



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

March 1, 2021

Mr. Marcus R. Nichol
Senior Director, New Reactors
Nuclear Energy Institute
1201 F Street, NW, Suite 1100
Washington, DC 20004

SUBJECT: RESPONSE TO NUCLEAR ENERGY INSTITUTE LETTER REGARDING
SUPPLEMENTAL NEI COMMENTS ON DRAFT DESIGN REVIEW GUIDE:
INSTRUMENTATION AND CONTROLS FOR NON-LIGHT-WATER REACTOR
REVIEWS [DOCKET ID NRC-2020-0072]

Dear Mr. Nichol:

By letter dated February 11, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21057A261), you provided the Nuclear Energy Institute's (NEI's) supplemental comments related to the U.S. Nuclear Regulatory Commission (NRC) staff's draft Design Review Guide (DRG): Instrumentation and Controls for Non-Light-Water Reactor (non-LWR) Reviews (ADAMS Accession No. ML20238B943). Specifically, NEI's supplemental comments focused solely on section X.2.2.1.3, "Diversity in Support of Defense-in-Depth to Address Common Cause Failures (CCFs)," and Appendix B, "Cross-Cutting Issues and Interfaces," and intended to further clarify the guidance related to CCFs. We appreciate the supplemental comments received from the NEI that are intended to clarify the option for a risk-informed and performance-based approach when considering diversity in support of defense-in-depth to address CCFs.

The staff has reviewed the detailed comments provided in the attachment to your February 11, 2021 letter and believes that at this time, it would be premature to revise the DRG to incorporate the proposed revisions for the following reasons.

1. The DRG, as currently written, provides the flexibility for the staff to review an approach such as the one discussed in the NEI letter. The DRG supports a risk-informed and performance-based regulatory framework and aligns with the NEI 18-04, Revision 1, "Risk-Informed Performance-Based Guidance for Non-Light Water Reactor Licensing Basis Development" (ADAMS Accession No. ML19241A472), methodology for selecting licensing basis events, classifying structures, systems, and components, and assessing the adequacy of a design in terms of providing layers of defense-in-depth. Therefore, the staff believes that addressing the proposed DRG revisions at a later time does not impact the staff's readiness to review the instrumentation and controls portions of non-LWR designs, including the use of risk-informed, performance-based approaches.
2. The staff determined that some of the concepts discussed in NEI's supplemental comments (e.g., consideration of likelihood as part of the CCF assessment) are currently

being reviewed by the staff as part of pre-submittal activities related to NEI's Technical Report, NEI 20-07 Draft B, "Guidance for Addressing Software Common Cause Failure in High Safety-Significant Safety-Related Digital I&C Systems" (ADAMS Accession No. [ML20245E561](#)). Similar to NEI 20-07 Draft B, the staff believes that the proposed DRG revisions would require a fulsome technical and policy review. Therefore, the staff's pre-submittal review of NEI 20-07 Draft B provides an opportunity to evaluate these technical and policy considerations. There may be additional lessons learned from the pre-submittal review of NEI 20-07 Draft B that could eventually be incorporated into the DRG.

The staff intends to issue the DRG as currently written and will capture any lessons learned resulting from its use in support of the timely staff review of potential near-term, non-LWR applications. In addition, the staff continues to work on the industry-led Technology-Inclusive Content of Application Project (TICAP), the NRC-led Advanced Reactor Content of Application Project (ARCAP), and other advanced reactor initiatives such as the guidance development on construction permit applications. As these efforts progress, there may be opportunities to further augment the DRG for instrumentation and controls reviews.

If you have any questions regarding the status of the DRG, please contact Jordan Hoellman by telephone at 301-415-5481 or by e-mail to Jordan.Hoellman2@nrc.gov.

Sincerely,



Signed by Shams, Mohamed
on 03/01/21

Mohamed Shams, Director
Division of Advanced Reactors and Non-Power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

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