



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
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August 21, 2020

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 /RA/  
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Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF JULY 31, 2020, PUBLIC MEETING TO DISCUSS  
ADVANCED REACTOR CONTENT OF APPLICATION PROJECT  
AND CONSTRUCTION PERMIT GUIDANCE

On July 31, 2020, the U.S. Nuclear Regulatory Commission (NRC) held a Category 2 public meeting with stakeholders, to discuss the advanced reactor content of application project (ARCAP) and construction permit (CP) guidance. The meeting notice is available in the NRC's Agencywide Documents Access and Management System (ADAMS) at Accession No. ML20212L518 and the presentation slides are available at ADAMS Accession No. ML20212L398. This was a teleconference meeting, and an attempt was made to capture a list of the attendees as they called into the meeting. Enclosure 1 provides the attendees for the meeting as captured by the operator that helped to facilitate the meeting.

Meeting Highlights

Construction Permit Guidance

During a June 12, 2020, public meeting (see meeting summary dated July 15, 2020, at ADAMS Accession No. ML20195B104) both the U.S. Nuclear Industry Council (USNIC) and the Nuclear Energy Institute (NEI) suggested that the NRC staff develop construction permit guidance for light water small modular reactors (SMRs). During the July 31, 2020, meeting the staff presented the options it considered for developing such guidance and noted the three options that it was actively considering (i.e., Interim Staff Guidance (ISG), Draft Strategy Paper for SMR CP reviews, or an Office Instruction).

USNIC provided a presentation on light water SMR CP guidance development and indicated that it generally believed that the ISG is the most efficient approach and will provide regulatory certainty. USNIC stated that it is in the process of gathering information from developers regarding their plans for CP submittals and noted that it may take six to nine months for the USNIC to provide feedback to the NRC staff.

NEI stated that it expects that a light water SMR CP application could be submitted to the NRC as early as the end of calendar year 2021. NEI stated that having draft guidance by the Spring

of 2021 would be helpful. As a result of the meeting NEI has the following action items:

- Provide feedback to the NRC staff on dual track approach for CP guidance that was presented by the NRC staff during the meeting. The dual track approach described by the staff during the meeting was to develop light water SMR CP guidance for applications not using the LMP approach and separate guidance for non-light water reactors (LWRs) using the licensing modernization project (LMP) process.
- Provide a list of topics to be considered in the light water SMR CP guidance.
- Provide NRC staff with target dates for issuance of draft light water SMR CP guidance.

The Tennessee Valley Authority (TVA) provided comments regarding the development of light water SMR CP guidance. The NRC staff requested that the TVA provide the comments via email so that the comments could be captured as part of the meeting summary. TVA's comments can be found in Enclosure 2 of this document.

The staff noted that if a non-LWR applicant does not intend to use the LMP approach, then the applicant needs to reach out to NRC as soon as possible so that the NRC staff understands how the applicant intends to identify licensing basis events, structures systems and component classification and ensure defense-in-depth. The NRC staff stressed the need for potential near-term applicants to inform the NRC staff of their plans. The NRC noted that it needs to ensure that it has adequate resources budgeted to perform the reviews and that appropriate guidance is in place or in development to perform the review. The NRC staff stated that it intends to issue a regulatory issue summary (RIS) in the near-term requesting information from industry on their intentions for submitting applications. The NRC staff noted that applicants can also provide their intentions in response to existing RIS 2017-08, "Process for Scheduling and Allocating Resources for Fiscal Years 2020 Through 2022 for the Review of New Licensing Applications for Light-Water Reactors and Non-Light-Water Reactors," (ADAMS Accession No. ML17262B022).

#### Advanced Reactor Content of Application Project

The NRC staff and its contractor Idaho National Laboratory (INL) stated that as a result of feedback from the June 12, 2020, ARCAP meeting it had further refined the performance-based approach described in that meeting. INL staff provided an overview of the updated Chapter 8, "Control of Routine Plant Radioactive Effluents, Plant Contamination and Solid Waste," that was referenced in the meeting notice (ADAMS Accession No. ML20197A234). INL described the changes to the updated Chapter 8 that included changes to address comments from the previous draft document. Changes to the updated Chapter 8 include: adding guidance such that it can be used for Part 50 applicants, making the guidance more technology inclusive, adding acceptance criteria, including guidance for microreactors, and providing more guidance related to the level of detail expected in an application.

#### Industry Feedback on ARCAP Annotated Outline

USNIC and NEI generally supported the development of the performance-based approach and noted that it should be applied to other areas of an application. NEI took an action to provide feedback on the updated Chapter 8 outline. Based on an NEI comment, the NRC took an action to determine how ARCAP guidance would include guidance such as the recently issued Design Review Guide (DRG), "Instrumentation and Controls for Non-Light-Water Reactor

Reviews," (ADAMS Accession No. ML20045D302). The staff noted that it was in the process of developing performance-based guidance for other portions of an application and that the INL developed annotated outline would have to be eventually updated to be consistent with the outline that is being developed by the industry-led technology inclusive content of application project.

Enclosures:

1. Attendance List
2. Tennessee Valley Authority Construction Permit Guidance Comments

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REACTOR CONTENT OF APPLICATION PROJECT AND CONSTRUCTION  
PERMIT GUIDANCE DATED: August 21, 2020

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DATE	8/21/20	8/21/20

**OFFICIAL RECORD COPY**

July 31, 2020, Public Meeting to Discuss Advanced Reactor Content of  
Application Project and Construction Permit Guidance Attendance List

NAME	AFFILIATION	NAME	AFFILIATION
Bob Caldwell	NRC/DNRL	Marc Nichol	Nuclear Energy Institute (NEI)
Mike Dudek	NRC/DNRL/NRLB	Kati Austgen	NEI
Carolyn Lauron	NRC/DNRL/NRLB	Mike Tschiltz	NEI
Demetrius Murray	NRC/DNRL/NRLB	Martin O'Neill	NEI
Mo Shams	NRC/DANU	Jeff Merrifield	Pillsbury Law Firm
Brian Smith	NRC/DANU	Cyril Draffin	US Nuclear Industry Council
Steve Lynch	NRC/DANU/UNPL	Martin Owens	GE Hitachi
Eric Oesterle	NRC/DANU/UARP	Denis Henneke	GE Hitachi
Bill Reckley	NRC/DANU/UARP	Michelle Catts	GE Hitachi
Amy Cabbage	NRC/DANU/UARP	Bernard Gilligan	Hitachi America
Joe Sebrosky	NRC/DANU/UARP	Frank Misehler	Hitachi America
Nan Valliere	NRC/DANU/UARP	Jun Matsumoto	Hitachi - GE
Jordan Hoellman	NRC/DANU/UARP	Farshid Shahrokhi	Framatome
Chris Van Wert	NRC/DANU/UART	Ben Tomkins	Kairos Power
Jim Kinsey	Idaho National Laboratory (INL)	Darrell Gardner	Kairos Power
Wayne Moe	INL	Margaret Ellanson	Kairos Power
Tom Hicks	INL	Matthew Denman	Kairos Power
Tom King	INL	Caroline Cochran	Oklo
Amir Afzali	Southern Company	Alex Winter	Oklo
Ben Carmichael	Southern Nuclear	Caroline Clarke	Westinghouse
Jason Redd	Southern Nuclear	Travis Chapman	X Energy
Ray Schiele	Tennessee Valley Authority (TVA)	Steven Nesbit	LMNT Consulting
Roger Scott	TVA	Bill Horak	Brookhaven National Laboratory
Daniel Stout	TVA	Joshua Hogancamp	INL
Kevin Casey	TVA	David Luxat	Sandia National Lab (SNL)
Stu Magruder	NRC/NRR/DANU/UARL	Jamal Mohmand	SNL
Arlon Costa	NRC/NRR/DANU/UARP	Ed Wallace	GNBC
Maryam Khan	NRC/NRR/DANU/UARP	Nicholas McMurray	Clear Path
Michelle Hart	NRC/NRR/DANU/UART	Prasad Kadambi	Consultant
Ian Jung	NRC/NRR/DANU/UART	Jenna Bergman	Curtiss-Wright
Alyssa Beasley	NRC/NRR/DANU/UART	Frank Akstulewicz	A to Z Reactor Consulting Services
Hanh Phan	NRC/NRR/DANU/UART	Donald Helton	NASA
Bob Fitzpatrick	NRC/NRR/DEX/EENB	Karen Conchran	Public
Dave Cullison	NRC/OCIO/GEMSD	Kelvin Montague	UVA

<b>NAME</b>	<b>AFFILIATION</b>	<b>NAME</b>	<b>AFFILIATION</b>
Eric Bowman	NRC/COMM/OCMKS	Mark Jaeger	Structural IA
Shakur Walker	NRC/COMM/OCMDW	Peter LeJeune	Balch
Charles Murray	NRC/NSIR/DPR/POB	Phil Sharpe	Studesvik Scand Power
Derek Widmayer	NRC/ACRS	Rick Wachowiak	Jensen Hughes
Michael Spencer	NRC/OGC	Robert Armsitaad	Public

## Tennessee Valley Authority Construction Permit Guidance Comments

Mr. Ray Schiele, the Licensing Manager for Nuclear Technology Innovation – Small Modular Reactors, for the Tennessee Valley Authority, provided the following comment during the meeting. The NRC staff requested that Mr. Shiele email the comments to the NRC so that his comments could be captured in this meeting summary. Mr. Scheile's comments provided during the meeting were the following:

TVA would like to thank the NRC for this very important meeting on Construction Permit Application guidance.

TVA, in planning for a potential 10 CFR 50 application supporting deployment of an advanced reactor at the Clinch river nuclear site, has evaluated the delta between guidance provided in RG 1.70 and that provided in the NUREG 0800 (SRP). Some identified deltas are:

- SRP and RG 1.70 do not always specify what is PSAR content vs. FSAR content
- Alignment is needed regarding what specific level of detail is required for "Preliminary".
- Alignment/applicability of advanced reactor design features to specific requirements in SRP.

Considering the current and proposed near term guidance available for clarifying Construction Permit Applications, TVA suggests that the following near term approach might prove most efficient:

1. Develop a set of Regulatory Framework Documents as an integral part of the Regulatory Engagement Plan.
2. Use the Regulatory Engagement Plan to support "early and often" NRC "pre-application" engagement to gain alignment on:
  - a. What is PSAR vs. FSAR content?
  - b. What specific level of detail is required for "Preliminary"?
  - c. Where the existing review guidance is not applicable to advanced reactor design features.
  - d. Where appropriate review guidance doesn't exist (and is needed) for design of choice and
  - e. To establish (where identified) a design-specific set of agreements establishing what detail is needed for a complete and technically accurate CP application.
3. Obtain feedback from NRC management in writing. This doesn't have to be binding with finality, but should be something that industry and NRC management can refer to should the staff reviewing the Application materially deviate from the agreed upon REP.

As part of TVA near term regulatory engagement activities, TVA would like to use that opportunity to inform the development of ISG guidance. Thanks