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

July 24, 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: Jordan P. Hoellman, Project Manager ***/RA/***
Advanced Reactor Policy Branch
Division of Advanced Reactors and Non-Power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF JUNE 18, 2020, ADVANCED REACTOR STAKEHOLDER PUBLIC MEETING

On June 18, 2020, 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 or advanced reactors). The staff has posted the meeting notice in the NRC's Agencywide Documents Access and Management System (ADAMS) at Accession No. ML20170A455 and the presentation slides at Accession No. ML20169A590. Enclosure 1 lists the meeting attendees who participated remotely.

NRC staff provided an overview of the Advanced Reactor Integrated Schedule of Activities that was recently placed on the NRC's public website at https://www.nrc.gov/reactors/new-reactors/advanced.html. The staff noted that they are working to update the integrated schedule as they are identified, including annual fees. Industry stakeholders noted that the integrated schedule provides a good snapshot of the timelines for the NRC's advanced reactor activities.

The staff discussed the NRC endorsement of the advanced non-LWR Probabilistic Risk Assessment (PRA) standard and provided an update on the NRC's review and endorsement schedule. The staff discussed that they are preparing to endorse the non-LWR PRA standard through a new regulatory guide (RG), similar to RG 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities." The staff anticipates publishing the draft RG for public comment by Summer 2021 and the final RG

Enclosure:
List of Attendees

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by Fall 2022. The staff discussed conducting public meetings approximately every three to six months beginning tentatively in July 2020. The staff discussed its plans to review and endorse NEI 20-09, "Performance of PRA Peer Reviews Using the ASME/ANS Advanced Non-LWR Standard," concurrently with the non-LWR PRA standard. The staff discussed how the standard and RG are envisioned to be used to develop future risk-informed applications. Industry representatives asked clarifying questions regarding the use of the Licensing Modernization Project (LMP) for structure, system, and component (SSC) classification. The staff noted that an applicant can determine SSC classification through the implementation of LMP.

NEI provided an overview of NEI 20-09, noting that it is largely based on NEI 17-07 (LWR PRA Peer Review Guidance) and retains key aspects of LWR peer reviews. NEI discussed adjustments made to the non-LWR PRA Peer Review Guidance to reflect the differing standard structure, changes to wording on qualifications to reflect novel designs, and replacing "on-site review" with "final dedicated meetings" based on anticipated design reviews. NEI noted that they plan to conduct a pilot peer review of Kairos Power using NEI 20-09 and that a future revision will be developed based on feedback from the Kairos Power pilot, feedback from NRC, and changes in the final version of the non-LWR PRA standard. The staff stressed that early engagement between NEI, applicants, and the staff will be important so that there is a clear understanding of the intent of NEI 20-09.

The staff provided a subsequent discussion on promoting preapplication participation, which was discussed at the May 7, 2020, advanced reactor stakeholder meeting. The staff noted the various types of preapplication interactions and the expected value in terms of reliability, efficiency, and transparency. The staff discussed the current generic schedules and how preapplication interactions can substantially streamline NRC's review, consistent with implementing a staged licensing approach required by the Nuclear Energy Innovation and Modernization Act (NEIMA). The staff noted that the document they are developing would specify key preapplication activities, including topics for topical reports, white papers, and meetings. The staff and industry representatives discussed what would be attractive to potential applicants, recognizing that a readiness review is more beneficial to the staff than to an applicant. Industry representatives noted that real and substantive improvements to reduce review time and opportunities to receive important NRC feedback. The staff and industry discussed the use of regulatory engagement plans to understand and align on the expected outcome of certain interactions. Industry representatives discussed uncertainty in preapplication interactions when all design details are not finalized. Industry noted that getting alignment with staff and a regulatory decision on items that are more finalized, without scope creep into areas where there are less details, would also be attractive.

NEI discussed annual fee regulations for non-LWRs. NEI noted that the current NRC fee requirements under Title 10 of the Code of Federal Regulations (10 CFR) Part 170 and Part 171 are not technology-inclusive and only apply to LWRs. NEI discussed that addressing annual fees for non-LWRs is a timely consideration given a non-LWR application in front of NRC and more developers in pre-application discussions with the NRC. NEI noted that their preferred annual fee approach is to expand the variable annual fees structure established for light-water small modular reactors (SMRs) to include non-LWRs. NEI stated that microreactors require further consideration and suggested that fees should be much lower than the variable fee rule minimum since fees have a disproportionate impact on a microreactor and the cost of regulatory service for a microreactor is expected to be very small. NEI discussed that longer-term considerations for annual fee rulemakings should be based on operating experience of SMRs and non-LWRs. USNIC provided comments in support of expanding the

SMR variable fee rule for non-LWRs and suggested that annual fees for microreactors could be comparable to research and test reactors, given the regulatory service is expected to be small and disproportionate.

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 next advanced reactors stakeholder meeting would be scheduled in August 2020. The staff also reminded stakeholders of the workshop on Enhancing Risk-Informed and Performance-Based Seismic Safety for Advanced Non-Light Water Reactors scheduled for September 2-3, 2020.

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OFFICE	NRR/DANU/UARP/PM*	NRR/DANU/UARP/BC*
NAME	JHoellman	JSegala
DATE	7/27/2020	7/24/2020

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PUBLIC MEETING
U.S. NUCLEAR REGULATORY COMMISSION
Thursday, June 18, 2020
10:00 a.m. – 2:00 p.m.

List of Attendees (on phone)	
Name	**Organization**
Amy Cubbage	U.S. Nuclear Regulatory Commission (NRC)
John Segala	NRC
Jordan Hoellman	NRC
Hanh Phan	NRC
Jo Jacobs	NRC
Christy Galster	NRC
Bill Reckley	NRC
Donna Williams	NRC
Eric Oesterle	NRC
Ben Beasley	NRC
Martin Stutzke	NRC
Juan Uribe	NRC
Victoria Anderson	NRC
Michelle Gonzalez	NRC
Tim Lupold	NRC
Adrian Muniz	NRC
Kati Austgen	Nuclear Energy Institute (NEI)
Alex Runner	Oklo, Inc
Alice Caponiti	US Department of Energy (DOE)
Alyssa Beasley	NRC
Amir Afzali	Southern Nuclear
Anders Gilbertson	NRC
Andrea Gennetta	F&P Global Platts
Andrew Barto	NRC
Anthony Rossi	NRC
Antonio Barrett	NRC
Bob Fitzpatrick	NRC
Brandon Chisholn	Southern Company
Brandon Waits	Southern Company
Brian Glowacki	NRC
Brian Henderson	Boeing Company
Brian Smith	NRC

Brian Thomas	NRC
Bruce McDowell	PNNL
Carol Moyer	NRC
Caroline Walse	NRC
Charles Mahon	DroJect Management Institute
Chris Sterreagan	NRC
Chris Van Wert	NRC
Christine Galfter	NRC
Cyril Draffin	US Nuclear Industry Council
Dan Barss	NRC
Daniel Carls	Terrestrial Energy US
Daniel Miller	Public Citizen
Darrell Gardner	Kairos Power
Dave Goodwin	TNNO
Dave Grabaskas	Argonne National Lab
David Desaulniers	NRC
David Holcomb	Oak Ridge National Laboratory
Deb Ludhinger	NuScale Power
Derek Widmayer	NRC
Don Helton	NASA
Donald Palmrose	NRC
Drew Peebles	Kairos Power
Edward File	Elithium Industry USA
Edwin Lyman	Union of Concerned Scientists
Farshid Shahrokhi	Framatome
Frank Schaaf	ASME Code Member
George Flanagan	Oak Ridge National Laboratory
Grace Kim	NRC
Arlon Costa	NRC
Ian Jung	NRC
Ismael Garcia	NRC
Jack Cushing	NRC
Jacob Zimmerman	NRC
James Rubenstone	NRC
James Saldarini	Advanced Reactor Concepts
James Tompkins	Kairos Power
Jan Mazza	NRC
Jana Bergman	Curtiss Wright
Jason Read	Southern Nuclear
Jason Shay	NRC
Jean Wall	Jon Wnj
Jeff Gabor	Jensen Hughes

Jennifer Meservy	Senator Cra
Jim Hammelman	NRC
Jim Kinsey	Idaho National Laboratory
Joe Giacinto	NRC
John Kutsch	Thorium Energy Alliance
John Monninger	NRC
Jonathan Marcano	NRC
Jordan Hagaman	Kairos Power
Joseph Anderson	NRC
Julia Gregorian	Hogan Lovelos
Jun Wang	Jun Wang
Keith Consani	Member of the Public
Ken Erwin	NRC
Kenneth Armstrong	NRC
Kim Webber	NRC
Kurt Harris	Flibe Energy Inc
Lars Jorgensen	Thorcon US
Laura Schwartz	ITTA
Laura Willingham	NRC
Leanne Galanek	NEI
Lee Grzeck	Duke Energy
Louise Lund	NRC
Madaline Feltus	DOE
Marilyn Kray	Exelon
Marilyn Sears	NRC
Mark Nichol	NEI
Meraj Rahini	NRC
Michelle Albert	NRC
Michelle Catts	GE-Hitachi
Michelle Hart	NRC
Mike Poore	ORNL
Missy Mehdireisifard	NRC
Nan Vallierie	NRC
Nicholas McMurray	Clearpath
Patrick White	MIT
Paul Keutelian	Radiant
Peter Hastings	Kairos Power
Ranaad Samanka	Brookhaven National Laboratory
Richard Chang	NRC
Rick Paese	Westinghouse
Rob Taylor	NRC
Robert Rocke-Rivera	NRC
Robert Schaaf	NRC

Russ Felts	NRC
Scott Duffey	NRC
Shelby Wales	Southern Company
Stephen Vurdick	Idaho National Laboratory
Steven Vitto	NRC
Stu Magruder	NRC
Tammy Morin	Holtec International
Tom Cuadrado	NRC
Travis Chapman	X-Energy
Voida Via	NRC
Wendy Reid	NRC
William Horak	Acadia National Laboratory
Yen Phung	State University of Energy