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January 29, 2019

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Ms. Aida Rivera-Varona  
Chief, Operator Licensing and Training Branch  
Division of Inspection and Regional Support  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**Subject:** PWR & BWR Knowledge and Abilities Master Catalogs

**Project Number: 689**

Dear Ms. Rivera-Varona:

The Nuclear Energy Institute (NEI),<sup>1</sup> on behalf of its industry members, appreciates the opportunity to resubmit for your consideration and use, the revised NEI Knowledge and Abilities (K/A) Master Catalogs for Pressurized Water Reactors (PWRs) (Attachment 1) and Boiling Water Reactors (BWRs) (Attachment 2), and associated PWR Knowledge and Abilities Catalog Basis Document (Attachment 3) and associated BWR Knowledge and Abilities Catalog Basis Document (Attachment 4).

These catalogs provide the basis for the development of content-valid licensing examinations for reactor operators and senior reactor operators and is the industry's input for inclusion in the next revision to NUREG-1122, "The Knowledge and Abilities Catalog for Nuclear Power Plant Operators: Pressurized Water Reactors (PWRs)" and NUREG-1123, "The Knowledge and Abilities Catalog for Nuclear Power Plant Operators: Boiling Water Reactors (BWRs)."

These revised catalogs and associated basis documents were originally submitted on November 2, 2015 for BWRs<sup>2</sup> and on January 27, 2016 for PWRs.<sup>3</sup> These documents were included in NUREG-1122, Revision 3, "Knowledge and Abilities Catalog for Nuclear Power Plant Operators: Pressurized Water Reactors" and

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<sup>1</sup> The Nuclear Energy Institute (NEI) is responsible for establishing unified policy on behalf of its members relating to matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include entities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect and engineering firms, fuel cycle facilities, nuclear materials licensees, and other organizations involved in the nuclear energy industry.

<sup>2</sup> See "BWR Knowledge and Abilities Master Catalog," dated November 2, 2015; Letter from B. Montgomery (NEI) to S. Sloan (NRC)

<sup>3</sup> See "PWR Knowledge and Abilities Master Catalog," dated January 27, 2016; Letter from B. Montgomery (NEI) to S. Sloan (NRC)

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NUREG-1123, Revision 3, "Knowledge and Abilities Catalog for Nuclear Power Plant Operators: Boiling Water Reactors" for endorsement by the U.S. Nuclear Regulatory Commission (NRC). Following additional discussions with NRC staff and the publication of the draft NUREGs for public comment, NEI provided additional comments via letter on May 15, 2017.<sup>4</sup>

As the industry prepared to implement the revised K/As contained in NUREG-1122 and NUREG-1123, Revision 3 for upcoming examinations, licensees identified that the revisions contained changes to K/As related to the generic fundamentals examination which were unintended. Specifically, Section 5, "Components" and Section 6, "Theory" of both NUREG-1122 and NUREG-1123 contain a number of changes to K/A numbering, description and importance.

Following a series of document reviews and interviews, the industry panel that developed the revised K/A catalogs could not identify a technical justification for the generic fundamental K/A changes. Therefore, in a letter dated October 30, 2017, NEI recommended removal of any changes made to section 5 and 6 of the K/A catalogs prior to the final publishing of NUREG-1122 and NUREG-1123, Revision 3.<sup>5</sup>

In a letter dated July 11, 2018, the NRC requested that NEI provide the K/A importance rating survey inputs which were used to determine the listed importance ratings for all of the K/A statements contained in sections 3 and 4 (i.e., plant systems and emergency/abnormal plant evolutions) of draft Revision 3 of NUREG-1122 and draft revision 3 of NUREG-1123 to ensure additional errors or were not introduced into those sections.<sup>6</sup>

In response to the NRC's request, and to validate there were no additional unintended changes in the draft catalogs, the NEI Licensed Operator Focus Group (LOFG) formed a team to conduct a line by line review of the K/A catalog changes against the industry survey data used for catalog development. The results of this review are documented in Attachment 5, "Draft K/A Catalog Corrections" for your review.

The team successfully identified the cause of the inadvertent changes made to sections 5 and 6 of the catalogs and validated that the errors were limited to the generic fundamentals sections. Specifically, the BWR K/A's were unintentionally included in industry surveys by project support personnel and incorporated in BWR sections 5 and 6. These changes were then copied over to PWR sections 5 and 6. Since these changes were not within the scope of the project and were not intended by the industry, the associated sections were restored to the original K/A values. Additionally, the team corrected some minor typographical

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<sup>4</sup> See "NEI Comments on NUREG-1122, Revision 3, 'Knowledge and Abilities Catalog for Nuclear Power Plant Operators: Pressurized Water Reactors' and NUREG-1123, Revision 3, 'Knowledge and Abilities Catalog for Nuclear Power Plant Operators: Boiling Water Reactors,' 82 FR 18018; Docket ID NRC-2017-0068," dated May 15, 2017; Letter from G. Cameron (NEI) to C. Bladey (NRC)

<sup>5</sup> See "Request for Removal of Unintended Changes Contained in NUREG-1122, Revision 3, 'Knowledge and Abilities Catalog for Nuclear Power Plant Operators: Pressurized Water Reactors' and NUREG-1123, Revision 3, 'Knowledge and Abilities Catalog for Nuclear Power Plant Operators: Boiling Water Reactors,'" dated October 30, 2017; Letter from G. Cameron (NEI) to N. Salgado (NRC)

<sup>6</sup> See "Information Requests Regarding Draft Revision 3 of the Knowledge and Abilities Catalogues for Nuclear Power Plant Operators (NUREG-1122 and NUREG-1123)," dated July 11, 2018; Letter from N. Salgado (NRC) to T. Riti (NEI)

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errors and importance rating rounding errors. None of these corrections resulted in any changes to the testability of any K/As.

The attachments referenced in this letter and the survey data used to revise the catalogs are provided on the enclosed CD.

If there are any questions on this matter, please contact me at (202) 739-8137 or [txr@nei.org](mailto:txr@nei.org). I look forward to further dialog at the upcoming LOFG public meeting on February 13, 2019.

Sincerely,

A handwritten signature in black ink, appearing to read 'Timothy Riti', with a stylized flourish at the end.

Timothy Riti

Enclosure

c: Mr. Brian Tindell, NRR/DIRS/IOLB, NRC  
Mr. Kostas Dovas, LOFG Co-Chair  
NRC Document Control Desk