risk-based objectives which are related to safety goals. Implementation of the proposed rule would not explicitly require consideration of risk. The NRC staff is seeking public comments regarding the need for the proposed rule to establish risk-based safety objectives.

The petitioner states that the overall approach of the proposed rule may be appropriately characterized as performance-based. The proposed rule would require licensees to establish measurable processes or parameters, as appropriate, to ensure that the adequacy of plant fire protection features in protecting the safe shutdown capability can be demonstrated, based on the plant-specific actual fire risk. The NRC solicits further detail and information on the nature of these parameters, and how they could be monitored to ensure adequacy of the protection features for fire risk.

In addition, the petitioner contends that all previously granted exemptions from current NRC fire protection regulations would remain valid and would be exempted from the proposed rule. The NRC staff is requesting public comments regarding if and how previously granted exemptions should be exempted from the scope of a performance-based regulation.

6. Voluntary Adoption in Whole or in Part: Extent to which licensees should be permitted to voluntarily adopt parts of a revised regulation.

The Commission has approved an NRC staff policy (see SECY-94-090) in which any proposed revisions to existing regulations developed by the Regulatory Improvement Program would not be mandatory but would be proposed as alternatives (options) to existing requirements which may be voluntarily adopted by licensees. This policy was formulated because the main objective of the program is to increase regulatory efficiency and to recognize that many licensees have technical programs which they may not wish to modify.

The petitioner has proposed an Appendix S to 10 CFR Part 50 which provides an alternative method to satisfy fire protection requirements. Licensees may continue to comply with 10 CFR Part 50, Appendix R, or they may utilize, in whole or in part, the requirements of Appendix S for any matter for which there is a corresponding specific topic in the licensee's fire protection program. This

would provide licensees flexibility to revise its program when it determines it would be cost beneficial without modifying the entire fire protection program. The NRC staff is soliciting public comment on any challenges this partial adoption may present. For example, performance-oriented approaches need to ensure that the new regulation can be objectively inspected and enforced (SECY-94-090). The NRC staff resources to evaluate the licensee implementation of the proposed rule could exceed those required currently to enforce 10 CFR Part 50, Appendix R, and may make effective and consistent inspections and enforcement difficult. The NRC staff is requesting public comments on the pros and cons for adoption of a revised regulation partially, or in its entirety by a licensee.

7. Allowable Repairs During Fire Events: Extent of allowable fire damage and repairs to one train needed for hot shutdown.

One of the safety objectives of the current NRC fire protection regulations is to ensure that one train of systems necessary to achieve and maintain hot shutdown conditions will remain free of fire damage. The proposed rule would permit both trains of systems necessary to achieve and maintain hot shutdown to be damaged by a single fire if the functional availability of the required safe shutdown equipment located in the fire area is ensured.

The safety objective of the current regulation is met by protecting the safe shutdown capability with the fire protection features specified in the rule. When this objective cannot be met, the current rule specifies that alternate or dedicated safe shutdown capability must be provided. The proposed rule replaces the prescriptive requirements to provide fire protection for safe shutdown capability or to provide alternative or dedicated safe shutdown capability with the requirement to perform an engineering analysis or use the combination of engineering and probabilistic assessments to demonstrate that adequate time is available to complete the safety function to bring the reactor to a safe shutdown condition. This approach would allow fire damage to redundant safe shutdown functions provided an analysis demonstrates that a sufficient quantity of shutdown equipment could be made "functionally available" (through repairs) in a time frame commensurate with assuring safe shutdown of the plant. The current regulations do not allow licensees to perform troubleshooting and make repairs in order to achieve and maintain post-fire safe (hot) shutdown conditions. Is the

petitioner's proposal acceptable or should the revised rule retain the performance goals established in the current rule for limiting fire damage so that one train of safe shutdown systems and components is free from fire damage or to provide alternative or dedicated shutdown capability?

8. Automatic Actuation of Suppression Systems: Means to address adverse impacts of inadvertent actuation of suppression systems.

The petitioner has stated the potential for damage to safety equipment and that plant transients from inadvertent actuations of automatic suppression systems can contribute to the overall damage risk in a facility. The probability for core damage due to various events is being assessed by licensees under the Individual Plant Examination for External Events (IPEEE) programs. The petitioner claims, given the potential for inadvertent actuation of automatic suppression systems, the marginal improvement to safety from a defense-in-depth perspective may not warrant the increased risk of water damage to safety systems or exposure to personnel. Is the petitioner's assertion accurate, and, if so, should the proposed rule allow the elimination of some automatic suppression systems on the basis of their adverse impact on safety, or should other means be employed, e.g. plant modifications, to address this issue?

9. Alternative and Dedicated Shutdown Capability:

(a) Need for an independent shutdown path.

For plant areas in which redundant trains of safe shutdown systems may be damaged by fire (e.g., control room, cable spreading room, some plant specific switchgear rooms and relay rooms), current NRC fire protection guidelines and regulations require plants to develop a shutdown capability that is physically and electrically independent of the fire area of concern. The proposed rule does not specifically require this capability, but is stated to be similar to the current rule in that it specifies that shutdown path equipment must be able to achieve and maintain critical functions; namely, achieve subcritical conditions, maintain coolant inventory, achieve and maintain hot standby or hot shutdown conditions until cold shutdown equipment can be made available, and achieve and maintain cold shutdown conditions. The proposed rule differs from the current regulation by allowing licensees to take advantage of the extensive operational experience with fire protection, prior NRC determinations, and the significant developments in fire

sciences in providing fire protection for the appropriate equipment. The NRC staff is seeking public comments regarding details of the extensive operational experience, the developments which have been made in the fire sciences, and if and how the use of this information will ensure that an equivalent level of fire safety to that which is currently implemented and incorporated into operating plant designs is maintained.

(b) The need to have abnormal operating procedures that provide guidance on which safe shutdown path is free from fire damage and can be used to achieve and maintain safe shutdown.

Post-fire safe shutdown performance criteria established by the current regulation requires that the reactor coolant system inventory and process variables be maintained within those predicted for a loss of normal a.c. power. The proposed rule changes this performance criteria to allow the reactor coolant process variables to be controlled commensurate with parameters in the plant emergency operating procedures (EOP). Because fires can cause rapid and widespread damage, this may result in unusual conditions requiring the operation of unique plant shutdown equipment in order to meet the established performance goals. The use of EOPs may not be adequate to address the use of alternative or dedicated shutdown systems. Therefore, the NRC is seeking public comments regarding the proposed rule's intent to eliminate the need to develop procedures that address unique fire damage and shutdown conditions, and provide operators with specific guidance on which safe shutdown systems have been properly protected from potential fire damage.

10. 72-Hour Requirement to Achieve Cold Shutdown: Elimination of the requirement to allow repairs and provide flexibility.

The petitioner proposes to eliminate the current 72-hour time requirement to achieve cold shutdown with on-site power stating that it is an overly conservative and unnecessarily prescriptive requirement. Additionally, the petitioner states that inadvertent actuation of protective features designed to address postulated simultaneous loss of offsite power scenarios in the event of a real fire may create abnormal conditions that further unnecessarily challenge operator control of the plant. The intent of this requirement is to effectively limit the extent of repairs necessary to achieve and maintain cold shutdown. The petitioner justifies the elimination of this requirement on the basis that the NRC has granted a number

of site-specific exemptions from this requirement. The petitioner states that operational experience has revealed that the plant is in a more safe condition during deliberate and controlled evolutions employing normal and familiar equipment configurations as compared to nonroutine responses to transients using nonroutine equipment and procedures. The petitioner also recognizes the success of operating history and accumulated operator training and experience.

Under the criteria of the proposed rule, the availability of off-site power would be determined from an analysis of the fire area under review and if off-site power could be lost due to fire damage. Generally, plant areas in which a fire may cause a loss of off-site power typically include the control room, certain cable spreading rooms and switchgear rooms, and the turbine building. Therefore, the proposed rule appears to be consistent with the intent of current NRC regulations.

The NRC staff is seeking public comments on the justification of the petitioners proposal to not impose fire damage limits and allow repairs of shutdown equipment that would require more than 72 hours, and maintain hot standby or hot shutdown conditions until cold shutdown equipment can be made available. The NRC staff specifically solicits information on the methods and feasibility of quantifying the risk impact for this relaxation, and the operating history and accumulated operator training and experience cited in the petition.

11. Rulemaking Finding: Necessity of finding of compliance with current requirements.

Paragraph (c) of the petitioner's proposed revision to § 50.48 would include a rulemaking finding that all nuclear power plants licensed after January 1, 1979, met the requirements of 10 CFR Part 50, Appendix R, and satisfy GDC 3. It is not clear why this language is necessary in order to provide an alternative to the requirements of Appendix R. Furthermore, it is unclear whether this rulemaking finding would preclude future NRC determinations (e.g., enforcement action) that licensees are not complying with the requirements of Appendix R and GDC 3. If this is the intent of the petitioner's proposed rule, it is unclear what policy considerations favor adoption of such a rulemaking finding. The Commission requests public comment on these matters.

12. Exemptions: Treatment of exemptions from current requirements when adopting revised requirements.

Paragraph (d) of the petitioner's proposed revision to § 50.48 provides that all exemptions to 10 CFR Part 50, Appendix R, "apply in full under the terms of Appendix S." However, the petition does not explain what relevance or effect an exemption to a specific Appendix R requirement could have if a licensee instead chose to comply with a substitute Appendix S requirement. The language could be interpreted as intending to make clear that licensees who choose to comply with a specific Appendix S provision should not lose its exemptions to those portions of Appendix R for which the licensee continues to be in compliance. The Commission requests comments on how exemptions to 10 CFR Part 50, Appendix R, should be treated if a licensee chooses to comply, in full or part, with the alternative requirements in the proposed Appendix S.

13. Regulatory Analysis: The need for regulatory analysis for rulemakings that reduce burden.

The petition proposes that a regulatory analysis does need not to be prepared for the proposed rulemaking, because it does not impose a new requirement on licensees but instead, provides an alternative means of compliance. The petition also argues that because the proposed rulemaking is intended to result in cost saving for licensees, there is no need for a regulatory analysis. The Commission notes that a regulatory analysis could also provide important information when the Commission is considering reducing regulatory requirements. For example, the regulatory analysis could be utilized to determine whether a proposed change in regulatory requirements in fact would be more efficient in maintaining the desired level of safety while reducing regulatory burden. The regulatory analysis process would also be useful in identifying alternatives for reducing regulatory burden with a different mix of impacts on licensees and the NRC. Therefore, the Commission requests comments on the petition's arguments that a regulatory analysis does not need to be prepared for rulemaking petitions in which regulatory burdens are proposed to be relaxed.

Dated at Rockville, Maryland, this 31st day of May, 1995.

For the Nuclear Regulatory Commission.

**John C. Hoyle,**

*Secretary of the Commission.*

[FR Doc. 95-13755 Filed 6-5-95; 8:45 am]

BILLING CODE 7590-01-P

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. 94-NM-133-AD]

#### Airworthiness Directives; Boeing Model 757 Series Airplanes

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** This document proposes the adoption of a new airworthiness directive (AD) that is applicable to Boeing Model 757 series airplanes. This proposal would require modifying the engine fuel indication circuits. This proposal is prompted by numerous reports of false indications of engine fuel valve faults, which have led to the flight crew conducting rejected takeoffs (RTO). The actions specified by the proposed AD are intended to prevent such false indications and the flight crew's consequent execution of an RTO at high speed during takeoff roll, which could result in the airplane overrunning the runway, damage to the airplane, and injury to airplane occupants.

**DATES:** Comments must be received by August 2, 1995.

**ADDRESSES:** Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM-103, Attention: Rules Docket No. 94-NM-133-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056. Comments may be inspected at this location between 9:00 a.m. and 3:00 p.m., Monday through Friday, except Federal holidays.

The service information referenced in the proposed rule may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. This information may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington.

**FOR FURTHER INFORMATION CONTACT:** Jeff Duven, Aerospace Engineer, Propulsion Branch, ANM-140S, Seattle Aircraft Certification Office, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98055-4065; telephone (206) 227-2688; fax (206) 227-1181.

#### SUPPLEMENTARY INFORMATION:

#### Comments Invited

Interested persons are invited to participate in the making of the proposed rule by submitting such

written data, views, or arguments as they may desire. Communications shall identify the Rules Docket number and be submitted in triplicate to the address specified above. All communications received on or before the closing date for comments, specified above, will be considered before taking action on the proposed rule. The proposals contained in this notice may be changed in light of the comments received.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposed rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each FAA-public contact concerned with the substance of this proposal will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 94-NM-133-AD." The postcard will be date stamped and returned to the commenter.

#### Availability of NPRMs

Any person may obtain a copy of this NPRM by submitting a request to the FAA, Transport Airplane Directorate, ANM-103, Attention: Rules Docket No. 94-NM-133-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056.

#### Discussion

The FAA has received reports of at least fifteen incidents of false indications of engine fuel valve faults that have occurred on Boeing Model 757 series airplanes. The purpose of the engine fuel valve fault indication is to alert the flight crew that the engine-mounted fuel valve is not in the commanded position. In all of the reported incidents, the engine fuel valve was in the commanded position, but the indication system indicated that the valve was not in that position.

In nine of these incidents, the flight crew's response to the false indication was to initiate a rejected takeoff (RTO). The other six incidents resulted in various flight schedule interruptions. There have been no reports of airplane damage or passenger injuries resulting from any of these particular incidents.

Rejected takeoffs that are initiated at high speed should be executed only in response to conditions that preclude the continued safe takeoff of the airplane. False indications of an engine fuel valve fault, such as those that occurred in the