

March 29, 2017

MEMORANDUM TO: John P. Segala, Chief  
Advanced Reactor and Policy Branch  
Division of Safety Systems, Risk Assessment, and Advanced  
Reactors  
Office of New Reactors

FROM: William D. Reckley, Senior Project Manager */RA/*  
Advanced Reactor and Policy Branch  
Division of Safety Systems, Risk Assessment, and Advanced  
Reactors  
Office of New Reactors

SUBJECT: SUMMARY OF MARCH 22, 2017, PUBLIC MEETING  
TO DISCUSS REGULATORY IMPROVEMENTS FOR  
ADVANCED REACTORS

On March 22, 2017, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17068A232), the U.S. Nuclear Regulatory Commission (NRC) staff held a Category 2 public meeting with stakeholders, Department of Energy (DOE), Nuclear Infrastructure Council (NIC), Nuclear Innovation Alliance (NIA), and Nuclear Energy Institute (NEI), to discuss ongoing initiatives within the industry and NRC related to the development and licensing of non-light water reactors. A list of individuals attending or participating in the meeting by webinar can be found as Enclosure 1 to this summary. The slides and meeting handouts used by the staff and other participants are available in ADAMS under Accession No. ML17086A419.

The staff supported a discussion of the NRC's "Draft Mid- and Long-Term implementation Action Plans" (ADAMS Accession No. ML17054D483), made publicly available in February 2017, and the draft security design considerations (ADAMS Accession No. ML16305A328) issued for public comment on March 13, 2017 (Federal Register Notice 2017-04873). The staff and stakeholders agreed that the security design considerations were related to and would be discussed in future meetings related to a white paper submitted by NEI entitled "Proposed Physical Security Requirements for Advanced Reactor Technologies" (ADAMS Accession No. ML17026A440). A public meeting is being planned for May 2017 to further discuss the white paper and related topics described in the security design considerations. The staff's presentation during the morning session ended with a short discussion on the importance of licensing project plans and the use of the enhanced safety focused review being used for small modular reactors as a starting point for developing the scope and depth of applications and NRC reviews.

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Mr. Jeffrey Merrifield represented NIC during the meeting and his presentation is included in the meeting handouts (ADAMS Accession No. ML17086A419). Mr. Merrifield provided the results of a survey of NIC's technology owners group – representing the views of 16 advanced reactor developers. The survey gathered information about the relative importance or priority of policy issues related to the development and licensing of advanced reactors. Mr. Merrifield noted that the presentation was providing raw data and that ongoing assessments and discussions within NIC's technology owners group might provide additional insights or clarifications about the rankings. Several issues ranking high in the survey include developing guidance for appropriate source terms, use of probabilistic risk assessment, licensing basis events, functional containment performance criteria, and matters related to fuel cycle facilities and increased fuel enrichments. NIC and NEI agreed to coordinate their activities and preparation of possible white papers on deployment and regulatory issues associated with the use of increased fuel enrichments. This topic is likely to be included on the agenda for a public meeting later this year. Some of the high priority issues are being discussed in the context of the utility-led licensing technical requirements modernization project (LTRMP), which was the subject of the afternoon session. Meeting participants observed that the list of policy issues were developed for both light-water small modular reactors (SMRs) and non-light water technologies. The staff agreed to work with stakeholders and provide for the next public meeting, tentatively scheduled for May 4, 2017, and updated list of policy issues specific to non-light water designs. The staff also agreed to include a discussion of functional containment performance criteria on the agenda for the May 4, 2017, public meeting.

Mr. Peter Hastings, representing NIA, provided an update on their activities related to preparing guidance on what constitutes a “major portion” of a plant design. The guidance is expected to help developers considering an application for a standard design approval (SDA). Phase 1 of the NIA efforts involve preparing a white paper describing the SDA process for inclusion in the NRC's regulatory roadmap described under Strategy 3 within the near-term implementation action plans. The white paper will be discussed at the May 2017 public meeting. Mr. Hastings provided several examples of possible uses of the “major portions” scope of an SDA and how developers could use the process to address specific issues. Subsequent phases of the NIA activity include providing additional guidance for use in licensing project plans and integration of the SDA-related guidance with broader regulatory framework initiatives.

The discussions in the afternoon portion of the meeting focused on elements of Strategy 3 within the NRC's near-term implementation action plans. In particular, contributing activities Nos. 3.1 and 3.2 involve the NRC establishing and documenting criteria necessary to reach safety, security, or environmental findings for non-LWR submissions and determining and documenting appropriate licensing bases and accident sets for non-LWR technologies. These activities are supported by the utility-led LTRMP being coordinated by NEI and Southern Company. Following a short presentation by the staff discussing recent interactions with the Advisory Committee on Reactor Safeguards, Amir Afzali (Southern Company) described the ongoing LTRMP activities and Karl Fleming responded to questions posed to stakeholders by the NRC staff during the public meeting in February 2017. Dr. Fleming provided some background on previous initiatives related to establishing licensing basis events and associated acceptance criteria as well as the use of deterministic and probabilistic analyses to ensure defense in depth. The staff encouraged the submittal of a draft white paper to help inform activities defined in the NRC's implementation action plans and to develop further plans for related matters such as the role of probabilistic risk assessments; safety classification of structures, systems, and components; and approaches to provide defense in depth.

An advanced reactor workshop jointly sponsored by DOE and the NRC is scheduled for

April 25-26, 2017. The staff expects to hold a public meeting in May 2017 with NEI and other stakeholders on the white paper addressing proposed physical security requirements for advanced reactors. The next in the series of working-group public meetings on regulatory improvements for advanced reactors is tentatively scheduled for May 4, 2017. The agenda for the May meeting will include discussions of:

- SDAs covering the design of the entire facility or major portions thereof;
- an updated list of policy issues,
- functional containment performance criteria; and
- LTRMP.

Please direct any inquiries to me at (301) 415-7490 or [william.reckley@nrc.gov](mailto:william.reckley@nrc.gov).

Enclosure:

1. List of Attendees

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**ADAMS Accession Nos.:**

**Package ML17090A575**

**Memo ML17090A574**

**Meeting Slides ML17086A419**

**NRO-002**

<b>OFFICE</b>	NRO/DSRA/ARPB
<b>NAME</b>	WReckley
<b>DATE</b>	3/29/2017

**OFFICIAL RECORD COPY**

Public Meeting to Discuss Regulatory Improvements for Advanced Reactors  
 March 22, 2017  
 Attendance List

Name			Organization		
Mark	Caruso	NRC	* Jordan	Hagaman	GE-H
Amy	Cubbage	NRC	Patricia	Campbell	GE-H
Mike	Franovich	NRC	* Dale	Wuokko	Global Energy Management
James	Hammelman	NRC	* Ed	Wallace	GNBC Associates
Michelle	Hart	NRC	* Mark	Holbrook	INL
Tara	Inverso	NRC	Jim	Kinsey	INL
Kim	Lawson-Jenkins	NRC	* Wayne	Moe	INL
Pete	Lee	NRC	* JongSeuk	Park	KINS
Steven	Lynch	NRC	Kati	Austgen	NEI
Carol	Moyer	NRC	Anne	Cottingham	NEI
Jan	Mazza	NRC	Mike	Tschiltz	NEI
Bill	Reckley	NRC	* Alexandra	Popova	Oklo
* Alison	Rivera	NRC	* Randy	Belles	ONRL
John	Segala	NRC	* George	Flanagan	ONRL
Courtney	St. Peters	NRC	Steven	Dolley	Platts
George	Tartal	NRC	* Gary	Ruf	PSEG
Lucieann	Vechioli	NRC	Amir	Afzali	Southern Co.
* Acacia	Brunett	ANL	Karl	Fleming	Southern Co.
* Matthew	Bucknor	ANL	* Daniel	Carleton	Terrestrial USA
* David	Grabaskas	ANL	* Lisa	Matis	Tetrattech.com
* George	Honma	Areva	* Per	Peterson	UC-Berkeley
* Farshid	Shahrokhi	Areva	David	Blee	USNIC
* Glenn	Neises	Burns & McDonnell	Jeff	Merrifield	USNIC
Jana	Bergman	Curtiss-Wright	* Caleb	Ward	USNIC
Gilbert	Brown	Elysium	* Ray	Kuyler	Westinghouse
* Dominic	Napolitano	Enercon	* Art	Wharton	Westinghouse
* George	Brendahl	Energysys	Edward	Burns	X-energy
* Heath	Dehn	EPM	N. Prasad	Kadambi	
* William	Wallace	EPM	* William	Kelly	
* John	Bolin	GA	* Staci	Wheeler	

\* indicates individual participated by webinar