March 23, 2009

MEMORANDUM TO: Edwin M. Hackett, Executive Director
Advisory Committee on Reactor Safeguards
Advisory Committee on Nuclear Waste and Materials

James E. Lyons, Chairman
The Committee to Review Generic Requirements

FROM: William F. Burton, Branch Chief ***/RA/***
Rulemaking and Guidance Development Branch
Division of New Reactor Licensing
Office of New Reactors

SUBJECT: TRANSMITTAL OF PROPOSED INTERIM STAFF GUIDANCE TO THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS AND THE COMMITTEE TO REVIEW GENERIC REQUIREMENTS ON DISPOSITION OF REVIEW OF EVALUATION TO ADDRESS ADVERSE FLOW EFFECTS IN EQUIPMENT OTHER THAN REACTOR INTERNALS

The purpose of this memorandum is to transmit the Proposed Interim Staff Guidance (ISG) on "Disposition of Review of Evaluation to Address Adverse Flow Effects in Equipment Other Than Reactor Internals" for the Advisory Committee on Reactor Safeguards (ACRS) and the Committee to Review Generic Requirements (CRGR) review and consideration.

The U.S. Nuclear Regulatory Commission is issuing its DC/COL-ISG-010 for comments from stake holders and transmitting in parallel to ACRS and CRGR for information.

If the ACRS or CRGR determines that there is a need to review the DC/COL-ISG-010, then please inform the technical contact and the Office of New Reactors will support a briefing.

Enclosure:
As stated

CONTACT: Ram Subbaratnam, NRO/DNRL
301-415-1478

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Nuclear Regulatory Commission

Interim Staff Guidance on Disposition Of

Review of Evaluation to Address Adverse Flow Effects in

Equipment Other than Reactor Internals

[NRC-2009-0110]

AGENCY: Nuclear Regulatory Commission.

ACTION: Solicitation of public comment.

SUMMARY: The NRC is soliciting public comment on its Proposed Interim Staff Guidance (ISG) DC/COL-ISG-010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML090510728). The purpose of this ISG is to modify and provide additional clarity in the guidance for the review of analyses of adverse flow effects in equipment other than reactor internals performed by Combined License (COL) and Design Certification (DC) applicants. This ISG would revise the staff guidance previously issued in March 2007 in the Standard Review Plan (SRP) NUREG-0080, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," Section 3.9.2, "Dynamic Testing and Analysis of Systems, Structures, and Components," Section 3.9.5, "Reactor Pressure Vessel Internals," and Regulatory Guide 1.20, "Comprehensive Vibration Assessment Program for Reactor Internals During Pre-operational and Initial Startup Testing." The NRC staff issues DC/COL-ISGs to facilitate timely implementation of current staff guidance and to facilitate activities associated with review of applications for DCs and COLs by the Office of New Reactors. The NRC staff will also incorporate the approved DC/COL-ISG-010 into the next revision of the SRP and related guidance documents.

DATES: Comments must be filed no later than 30 days from the date of publication of this notice in the *Federal Register*. Comments received after this date will be considered, if it is practical to do so, but the Commission is able to ensure consideration only for comments received on or before this date.

ADDRESSES: Comments may be submitted to: Chief, Rulemaking, Directives, and Editing Branch, Office of Administration, Mail Stop TWB-05-B01M, U.S. Nuclear Regulatory Commission, Washington, DC, 20555-0001, and should cite the publication date and page number of the *Federal Register* notice.

The NRC ADAMS provides text and image files of NRC's public documents. These documents may be accessed through the NRC's Public Electronic Reading Room on the Internet at http://www.nrc.gov/reading-rm/adams.html. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC Public Document Room reference staff at 1-800-397-4209, 301-415-4737, or by e-mail at PDR.Resource@nrc.gov.

FOR FURTHER INFORMATION CONTACT: Ms. Jennifer L. Dixon-Herrity, Chief, Engineering Mechanics Branch 2, Division of Engineering, Office of the New Reactors, U.S. Nuclear Regulatory Commission, Washington, DC, 20555-0001; telephone 301-415-2967 or e-mail at jennifer.dixon-herrity@nrc.gov.

SUPPLEMENTARY INFORMATION: The agency posts its issued staff guidance in the agency external web page (http://www.nrc.gov/reading-rm/doc-collections/isg/).

The NRC staff is issuing this notice to solicit public comments on proposed DC/COL-ISG-010. After the NRC staff considers any public comments, it will make a determination regarding proposed DC/COL-ISG-010.

Dated at Rockville, Maryland, this 9th day of March 2009.

For the Nuclear Regulatory Commission,

/RA/

William F. Burton, Branch Chief
Rulemaking and Guidance Development Branch
Division of New Reactor Licensing
Office of New Reactors

Interim Staff Guidance
Review of Evaluation to Address Adverse Flow Effects in Equipment Other than Reactor Internals

Issuance Status

Proposed

Purpose

The purpose of this interim staff guidance (ISG) is to provide for the review of adverse flow effects on components and piping other than reactor internals in the appropriate Standard Review Plan (SRP) Section.

Background

In March 2007, the Nuclear Regulatory Commission (NRC) revised SRP Section 3.9.2, "Dynamic Testing and Analysis of Systems, Structures, and Components," Section 3.9.5, "Reactor Pressure Vessel Internals," and Regulatory Guide (RG) 1.20, "Comprehensive Vibration Assessment Program for Reactor Internals During Preoperational and Initial Startup Testing" to address adverse flow induced vibration effects experienced in industry. Since the worst case problems in industry at the time occurred in boiling-water reactor (BWR) internals (the steam dryer), SRP Sections 3.9.2 and 3.9.5 and RG 1.20 were modified to include the details for all the events.

Issue Discussion

Staff members conducting reviews in accordance with SRP Section 3.9.5 review reactor internals design, but not steam generator, valve, piping, or other component design. The staff realizes that including actions to address adverse flow effects in these other components in the license application section dealing with reactor internals is not effective.

Proposed Interim Staff Guidance

To correct this issue, the staff reviewers looking at component and piping design will review applicant actions to address adverse flow effects on other components and piping in their native sections of the safety evaluation report (SER). Several examples of such effects have occurred in industry and call for consideration of this concern in components other than the reactor internals. Consideration of effects on safety relief valves and steam lines in BWR plants similar to the issues identified following implementation of extended power uprates will be documented in SER Section 3.9.3. Actions to address concerns involving vibration effects similar to those encountered on a shutdown cooling line and shutdown cooling line isolation valve at an operating pressurized-water reactor plant would be considered under SER Sections 3.9.3 and 3.12. The potential for adverse flow induced vibration of steam generator internal components would be addressed in SER Sections 3.9.2 and 3.9.3. Finally, SER Section 3.9.5 will continue to address vibration concerns with reactor internals.

Final Resolution Method

Future updates of SRP Sections 3.9.2, 3.9.3, 3.9.5, 5.4, and 3.12 will incorporate the final changes adopted, and will be documented in the final version of this ISG and other guidance documents. The NRC staff is specifically soliciting stakeholder comment on how to revise the text of the SRP sections and other guidance documents. The updates will either clarify or correct affected sections of the staff guidance to address components within the scope of the review of the native section(s).

After resolution of public/stakeholder comments, the staff will issue this ISG in final form and incorporate its contents into the applicable SRP sections and RG 1.20.

Applicability

This ISG is applicable to all design certification and COL applications submitted under 10 CFR Part 52. It shall remain in effect until it has been superseded, withdrawn, or incorporated into revisions of the applicable SRP sections and RG 1.20.

Backfit Determination

This ISG reformats reviews called for in the SRP to more closely align those reviews with the outline in the SRP. The same level of review will still occur, but will be conducted under other SRP sections. No backfit analysis is required.