

July 11, 2005

MEMORANDUM TO: Michael D. Tschiltz, Chief
Probabilistic Safety Assessment Branch
Division of Systems Safety and Analysis
Office of Nuclear Reactor Regulation

FROM: Lynn A. Mrowca, Reliability and Risk Analyst, Section B **/RA/**
Probabilistic Safety Assessment Branch
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SUBJECT: MEETING WITH THE NUCLEAR ENERGY INSTITUTE (NEI) TO
DISCUSS REQUESTS FOR ADDITIONAL INFORMATION (RAIs)
ASSOCIATED WITH REVIEW OF NEI 94-01, REVISION 1 (DRAFT)
AND EPRI REPORT, PRODUCT NO. 1009325 (TAC NO. MC4235)

On June 17, 2005, the U.S. Nuclear Regulatory Commission (NRC) staff met with the Nuclear Energy Institute (NEI), the Electric Power Research Institute (EPRI), and other stakeholders at NRC headquarters to discuss requests for additional information (RAIs) concerning the review of Draft Revision 1 to NEI 94-01, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J" and EPRI report, Product No. 1009325, "Risk Impact of Extended Integrated Leak Rate Testing (ILRT)." Attachment 1 lists the meeting attendees.

A public meeting notice was issued on May 19, 2005, and was posted on the NRC's external (public) web page (ADAMS Accession No. ML051430336). The notice included the meeting agenda. Copies of the RAIs (ADAMS Accession No. ML051150046) and NEI/EPRI reports (ADAMS Accession No. ML041240409) were available at the meeting. The meeting included a presentation by NEI/EPRI and a discussion of future actions.

During the introductions, the primary NRC staff reviewers of the reports were introduced: Hans Ashar, Art Buslik, Bob Palla, and Jim Pulsipher. In opening remarks, Biff Bradley from NEI provided a brief history of the document review and noted that industry is looking forward to finding the best path forward on the issue. Mike Tschiltz from the NRC stated that the staff is interested in the most efficient process for reviewing and approving ILRT extensions. The discussions began with a presentation by NEI/EPRI, before discussing future actions and general public comments.

NEI/EPRI Presentation

Ken Canavan from EPRI presented "Risk Impact Assessment of Extended ILRT Intervals" (Attachment 2). The presentation included the regulatory history of ILRT intervals, a historical

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timeline of the meetings and considerations that provided the basis for the EPRI report (Product No. 1009325) and the subsequent NEI 94-01 report revision, details associated with the expert elicitation process and results used in the EPRI report, ILRT extension analysis and risk assessment results, RAI observations, and conclusions. During the presentation, discussions with NRC staff included the following:

- Definition of ILRT failures
- ILRT database (Note: John Gisclon from EPRI was also prepared to present “ILRT Database Summary” (Attachment 3), but detailed discussion on the database was deferred.)
- Definition of upper bound estimate
- Use of statistical mean values (i.e., expert elicitation panel members were given failure data in mean values and therefore were requested to provide their input in mean values)
- Expert elicitation panel members background, training provided to them, and discussions during the elicitation process concerning containment degradation/failure
- Documentation of individual expert panel member elicited information
- Documentation of training materials on failure modes/mechanisms (EPRI noted that more information could have been included in the report, but not all information requested in the RAIs may be available)
- Data from two panel members that was specifically eliminated
- Expert elicitation process discussions with NRC staff during development
- Containment leak size versus probability of occurrence
- “Typical” plants used for the 20-year ILRT interval risk analysis results: Calvert Cliffs (pressurized water reactor) and Peach Bottom (boiling water reactor) (may need to expand review to include other containment types)

In general, NRC staff noted that the information discussed during the presentation was helpful in understanding how the results and conclusions of the report were determined. However, the report must still contain sufficient information for the NRC to review and provide a credible basis for approval in a safety evaluation report. In terms of the expert elicitation process, NEI/EPRI and NRC staff may differ in defining the level of detail necessary for the specific application of the process. Mike Tschiltz noted that additional guidance is needed for the future use of an expert elicitation process and level of documentation required considering the complexity and safety importance of the application.

Based on the information provided during the presentation, NRC staff reviewers were polled and felt that they would still need a complete response to the RAIs provided to NEI in April 2005 before they could proceed with their review. In addition, once the documentation was provided, there could be more RAIs based on the new information submitted.

Future Actions

Biff Bradley from NEI said that they could provide more documentation on expert opinions and look at best estimates, but that a more prudent way to proceed might be to explore a permanent 15-year ILRT interval extension in lieu of the 20-year interval. NRC staff reviewers were asked to comment on a permanent 15-year interval and provided the following

observations related to the most current individual plant one-time 15-year ILRT interval extensions:

- NRC staff is more comfortable with use of the Jeffreys noninformative prior distribution as the basis for 15-year extensions
- Current licensee submittals have been more hardware-oriented by considering containment degradation and testing (e.g., address repair/replacement issues, leak/failure rate criteria, corrosion in hidden/inaccessible areas)
- The technical basis document would need to address external events
- Reconsider the length of add-on extensions for a nominal 15-year interval (Reference: NEI 94-01, Revision 1 (Draft), Section 9.1)
- The technical document would need to consider the range of potential conditional containment failure probabilities (CCFPs) for different containments, since the CCFP can impact the estimated risk assessment of the interval extension

If the industry would like to pursue a permanent 15-year ILRT interval extension, NRC staff recommended that NEI withdraw the current version of NEI 94-01, Revision 1 (Draft) (and EPRI report, Product No. 1009325) from NRC review and resubmit a report that provides the technical justification for 15-year ILRT intervals.

NEI decided to caucus with the industry and will contact NRC staff later with their decision about whether to pursue a permanent 15-year ILRT interval extension.

Public Participation

Mr. J. Glover of Graftel, Inc., commented that references to the applicability of the 1994 and 2002 versions of standard ANSI/ANS 56.8 are confusing (e.g., from report NEI 94-01, Revision 1 (Draft), Section 2.0: “[This guideline] does not address how to perform the tests because these details can be found in existing documents (e.g., ANSI/ANS 56.8-[1994 or 2002]). Both provide consistent information on how to perform tests, however, the 1994 revision conflicts in some cases with the performance-based aspects of this guideline. While the 2002 revision of ANSI/ANS 56.8 is performance-based, it conflicts in some cases with this document.”) He requested that this ambiguity be resolved if NEI 94-01 is revised (i.e., reference ANSI/ANS 56.8-2002 and provide a list of specific exceptions).

Attachments: 1. Meeting Attendees
2. “Risk Impact Assessment of Extended ILRT Intervals”
3. “ILRT Database Summary”

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