



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

April 15, 2021

MEMORANDUM TO: Michelle Hayes, Chief
Advanced Reactor Technical Branch
Division of Advanced Reactors and
Non-Power Production and Utilization Facilities
Office of Nuclear Reactor Regulation

FROM: Donna Williams, Project Manager *Donna Williams*
Advanced Reactor Licensing Branch
Division of Advanced Reactors and
Non-Power Production and Utilization Facilities
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF MARCH 30, 2021, PUBLIC MEETING TO
DISCUSS THE ADVANCED NON-LIGHT-WATER REACTOR
PROBABILISTIC RISK ASSESSMENT STANDARD

On March 30, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21075A033), the U.S. Nuclear Regulatory Commission (NRC) held an Information Public Meeting with stakeholders, including the Nuclear Energy Institute (NEI), to discuss the staff's review and endorsement of the American Society of Mechanical Engineers/American Nuclear Society Advanced Non-light-water reactor (LWR) probabilistic risk assessment (PRA) Standard, ASME/ANS RA-S-1.4-2020, and the NEI Performance of PRA Peer Reviews, NEI 20-09, Rev. 0. The staff's presentation slides are available at ADAMS Accession No. ML21085A594. The enclosure to this document lists the meeting attendees.

The purpose of the meeting was to discuss the NRC Staff Draft White Paper "Demonstrating the Acceptability of Probabilistic Risk Assessment Results Used to Support Advanced Non-Light Water Reactor Plant Licensing" (ADAMS Accession No. ML21015A434) and staff feedback on the most recent revision of NEI 20-09, Performance of PRA Peer Reviews Using the ASME/ANS Advanced Non-LWR PRA Standard, dated March 2021.

The staff issued the draft white paper on January 19, 2021, to support ongoing discussions with external stakeholders. The paper provides staff views and perspectives on demonstrating the acceptability of PRA results used to support NLWR licensing. The content of the white paper should not be interpreted as official agency positions but will help inform the staff's development of regulatory guidance.

At the previous public meeting held on February 23, 2021 (ADAMS Accession No. ML21055A732), NEI provided industry feedback on the draft white paper. The purpose of the March 30, 2021, meeting was for the staff to address the industry feedback. In its presentation, the staff addressed each of the comments provided by NEI on February 23, 2021.

CONTACT: Donna Williams, NRR/DANU

Discussion at the meeting focused on the following topics in the staff draft white paper:

- **Peer reviews** – Industry noted that they need to perform several PRA peer reviews for each application and would like a way to streamline these reviews, especially at the construction permit stage.
- **Timing of submitting the operating license PRA** – Industry representatives requested that the staff provide clarity on the expectations for the timing of operating license PRAs. They noted that submitting a PRA at the time an operating license application is submitted will not reflect the as-built plant.
- **SAMDAs** – Industry expressed its position that a nuclear power plant, which is designed and to be built using the Licensing Modernization Project (LMP) guidance, should not have to perform a severe accident mitigation design alternative (SAMDA) analysis because the LMP process essentially achieves the same purpose as a SAMDA analysis.
- **Bounding site for external hazards** – Industry stated that an application should only need to provide enough siting information to demonstrate that the site is bounded by the bounding site analyses performed. The staff interprets the NLWR PRA standard as requiring the use of site-specific information once the site has been selected. Additional guidance is needed on identifying a bounding site and updating the PRA when a site is chosen.
- **Absolute vs. relative risk significance** – Industry suggested that the expectations for relative risk significance criteria should be removed. The staff is concerned that only a few PRA structures, systems, components, and human events will be reported using the absolute risk significance criteria, particularly for applicants that are not using the LMP methodology.

The staff will assess the feedback received and plans to revise the draft white paper in the next few months.

The staff stated its appreciation to NEI for providing the latest version of NEI 20-09 that was received on March 25 (ML2108A555) and its responses to NRC's latest feedback but had not had an opportunity to perform a detailed review of this document in advance of this meeting. The staff noted that it had not identified any challenges to the main elements of the guidance in NEI 20-09 and the white paper reflects this status. The staff will review the March 2021 version of NEI 20-09 and the responses to the latest feedback and, if necessary, will schedule a public meeting to provide additional feedback.

Enclosure:
List of attendees

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ADVANCED NON-LIGHT-WATER REACTOR PROBABILISTIC RISK
ASSESSMENT STANDARD DATED: April 15, 2021

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NRR-106

OFFICE	NRR/DANU/UARL/PM	NRR/DANU/UAR/LA	NRR/DANU/UARL/LA	NRR/DANU/UARL/PM
NAME	DWilliams	SLent	MHayes	DWilliams
DATE	4/13/2021	4/13/2021	4/15/2021	4/15/2021

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List of Attendees (via Teams or conference call)	
Name	Organization
Michelle Gonzales	U.S. Nuclear Regulatory Commission (NRC)
Marty Stutzke	NRC
Hanh Phan	NRC
Anders Gilbertson	NRC
Matthew Humberstone	NRC
Donna Williams	NRC
Shilp Vasavada	NRC
Mike Franovich	NRC
Christian Araguas	NRC
Nathan Sanfilippo	NRC
JS Hyslop	NRC
Keith Compton	NRC
Susan Cooper	NRC
John Nakoski	NRC
Marie Pohida	NRC
Amy Cabbage	NRC
Jung, Ian	NRC
John Lane	NRC
Farshid Shahrokhi	Framatome
Andrea Maioli	Nuclear Energy Institute (NEI)
Dennis Henneke	General Electric Power Portfolio
Emma Redfoot	Oklo, Inc.
Victoria Andersen	NEI
Jordan Hagaman	Kairos Power
Matt Denman	Kairos Power
Steve Vaughn	X-Energy
Scott Nelson	
Glen Lawson	
Jan Grobbelaar	
Michael Mayfield	
Nicole Lahaye	
David Brown	
Drew Peebles	
Derek Brice	
Dave Grabaskas	
Steve Short	
Karl Fleming	
Cindy Williams	
Amir Afzali	
Rob Burg	
George Flanagan	

Enclosure