

December 8, 2014

MEMORANDUM TO: Brian E. Thomas, Director
Division of Engineering
Office of Nuclear Regulatory Research

FROM: Joseph G. Giitter, Director */RA/*
Division of Risk Assessment
Office of Nuclear Reactor Regulation

SUBJECT: RESULTS OF PERIODIC REVIEW OF REGULATORY
GUIDE 1.189

This memorandum documents the US Nuclear Regulatory Commission (NRC) periodic review of Regulatory Guide (RG) 1.189, "Fire Protection for Nuclear Power Plants," most recently published in October 2009. The RG provides fire protection guidance that identifies the scope and depth of fire protection that the staff would consider as one acceptable way for nuclear power plants to meet fire protection regulations. As discussed in Management Directive 6.6, "Regulatory Guides," the NRC staff reviews RGs approximately every 5 years to ensure that the RGs continue to provide useful guidance. Documentation of the NRC staff review is enclosed.

Based on the results of the periodic review, the staff concludes that no changes to RG 1.189 are warranted at this time. However, the staff identified some technical and regulatory issues that are currently under development and are expected to be fully developed during 2015. The NRC staff plans to revisit the updating of RG 1.189 in the fourth quarter of calendar year 2015.

Enclosure:
As stated

CONTACT: Daniel M. Frumkin, NRR/DRA
(301) 415-2280

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Regulatory Guide Periodic Review

Regulatory Guide Number: **1.189**

Title: **Fire Protection for Nuclear Power Plants**

Office/division/branch: **NRR/DRA/AFPB**

Technical Lead: **Daniel M. Frumkin**

Recommended Staff Action: **Reviewed, issues identified for future consideration.**

1. What are the known technical or regulatory issues with the current version of the Regulatory Guide (RG)?

Regulatory Guide 1.189, Revision 2 (Rev. 2), "Fire Protection for Nuclear Power Plants," most recently published in October 2009, provides fire protection guidance that identifies the scope and depth of fire protection that the staff would consider as one acceptable way for nuclear power plants to meet fire protection regulations.

Since 2009 licensees have used the information in RG 1.189 extensively and a number of enhancements have been identified. These enhancements include incorporating staff information that has been discussed in memoranda. One example is the application of the performance goals of 10 CFR 50, Appendix R, Section III.L, see February 10, 2005, memorandum, Agencywide Documents and Management System (ADAMS) Accession No. [ML050330417](#). Another example relates to what systems are considered acceptable as 'redundant' shutdown systems under 10 CFR 50, Appendix R, see November 28, 2000, memorandum, ADAMS Accession No. [ML003772256](#) and December 20, 2000, memorandum, ADAMS Accession No. [ML003776828](#).

In addition, information released as part of [NUREG/CR-7150](#), "Joint Assessment of Cable Damage and Quantification of Effects from Fire (JACQUE-FIRE)," is considered applicable to this RG and will be considered for inclusion. Some information from NUREG/CR-7150, Volume 3, is not expected to be available until the spring of 2015. Portions of RG 1.189 are based on [Nuclear Energy Institute \(NEI\) 00-01](#), "Guidance for Post-Fire Safe Shutdown Circuit Analysis," Revision 2 that was last published in 2009. Based on discussions with NEI staff, the next revision of NEI 00-01 will include information from NUREG/CR-7150, Volume 3.

While the staff has identified issues that would merit the revision of RG 1.189, Rev. 2, those issues have not related to any currently identified safety concerns.

2. What is the impact on internal and external stakeholders of not updating the RG for the known issues, in terms of anticipated numbers of licensing and inspection activities over the next several years?

There are no identified safety concerns if the regulatory guide is not updated. However, there are consistency issues that merit resolving as discussed above. Not having a single reference for fire protection guidance, for example relying on memoranda as described in Question 1, complicates discussions between the NRC inspectors and staff, and licensees regarding the current guidance. Although, improving this consistency would be advantageous there is

minimal impact on internal or external stakeholders. The benefit of updating would be regulatory endorsement of information included in NEI 00-01, to be developed based on NUREG/CR-7150, but that information is not yet available.

3. What is an estimate of the level of effort needed to address identified issues in terms of full-time equivalent (FTE) and contractor resources?

NRC staff requires approximately 1-2 FTE to compile the information and develop the changes to the RG. This activity will require coordination with other NRC Offices (NRR, Office of New Reactors, and Office of Nuclear Regulatory Research), and the NRC Regional Offices. NRC staff would also need to coordinate with industry stakeholders as part of the development of the next revision of NEI 00-01. The organizations that will be involved are cognizant of the need for updating this RG. Contractor support may be utilized in lieu of staff resources if dictated by resource constraints

4. Based on the answers to the questions above, what is the staff action for this guide (Reviewed with no issues identified, Reviewed with issues identified for future consideration, Revise, or Withdraw)?

Reviewed, issues identified for future consideration.

5. Provide a conceptual plan and timeframe to address the issues identified during the review.

A revision to RG 1.189 would be based on the consistency changes above and also the revision based on the NUREG/CR-7150. The NUREG is expected to be updated in the fall of 2015, and the expected delivery of a revision to NEI 00-01, is expected to be released later that year. Therefore, the staff plans to revisit the review of RG 1.189 in the fourth calendar quarter of 2015. If both the NUREG and revision of NEI 00-01 are complete, the staff would begin a revision at that time. Such a schedule would result in the development of a draft guide by the fourth quarter of calendar year (CY) 2016, and issue it public comment by the fourth quarter of CY 2016.

NOTE: This review was conducted in December 2014 and reflects the staff's plans as of that date. These plans are tentative and are subject to change as appropriate.