



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

September 8, 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

A handwritten signature in black ink, appearing to read "J. Sebrosky", is placed over the signature line of the memorandum.

Signed by Sebrosky, Joseph
on 09/08/21

FROM: Joseph M. Sebrosky, Senior Project Manager
Advanced Reactor Policy Branch
Division of Advanced Reactors and Non-Power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF AUGUST 17, 2021, PUBLIC MEETING TO DISCUSS
TECHNOLOGY INCLUSIVE CONTENT OF APPLICATION PROJECT

On August 17, 2021, the U.S. Nuclear Regulatory Commission (NRC) staff held a public meeting with stakeholders, to discuss the technology inclusive content of application project (TICAP). The meeting notice is available in the NRC's Agencywide Documents Access and Management System (ADAMS) at Accession No. ML21228A117, and the presentation slides are available at ADAMS Accession No. ML21228A039. The enclosure to this summary provides the attendees for the meeting as captured by Microsoft Teams.

The purpose of this meeting was to discuss with the nuclear industry issues related to the draft TICAP guidance document dated August 3, 2021, for Safety Analysis Report content for an advanced reactor application based on the licensing modernization project. The August 3, 2021, draft TICAP guidance document is available in ADAMS at Accession No. ML21215A577. The August 17, 2021, meeting was a follow-on meeting to public TICAP meetings held on:

- May 11, 2021 (meeting summary available in ADAMS at Accession No. ML21132A295)
- May 19, 2021 (meeting summary available in ADAMS at Accession No. ML21154A290)
- May 26, 2021 (meeting summary available in ADAMS at Accession No. ML21158A223)
- June 23, 2021 (meeting summary available in ADAMS at Accession No. ML21181A335)

The four TICAP meetings described above led to industry revising the previous version of the TICAP guidance document and providing the NRC staff with the August 3, 2021, version of the document. Prior to the August 17, 2021, meeting, the NRC staff provided industry with a marked-up version of the August 3, 2021, industry TICAP guidance document that identified questions and comments associated with industry's document. The NRC staff's marked-up

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version of industry's TICAP guidance document is available in ADAMS at Accession No. ML21225A565. The NRC staff identified more significant comments by highlighting them in yellow in the marked-up version of the document.

The meeting was broken into two parts: a discussion of guidance associated with principal design criteria (PDC), and a discussion of NRC staff significant comments other than those associated with principal design criteria.

Principal Design Criteria

Guidance associated with developing PDC using an LMP-based approach was a topic of discussion during previous TICAP meetings. Prior to the August 17, 2021, meeting, industry provided a paper dated July 30, 2021, titled, "Technology Inclusive Content of Application Project (TICAP) Proposal for Non-LWR Principal Design Criteria White Paper," (ADAMS Accession No. ML21214A008).

The staff reiterated some of its concerns stated in previous meetings including the underlying concern that industry's approach may not identify PDC associated with normal operations and areas associated with proposed special treatments (e.g., quality assurance, protection from external hazards, testability, inspectability). The staff questioned whether industry would consider adjusting their proposed guidance to reference complimentary design criteria (CDC) to address these areas.

Industry's position remained the same as stated in previous meetings. That is, that the LMP-based safety case provides a more focused performance basis for a facility's safety based on the specifics of the unique design and that it will provide the same type of information included in the description of PDC in the introductory text of Title 10 of the *Code of Federal Regulations* (CFR) Part 50 Appendix A in other elements of a SAR developed using the LMP. Industry stated that it did not intend to make changes to the PDC guidance in the next update to the TICAP guidance document.

The staff stated that it would consider industry's position and noted that it would document its position in the next update to the draft TICAP RG white paper. The staff indicated that the possible options included:

- The LMP-based approach provides an acceptable approach for identifying PDC associated with off-normal conditions.
- The staff will review the proposed treatment of areas such as normal operations and identify if PDCs, as well as proposed CDCs are appropriate to address the staff's concerns.
- The LMP-based approach cannot be reconciled with the current PDC framework under 10 CFR Part 50 and 52, and an exemption may be required.

Other Comments

The NRC staff and industry then discussed the comments that were identified in the marked-up version of the document provided to industry prior to the meeting. In some cases, industry

indicated that it would be making changes to address the underlying comment. In other cases, industry indicated it would not be making changes. The staff stated that it would review industry's revised guidance and determine whether to identify exceptions or clarifications in the staff's draft guidance referencing industry's guidance document. The staff noted that in two areas (i.e., amount of defense-in-depth analysis that is captured in the safety analysis report, and the treatment of internal hazards such as fire or flood) industry's guidance appeared to deviate from the guidance found in NEI 18-04, Revision 1, "Risk-Informed Performance-Based Technology Inclusive Guidance for Non-Light Water Reactor Licensing Basis Development," (ADAMS Accession No. ML19241A472) as endorsed by the NRC in Regulatory Guide 1.233. After the meeting industry stated that it did not intend for the TICAP guidance to deviate from the LMP process described in NEI 18-04, revision 1 as endorsed by the NRC.

The meeting concluded with a discussion of the schedule for development of TICAP guidance documents. Highlights of this discussion included industry providing a revision to the August 3, 2021, TICAP guidance document by the end of August 2021 in an NEI Revision 0 format. The staff stated that it would review NEI Revision 0 of the guidance document and update the July 8, 2021, version of its draft TICAP regulatory guide white paper (ADAMS Accession No. ML21190A014) sometime in the October 2021 time frame with a proposed briefing of the Advisory Committee on Reactor Safeguards Future Plant Designs Subcommittee possibly sometime in the November time frame. The NRC staff and industry agreed that a public meeting in late September 2021, on industry's TICAP guidance document may be appropriate.

Enclosure:
Attendance List

SUBJECT: SUMMARY OF AUGUST 17, 2021, PUBLIC MEETING TO DISCUSS
TECHNOLOGY INCLUSIVE CONTENT OF APPLICATION PROJECT DATED:
SEPTEMBER 8, 2021

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ADAMS Accession No. ML21245A442**NRC-001**

OFFICE	NRR/DANU/UARP/PM	NRR/DANU/UARP/BC	NRR/DANU/UARP/PM
NAME	JSebrosky	JSegala	JSebrosky
DATE	09/3/2021	09/7/2021	09/8/2021

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**August 17, 2021, Public Meeting to Discuss
Technology Inclusive Content of Application Project
Attendance List***

NAME	AFFILIATION	NAME	AFFILIATION
Robert Taylor	NRC/NRR	Amir Afzali	Southern Company
Mo Shams	NRC/NRR/DANU	Brandon Chisholm	Southern Company
Brian Smith	NRC/NRR/DANU	Mike Tschiltz	Nuclear Energy Institute (NEI)
Nathan Sanfilippo	NRC/NRR/DANU	Benjamin Holtzman	NEI
Martin Stutzke	NRC/NRR/DANU	Steve Vaughn	X-energy
Dayna Dority	NRC/NRR/DANU	Ed Wallace	GNBC Associates
John Segala	NRC/NRR/DANU/UARP	Cyril Draffin	US Nuclear Industry Council
William Reckley	NRC/NRR/DANU/UARP	Steven Nesbit	LMNT Consulting
Maryam Khan	NRC/NRR/DANU/UARP	George Wilson	TerraPower
Eric Oesterle	NRC/NRR/DANU/UARP	Frank Akstulewicz	A to Z Reactor Consulting Services
Juan Uribe	NRC/NRR/DANU/UARP	Dennis Henneke	GE Power
Beth Reed	NRC/NRR/DANU/UARP	Tom King	Idaho National Lab (INL)
Joe Sebrosky	NRC/NRR/DANU/UARP	Jim Kinsey	INL
Prosanta Chowdhury	NRC/NRR/DANU/UARP	Chris Chwasz	INL
Jordan Hoellman	NRC/NRR/DANU/UARP	Tom Hicks	INL
Stephen Philpott	NRC/NRR/DANU/UARP	Daniel Gardner	Kairos Power
Margaret O'Banion	NRC/NRR/DANU/UARP	Raymond Wang	X-energy
Jan Mazza	NRC/NRR/DANU/UARL	Pete Gaillard	TerraPower
Mallecia Sutton	NRC/NRR/DANU/UARL	Scott Ingalls	GE Power
Ben Adams	NRC/NRR/DANU/UART	Amanada Spalding	Westinghouse
Alexandra Siwy	NRC/NRR/DANU/UART	Farshid Shahrokhi	Not Available (NA)
Michael Orenak	NRC/NRR/DANU/UART	Paul Loza	NA
Imtiaz Madni	NRC/NRR/DANU/UART	Michael Mayfield	NA
Michelle Hart	NRC/NRR/DANU/UART	Karl Fleming	NA
Timothy Lupold	NRC/NRR/DANU/UART	Jana Bergman	NA
Hanh Phan	NRC/NRR/DANU/UART	Rob Burg	NA
Alexander Chereskin	NRC/NRR/DANU/UART	Maxine Keefe	NA
Boyce Travis	NRC/NRR/DANU/UART	Parthasarathy Chandran	NA
Ian Jung	NRC/NRR/DANU/UART	Charlotte Geiger	NA
Margaret Audrain	NRC/NRR/DANU/UART	Ben Chen	NA
Carolyn Lauron	NRC/NRR/DNRL/NRLB	David Holcomb	NA
David Desaulniers	NRC/NRR/DRO	Ewa Muzikova	NA
Weijun Wang	NRC/RES/DE/SGSEB	Alan Levin	NA
Johari Moore	NRC/ NSIR/DPCP/MSB	Jim von Suskil	NA

Enclosure

NAME	AFFILIATION	NAME	AFFILIATION
Steve Bajorek	NRC/RES/DSA	Mike Keller	NA
Shakur Walker	NRC/COMM/DW	Jason Andrus	NA
Bob Weisman	NRC/OGC	Jon Facemire	NA
Marcia Carpentier	NRC/OGC	Ross Moore	NA
Derek Widmayer	NRC/ACRS	Scott Ferrara	NA
Scott Bussey	NRC/OCHCO/ADHRTD/ RTTB	Kurt Harris	NA
Tom Braudt	NA	Steven Pope	NA

* Attendance list based on Microsoft Teams Participant list. List does not include 5 individuals that connected via phone.