



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

May 8, 2020

MEMORANDUM TO: John Segala, Chief  
Advanced Reactor Policy Branch  
Division of Advanced Reactors and Non-Power  
Production and Utilization Facilities  
Office of Nuclear Reactor Regulation

FROM: Jordan Hoellman, Project Manager *Jordan Hoellman*  
Advanced Reactor Policy Branch 5/8/2020  
Division of Advanced Reactors and Non-Power  
Production and Utilization Facilities  
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF FEBRUARY 20, 2020, ADVANCED REACTOR  
STAKEHOLDER PUBLIC MEETING

On February 20, 2020, the U.S. Nuclear Regulatory Commission (NRC) held a Category 2 public meeting with stakeholders 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. ML20054A703 and the presentation slides at Accession No. ML20050E155. Enclosure 1 lists the meeting attendees.

The meeting began with NRC updates on the status of NRC's readiness for licensing non-LWRs and the NRC's planned update of the advanced reactor public website. The staff noted that there are thousands of guidance documents related to LWRs and that NRC's readiness activities for non-LWRs has been safety-focused and emphasized right-sizing the regulatory framework to ensure predictability in licensing diverse reactor technologies by identifying the fundamental safety functions. NRC discussed that readiness activities were pursued to ensure there are no major gaps in the licensing framework. NRC noted that the current regulatory framework is capable of licensing non-LWRs, but exemptions are likely for near-term applications. The Nuclear Energy Institute (NEI) noted that they thought the NRC was focused on appropriate activities to support the advanced reactor community. NRC discussed updating the public website to provide clearer and easier access to the status of NRC advanced reactor activities, including proposed rulemakings, licensing and technical reviews, and guidance development. Stakeholders agreed that updating the public website would make it easier to navigate the site and suggested the NRC consider reducing the number of clicks it takes to get to the most relevant information.

CONTACT: Jordan Hoellman, NRR/DANU  
301-415-5481

Mirabelle Shoemaker from the NRC discussed the Nuclear Materials Management and Safeguards System, the US Government database for tracking physical inventory and nuclear material transactions for source and special nuclear material.

Mallecia Sutton and Ken Erwin from the NRC presented on the status of the generic environmental impact statement (GEIS) for advanced reactors, noting that the staff is preparing responses to public comments received on the GEIS during the comment period that closed on January 24, 2020. NRC staff discussed preparing a Commission information paper on the potential benefits of the GEIS and that further details will be discussed in future periodic stakeholder meetings.

Kati Austgen from NEI discussed NEI's recommendations for streamlining NRC environmental reviews for advanced reactors, noting that reviews should be proportional to the potential environmental impacts, which are expected to be small. NEI discussed the six recommendations: (1) allow for the flexibility to use environmental assessments (EAs) and categorical exclusions, (2) increase the use of GEISs, (3) incorporate existing environmental analyses into a project's EA or environment impact statement (EIS), (4) flexibility to use an applicant's environmental report (ER) as the basis for the draft EA or EIS, (5) reduce unnecessary burden in alternative site analysis, and (6) increase efficiency of environmental reviews.

Frank Akstulewicz from A to Z Reactor Consulting Services discussed mapping fundamental safety functions (FSF) to NRC regulations as a part of the Technology Inclusive Content of Application Project, which has a goal of developing an endorsable document that outlines the content of an application in a manner that is technology inclusive, risk-informed, performance-based and its scope is limited by the Licensing Modernization Project (LMP) methodology. The purpose of the FSF mapping report is to demonstrate that the existing body of Part 50 regulatory requirements will map to one or more FSF and to demonstrate equivalence between prescriptive regulatory requirements and performance-based FSF. The FSF mapping report is expected to be provided to NRC for review and comment in May 2020.

Jason Schaperow and Hossein Esmaili from the NRC presented on the NRC's efforts related to source term guidance for advanced reactors through computer code developments in SCALE and MELCOR. The staff discussed two efforts: (1) advanced reactor guidance for developing mechanistic source terms and (2) non-LWR pilot studies to illustrate how to perform source term analysis with MELCOR. Phase 1 involves MELCOR full-plant simulations for three representative non-LWR designs based on publicly available design information. Phase 2 involves workshops on each of the three representative designs to train and prepare staff for design reviews. Phase 3 involves workshops on each of the three representative designs to inform stakeholders on the staff's approach to source term analysis. The staff noted that they estimate that the schedule for each representative design is 6 months.

Marc Nichols from NEI presented on NEI 19-03 (ADAMS Accession No. ML20083G488) related to advanced reactor codes and standards needs assessment. Codes and standards help establish conservatism in the designs and reflect the interests from all relevant organization, and when endorsed, they can make the regulatory process more efficient and predictable. NEI discussed the American Nuclear Society (ANS) Special Report recommendations for Congress, US Department of Energy (DOE), and NRC and the challenges associated with code and standard development. NEI discussed the purpose of NEI 19-03 to identify and prioritize needed codes and standards and to identify the need for more streamlined and timely efforts in

the development and endorsement of codes and standards. NEI discussed the results of their prioritization effort, which identified 18 high priority codes and standards based on the NEI 19-03 criteria.

Hanh Phan and Michelle Gonzalez from the NRC presented on an update on the NRC plan for endorsement of the Probabilistic Risk Assessment (PRA) Standard for Advanced Non-LWR Nuclear Power Plants, on the gap analysis of PRA standard, and on the industry peer review guidance. The staff discussed that an endorsement plan is currently being developed and anticipates publishing the draft regulatory guide in the summer of 2021 but noted that the staff's schedule is dependent on the proposed schedule for issuing the standard. Regarding the gap analysis, the staff discussed that their efforts would assess the technical applicability of the non-LWR PRA standard to PRAs developed for the design certification and combined license LMP applications to convey the staff's position on the use of the non-LWR PRA standard for LMP. The staff stressed that PRA acceptability is achieved by the NRC regulatory position, consensus standard demonstrating conformance with the regulatory position, and peer review demonstrating conformance with the standard all working together.

Thomas Sowinski from the DOE discussed the status of DOE-led activities such as those underway at DOE laboratories, implementation of the Nuclear Energy Innovation Capabilities Act, and coordination efforts with commercial vendors. DOE discussed microreactor activities ongoing at DOE and Idaho National Laboratory (INL) and initiatives to prepare for the deployment of demonstration reactors at INL.

Amy Cabbage and William Reckley from the NRC provided an update to the list of non-LWR policy issues the NRC is tracking. The staff discussed the status of current activities related to policy issues, including source term, emergency planning, fuel qualification, and fuel cycle facilities. The staff solicited input regarding whether the staff should pursue activities related to other policy issues on the list or if there were any new policy issues that should be identified. The staff received input that it is encouraging to see items on the list being resolved and that updates could be provided on certain issues in future public stakeholder meetings, specifically fuel cycle facilities and financial qualification topics.

Nanette Valliere and Dennis Andrukat from the NRC presented an update on the Alternative Physical Security for Advanced Reactors proposed rule. The staff gave a high-level overview on:

- the current proposed alternatives being considered
- the regulations being considered to house the performance criteria and alternative
- the draft guidance
- the rulemaking's next steps

Staff informed stakeholders that implementation guidance will be developed with the rule. Staff clarified that NEI is providing draft guidance on the rule's performance criteria and NEI confirmed that the schedule for providing the initial draft of the guidance is June 4, 2020. Staff also clarified that the NRC is reviewing existing NRC guidance to be referenced for the proposed alternatives.

Staff stated that the performance criteria presented is the same as those presented in the published Regulatory Basis document and the December 12, 2019 public meeting. The staff clarified that the performance criteria may receive minor, nonsubstantive changes for the proposed rule. However, public comments may or may not dictate additional changes.

Regarding next steps, the staff presented an overview schedule of when the proposed rule and final rule will be published. The NRC plans to hold a separate public meeting to discuss draft rule text, tentatively scheduled for April 22, 2020, and will release the draft text beforehand.

The NRC reviewed and screened stakeholder proposed alternatives identified during the December 12, 2019, public meeting. Two items are being considered in addition to the two items in the SRM. TVA asked if the staff could share how the staff screened the public comments and the results for each comment. The staff agreed to sharing this information in a future public meeting.

John Segala from the NRC presented on the proposed rule for emergency preparedness. The staff discussed that the Commission issued SRM-SECY-18-0103 (ADAMS Accession No. ML19351C729) in December 2019 and that the staff is addressing the Commission's comments. The staff expects to provide the revised rule package to the Commission in March 2020 and if the Commission approves, the rule will be published in the *Federal Register* for a 75-day comment period. The staff plans to hold a public meeting during the comment period.

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 was scheduled for April 2, 2020.

Enclosure:

1. List of Attendees

SUBJECT: SUMMARY OF FEBRUARY 20, 2020, ADVANCED REACTOR STAKEHOLDER PUBLIC MEETING - DATED May 8, 2020

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**ADAMS Accession No.: ML20113F056**

**\*Via Email**

**NRR-106**

<b>OFFICE</b>	NRO/DANU	NRO/DANU
<b>NAME</b>	JHoellman	JSegala
<b>DATE</b>	05/08/20	05/08/20

**OFFICIAL RECORD COPY**

**PUBLIC MEETING**  
**U.S. NUCLEAR REGULATORY COMMISSION**  
**Thursday, February 20, 2020**  
**9:00 a.m. – 4:00 p.m.**

<b>List of Attendees (in person)</b>	
<b>Name</b>	<b>Organization</b>
John Monninger	U.S. Nuclear Regulatory Commission (NRC)
Brian Smith	NRC
Benjamin Beasley	NRC
Amy Cabbage	NRC
Jim Hammelman	NRC
John Segala	NRC
Adrian Muniz	NRC
Robert Beall	NRC
Nanette Valliere	NRC
Andrew Yeshnik	NRC
Stewart Magruder	NRC
Mallecia Sutton	NRC
Hossein Esmaili	NRC
Jason Schaperow	NRC
Jordan Hoellman	NRC
John Nakoski	NRC
Jake Zimmerman	NRC
Mirabelle Shoemaker	NRC
Michelle Hayes	NRC
Donna Williams	NRC
William Reckley	NRC
Michelle Gonzalez	NRC
Joe Sebrosky	NRC
Hanh Phan	NRC
Ian Jung	NRC
Michelle Hart	NRC
Tom Boyce	NRC
Martin Stutzke	NRC
Robert Roche-Rivera	NRC
Ken Erwin	NRC
Ken Mott	NRC
Kati Austgen	Nuclear Energy Institute (NEI)
Marc Nichol	NEI
Frank Schaaf	ASME Sec. XI
Steven Kraft	Kraft-Contente, LLC
Bo Saulsbury	Pacific Northwest National Laboratory
N.P. Kadambi	Self
Joe Rivers	Self
Frank Akstulewicz	AtoZ Reactor Consulting
Amir Afzali	Southern Company

Clint Medlock	Southern Company
Dr. Deb Luchsinger	NuScale Power
Kevin Deyette	NuScale Power
G.L. Plumlee III	NuScale Power
Cyril Draffin	U.S. Nuclear Industry Council
Farshid Shahrokhi	Framatome
Darrell Gardner	Kairos Power
Drew Peebles	Kairos Power
John Price	Kairos Power