March 8, 2016

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 1.4

This memorandum documents the U.S. Nuclear Regulatory Commission's (NRC's) periodic review of Regulatory Guide (RG) 1.4, Revision 2, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Loss of Coolant Accident for Pressurized Water Reactors," published in June 1974. The RG describes methods that the NRC staff considers acceptable for complying with the NRC's regulations regarding the evaluation of the design-basis loss-of-coolant accident for pressurized water reactors. As discussed in Management Directive 6.6, "Regulatory Guides," the NRC staff reviews RGs approximately every five years to ensure that the RGs continue to provide useful guidance. Documentation of the Office of Nuclear Reactor Regulation (NRR) staff review is enclosed.

Based on the results of the periodic review, the NRC staff concludes that a revision to RG 1.4 is not warranted and the RG should be withdrawn. The guidance contained in RG 1.4 has been updated and incorporated into RG 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Plants," and RG 1.195, "Methods and Assumptions for Evaluating Radiological Consequences of Design Basis Accidents at Light-Water Nuclear Power Plants." Please see the enclosed periodic review for details.

Enclosure:
Regulatory Guide Periodic Review

CONTACTS: John Parillo, NRR/DRA
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Leslie Perkins, NRR/DPR
301-415-2375

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

FROM: Joseph G. Giitter, Director ***/RA/***
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

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DATE	02/29/2016	02/23/2016	02/02/2016	03/04/2016	03/08/2016

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Regulatory Guide Periodic Review

Regulatory Guide Number:	**1.4, Revision 2**
Title:	**Assumptions Used for Evaluating the Potential Radiological Consequences of a Loss of Coolant Accident for Pressurized Water Reactors**
Office/Division/Branch:	**NRR/DRA/ARCB**
Technical Lead:	**John Parillo**
Staff Action Decided:	**Withdraw**

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

Regulatory Guide 1.4, Revision 2, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Loss of Coolant Accident for Pressurized Water Reactors," published in June 1974, describes methods that the U.S. Nuclear Regulatory Commission (NRC) staff considers acceptable for complying with the NRC's regulations regarding the evaluation of the design basis loss of coolant accident for pressurized water reactors. The guidance contained in RG 1.4 has been updated and incorporated into RG 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Plants," and RG 1.195, "Methods and Assumptions for Evaluating Radiological Consequences of Design Basis Accidents at Light-Water Nuclear Power Plants." RG 1.183 provides guidance for new and existing light water reactor (LWR) plants that have adopted the alternative source term (AST) and RG 1.195 provides guidance for those LWR plants that have not adopted the AST.

The withdrawal of RG 1.4 will require identification of all RGs and Standard Review Plan (SRP) chapters that refer to RG 1.4 such that future reviews and revisions of these documents will account for the withdrawal of RG 1.4. Two RGs that currently are known to reference RG 1.4 are RG 1.183 and RG 1.195. Both RGs 1.195 and 1.183 include a statement that several old RGs including RG 1.4 will not be withdrawn. This statement should be deleted from both RG 1.183 and RG 1.195.

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

Current licensees may continue to use RG 1.4 and withdrawal does not affect any existing licenses or agreements. Withdrawal means that the guide should not be used for future NRC licensing activities.

Enclosure

(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?

Currently, the staff is not planning a revision of RG 1.4 however changes to RG 1.183 and 1.195 are estimated to take approximately 0.1 FTE per RG to remove references to RG 1.4. If the proposed changes are determined to not be administrative and require public comment and internal reviews (Advisory Committee on Reactor Safeguards and The Committee to Review Generic Requirement) it is estimated that the changes will take 0.3 FTE per RG or standard review plan.

(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)?

Withdraw.

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

The NRC staff is planning to withdraw RG 1.4 in 2016.