

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 1.205

This memorandum documents the US Nuclear Regulatory Commission (NRC) periodic review of Regulatory Guide (RG) 1.205, "Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants," published in December 2009. The RG provides one acceptable way to comply with the requirements that NRC has promulgated for risk-informed, performance-based fire protection programs that comply with Title 10, of the *Code of Federal Regulations* Part 50.48(c), and the referenced 2001 Edition of the National Fire Protection Association (NFPA) standard, NFPA 805, "Performance-Based Standard for Fire Protection for Light-Water Reactor Electric Generating Plants." 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 1.205 Revision 2 are warranted at this time. However, the staff identified some technical and regulatory issues in the review that could warrant addressing in a future revision. The NRC plans to revisit the updating of RG 1.205 in the third quarter of calendar year 2016.

Enclosure:  
As stated

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

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 GUIDE 1.205

This memorandum documents the US Nuclear Regulatory Commission (NRC) periodic review of Regulatory Guide (RG) 1.205, "Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants," published in December 2009. The RG provides one acceptable way to comply with the requirements that NRC has promulgated for risk-informed, performance-based fire protection programs that comply with Title 10, of the *Code of Federal Regulations* Part 50.48(c), and the referenced 2001 Edition of the National Fire Protection Association (NFPA) standard, NFPA 805, "Performance-Based Standard for Fire Protection for Light-Water Reactor Electric Generating Plants." 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 1.205 Revision 2 are warranted at this time. However, the staff identified some technical and regulatory issues in the review that could warrant addressing in a future revision. The NRC plans to revisit the updating of RG 1.205 in the third quarter of calendar year 2016.

Enclosure:  
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**ADAMS Accession No: PKG: ML14336A693; Response Memo: ML14328A611**

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DATE	12/03/2014	12/03/2014	12/03/2014	12/08/2014

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## Regulatory Guide Periodic Review

Regulatory Guide Number: **1.205**

Title: **Risk-Informed, Performance-Based Fire Protection for Existing Light-Water 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 1.205, Revision 2 (Rev. 2), "Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants," issued in December 2009, provides one acceptable way to comply with the requirements that the U.S. Nuclear Regulatory Commission (NRC) has promulgated for risk-informed, performance-based fire protection programs that comply with Title 10 of the *Code of Federal Regulations* Part 50.48(c) and the referenced 2001 Edition of the National Fire Protection Association (NFPA) standard, NFPA 805, "Performance-Based Standard for Fire Protection for Light-Water Reactor Electric Generating Plants."

Since 2009 licensees have used the information in RG 1.205 actively in license amendment requests to adopt NFPA 805. As part of the NRC staff preparing license amendment reviews, staff and industry stakeholders have identified numerous enhancements to the guidance. Due to the complexity of the NFPA 805 reviews, the staff published Regulatory Issue Summary (RIS) 2007-19: "Process for Communicating Clarification of Staff Positions Provided in Regulatory Guide 1.205 Concerning Issues Identified During the Pilot Application of National Fire Protection Association Standard 805." The results of information developed as part of RIS 2007-19 is publicly available and is also available for licensees use. A status and history document that includes information created consistent with RIS 2007-19 is available in the Agencywide Documents and Management System (ADAMS) as Accession Number [ML14059A447](#).

RG 1.205 endorses with some exceptions information in Nuclear Energy Institute (NEI) 04-02, "Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program under 10 CFR 50.48(c)." The current revision of NEI 04-02 was issued in April of 2008 and has not been revised. A revision of NEI 04-02, would need to be completed prior to revising RG 1.205, and should be completed to support revising RG 1.205. Information from NEI staff indicates that a revised version of NEI 04-02 may be available as early as the first part of calendar year 2015. The NRC staff has not yet seen the proposed revision and may need to interact with NEI regarding the content before NEI 04-02 is consistent with regulatory expectations for endorsement in RG 1.205.

In addition, the Office of Nuclear Regulatory Research (RES) is currently performing research which has the potential to impact information in RG 1.205. During a recent industry sponsored

meeting the NRC staff provided information regarding this research, indicating that the results of the research would be available in 2015. Recent information on the research is in ADAMS as Accession Number [ML14261A111](#). Information regarding some of the testing that may impact RG 1.205 is located starting on Slide 22, for the heat release rate testing, and also starting on Slide 31, for the very early warning fire detection system testing.

While the staff has identified enhancements related to RG 1.205, Rev. 2, those issues are 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. In addition much of the information expected to be included in an update is either (1) in the public domain related to RIS 2007-19, or (2) still under development as part of the NRC's Office of Nuclear Reactor Research test programs.

**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 2-3 FTE to compile the information and develop the changes to the RG. This activity will require coordination with other NRC Offices (NRR, NRO, and RES), and the NRC Regional Offices. The NRC staff will also need to coordinate with industry stakeholders, specifically to support any endorsement of NEI 04-02.

**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.**

The number of enhancements to RG 1.205 is expected to decrease when the majority of NFPA 805 licensee amendment requests have had their reviews completed. This is estimated to occur in May of 2016. In addition, by that time the test programs should be completed with information developed of sufficient quality to use as the basis for updating RG 1.205. Therefore, the staff plans to revisit the review of RG 1.205 in the third quarter of calendar year of 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.**