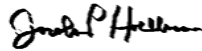




UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 26, 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: Jordan P. Hoellman, Project Manager  Signed by Hoellman, Jordan
Advanced Reactor Policy Branch on 03/26/21
Division of Advanced Reactors and Non-Power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF JANUARY 21, 2021, ADVANCED REACTOR
STAKEHOLDER PUBLIC MEETING

On January 21, 2021, the U.S. Nuclear Regulatory Commission (NRC) held a Category 2 public meeting with industry stakeholders, including the Nuclear Energy Institute (NEI) and the U.S. Nuclear Industry Council (USNIC), to discuss ongoing initiatives related to the development and licensing of non-light-water reactors (non-LWRs). The staff has posted the meeting notice in the NRC's Agencywide Documents Access and Management System (ADAMS) at Accession No. ML21012A036 and the presentation slides at ADAMS Accession No. ML21019A462. Enclosure 1 lists the meeting attendees who participated remotely.

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.html#advSumISRA>. The staff specifically noted the activities that have recently been completed, updated, or added since the November 5, 2020, advanced reactors stakeholder meeting.

The NRC staff provided feedback on NEI's input on regulatory priorities for new and advanced reactors (ADAMS Accession No. ML20353A393), dated December 18, 2020, which recommended establishing the following regulatory objectives to inform NRC priorities: (1) streamlining of regulatory processes needed to support the timely and efficient review and oversight of new and advanced reactors; (2) resolution of key generic technical or policy topics needed to support the review and approval of new and advanced reactor applications; and (3) changes to the regulations that are needed to achieve a more modern and efficient regulatory framework. The staff noted that they appreciate NEI's input and that the objectives are

Enclosure:
List of Attendees

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consistent with NRC's vision and strategy for advanced reactor readiness, but some differences exist between the schedules recommended in NEI's letter and current NRC activities. The staff also noted that they will continue to seek input from stakeholders on ongoing and planned activities and that current staff priorities are focused on ongoing license application reviews, preapplication engagement reviews, activities required by the Nuclear Energy Innovation and Modernization Act (NEIMA), Commission directed rulemakings, and activities to prepare for new applications.

The NRC staff provided a summary of the key revisions to its draft white paper, Preapplication Engagement to Optimize Application Reviews (ADAMS Accession No. ML21014A267), which considered stakeholder feedback received at the November 5, 2020, public advanced reactor stakeholder meeting. The staff noted that the revisions provided additional clarifications in the areas of probabilistic risk assessment (PRA), regulatory exemptions, and environmental considerations discussed in the white paper. The staff discussed that the white paper will go through formal review and concurrence and that the final white paper will be posted on NRC's advanced reactor website following issuance.

The NRC staff presented on preapplication engagement for advanced reactor fuels to support advanced reactor readiness to license and certify fuel facilities, transportation packages, and spent fuel storage installations. The staff noted that they are proactively identifying potential technical challenges and information needs associated with the safe use of advanced reactor fuels being developed at higher enrichments. The staff discussed that the preapplication guidance is applicable to both potential non-LWR and LWR applicants planning on using fuels at higher enrichments. The staff encouraged applicants to have early engagements with the staff to ensure a common understanding of the regulatory issued.

Staff from Sandia National Laboratories (SNL) presented on its work associated with the incorporation of the HYSPLIT atmospheric transport and dispersion (ATD) model into MELCOR Accident Consequence Code System (MACCS) to advance ATD capabilities. SNL discussed the purpose of MACCS and challenges experienced with the use of the Gaussian plume model. SNL discussed the evaluation and selection of HYSPLIT among other ATD models based on the inclusion of essential features and additional desirable features to increase ATD capabilities. SNL noted that MACCS coupled with HYSPLIT has been implemented and verified and that the ability to incorporate the HYSPLIT ATD model results in MACCS is a major improvement in the capabilities of MACCS simulations and provides state-of-the-art alternative to the use of the Gaussian plume segment model. Stakeholders asked questions about the use of MACCS for near-field applications. SNL discussed that near-field applications was included in the release of MACCS 4.0. SNL provided a presentation on the use of MACCS for near-field applications at an NRC advanced reactor stakeholder meeting on October 1, 2020 (ADAMS Accession No. ML20350B457).

The NRC staff provided a status update regarding the plans and schedule to develop a regulatory guide (RG) endorsing the American Society of Mechanical Engineers / American Nuclear Society (ASME/ANS) advanced non-LWR PRA standard and NEI 20-09, Performance of PRA Peer Reviews Using the ASME/ANS Advanced Non-LWR PRA Standard. The staff discussed that they issued a 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), dated January 15, 2021, and are planning a public meeting in February or March 2021 to discuss the draft white paper in detail.

The U.S. Department of Energy (DOE) Gateway for Accelerated Innovation in Nuclear (GAIN) provided an overview of GAIN as a resource for accelerated development of nuclear innovations with laboratory partners. GAIN discussed how to do business with them through contact mechanisms and funding opportunities and provided an overview of recent voucher awards and the impact GAIN has made on the industry since it was established in 2015. GAIN discussed upcoming workshops and webinar series scheduled in 2021 and focused on multi-industry stakeholders. GAIN provided an overview of DOE's Office of Nuclear Energy (NE) strategic vision, with the goals of (1) enabling continued operation of existing U.S. nuclear reactors, (2) enabling the deployment of advanced nuclear reactors, (3) developing advanced nuclear fuel cycles, (4) maintaining U.S. leadership in nuclear energy technology, and (5) enabling a high-performing organization.

DOE-NE presented an overview of their Advanced Reactor Demonstration Program (ARDP), which focuses DOE and non-federal resources on the actual construction of real demonstration reactors. DOE-NE discussed the ARDP program elements and that the Funding Opportunity Announcement (FOA) solicited applications under three funding pathways aligned with different maturity levels: Advanced Reactor Demonstration awards, Risk Reduction for Future Demonstration awards, and Advanced Reactor Concepts-20 awards. DOE-NE discussed the selected technologies for each award. DOE-NE noted that continued coordination with the NRC is needed to meet the aggressive deployment dates associated with these awards.

The NRC staff provided an update on its activities related to the NRC's review and endorsement of ASME Boiler and Pressure Vessel Code (BPVC) Section III, Division 5, "High Temperature Reactors." The staff noted that they have received final contractor reports that provide expert recommendation on the technical adequacy of ASME Section III, Division 5 and have posted these reports on the NRC's advanced reactor public website: <https://www.nrc.gov/reactors/new-reactors/advanced/details.html#endorev>. The staff noted that they are drafting the NUREG and draft RG endorsing ASME Section III, Division 5. The staff expects the NUREG and draft RG to be published for public comment in the spring of 2021.

The meeting ended with an open discussion. The NRC requested feedback about how these meetings can be more engaging and how to increase participation by prospective applicants. The staff discussed the various upcoming public meetings focused on advanced reactor initiatives, including Part 53. The next advanced reactors stakeholder meeting would be scheduled in late February 2021.

SUBJECT: SUMMARY OF JANUARY 21, 2021, ADVANCED REACTOR STAKEHOLDER
PUBLIC MEETING DATED: MARCH 26, 2021

DISTRIBUTION:

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JSegala, NRR

JHoellman, NRR

ADAMS Accession No.: ML21074A409

NRC-001

OFFICE	NRR/DANU/UARP/PM*	NRR/DANU/UARP/BC*	NRR/DANU/UARP/PM*
NAME	JHoellman	JSegala	JHoellman
DATE	3/15/2021	3/25/2021	3/26/2021

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PUBLIC MEETING
U.S. NUCLEAR REGULATORY COMMISSION
Thursday, January 21, 2021
10:00 a.m. – 3:00 p.m.

List of Attendees* (on phone)	
Blank Fields = Indecipherable Information	
Name	Organization
Amy Cabbage	U.S. Nuclear Regulatory Commission (NRC)
John Segala	NRC
Jordan Hoellman	NRC
Bob Beall	NRC
Hanh Phan	NRC
Jo Jacobs	NRC
Bill Reckley	NRC
Eric Oesterle	NRC
Ben Beasley	NRC
Martin Stutzke	NRC
Juan Uribe	NRC
Tim Lupold	NRC
Adrian Muniz	NRC
Mo Shams	NRC
Donna Williams	NRC
Emil Tabakov	NRC
Robert Weisman	NRC
Tom Boyce	NRC
Nathan Sanfilippo	NRC
Salman Haq	NRC
Megan Wright	NRC
James Rubenstone	NRC
Maxine Keefe	NRC
Alexander Tsirigotis	NRC
Anders Gilbertson	NRC
Meraj Rahimi	NRC
Robert Roche-Rivera	NRC
Chakrapani Basavaraju	NRC
Joseph Giacinto	NRC
Dawnmathews Kalathiveettil	NRC
Nicholas Hansing	NRC
Bernie White	NRC
Ismael Garcia	NRC
Michelle Gonzalez	NRC

Pete Lee	NRC
Ian Tseng	NRC
Weijun Wang	NRC
Lucieann Vechioli	NRC
Steven Vitto	NRC
Robert Taylor	NRC
Ian Jung	NRC
Dan Barss	NRC
Jessie Quichocho	NRC
Richard Rivera	NRC
Dayna Dority	NRC
John Nakoski	NRC
Jack Cushing	NRC
Brian Smith	NRC
Beth Reed	NRC
Jan Mazza	NRC
Kamal Manoly	NRC
Maryam Khan	NRC
Laura Willingham	NRC
Andrea Kock	NRC
Johnathan Marcano Lozada	NRC
Joe Ashcraft	NRC
Jesse Seymour	NRC
Arlon Costa	NRC
Ricardo Torres	NRC
Susan Vrahoretis	NRC
Carolyn Lauron	NRC
Steve Bajorek	NRC
Bruce Musico	NRC
Hossein Esmaili	NRC
Derek Widmayer	NRC
Marilyn Diaz Maldonado	NRC
Robert Hsu	NRC
Brian Green	NRC
Julie Ezell	NRC
Stu Magruder	NRC
Jeff Schmidt	NRC
Mallecia Sutton	NRC
Ken Erwin	NRC
Tamara Bloomer	NRC
Jeffrey Poehler	NRC
Michelle Hart	NRC
Nanette Valliere	NRC

James Hammelman	NRC
Stephen Philpott	NRC
Donald Palmrose	NRC
Matt Gordon	NRC
Lucas Kyriazidis	NRC
Jonathan Barr	NRC
Scott Bussey	
Alexander Chereskin	NRC
Yamir Diaz-Castillo	NRC
Katie Wagner	NRC
Kati Austgen	Nuclear Energy Institute (NEI)
Marc Nichol	NEI
Everett Redmond	NEI
Victoria Anderson	NEI
Cyril Draffin	U.S. Nuclear Industry Council (USNIC)
Ed Lyman	Union of Concerned Scientists (UCS)
Tim Beville	U.S. Department of Energy (DOE)
Christine King	DOE
Steven Kraft	
Francis Akstulewicz	A to Z Reactor Consulting Services
Farshid Shahrokhi	Framatome
Jana Bergman	
Travis Chapman	X-energy
Drew Peebles	Kairos Power
Jordan Hagaman	Kairos Power
Bob McReynolds	Kairos Power
Darrell Gardner	Kairos Power
Peter Hastings	Kairos Power
Brian Johnson	TerraPower
Steve Schilthelm	BWXT
Dr. Deb Luchsinger	
Brian Glowacki	
Niko McMurray	ClearPath
Jason Redd	Southern Nuclear
Ross Moore	Oklo
Caroline Cochran	Oklo
Alex Renner	Oklo
Richard Paese	Westinghouse
Anthony Schoedel	Westinghouse
Robert Schaaf	
Marty O'Neill	
Rebecca Norris	
Sophie Holiday	

Alfred Hathaway	
Mike Keller	
Benjamin Carmichael	
Tammy Morin	Holtec
Tom Roberts	
David Holcomb	Oak Ridge National Laboratory
Tanju Sofu	Argonne National Laboratory
Dan Clayton	Sandia National Laboratories (SNL)
Jenn Leute	SNL
Antonio Godoy	
James Johnson	
Austin Clark	
Amy Sharp	
Michael Mayfield	
John Wise	
Nazila Tehrani	
Chet Sigmon	
Phil Sharpe	
Rob Burg	
Don Williams	
Rachel Turney	
Matthew Humberstone	
Andy Griffith	
Donald Helton	
Bud Brust	
Archana Manoharan	
Alex Huning	
Yanli Wang	
David Luxat	
Scott Nelson	
Gurjendra Bedi	
Alfred Hathaway	
Chris Robinson	
Christina Leggett	
Leigh Ford	
Wendolyn Holland	
Dean Kothmann	
Ned Finney	
Margaret Ellenson	
Aslak Stubsgaard	
Keith Compton	
Ryan Meyer	
Bob Kurth	

Teri Conner	
Brad Williams	
Paul Rades	
Prabhat Krishnaswamy	
Richard Lee	
Mo Uddin	
Sue Lesica	

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