



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 7, 2016

MEMORANDUM TO: Kevin Hsueh, Chief
Licensing Processes Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

FROM: Joseph J. Holonich, Senior Project Manager /RA/
Licensing Processes Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF SEPTEMBER 7, 2016, MEETING TO DISCUSS
DRAFT APPENDIX D OF NEI 96-07, "SUPPLEMENTAL GUIDANCE
FOR APPLICATION OF 10 CFR 50.59 TO DIGITAL MODIFICATIONS"

On September 7, 2016, U.S. Nuclear Regulatory Commission (NRC) staff met with representatives from the Nuclear Energy Institute (NEI). The purpose of the meeting was to continue discussions of topics and issues related to Draft Appendix D of NEI 96-07, "Supplemental Guidance for Application of 10 CFR [Title 10 of the *Code of Federal Regulations*] 50.59 to Digital Modifications." Information related to the meeting, including presentations, NEI 96-07, Appendix D, and the attendees list can be found in the Agencywide Documents Access and Management System (ADAMS) Package Accession No. ML16238A330.

During the NRC staff opening remarks, it was reported that the revised NUREG-0800, "Standard Review Plan," Section 7.0, "Instrumentation and Controls" (ADAMS Package Accession No. ML16008B013) was issued.

The NRC staff also stated that the discussions being had on NEI 96-07, Appendix D, have been general in nature and were mixing implementation issues related to 10 CFR 50.59, "Changes, tests, and experiments" and technical topics related to engineering analysis. The NRC staff further stated that it believed this was a pattern NEI also recognized.

The NEI representatives stated in their opening remarks that detailed issues related to other sections of Appendix D or tangentially related to Appendix D should be placed in the parking lot. NEI's goal was to keep these meetings focused on licensing aspects of 50.59 not technical aspects or CCF. The NRC expressed its desire to also talk about the technical basis for the proposed licensing guidance.

A presentation was made by the NEI representative discussed responses to the NRC staff observations. For the responses to draft NRC Comments Nos. 13 and 20, Slides Nos. 3 and 4, the NRC staff agreed with the responses.

CONTACT: Joseph J. Holonich, NRR/DPR
301-415-7297

One topic raised during the meeting was the inclusions of new definitions in Appendix D. The NRC staff identified coping analysis as a term where the NRC staff questioned why it was included and what the basis was for it. The NEI representatives responded that the term coping analysis is used in a number of NRC documents, in particular, as it applies to instrumentation and control (I&C) common cause failure (CCF), it is in the acceptance criteria section (and other sections) of BTP 7-19, Rev. 7, "Guidance for Evaluation of Diversity and Defense-In-Depth in Digital Computer-Based Instrumentation and Control Systems Review Responsibilities." A copy of BTP 7-19 can be found in the Section 7.0 ADAMS package referenced earlier.

A second discussion on the topic of definitions related to the development of a cross-reference table between the main body of NEI 96-07 and Appendix D. NEI reported that a cross-reference table should be avoided because the definitions in Appendix D were unique definitions that were needed for Appendix D.

It was recommended by NEI that "unlikely" be replaced with "sufficiently low." The basis for this proposal was an appropriate interpretation and definition of what is sufficiently low already exists (and has been endorsed) in NEI 01-01, "Guideline on Licensing Digital Upgrades: EPRI TR [Technical Report]-102348, Revision 1, NEI 01-01: A Revision of EPRI TR-102348 to Reflect Changes to the 10 CFR 50.59 Rule" (ADAMS Accession No. ML020860169). The NRC staff stated that the concept of "unlikely" was a concern and the same concern remains in changing to "sufficiently low." The NRC staff has not been shown an objective methodology for characterizing the probability of CCF based on the quality of a developmental methodology.

Related also, NEI has proposed removing the definitions CCF (Definition 2.1) and CCF Susceptibility Analysis (Definition 2.3) stating "the technical intent, process and guidance associated with these definitions are subject to change." The NRC staff stated it can see how the CCF working group results may effect these definitions. However, these definitions will solidify once CCF work is complete and these terms will be as static as any other and should be included.

The final definition discussed was the term "malfunction." The NRC staff stated its view that additional guidance is required for digital equipment. NEI stated it did not agree with the NRC staff. Further, the NEI representatives noted that NEI 96-07 had a definition of malfunction in it that was endorsed by the NRC staff. The NRC staff is aware of the definitions for both accident and malfunction, but these definitions are ambiguous with respect to digital system misbehaviors. Since all new types of accidents require a LAR, but only malfunctions with a different result require a LAR, this distinction is very important.

Parking lot/action items and questions from the September 7, 2016, meeting are:

- 1) In a future meeting, identify where parking lot items will be discussed. – NRC/NEI
- 2) Change the format to be a meeting instead of a conference call. NEI will limit the number of in-person attendees. - NRC
- 3) Identify tools on how to manage the issues and achieve better alignment.
– NRC/NEI

- 4) Extract Section 3 of Appendix D and edit using redline/strikeout to provide to the NRC staff to review them and see if they agree with the changes. – NEI
- 5) Discussion aspects of Section 3. – NRC/NEI
- 6) Provide the following information by September 14, 2016:
 - a. Draft NRC comments on the screening of Appendix D. – NRC
 - b. Proposed redline/strikeout text for discussion – NEI
 - c. Prepare outline with revisions (i.e., redline/strikeout) to Appendix D for definition changes. - NEI
- 7) Work with the NRC staff to identify how NEI will bin the NRC staff comments and address or not address. – NEI
- 8) Are technical references being removed from Appendix D across-the-board (not just definitions)? - NEI
- 9) Why is “coping” terminology introduced into the screening process of Appendix D? What is the technical basis? - NEI
- 10) Discuss hazard analysis as a type of analysis vs. broad range of analyses. - NEI
- 11) Discuss “Variety and Layers of Design” vs. “Diversity & Defense in Depth.” If these terms are to be removed from Appendix D, what will be used in place of these terms? - NEI
- 12) How are “Malfunctions” in the digital age not the same as “Failures” as understood in NEI 96-07, Rev. 1? – NRC/NEI

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ADAMS Accession Nos.: Package (ML16238A330); Summary (ML16256A019) *Via email

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NAME	JHolonich	DHarrison	MWaters	KHsueh	JHolonich
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