

June 6, 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 MAY 3-4, 2017, PUBLIC MEETING  
TO DISCUSS REGULATORY IMPROVEMENTS FOR  
ADVANCED REACTORS

On May 3–4, 2017, the U.S. Nuclear Regulatory Commission (NRC) 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 (Agencywide Documents Access and Management System [ADAMS] Accession No. ML17108A693). Enclosure 1 contains a list of meeting attendees and participants who joined via webinar. The slides and meeting handouts are available in ADAMS Accession No. ML17130A782.

During the May 3, 2017, morning session, representatives from NEI described the content of a white paper (WP) entitled, “Proposed Physical Security Requirements For Advanced Reactor Technologies,” dated December 14, 2016 (ADAMS Accession No. ML17026A474). The WP outlines criteria for determining when certain physical security requirements applicable to current generation light water reactors (LWRs) might be relaxed due to design characteristics associated with some advanced reactor designs. The proposed criteria for a facility using the proposed framework include:

1. uses a reactor technology that is not susceptible to significant core damage and spent fuel sabotage, or
2. does not have an achievable target set, or
3. has engineered safety and security features that allow for implementation of mitigation strategies to prevent significant core damage and spent fuel sabotage if a target set is compromised, destroyed, or rendered nonfunctional.

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The NRC asked questions and provided initial observations on the proposal. This discussion was followed by a presentation by Dr. Edwin Lyman of the Union of Concerned Scientists, during which he offered concerns about the approach proposed in the NEI WP. The morning session ended with a discussion of follow-up activities, including the NRC staff providing written questions and comments by the end of June 2017, NEI submitting a revised WP, and the NRC staff then formulating a position and making recommendations to the Commission related to pursuing or not pursuing a rulemaking related to physical security requirements for advanced reactor technologies.

The May 3, 2017, afternoon discussions centered on a draft WP "Selection of Licensing Basis Events," provided by the utility-led Licensing Modernization Program (LMP) supported by DOE and NEI related to the identification and analysis of licensing basis events for non-LWR designs (ADAMS Accession No. ML17104A254). The staff provided individual comments and questions. Dr. Karl Fleming, representing the LMP, responded to questions and provided additional background, including explanations for the approach presented in the WP. The afternoon session ended with a discussion of followup activities, including the NRC staff providing written questions and comments by the end of May 2017, LMP submitting a revised WP, and subsequently including the guidance related to licensing basis events in a consolidated guidance document for licensing of non-LWRs to be prepared and submitted by NEI.

The May 4, 2017, morning session included presentations by Dr. Fleming on the planned submittal of a draft WP on the use of probabilistic risk assessment (PRA) in the design and licensing of non-LWR designs. The staff provided individual comments and questions. Dr. Fleming responded to questions and provided additional background and explanations for the approach expected to be provided in the WP. Much of the discussion involved standard American Nuclear Society/American Society of Mechanical Engineers PRA Standard for Advanced Non-LWRs, issued for trial use in December 2013. Following the LMP discussion, Mr. Jim Kinsey of the Idaho National Laboratory provided a presentation giving some of the policy issue history on functional containment performance. The staff plans to prepare a WP on this topic for discussion at a future public meeting and subsequently provide a paper to the Commission with the goal of resolving remaining issues on performance criteria for retaining radioactive materials within defined barriers provided by various non-LWR designs.

Finally, during the May 4, 2017, afternoon session, Mr. Peter Hastings, representing NIA, provided a summary of a WP, "Clarifying 'Major Portions' of a Reactor Design in Support of A Standard Design Approval," dated April 2017 (ADAMS Accession No. ML17128A507). The guidance is expected to help developers considering an application for a standard design approval (SDA). The staff plans to provide comments on the WP in June 2017, and expects to incorporate or reference the guidance in a future update to the regulatory roadmap for non-LWR technologies (draft roadmap provided in ADAMS under Accession No. ML16291A248). Additional actions related to the NIA WP will be discussed in future public meetings. The May 4, 2017 afternoon session also included a discussion of policy issues associated with non-LWR designs and updating a table (see slides provided in ADAMS under Accession No. ML17130A782) that previously included discussions related to both LWR small modular reactors (SMRs) and non-LWR technologies. An update to the table is provided in Enclosure 2. The table will be discussed and updated during future public meetings.

The next in the series of working-group public meetings on regulatory improvements for advanced reactors is tentatively being moved to June 21, 2017, to avoid conflicting with an annual meeting of the American Nuclear Society. The agenda for the June meeting will include discussions of:

- LMP LBE white paper (NRC comments and questions)
- LMP PRA white paper
- Policy issues
- Other topics to be determined

Enclosures:

1. List of attendees
2. Updated policy issues table

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<b>DATE</b>	06 / 06 / 2017	05 / 25 / 2017	06 / 06 / 2017

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Public Meeting to Discuss Regulatory Improvements for Advanced Reactors  
 May 3-4, 2017  
 Attendance List

<b>Attendance List – Attended at least part of meeting in person</b>					
<b>Name</b>		<b>Organization</b>	<b>Name</b>		<b>Organization</b>
Marcia	Carpentier	NRC	David	Young	NEI
Mark	Caruso	NRC	Thomas	Zachariah	NEI
Amy	Cubbage	NRC	B. Eric	Brooks	NEI/Exelon
David	Diac	NRC	Karl	Fleming	SNC
Mike	Franovich	NRC	Mike	Meier	SNC
Jim	Hammelman	NRC	Jason	Reed	SNC
Michelle	Hart	NRC	Amir	Afzali	SNC/SCS
Michelle	Hayes	NRC	Peter	Hastings	THG
Gary	Holahan	NRC	Timothy	Crook	Transatomic Power
Pete	Lee	NRC	Ed	Lyman	UCS
Jan	Mazza	NRC	Gilbert	Brown	Umass-Lowell
Nicholas	McMurray	NRC	Edward	Burns	X-Energy
John	Monninger	NRC			
Malcolm	Patterson	NRC			
Hanh	Phan	NRC			
Alison	Rivera	NRC			
Joe	Rivers	NRC			
John	Segala	NRC			
Courtney	St.Peters	NRC			
Martin	Stutzke	NRC			
Robert	Bari	BNL			
George	Apostolakis	Consultant			
Prasad	Kadambi	Consultant			
Jana	Bergman	Curtiss-Wright			
Jim	Kinsey	DOE-INL			
Trevor	Cook	DOE-NE			
Steve	Frantz	Morgan Lewis			
Dimitri	Lutchenikov	MPR Assoc			
Kati	Austgen	NEI			
Gregory	Krueger	NEI			

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<b>Attendance List – Registrants for Webinar</b>		
<b>Unfortunately, the NRC was unable to support the gotowebinar service during this meeting, many registrants were able to participate via the teleconference bridge</b>		
Name	E-mail	
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