



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

September 21, 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: Margaret W. O'Banion, Project Manager
Advanced Reactor Policy Branch
Division of Advanced Reactors and Non-Power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

Margaret O'Banion

Signed by O'Banion, Margaret
on 09/21/21

SUBJECT: SUMMARY OF AUGUST 26, 2021, PERIODIC ADVANCED
REACTOR STAKEHOLDER PUBLIC MEETING

On August 26, 2021, the U.S. Nuclear Regulatory Commission (NRC) staff held an information meeting with a question-and-answer session with stakeholders to discuss advanced reactor topics including:

- Updates to the Advanced Reactor Integrated Review Schedule;
- Part 71, "Packaging and Transportation of Radioactive Material" – Transportation Requirements for Micro-Reactors;
- Material Control and Accounting of Special Nuclear Material of Moderate Strategic Significance (Category II Material): Upcoming Guidance, NUREG-2159, Draft for Public Comment;
- Results of U.S. Nuclear Industry Council's (USNIC's) 2021 Advanced Nuclear Survey;
- Role and Use of Probabilistic Risk Assessment (PRA) in Support of Advanced Reactor Licensing;
- Status of Non-Light Water Reactor (LWR) PRA Acceptability Regulatory Guide;
- Draft White Paper on Inservice Inspection (ISI)/Inservice Testing (IST) Guidance; and
- Update on Advanced Reactor Exports Working Group Report.

The meeting notice is available in the NRC's Agencywide Documents Access and Management System (ADAMS) at Accession No. ML21231A129, and the presentation slides are available at ADAMS Accession No. ML21237A463. The Enclosure to this summary provides the attendees for the meeting as captured by Microsoft Teams.

CONTACT: Margaret O'Banion
(301) 415-1233

Enclosure:
Attendance List

For each topic listed above, the NRC staff provided information and allotted time for stakeholder comments and questions. Stakeholders provided feedback on several of the topics and asked clarifying questions. NRC staff stated that the feedback was appreciated.

The NRC staff provided an overview of the Advanced Reactor Integrated Schedule of Activities on the NRC's public website at <https://www.nrc.gov/reactors/new-reactors/advanced/details#advSumISRA>. The staff specifically noted the activities that have recently been completed, updated, or added since the July 15, 2021, advanced reactor stakeholder meeting. Of note, NRC staff completed the MACCS near-field atmospheric transport and dispersion model improvement under Strategy 2 (Computer Codes and Review Tools) on July 31, 2021. In addition, NRC staff added two new regulatory activities to the integrated review schedule, including:

- Research on risk-informed and performance-based seismic design approaches and adopting seismic isolation technologies was added under Strategy 2 (Computer Codes and Review Tools) and
- Alloy 617 Code Cases (N-872 and N-898) was added as a sub activity under develop regulatory guide for endorsement of the ASME Section III, Division 5 Standard under Strategy 4 (Consensus Codes and Standards).

The NRC staff gave an overview of the Part 71 transportation requirements and requested stakeholder feedback on if these regulations would be a challenge for transportable micro-reactor development and/or package approval. Stakeholders asked clarifying questions and a member from Idaho National Lab stated that they were in the process of researching this topic for an upcoming white paper.

The NRC staff provided information on the upcoming issuance of draft NUREG-2159 to address material control and accounting for special nuclear material of moderate strategic significance (Category II material) and encouraged stakeholders to provide comments via the soon-to-be issued Federal Register Notice.

Representatives from USNIC presented on the results of their annual Advanced Nuclear Survey, which detailed responses from advanced reactor developers on a variety of topics, including policy issues, Part 53 rulemaking, licensing, U.S. and Canada relations, emergency planning zones, operators, refueling, NRC fees, Capitol Hill, national and international agencies, Department of Energy programs, high-assay low-enriched uranium fuel, and miscellaneous issues. Additional details on the survey responses are provided in the presentation slides.

The NRC staff and a representative of the Nuclear Industry Institute (NEI) shared presentations related to the use of PRA in the advanced reactor licensing process. As the NRC staff develop a preliminary Part 53, alternatives and options are being explored related to the role and use of PRA. NRC staff and NEI each shared current thinking around possible alternatives to the Licensing Modernization Process approach, which uses PRA in a leading role in the safety analysis. Alternatives to use PRA in a supporting role, more akin to current Part 52 licensing (but in a technology-neutral way), and a potential dose-based deterministic approach without the use of PRA are being further explored. NEI stated that they intend to submit a white paper to the NRC in September 2021, which will provide additional details on their preferred alternatives/options.

The NRC staff gave a brief overview of the upcoming issuance of a regulatory guide on PRA acceptability for non-LWRs. In response to questions from stakeholders, NRC staff clarified that the regulatory guide will be issued for trial use for the sole purpose of getting stakeholder

feedback before it's issued as a final regulatory guide. Regulatory Guide 1.247, "Acceptability of Probabilistic Risk Assessment Results for Advanced Non-Light Water Reactor Risk-Informed Activities," was released for trial use on September 3, 2021 and is available at ADAMS Accession No. ML21246A216.

The NRC staff and a representative from Idaho National Lab presented on the recently issued draft advanced reactor content of application project white paper associated with ISI and IST guidance. The draft white paper is available at ADAMS Accession No. ML21216A051. The guidance assumes that insights from a PRA are available and was developed to support advanced reactor applications that may have structures, systems, and components subject to ISI/IST programs that are very different than those associated with large light water reactors. In response to questions from stakeholders, the NRC staff emphasized that the traditional ISI/IST guidance for LWRs remains available for stakeholders to use. Additionally, the staff stated that advanced reactor ISI/IST guidance for designs where a PRA is not available is something the staff will consider developing at a later date.

The NRC staff presented on the recently issued public report on advanced reactor exports and requested stakeholder feedback on whether to pursue rulemaking or a regulatory guide to clarify the provisions for advanced reactor exports under Part 110. The public report is available at ADAMS Accession No. ML21194A213. Stakeholders asked clarifying questions on the different options.

Members of the public were in attendance and the NRC did not receive public meeting feedback forms. To see information regarding previously held periodic advanced reactor stakeholder public meetings, please visit the NRC's public website at <https://www.nrc.gov/reactors/new-reactors/advanced/details.html#stakeholder>. The next advanced reactor stakeholder meeting is currently scheduled for September 29, 2021.

Please direct any inquiries to me at (301) 415-1233 or via e-mail at Margaret.O'Banion@nrc.gov.

SUBJECT: SUMMARY OF AUGUST 26, 2021, PERIODIC ADVANCED REACTOR
STAKEHOLDER PUBLIC MEETING DATED: SEPTEMBER 21, 2021

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JSegala, NRR

MO'Banion, NRR

ADAMS Accession No. ML21253A068 Meeting Summary

Associated documents: Meeting Notice ML21231A129, Slides ML21237A463 **NRC-001**

OFFICE	NRR/DANU/UARP/PM	NRR/DANU/UARP/BC	NRR/DANU/UARP/PM
NAME	MO'Banion	JSegala	MO'Banion
DATE	09/14/2021	09/18/2021	09/21/2021

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Periodic Advanced Reactor Stakeholder
Public Meeting August 26, 2021
Attendance List

Name	Organization
Adams, Ben	U.S. Nuclear Regulatory Commission (NRC)
Armstrong, Kenneth	NRC
Ashcraft, Joseph	NRC
Baker, Stephen	NRC
Barrett, Antonio	NRC
Beasley, Benjamin	NRC
Bowman, Eric	NRC
Carpentier, Marcia	NRC
Chen, Ben	NRC
Cheng, Yuan	NRC
Chowdhury, Prosanta	NRC
Compton, Keith	NRC
Cuadrado de Jesus, Samuel	NRC
Cubbage, Amy	NRC
Desaulniers, David	NRC
Diaz Maldonado, Marilyn	NRC
Dority, Dayna	NRC
Doub, Peyton	NRC
Drzewiecki, Timothy	NRC
Erwin, Kenneth	NRC
Folk, Kevin	NRC
Garcia, Ismael	NRC
Gascot Lozada, Ramon	NRC
Glowacki, Brian	NRC
Gonzalez, Michelle	NRC
Grady, Anne-Marie	NRC
Habighorst, Peter	NRC
Hansing, Nicholas	NRC
Hart, Michelle	NRC
Hartage, Kayleh	NRC
Hoellman, Jordan	NRC
Humberstone, Matthew	NRC
Jacobs, Jo	NRC
Jauntirans, Juris	NRC
Keefe, Maxine	NRC
Kim, Grace	NRC
Krsek, Robert	NRC
Lauron, Carolyn	NRC
Lav, Samantha Crane	NRC
Lee, Pete	NRC

Name	Organization
Lupold, Timothy	NRC
Magruder, Stewart	NRC
Mayros, Lauren	NRC
McCann, Carrie	NRC
Moyer, Carol	NRC
Mussatti, Daniel	NRC
Nakanishi, Tony	NRC
Nie, Jinsuo	NRC
O'Banion (Watford), Margaret	NRC
Oberson, Greg	NRC
Oesterle, Eric	NRC
Owens, Janice	NRC
Palmrose, Donald	NRC
Pham, Tom	NRC
Phan, Hanh	NRC
Philpott, Stephen	NRC
Piotter, Jason	NRC
Pires, Jose	NRC
Reckley, William	NRC
Roche-Rivera, Robert	NRC
Rubestone, James	NRC
Sanfilippo, Nathan	NRC
Schaaf, Robert	NRC
Schmidt, Jeffrey	NRC
Sebrosky, Joseph	NRC
Segala, John	NRC
Seymour, Jesse	NRC
Shams, Mohamed	NRC
Siwy, Alexandra	NRC
Smith, Brian	NRC
Smith, Maxwell	NRC
Stutzke, Martin	NRC
Sutton, Mallecia	NRC
Travis, Boyce	NRC
Tseng, Ian	NRC
Tuttle, Glenn	NRC
Uribe, Juan	NRC
Valliere, Nanette	NRC
Vechioli Feliciano, Lucieann	NRC
Vitto, Steven	NRC
Vokoun, Patricia	NRC
Wagner, Katie	NRC
Walker, Shakur	NRC

Name	Organization
Wang, Weijun	NRC
Weisman, Bob	NRC
White, Bernie	NRC
Widmayer, Derek	NRC
Williams, Donna	NRC
Wolf, Carolyn	NRC
Pete Pappano	Stakeholder
Adam Stein (Breakthrough Institute)	Stakeholder
Adkins, Harold E	Stakeholder
Anderson, Victoria	Stakeholder
Arthur Baker	Stakeholder
AUSTGEN, Kati	Stakeholder
Bergman, Jana	Stakeholder
Blake Bixenman - Urenco USA	Stakeholder
Brad Rearden (X-energy)	Stakeholder
Braunstein, Ariel E.	Stakeholder
Brian Kloiber	Stakeholder
Brinsfield, Wes	Stakeholder
Burg, Rob	Stakeholder
Carpenter, Gene (CONTR)	Stakeholder
Casey, Kevin E	Stakeholder
Celik, Cihangir	Stakeholder
Charlotte Geiger	Stakeholder
Christopher P. Chwasz	Stakeholder
Cipiti, Benjamin B	Stakeholder
Cyril Draffin (USNIC)	Stakeholder
Dan Moneghan (EPRI)	Stakeholder
Darrell Gardner (Kairos Power)	Stakeholder
David Holcomb	Stakeholder
Doug Kull	Stakeholder
Doug True	Stakeholder
Drew Nigh	Stakeholder
Edwin Lyman	Stakeholder
Emma Redfoot	Stakeholder
Erica McLamb	Stakeholder
Ewa Muzikova	Stakeholder
Farshid Shahrokhi	Stakeholder
Fernando Ferrante - EPRI	Stakeholder
Ford, Austin	Stakeholder
frank akstulewicz TEUSA	Stakeholder
George Flanagan	Stakeholder
Grabaskas, Dave	Stakeholder
Greg Selby	Stakeholder

Name	Organization
Grzeck, Lee	Stakeholder
Gustavo A. Reyes	Stakeholder
Henderson, Ryan Donald	Stakeholder
Jackie Toth	Stakeholder
Jason A. Christensen	Stakeholder
Jay Basken	Stakeholder
Jill M. Owens	Stakeholder
Jim C. Kinsey	Stakeholder
John H. Jackson	Stakeholder
Jon Facemire	Stakeholder
Jordan Hagaman (Kairos Power)	Stakeholder
Justin Wheat	Stakeholder
Kitani Wesley	Stakeholder
Kurt Harris	Stakeholder
Lane Howard	Stakeholder
Laurie Hernandez, TRMTC	Stakeholder
Leidich, Anne	Stakeholder
Leigh Ford	Stakeholder
Lindsay Robinson	Stakeholder
Manoharan, Archie	Stakeholder
Margaret Ellenson	Stakeholder
Mark A Giles	Stakeholder
Mark Edison	Stakeholder
Mary Neumayr	Stakeholder
Matt Denman	Stakeholder
Matt Nudi	Stakeholder
Matt Walter - EPRI	Stakeholder
Merrifield, Jeffrey S.	Stakeholder
Michael Mayfield	Stakeholder
Mike Keller	Stakeholder
Mike Mankosa	Stakeholder
Morin, Chantal	Stakeholder
Narasimha Prasad Kadambi	Stakeholder
Nathan Jackson	Stakeholder
Nelson, Scott	Stakeholder
NICHOL, Marcus	Stakeholder
Niko McMurray (ClearPath)	Stakeholder
O'Neill, Martin	Stakeholder
Paese, Richard M	Stakeholder
Patrick O'Regan	Stakeholder
Paul Keutelian	Stakeholder
Paul Loza (Guest)	Stakeholder
Priya Chhiba	Stakeholder

Name	Organization
R Sweeney	Stakeholder
Raymond Wang (X-energy)	Stakeholder
Rebecca Norris	Stakeholder
Redd, Jason P.	Stakeholder
Redmond, Everett	Stakeholder
Ricardo Ruiz	Stakeholder
Robert Budnitz	Stakeholder
Robert Weinmann-Smith	Stakeholder
Ross Moore	Stakeholder
Ryan Dreke	Stakeholder
Sarah Fields	Stakeholder
Schiele, Raymond Joseph	Stakeholder
Schilthelm, Steve W	Stakeholder
Scott E. Ferrara	Stakeholder
Semancik, Jeffrey	Stakeholder
Sleigh, Michael	Stakeholder
Sloma-DeLosier, Tanya N	Stakeholder
Smith, Matthew	Stakeholder
Sofu, Tanju	Stakeholder
Staci Wheeler	Stakeholder
Stanish, Adana L	Stakeholder
Stephen P O'Hearn	Stakeholder
Steven Kraft	Stakeholder
Steven Nesbit	Stakeholder
Steven Pope	Stakeholder
Steven R. Prescott	Stakeholder
Stuart Lewis	Stakeholder
Tammy Morin	Stakeholder
Thomas Hicks	Stakeholder
Tom Braudt	Stakeholder
Tom King	Stakeholder
Tom Roberts	Stakeholder
Victor Ibarra Jr. (NIA)	Stakeholder
Wishart, Mark	Stakeholder
Wong, Emma	Stakeholder
Zach, Andrew (EPW)	Stakeholder

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