



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

September 27, 2023

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

FROM: Ossy Font, 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 OCTOBER 12, 2022, PERIODIC ADVANCED
REACTOR STAKEHOLDER PUBLIC MEETING

On October 12, 2022, 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:

- CNCS/NRC Third Interim Report
- Discussion of Draft Outline for Sodium Construction Permit Application
- Part 53 Update: Status and Overview of Revisions; Fire Protection Requirements in Framework B
- Overview of the Part 53 Subpart F Interim Staff Guidance
- Technology-Inclusive, Risk-Informed, and Performance-Based Methodology for Seismic Design of Commercial Nuclear Plants
- Seismically Isolated Nuclear Plants Guidance

The meeting notice is available in the NRC's Agencywide Documents Access and Management System (ADAMS) at Accession No. ML22284A147, and the presentation slides are available at ADAMS Accession No. ML22284A141. The Enclosure to this summary provides the attendees for the meeting as captured by Microsoft Teams.

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. No follow-up actions were identified. Members of the public were in attendance and the NRC did not receive public meeting feedback forms.

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The NRC staff provided updates of the Advanced Reactor Integrated Schedule of Activities on the NRC's public website at <https://www.nrc.gov/reactors/new-reactors/advanced/integratedreview-schedule.html>. The NRC staff noted that the schedule reflects activities that have recently been completed, updated, or added since the August 18, 2022, advanced reactor stakeholder meeting.

The NRC staff presented an update to the Canadian Nuclear Safety Commission (CNSC)/NRC report describing the attributes of the Silicon carbide (SiC) coating properties and attributes based on the review of the Advanced Reactor Fuel (AGR) program data.

There was a question on how the licensing of TRISO fueled plants are proceeding without specific SiC end-state attributes determined. The NRC staff is assuming that fission product retention is similar to the AGR program, and, therefore, the report will list desirable SiC attributes. Specific TRISO fueled design reviews will use the identified parameters as supporting information for a case-by-case review. Specific uses of the report information in the CNCS review process should be directed to mediarelations-relationsmedias@cnsccsn.gc.ca.

Another question inquired about the timeline to close identified gaps. The NRC staff does not know the timeline, as that would take additional research/study which is dependent upon other stakeholders such as the US Department of Energy.

Lastly, a stakeholder asked, "What is the most important SiC attribute?" The NRC staff identified the non-columnar grain boundary as an important attribute for intact SiC coating fission product retention (similar to AGR retention).

During the next topic, the NRC staff discussed TerraPower's draft proposed table of contents for their forthcoming construction permit application for the Natrium design. The Natrium draft table of contents can be found in ADAMS at Accession No. [ML22258A301](#). The staff noted differences between the Natrium draft table of contents and that found in advanced reactor content of application project (ARCAP) and technology inclusive content of application project (TICAP) guidance. One of the differences noted was with the structure of Chapter 6 and 7 of the safety analysis report (SAR) found in TICAP guidance document NEI 21-07, Revision 1, "Technology Inclusive Guidance for Non-Light Water Reactor Safety Analysis Report: For Applicants Utilizing NEI 18-04 Methodology" ([ML22060A190](#)). NEI 21-07, Revision 1 proposes that safety related (SR) structures, systems, and components (SSCs) be identified in Chapter 6 of the SAR and non-safety related special treatment (NSRST) SSCs be identified in Chapter 7 of the SAR. The NRC noted that the Natrium draft table of contents included both SR and NSRST SSCs in Chapter 7 of the SAR. The staff further noted that the proposed difference in these chapters had merit because as a TerraPower representative pointed out during the meeting, grouping of systems and subsystems that include both SR and NSRST SSCs is thought to aid the applicant in better describing the design and aid the NRC staff reviewers in better understanding the design. As an example, the TerraPower representative pointed to Section 7.2.3, "Sodium Cover Gas System," as a system that included both SR and NSRST systems and subsystems.

In response to a question from the public during the meeting, the NRC staff noted that ARCAP and TICAP are guidance documents and not requirements. To the extent that applicants would like to deviate from the guidance, the staff suggested that preapplication engagement would help the NRC staff better understand the structure of an application so that questions or concerns could be discussed and resolved prior to the application being submitted.

The next presentation by the NRC staff provided a status update on the ongoing Part 53 rulemaking activities. The presentation focused on the current rulemaking schedule, the recently issued draft proposed rule package that will support upcoming ACRS meetings, fire protection requirements in the package, and recent feedback received on the rule.

Several stakeholders provided feedback on the topic. One stakeholder noted that the proposed requirements for Construction Permit applications to include a description and results of a PRA are burdensome and not reasonable. The comment not only applied to the Part 53 rulemaking activities, but also to the ongoing Parts 50/52 harmonization rulemaking efforts. Another stakeholder appreciated the discussion on Part 53, but noted that the staff's presentation did not address the six key issues conveyed in the NEI/USNIC August 31, 2022, letter (e.g., QHOs, ALARA, FSP). These have been discussed with external stakeholders during previous meetings. Another stakeholder expressed concern that the Part 53 rulemaking activities are entering a period where external stakeholders have limited opportunity to comment on the proposed rule package. The NRC staff noted that there will be multiple meetings at which stakeholders can communicate with the staff and that the formal public comment period would provide another opportunity for stakeholders to submit comments, after which the NRC staff will formally respond. Another stakeholder also reiterated an ongoing concern of their specific to draft fire protection requirements in Part 53, suggesting that deterministic requirements will apply to non-safety related SSCs. The NRC staff clarified that is not the intent of the draft requirements and discussed this point using examples. The final stakeholder provided support on the NRC staff's response on this issue.

The next NRC staff presentation covered development of several interim staff guidance (ISG) documents in support of the Part 53 rule language package. Among these were draft guidance documents addressing the review of staffing plans, operator licensing, and human factors engineering (HFE) for Part 53 facility applicants.

A stakeholder's questions covered staffing approaches for very safe plants. The NRC staff pointed out that staffing was adapted to plant specific needs for safety and also accommodates an alternate approach using Generally Licensed Reactor Operators. The stakeholder also inquired about the opportunity to provide comments. The NRC staff pointed out that these ISGs were part of the Part 53 proposed rule package and public comments would be accepted regarding them during the Part 53 rule's public comment period that will occur after the federal register notice is issued. The stakeholder also made a general comment questioning the extent of the NRC's involvement in the licensing of operators. The NRC staff highlighted that the licensing of operators is a mandated responsibility of the NRC under the Atomic Energy Act. Finally, the stakeholder expressed a concern that the human factors engineering requirements could be extended too broadly to the entire plant. The NRC staff clarified that the scope of the HFE requirement is targeted at contexts where there is a nexus to safety or emergency preparedness.

Another stakeholder asked if the operator licensing examination guidance included the use of augmented reality and virtual reality. The NRC staff stated that it was not explicitly included for exams, but it's something that the NRC can take into consideration for simulation facilities more broadly. The NRC staff also noted that, within the context of operator licensing examinations, there's also a statutory need to ensure that uniform conditions are maintained in the operator licensing process.

The last stakeholder provided a perspective that the scope of rule language could be amended to provide a targeted focus on reactor and radiation safety versus plant safety. Another stakeholder also expressed a similar perspective about focus being placed on the plant versus the reactor. The NRC staff discussed the basis for the existing language used.

The next two presentation were on seismic related topics; specifically, on technology-inclusive, risk-informed, and performance-based methodology for seismic design of commercial nuclear plants and seismically isolated nuclear plants guidance.

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>.

Please direct any inquiries to me at 301-415-2490 or via e-mail at Ossy.Font@nrc.gov.

Enclosure:
Attendance List

SUBJECT: SUMMARY OF OCTOBER 12, 2022, PERIODIC ADVANCED REACTOR
STAKEHOLDER PUBLIC MEETING DATED: SEPTEMBER 27, 2023

DISTRIBUTION:

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ADAMS Accession No.:

Meeting Notice ML22284A147

Meeting Summary

Handouts ML22284A141

NRC-001

OFFICE	NRR/DANU/UARP/PM	NRR/DANU/UARP/BC	NRR/DANU/UARP/PM
NAME	OFont	SLynch	OFont
DATE	09/27/2023	09/27/2023	09/27/2023

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October 12, 2022, Periodic Advanced Reactor Stakeholder Public Meeting
Attendance List

NAME	AFFILIATION
Tom Roberts (Guest)	ACRS
Mohamed Shams	NRC
William Jessup	NRC
Ossy Font	NRC
Donna Williams	NRC
Boyce Travis	NRC
Marcia Carpentier	NRC
William Reckley	NRC
Mihaela Biro	NRC
William Kennedy	NRC
Steven Vitto	NRC
Mallecia Sutton	NRC
Brian Glowacki	NRC
Jim Xu	NRC
Chen, Ben	NRC
Ramon Gascot Lozada	NRC
Jason Piotter	NRC
Maurin Scheetz	NRC
Matthew Hiser	NRC
James O'Driscoll	NRC
Christopher Regan	NRC
Joseph Sebrosky	NRC
Tom Boyce	NRC
John Segala	NRC
Stephanie Devlin-Gill (She/Her/Hers)	NRC
Thomas Scarbrough	NRC
Ben Adams	NRC
Zackery Helgert	NRC
Michelle Hayes	NRC
Marty Stutzke	NRC
Stephen Philpott	NRC
David Desaulniers	NRC
Candace de Messieres	NRC
Hanh Phan	NRC
Reed Anzalone	NRC
Tony Nakanishi	NRC
David Burgess	NRC
Jordan Hoellman	NRC
Michael Orenak	NRC

Enclosure

Gurcharan Matharu	NRC
Anthony Valiaveedu	NRC
Amy Cubbage	NRC
Scott Tonsfeldt	NRC
Ian Jung	NRC
Donald Palmrose	NRC
Yuken Wong	NRC
Anders Gilbertson (He/Him)	NRC
Jeffrey Schmidt	NRC
Robert Taylor	NRC
Theresa Buchanan	NRC
Jing Xing	NRC
Matthew Humberstone	NRC
Nicholas Hansing	NRC
Jesse Seymour	NRC
Lauren Nist (She)	NRC
Charles Moulton	NRC
Belkys Sosa	NRC
Todd Hilsmeier	NRC
Christopher P. Chwasz	NRC Contractor
James C. Kinsey Jr	NRC Contractor
Chisholm, Brandon M.	NRC Contractor
Tom King (Guest)	NRC Contractor
Tom Hicks (Guest)	NRC Contractor
Cyril Draffin (U.S. Nuclear Industry Council (USNIC))	Public
Leigh Lloveras (Breakthrough Institute)	Public
Rani Franovich (Breakthrough Institute)	Public
Peter Hastings (Kairos Power)	Public
Edwin Lyman	Public
Burg, Rob	Public
Jason A. Christensen	Public
Ciocco, Jeff	Public
Scott E. Ferrara	Public
STADTLANDER, Richard	Public
Paul A. Demkowicz	Public
NICHOL, Marcus	Public
Courtenay, Christopher C	Public
HOLTZMAN, Benjamin	Public
Schichlein, Lisa (GE Power Portfolio)	Public

Grabaskas, Dave	Public
Eric Oesterle	Public
Henderson, Ryan Donald	Public
PIMENTEL, Frances	Public
Enfinger, Timothy (GE Power Portfolio)	Public
Friesen, Carl D	Public
Kaniel Z. Tilow	Public
O'NEILL, Martin	Public
Hahn, Matthew	Public
Ashley Harper	Public
Bergman, Jana	Public
Don Eggett	Public
Lance Sterling	Public
Lipinski, Pearle M.	Public
Spalding, Amanda J	Public
Wyche, Altheia	Public
Justin Hawkins	Public
Adam Stein (Breakthrough Institute) (Guest)	Public
Robert Budnitz (Guest)	Public
Nick Kellenberger (Guest)	Public
Guest	Public
Ross (Guest)	Public
Ingrid Nordby (X-energy) (Guest)	Public
Mike Empey (Guest)	Public
David Koenigsfeld (Guest)	Public
mike keller (Guest)	Public
Henneke, Dennis (GE Power Portfolio)	Public
Brandon Hartle (X-energy) (Guest)	Public
Charlotte Geiger (X-energy) (Guest)	Public
Deborah A Luchsinger (Services - 6)	Public
Benjamin D. Kosbab	Public

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