NFPA 805 Rule Implementation

- Transition to an NFPA 805 licensing basis is voluntary. Each licensee can review the flexibility and advantages of adoption.
- Once the decision to implement transition has been made, a licensee should submit a Letter of Intent (LOI) outlining their transition schedule.
- Submittal of the LOI will initiate interim enforcement discretion for the self-assessment period to encourage the identification and resolution of non-compliances. This discretion is good for up to two years.
- Existing fire protection items in the corrective action program may be eligible for interim enforcement discretion for a limited time after the rule becomes effective.
- During the self-assessment period, the licensees will evaluate their existing fire protection program for transitioning to the new NFPA 805 licensing basis.
- The Nuclear Energy Institute (NEI) and the nuclear industry are developing an implementation guidance document for the NFPA 805 fire protection rule. The document is intended to assist in implementing NFPA 805 in a manner that is acceptable to the NRC. Endorsement of this guidance is planned for an NRC regulatory guide.
- Once transition review is complete, a licensee will submit a license amendment request to change their current fire protection license condition to an NFPA 805 licensing basis.
- During NRC review of the license amendment, interim enforcement discretion will continue.
- After obtaining NRC approval, a licensee may modify its fire protection program, as permitted by the NFPA 805 standard, utilizing risk-informed, performance-based methods without prior NRC review.
- The NRC staff will continues to monitor individual licensee actions to address plant-specific fire protection technical issues through its reactor oversight program.

For more information on the NRC's regulations and supporting guidelines for nuclear plant fire protection program, see the NRC fire protection Web site at http://www.nrc.gov/reactors/operating/ops-experience/fire-protection.html

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NUREG/BR-0312
September 2004

Alternate Fire Protection Rule for Light-Water Nuclear Power Plants

10 CFR 50.48(c) Permits Existing Light-Water Reactor Licensees to Voluntarily Adopt the National Fire Protection Association (NFPA) Standard 805, Performance-Based Standard for Fire Protection for Light-Water Reactor Electric Generating Plants, 2001 Edition, as an Alternative to the Requirements of 10 CFR 50.48(b), Appendix R

U.S. Nuclear Regulatory Commission

Alternate Fire Protection Rule for Light-Water Nuclear Power Plants

Introduction

The U.S. Nuclear Regulatory Commission (NRC) has amended its fire protection rule in Title 10 of the Code of Federal Regulations Section 50.48 (10 CFR 50.48) to allow nuclear power plant licensees to voluntarily adopt a risk-informed and performance-based rule. This alternate fire protection rule maintains safety while adding flexibility to the current fire protection requirements for existing nuclear power facilities.

A new paragraph 10 CFR 50.48(c) has been added to permit a reactor licensee to use the fire protection requirements contained in the National Fire Protection Association (NFPA) Standard 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 edition, with exceptions, as an alternative to complying with 10 CFR 50.48(b) or the licensee's fire protection license condition. In addition, this rule amends 10 CFR 50.48(f) to allow decommissioning plants the option to use NFPA 805.

Risk-Informed, Performance-Based Fire Protection Regulation

The alternate fire protection rule is part of an effort by the agency to incorporate risk information into its regulations.

- The NRC has established its regulatory requirements to ensure that NRC- licensed facilities present no undue risk to the public health and safety.
- NRC's early fire protection regulation was developed without the benefit of quantitative estimates of risk and before recent advances in performance-based methods such as fire modeling. During the past decade, the NRC has recognized that risk assessment science has evolved to the point that it can be increasingly used as a tool in regulatory decisionmaking.
- In a risk-informed approach, risk insights are considered with other factors to establish requirements that better focus licensee and regulatory attention on design and operational issues commensurate with their importance to public health and safety.
- The risk-informed, performance-based approach can identify areas with insufficient safety margin and provide the bases for additional requirements or regulatory actions.
- This approach can reduce unnecessary conservatism associated with the current deterministic requirements, leading to better decisionmaking while maintaining safety margin and defense-in-depth.

NFPA 805 Rule Highlights

- NFPA 805 is a national consensus standard for existing light-water nuclear power plants.
- NFPA 805 sets performance-based goals, objectives, and criteria fo nuclear safety and radioactive release.
- NFPA 805 requirements are applied during all phases of plant operation.
- NFPA 805 describes the fundamental fire protection program elements and the minimum design requirements for fire protection systems and features to satisfy the performance criteria.
- The nuclear safety performance criteria can be satisfied with either the deterministic or performance-based approach.
- NFPA 805 applies to the power block areas of decommissioned and plants that have ceased operations.
- Once a licensee transitions, NFPA 805 provides for a single set of regulatory fire protection licensing requirements.
- Existing license exemptions, deviations and engineering equivalencies can be grandfathered during transition.
- NFPA 805 should reduce the need for license exemptions and amendments, therefor, reducing unnecessary regulatory burden associated with the current deterministic approach, and will maintain reactor safety while adding risk-informed, performance-based fire protection requirements to their fire protection programs.
- The NFPA 805 standard provides greater use of risk insights, engineering analysis, fire modeling, and fire probabilistic risk assessments (PRAs).[1]
- NFPA 805 focus on reactor-safety-oriented fire protection, add appropriate flexibility, eliminate the potential for confusion, and better cover post-fire safe-shutdown conditions.
- NFPA 805 rule will enable licensees to focus their resources primarily on the most risk-significant fire protection issues.

[1]PRA is a methodology that provides a structured analytical process to assess the likelihood and consequences of a severe reactor accident.