




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

March 11, 2021

MEMORANDUM TO: John P. Segala, Chief
Advanced Reactor Policy Branch
Division of Advanced Reactors and Non-Power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

FROM: Joseph M. Sebrosky, Senior Project Manager  Signed by Sebrosky, Jo
Advanced Reactor Policy Branch on 03/12/21
Division of Advanced Reactors and Non-Power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF FEBRUARY 25, 2021, PUBLIC MEETING TO
DISCUSS POWER REACTOR CONSTRUCTION PERMIT
GUIDANCE, AND ADVANCED REACTOR TOPICS INCLUDING:
APPLICABILITY OF REGULATIONS, TECHNOLOGY
INCLUSIVE CONTENT OF APPLICATION PROJECT, AND
ADVANCED REACTOR CONTENT OF APPLICATION PROJECT

On February 25, 2021, the U.S. Nuclear Regulatory Commission (NRC) staff held a Category 2 public meeting with stakeholders, to discuss power reactor construction permit guidance, and advanced reactor topics including: applicability of regulations, technology inclusive content of application project (TICAP), and advanced reactor content of application project (ARCAP). The meeting notice is available in the NRC's Agencywide Documents Access and Management System (ADAMS) at Accession No. ML21055A871, and the presentation slides are available at ADAMS Accession No. ML21055A541. The Enclosure to this summary provides the attendees for the meeting as captured by Microsoft Teams.

Meeting Highlights

Power Reactor Construction Permit Guidance

Prior to the meeting, the staff issued a draft white paper titled, "Safety Review of Power Reactor Construction Permit Applications," dated February 12, 2021 (ADAMS Accession No. ML21043A339). The staff described the following three parts of the guidance: 1) guidance applicable to both light water reactors and advanced reactors, 2) supplemental considerations for light water reactors following NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," (available at: <https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0800/index.html>), and 3) supplemental information found in Appendix C of the document for advanced reactors following the licensing modernization project (LMP) process.

Some of the major comments from stakeholders included: apparent inconsistencies concerning the completeness of design information and analyses necessary at the construction permit stage, the level of completeness of the probabilistic risk assessment (PRA) needed for applicants following the LMP process, and minimal guidance for advanced reactors not following the LMP process.

The actions from this portion of the meeting included:

- The staff stated that it plans to issue the light water reactor guidance separately from the advanced reactor guidance. The advanced reactor guidance is dependent on the status of TICAP and ARCAP guidance currently under development which is on a different timeline than the light water reactor guidance. The staff is targeting Summer 2021 to issue draft interim staff guidance (ISG) for the safety review of light water reactor construction permit applications. The staff has not yet established a schedule for advanced reactor construction permit guidance. As described below the NRC staff expects to consider the construction permit guidance that will be provided in the TICAP guidance document before developing a schedule for advanced reactor construction permit guidance.
- The Nuclear Energy Institute (NEI) indicated that it would provide its comments on the staff's draft white paper in the near term and would include the feedback that it provided to the staff during the meeting.

Applicability of Regulations to Non-Light Water Reactors

The purpose of this portion of the meeting was to discuss a document titled, "Appendix to NRC Staff Draft White Paper: Analysis of Applicability of NRC Regulations for Non-Light Water Reactors," (ADAMS Accession No. ML21049A098). The appendix was developed to address feedback that the NRC staff received during a December 10, 2020, public meeting (see meeting summary found at ADAMS Accession No. ML21006A414). The NRC Staff Draft White Paper that was discussed during the December 10, 2020, meeting and that is referenced in the Appendix is dated September 2020 and is available at ADAMS Accession No. ML20241A017.

The staff provided highlights of the information in the appendix to the draft white paper that provides two examples of expected exemptions to 10 CFR Part 50 regulations for non-light water reactors. During the meeting NEI indicated that a flow chart showing how to use the draft white paper and the associated appendix would be helpful.

The actions from this portion of the meeting included:

- The staff indicated that it would consider the feedback provided during the meeting, including adding a flow chart to the document. The staff also took an action to determine how best to promulgate the revised guidance.

Technology Inclusive Content of Application Project and Advanced Reactor Content of Application Project

Industry and the NRC discussed the integrated schedule for the TICAP and ARCAP guidance. There was general alignment that the industry developed TICAP guidance would be provided in draft form to the NRC around mid-April 2021. The industry guidance will include the LMP-based portions of the first 8 chapters of the safety analysis report including construction permit

guidance for these chapters. Non-LMP based portions of the application content will be developed by the NRC staff and will be included in the NRC-developed TICAP and ARCAP guidance. A timeline was provided in the slides that shows the tentative plan including major milestones for developing the TICAP and ARCAP guidance documents. Major milestones include TICAP workshops to be held in the May 2021 time frame, NEI Revision 0 of the TICAP guidance document at the end of July 2021, and NRC draft TICAP and ARCAP guidance documents in early August 2021. The staff indicated that it would need to engage the Advisory Committee on Reactor Safeguards (ACRS) to identify interactions related to ACRS review of the guidance.

Industry provided an update on the status of the TICAP tabletop exercises. The staff noted that it observed the X-energy tabletop exercise on February 3, 2021, and would be observing the versatile test reactor tabletop exercise on March 5, 2021. The Westinghouse eVinci microreactor tabletop exercise and the Terrapower molten chloride reactor experiment (MCRE) tabletop exercises are tentatively scheduled for later in March 2021. Like the LMP tabletop exercises, industry intends to provide publicly available documents summarizing the results of the TICAP tabletop exercises. The staff notes that the LMP tabletop exercise reports are available at: <https://www.nrc.gov/reactors/new-reactors/advanced/details.html#modern>.

The staff described its plans for ARCAP guidance. The plans include developing an ARCAP roadmap interim staff guidance document that would provide pointers to existing guidance and guidance that is under development or is planned to be developed. The staff noted that it had developed ARCAP guidance for the following areas: "Site Information," "Control of Routine Plant Radioactive Effluents, Plant Contamination, and Solid Waste," and "Control of Occupational Doses." These guidance documents were discussed in previous public meetings. During the meeting the staff described two additional ARCAP chapters, "Organization," (available at ADAMS Accession No. ML21049A277), and "Initial Startup Programs," (also available at ML21049A277).

The actions from this portion of the meeting included:

- Industry and the NRC staff have an action to finalize the plans for NRC observation of the Westinghouse eVinci, and Terrapower MCRE TICAP tabletop exercises.
- The NRC staff has an action to develop the ARCAP roadmap ISG.
- Industry and the staff have an action to finalize plans for the TICAP workshop tentatively scheduled for May of 2021. The schedule is dependent on industry providing a draft of the TICAP guidance document to the NRC in mid-April 2021.

Enclosure:

Attendance List

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OFFICE	NRR/DANU/UARP/PM	NRR/DNRL/NRLB/PM	NRR/DANU/UART	NRR/DANU/UARP/BC	NRR/DANU/UARP/PM
NAME	JSebrosky	CLauron	BTravis	JSegala	JSebrosky
DATE	3/7/2021	3/8/2021	3/9/2021	3/10/2021	3/11/2021

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February 25, 2021, Public Meeting to Discuss Power Reactor Construction
Permit Guidance, and Advanced Reactor Topics Including: Applicability of
Regulations, Technology Inclusive Content of Application Project, and
Advanced Reactor Content of Application Project
Attendance List*

NAME	AFFILIATION	NAME	AFFILIATION
Robert Taylor	NRC/NRR	Amir Afzali	Southern Company
Mohamed Shams	NRC/NRR/DANU	Jason Redd	Southern Nuclear
Brian Smith	NRC/NRR/DANU	Kati Austgen	Nuclear Energy Institute (NEI)
Nathan Sanfilippo	NRC/NRR/DANU	Steve Vaughn	NEI
Martin Stutzke	NRC/NRR/DANU	Mike Tschiltz	NEI
Dayna Dority	NRC/NRR/DANU	Marc Nichol	NEI
Bob Caldwell	NRC/NRR/DNRL	Cyril Draffin	US Nuclear Industry Council
Carolyn Lauron	NRC/NRR/DNRL/NRLB	Ed Wallace	GNBC Associates
Bruce Bavol	NRC/NRR/DNRL/NRLB	Steven Nesbit	LMNT Consulting
Greg Cranston	NRC/NRR/DNRL/NRLB	Frank Akstulewicz	A to Z Reactor Consulting Services
Sharon Green	NRC/NRR/DNRL/NRLB	Darrell Gardner	Kairos Power
Demetrius Murray	NRC/NRR/DNRL/NRLB	Nicole Schlichting	Kairos Power
James Shea	NRC/NRR/DNRL/NRLB	Drew Peebles	Kairos Power
Omid Tabatabai	NRC/NRR/DNRL/NRLB	Niko McMurray	Clear Path
Getachew Tesfaye	NRC/NRR/DNRL/NRLB	Ross Moore	Oklo
Prosanta Chowdhury	NRC/NRR/DNRL/NRLB	Caroline Cochran	Oklo
Steve Bloom	NRC/NRR/DNRL/NCSG	Steve Schilthelm	BWX Technologies Inc.
Gregory Makar	NRC/NRR/DNRL/NCSG	Tom Bergman	NuScale
Matthew Yoder	NRC/NRR/DNRL/NCSG	Deb Luchsinger	NuScale
John Segala	NRC/NRR/DANU/UARP	Travis Chapman	X-Energy
Maryam Khan	NRC/NRR/DANU/UARP	Pete Gaillard	TerraPower
Eric Oesterle	NRC/NRR/DANU/UARP	Junaid Razvi	Ultra Safe Nuclear Corporation
Arlon Costa	NRC/NRR/DANU/UARP	Kevin Casey	TVA
Juan Uribe	NRC/NRR/DANU/UARP	David Luxat	Sandia National Lab
Amy Cabbage	NRC/NRR/DANU/UARP	George Flanagan	Oak Ridge National Lab
Beth Reed	NRC/NRR/DANU/UARP	Lee Grzeck	Duke Energy
Joe Sebrosky	NRC/NRR/DANU/UARP	Jim Kinsey	Idaho National Laboratory (INL)
Nan Valliere	NRC/NRR/DANU/UARP	Tom King	INL
Jordan Hoellman	NRC/NRR/DANU/UARP	Christopher Chwasz	INL
Stephen Philpott	NRC/NRR/DANU/UARP	Tom Hicks	INL
Dawnmathews Kalathiveetil	NRC/NRR/DANU/UARP	Steven Pope	Information Systems Laboratories, Inc.
Benjamin Beasley	NRC/NRR/DANU/UARL	Andrew Kadak	Not Available (NA)
Stu Magruder	NRC/NRR/DANU/UARL	Andrew Sowder	NA
Richard Rivera	NRC/NRR/DANU/UARL	David Holcomb	NA

Donna Williams	NRC/NRR/DANU UARL	Don Williams	NA
Adrian Muniz	NRC/NRR/DANU/UARL	Scott Nelson	NA
Greg Oberson	NRC/NRR/DANU/UARL	Ryan Donald Henderson	NA
Lucieann Vechioli Feliciano	NRC/NRR/DANU/UARL	Mike Keller	NA
Katie Wagner	NRC/NRR/DANU/UARL	Jeff Perry	NA
Michelle Hayes	NRC/NRR/DANU/UART	Kai Jiang	NA
Michelle Hart	NRC/NRR/DANU/UART	Kevin Pigg	NA
Timothy Lupold	NRC/NRR/DANU/UART	Archana Manoharan	NA
Ian Jung	NRC/NRR/DANU/UART	Steve Kraft	NA
Chris Van Wert	NRC/NRR/DANU/UART	Srinivasan Makuteswara	NA
Boyce Travis	NRC/NRR/DANU/UART	Hussein Khalil	NA
Samuel Cuadrado de Jesus	NRC/NRR/DANU/UART	Lance Sterling	NA
Imtiaz Madni	NRC/NRR/DANU/UART	Lane Howard	NA
Tim Drzewiecki	NRC/NRR/DANU/UART	Ryan Lighty	NA
Hanh Phan	NRC/NRR/DANU/UART	Lindsay Robinson	NA
Jeffrey Schmidt	NRC/NRR/DANU/UART	Michael Mayfield	NA
Michael Balazik	NRC/NRR/DANU/UNPL	Mike Mazzola	NA
Cliff Munson	NRC/NRR/DEX	Stephen Burdick	NA
Kamal Manoly	NRC/NRR/DEX	Kelvin Jevon Motague	NA
Steven Arndt	NRC/NRR/DEX	Patrick White	NA
Barbara Hayes	NRC/NRR/DEX/EXHB	Paul Lozza	NA
Yuan Cheng	NRC/NRR/DEX/EXHB	Joseph Ashcraft	NRC/NRR/DEX/EICB
Norbert Carte	NRC/NRR/DEX/EICB	Robert Weisman	NRC/OGC
Sheila Ray	NRC/NRR/DEX/EEEE	Julie Ezell	NRC/OGC
Gurcharan Matharu	NRC/NRR/DEX/ELTB	Michael Spencer	NRC/OGC
Dinesh Taneja	NRC/NRR/DEX/ELTB	Susan Vrahoretis	NRC/OGC
Zachary Gran	NRC/NRR/DRA/ARCB	Marcia Carpentier	NRC/OGC
Edward Stutzcage	NRC/NRR/DRA/ARCB	Derek Widmayer	NRC/ACRS
Brian Wittick	NRC/NRR/DSS/SCPB	Tony Nakanishi	NRC/COMM/OCM
Raul Hernandez	NRC/NRR/DSS/SCPB	Shakur Walker	NRC/COMM/OCMDW
Rebecca Patton	NRC/NRR/DSS/SNRB	Alina Schiller	NRC/NRR/VPO/VPOB
Ryan Nolan	NRC/ NRR/DSS/SNRB	Scott Bussey	NRC/OCHCO/ADHRTD/RTTB
David Desaulniers	NRC/NRR/DRO	Kayleh Hartage	NRC/OCHCO/ADHRTD/NRANB
Greg Galletti	NRC/NRR/DRO/IQVB	Donald Palmrose	NRC/NMSS/REFS/ERNRB
Andrea Keim	NRC/NRR/DRO/IQVB	Casper Sun	NRC/RES/DSA/RPB
Nicholas Savwoir	NRC/NRR/DRO/IQVB	Weijun Wang	NRC/ RES/DE/SGSEB
Brian Green	NRC/NRR/DRO/IOLB/HFT	Thomas Braudt	NA

* Attendance list based on Microsoft Teams Participant list. List does not include 26 individuals that connected via phone.