UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, DC 20555-0001

December 8, 2008

NRC REGULATORY ISSUE SUMMARY 2008-27
STAFF POSITION ON EXTENSION OF THE CONTAINMENT TYPE A TEST INTERVAL BEYOND 15 YEARS UNDER OPTION B OF APPENDIX J TO 10 CFR PART 50

ADDRESSEES

All holders of operating licenses for nuclear power reactors, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

INTENT

The U.S. Nuclear Regulatory Commission (NRC) is issuing this regulatory issue summary (RIS) to clarify its position concerning licensee requests to extend Type A test (also known as integrated leak rate test or ILRT) intervals beyond the currently approved 15 years under Option B, "Performance-Based Requirements," of Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors," to Title 10, Part 50, "Domestic Licensing of Production and Utilization Facilities," of the *Code of Federal Regulations* (10 CFR Part 50).

This RIS requires no action or written response on the part of an addressee.

BACKGROUND INFORMATION

In 1995, the NRC amended 10 CFR Part 50, Appendix J to provide a performance-based Option B for the containment leakage testing requirements. Licensees of operating reactors have voluntarily adopted the Appendix J, Option B requirements in plant technical specifications (TS). The Option B requirements are implemented in accordance with the guidelines contained in Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak-Test Program." The current version of this RG, dated September 1995, endorses, with certain exceptions, the Nuclear Energy Institute (NEI) guideline NEI 94-01, Revision 0 (July 1995), "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J." One of the performance-based leakage-test requirements of Option B is that a Type A test must be conducted (1) after the containment system has been completed and is ready for operation and (2) at a periodic interval based on the historical performance of the overall containment system.

NEI 94-01, Revision 0, specifies that the interval for the Option B periodic Type A tests may be extended from the initial 48 months to as long as 10 years, based on acceptable performance history. The requirement with regard to extended Type A test intervals in Section 9.2.3 of NEI 94-01, Revision 2, is: "Type A testing shall be performed during a period of reactor shutdown at a frequency of at least once per 15 years based on acceptable performance

history." An acceptable performance history is established based on two consecutive successful Type A tests and other provisions in NEI 94-01, Revision 2. The NRC staff documented its position on NEI 94-01, Revision 2, in a safety evaluation report (SER) dated June 25, 2008 (Agencywide Documents Access and Management System (ADAMS) accession number ML081140105), which will also be reflected in the proposed Revision 1 to RG 1.163.

In the interim, the NRC staff has approved one-time 10-year to 15-year extensions of the Type A test intervals under Option B for the vast majority of operating reactors. The NRC staff granted these one-time extensions based on licensees demonstrating acceptable plant-specific performance of the containment and risk insights, including (1) results of at least the two most recent consecutive successful Type A tests, (2) proper and effective plant-specific implementation of required Type B and Type C tests (also known as local leak rate tests or LLRTs) and the containment inservice inspection program in monitoring and managing age-related containment degradation issues before and during the extension period, and (3) a supporting plant-specific risk assessment.

SUMMARY OF ISSUE

Issue:

Several licensees with approved one-time 15-year Type A test intervals have submitted license amendment requests to the NRC seeking further extensions of the interval for periods ranging from 3 months to 15 months beyond the currently approved 15 years. Many of these requests did not have proper justification. This RIS provides the NRC's expectations concerning Type A test interval extension requests beyond the currently approved performance-based interval of 15 years.

Consistent with the position described in Section 3.1.1.2 of its SER dated June 25, 2008 (ADAMS accession number ML081140105), for topical report (TR) NEI 94-01, Revision 2, the NRC staff emphasizes that requests for extension of the performance-based Type A test interval beyond the required 15 years should be infrequent and used only for compelling reasons. The staff, therefore, included a limitation/condition in Section 4.1 of the stated SER that the licensee must demonstrate to the NRC staff that an unforeseen emergent condition exists to utilize the provision of Section 9.1 of NEI 94-01, Revision 2, related to extending of the Type A test interval beyond 15 years. The staff position on any extension of Type A test intervals beyond 15 years is described in the following section.

Staff Position:

The staff position in the SER dated June 25, 2008. is applicable to approved one-time 15-year Type A test intervals and to permanent 15-year Type A test intervals based on NEI 94-01, Revision 2. However, if the current wording in the TS differs from the staff position in this RIS for the approved one-time 15-year Type A test interval, then the requirement in the TS will govern for the one-time 15-year test interval.

Except for compelling reasons, which could include unforeseen emergent conditions, licensees should conduct the Type A tests within the approved 15-year interval without seeking extensions. Since the containment is the final barrier against radioactive release in the event of an accident, the NRC staff emphasizes the importance of the discipline licensees should follow in performing the periodic verification of the structural and leakage integrity of the containment within the specified interval. The staff considers the approved 15-year Type A test interval as a

consensus upper-bound performance-based risk-informed interval which provides a significant period of time between tests. Licensees know the due date of the next required Type A test years in advance and also know that the due date may not necessarily coincide with a routine refueling outage. Therefore, the NRC staff expects that licensees will plan well ahead to conduct required Type A tests within the normal 15-year interval. However, the staff notes that licensees do have some built-in scheduling flexibility for conducting Type A tests as described in the following two paragraphs.

Consistent with Section 9.2.2 of NEI 94-01, the Type A test interval is defined as the time period from the completion of a Type A test to the start of the next test. Licensees should use this definition for scheduling and planning of the next Type A test to the month and year. This means that a licensee who has determined the due date for a Type A test using the stated interval definition gains limited flexibility by being able to commence the test no later than the last day of the month in which it becomes due, without seeking NRC approval.

Further, Section 9.2.2 of NEI 94-01 states, "If the test interval ends while primary containment integrity is either not required or it is required solely for shutdown activities, the test interval may be extended indefinitely. However, a successful Type A test shall be completed prior to entering the operating mode requiring primary containment integrity." This provision provides licensees additional flexibility in conducting Type A tests, without NRC approval, to accommodate plant circumstances as time draws closer to the normal 15-year ILRT due date. Licensees should document such discretionary extensions in the Type A test program records.

Any extension of the Type A test interval beyond the approved 15 years, with the exception of the built-in scheduling flexibility available as described in the previous two paragraphs, requires NRC approval through a license amendment. Consistent with Section 3.1.1.2 of the SER for TR NEI 94-01, Revision 2, the NRC staff will consider requests for Type A test interval extensions beyond 15 years only under compelling circumstances. This applies even if the licensee wants to use the provision in Section 9.1 of NEI 94-01, Revision 2, related to extending the Type A test interval beyond the required performance-based interval. The license amendment request should have a compelling basis in the form of a sound technical justification and/or undue hardship or unusual difficulty and show that the requested amendment poses minimal safety risk. In addition to establishing the compelling basis for an extension, the license amendment request should demonstrate acceptable plant-specific containment performance by providing the supporting plant-specific information including the plant-specific risk-informed analysis. The licensee should also demonstrate that the containment does not have a history of significant degradation issues.

The following are some examples (not all-inclusive) of justifications that the NRC typically would not consider acceptable for a Type A test interval extension beyond 15 years, unless additional factors are involved which demonstrate a compelling reason for an extension:

- The primary reason for the extension is to allow the test to be conducted in the outage following the Type A test due date.

- Including the Type A test in the refueling outage before the scheduled due date significantly impacts planning for the outage and also the overall length of the outage.

- The large number of containment projects included in the scope of the refueling outage before the Type A test due date would complicate the performance of the Type A test.

- Performing the Type A test during the outage before the due date places additional burden on station resources.

- Extension of the Type A test interval is solely motivated by a decrease in plant unavailability and the associated costs.

- Deferring the Type A test would reduce the dose from the radiation exposure resulting from performance of the test by a small or insignificant amount as a direct result of activities in the previous outage before the test due date.

- Because of poor planning or negligence on its part, the licensee missed the last opportunity to conduct the Type A test within the required due date resulting in a situation where the Type A test may have to be performed during a mid-cycle plant shutdown if the required test interval is not extended.

The following is an example (not all-inclusive) of a circumstance in which the NRC would consider a request for a one-time extension of the Type A test interval beyond the approved 15-year interval.

- The licensee has major repair/modification/replacement activities (e.g., replacing major equipment such as steam generators, reactor pressure vessel head, pressurizers) scheduled for the outage following the Type A test due date. These activities should require the containment pressure boundary to be breached (e.g., creation of large construction openings) in order to facilitate the repair/modification or replacement, and cannot be scheduled for an earlier outage. This situation would put the licensee in a position of having to perform system pressure tests in two consecutive refueling outages if the Type A test is performed by the original due date. Performing the Type A test concurrent with the post-repair containment pressure test before startup following the repair/modification or replacement would provide a more comprehensive test of the restored containment for leakage and structural integrity.

Timeliness Standard for Extension Requests:

Licensees should normally submit to the NRC a license amendment request, to extend a Type A test interval beyond the required 15-year performance-based interval, at least 9 months before the planned start of the last refueling outage that would end before the current Type A test due date. While the license amendment request is under review, the licensee should continue to plan on conducting the Type A test during the last refueling outage before the test due date.

BACKFIT DISCUSSION

This RIS reiterates the staff position concerning acceptable justification for extension requests of the performance-based Type A test interval beyond the currently approved 15 years. It also reminds licensees of the limited built-in scheduling flexibility available regarding performance-based Type A test intervals. The RIS imposes no new regulatory requirements and requires no action or written response. The staff position precludes any unintended backfit because of the wording of the current TS of some licensees with regard to the approved one-time 15-year Type A test interval. Therefore, the RIS does not constitute a backfit under 10 CFR 50.109, "Backfitting." Consequently, the NRC staff did not perform a backfit analysis.

FEDERAL REGISTER NOTIFICATION

A notice of opportunity for public comment was not published in the *Federal Register* because this RIS is informational and pertains to a staff position that does not represent a departure from current regulatory requirements. However, a public meeting to discuss the RIS and receive comments from interested parties was held on September 3, 2008. The meeting summary and NRC staff responses to comments are available under ADAMS accession number ML082980531.

CONGRESSIONAL REVIEW ACT

The NRC has determined that this RIS is not a rule under the Congressional Review Act (5 U.S.C., Section 801-808 and therefore, is not subject to the Act. The NRC has verified this determination with the Office of Information and Regulatory Affairs of the Office of Management and Budget (OMB).

PAPERWORK REDUCTION ACT STATEMENT

This RIS does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing requirements were approved by the OMB, approval number 3150-0011.

CONTACT

Please direct any questions about this matter to the technical contacts listed below or to the appropriate project manager in the Office of Nuclear Reactor Regulation (NRR).

/RA/

Timothy J. McGinty, Director
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Technical Contacts: George Thomas, NRR
301-415-6181
email: gxt4@nrc.gov

Hansraj Ashar, NRR
301-415-2851
email: hga@nrc.gov

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