May 16, 2016

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

FROM: Joseph J. Holonich, Sr. Project Manager ***/RA/***
Licensing Processes Branch
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Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF APRIL 5, 2016, PUBLIC TELECONFERENCE WITH NUCLEAR ENERGY INSTITUTE ON NEI 12-16, REVISION 1, "GUIDANCE FOR PERFORMING CRITICALITY ANALYSES OF FUEL STORAGE AT LIGHT-WATER REACTOR POWER PLANTS"

On April 5, 2016, U.S. Nuclear Regulatory Commission (NRC) staff met with representatives of the Nuclear Energy Institute (NEI) and industry. The enclosure provides a list of those who were in attendance.

The purpose of the public meeting was to discuss the NRC staff review of the request for additional information (RAI) responses on NEI 12-16, Revision 1, "Guidance for Performing Criticality Analyses of Fuel Storage at Light-Water Reactor Power Plants" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14112A517), and to discuss the path forward for finalizing the development of this guidance. The NRC staff began by reiterating the agreement reached at the public meeting on February 19, 2016 (ADAMS Accession No. ML16062A074), that NEI 12-16 will be endorsed through a regulatory guide. The NRC staff also communicated that Electric Power Research Institute (EPRI) Report 1025203, "Utilization of the EPRI Depletion Benchmarks for Burnup Credit Validation," and EPRI Report 1022909, "Benchmarks for Quantifying Fuel Reactivity Depletion Uncertainty," will still be treated as topical reports.

The discussion then centered on the request for additional information (RAI) responses not captured at the February 19, 2016, public meeting. The information in RAI 34 was the first discussion topic where the NRC staff wanted to understand how the treatment of manufacturing tolerances will be addressed to ensure clarity of the guidance in the new revision of NEI 12-16. The NRC staff also wanted to know how NEI will use the studies performed in the EPRI sensitivity study report to develop guidance. The NEI staff responded that manufacturing tolerances from the fuel fabricators, as well as the uncertainties in the design of the fuel rack, would be incorporated into the guidance. The use of the EPRI sensitivity studies on manufacturing tolerances will also be included in Revision 2 of NEI 12-16.

For RAI 37, NRC staff asked if the proposed checklist will help satisfy the need for data to perform confirmatory calculations, and if the NEI 12-16, Revision 2 wording regarding the checklist will address inclusion of data for confirmatory calculations. The NEI staff responded that the checklist would include wording that the applicant should provide fuel design and rack design data for confirmatory calculations.

For RAI 49, NRC staff wanted to ensure that there is clear direction on use of Mixed Oxide (MOX) or Haut Taux de Combustion (HTC) critical experiments for validating criticality codes for fresh uranium dioxide spell out [UO2] fuel. The NRC staff went on to say the NEI 12-16, Revision 2 text should be clear that criticality code validation for spent fuel calculations are to include appropriate HTC experiments, supplemented with additional MOX experiments. The NRC staff also pointed out that criticality code validation is not limited to just the library used but should include, among other things, any bias and uncertainty derived that is specific to the code system used, which includes the nuclear data libraries. The NEI staff agreed to include the MOX data.

The information in RAI 53 requested that guidance be added to NEI 12-16, Revision 2 to make it clear that analysts should ensure that only accurate critical experiment models are used in their validation studies, even if they come from a reputable source. The RAI 53 response states that such guidance is not needed because quality assurance programs will ensure that analysts will be responsible. Not including such guidance represents a missed opportunity to avoid issues in an area where NRC staff has previously noted problems. The NEI staff agreed to add language to provide a caution to prevent future human factors errors.

The meeting concluded with a focus on the next steps of the review, including when the final set of RAI responses and the draft of NEI 12-16, Revision 2 would be available.

The actions from the meeting are:

1. NEI will provide a draft checklist for the NRC staff's consideration, which will be incorporated into the NEI 12-16, Revision 2 guidance document, to assist licensees with preparing submittals and to assist in resolving remaining RAI responses.

2. NEI will provide draft Revision 2 of guidance document NEI 12-16 to the NRC by May 31, 2016.

Project No. 669

Enclosure:
List of Attendees

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DISTRIBUTION:

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RTaylor	KHuesh	WMacFee	MKing
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OFFICE	NRR/DSS/SRXB	NRR/DPR/PLPB	NRR/DPR/PLPB
NAME	EOesterle	KHsueh	JHolonich
DATE	5/6/16	5/11/16	5/16/16

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List of Attendees

U.S. NUCLEAR REGULATORY COMMISSION (NRC) STAFF MEETING WITH NUCLEAR ENERGY INSTITUTE ON NEI 12-16, REVISION 1 "GUIDANCE FOR PERFORMING SPENT FUEL POOL CRITICALITY ANALYSES OF FUEL STORAGE AT LIGHT-WATER REACTOR POWER PLANTS" REQUEST FOR ADDITIONAL INFORMATION RESPONSES APRIL 6, 2016	
Name	**Organization**
William MacFee	NRC
Kent Wood	NRC
Amrit Patel	NRC
Michael King	NRC
Don Mueller	ORNL
Kris Cummings	NEI
Hatice Akkurt	EPRI
Dave Phegley	Exelon
John McCulloch	APS
Robin Jones	Southern
Bob Hall	Dominion
Kristin Bennett	GEH
John Conly	Certrec
Cristina Edens	Curtiss-Wright
Zita Martin	TVA
Marvin Lewis	Member of the Public

Enclosure