



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

December 8, 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 AUGUST 20, 2020, ADVANCED REACTOR
STAKEHOLDER PUBLIC MEETING

On August 20, 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. ML20232D199 and the presentation slides at Accession No. ML20232D114. Enclosure 1 lists the meeting attendees who participated remotely.

NRC staff provided an overview of the Advanced Reactor Integrated Schedule of Activities on the NRC's public website at <https://www.nrc.gov/reactors/new-reactors/advanced.html#advSumISR>. The staff specifically noted the activities that have recently been completed or that have been added since the June 18, 2020, advanced reactors stakeholder meeting.

Argonne National Laboratory staff provided a presentation on their report, "Assessment of Tritium Detection and Control in Molten Salt Reactors [MSRs]" (ADAMS Accession No. ML20157A155), which was developed (1) to assist the NRC in expanding capacity and capabilities for licensing non-LWRs through knowledge base and skillset development, (2) to provide a technical assessment of tritium behavior in MSRs, and (3) to provide related regulatory considerations.

Enclosure:
List of Attendees

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

The NRC staff and Idaho National Laboratory (INL) staff provided a presentation on the INL report, “Technology-Inclusive Determination of Mechanistic Source Terms [MSTs] for Offsite Dose-Related Assessments for Advanced Nuclear Reactor Facilities” (ADAMS Accession No. ML20192A250). The report was developed to support the NRC’s non-LWR vision and strategy near-term implementation action plans and to support the NRC’s implementation of strategies to respond to the Nuclear Energy Innovation and Modernization Act (NEIMA).

The NRC staff provided an update on its activities related to advanced reactor source term and the pilot studies that are planned in 2020 and 2021. The project objectives are to develop an understanding of non-LWR beyond-design-basis-accident behavior and to demonstrate application of the NRC’s modeling and simulation codes, MELCOR and SCALE, for non-LWR technologies. The NRC uses MELCOR and SCALE to model severe accident behavior, including the retention or attenuation of radionuclides by plant systems and structures, in the resolution of safety concerns and evaluation of possible regulatory actions. The NRC staff plans to conduct public workshops in 2021 to facilitate dialogue with stakeholders on the NRC staff’s approach to assessing source term for non-LWR technologies using MELCOR and SCALE.

NEI provided a discussion on annual fee regulations for non-LWRs. NEI discussed their preferred annual fee rule approach, which consists of expanding the small modular reactor (SMR) variable fee structure to include non-LWRs and to address disproportionate impacts to micro-reactors. NEI noted that they are working on an NEI position paper on non-LWR annual fees, that they expect to release soon.

The NRC staff provided an overview of its plans to complete a rulemaking to establish a technology-inclusive, regulatory framework for optional use for commercial advanced nuclear reactors (Part 53), as required by NEIMA. The staff provided an overview of Part 53 rulemaking plan (SECY-20-0032, ADAMS Accession No. ML19340A056), which describes the staff’s expectation for extensive interactions with external stakeholders and the Advisory Committee on Reactor Safeguards (ACRS) on the content of the rule. The staff discussed Part 53 rulemaking objectives and noted that they developed a white paper (ADAMS Accession No. ML20195A270) to support discussions with the ACRS and other stakeholders. The staff is awaiting Commission decision on the rulemaking plan and scheduling public meetings dedicated to developing Part 53.

NEI provided their perspectives on the Part 53 rulemaking, noting that industry’s activities include an evaluation of the Atomic Energy Act (AEA) and that they envision a new Part 53 safety paradigm that creates a new bridge from the AEA to Part 53, promotes flexibility and efficiency, and evaluates international regulatory paradigms. NEI encouraged the NRC to evaluate the existing regulatory framework to identify what should be new for, and what could be incorporated into, Part 53.

USNIC provides their perspectives on the Part 53 rulemaking, noting that USNIC welcomes the opportunity to engage with NRC to develop Part 53 and will be providing NRC with 50 comments addressing each of the 14 issues described in the NRC white paper. USNIC discussed that the goal of Part 53 should be to craft a technology-inclusive, flexible regulatory framework that is so well defined that developers want to use it over the existing Part 50 and Part 52 frameworks.

The NRC staff provided a status update for its spent fuel reprocessing rulemaking, including the background, current status, and next steps. The staff plans to inform the Commission of its

recommendation regarding any proposed rulemaking for spent fuel reprocessing on or before March 31, 2021, and encourages early interactions from developers on anticipated needs or activities involving reprocessing. Following the meeting, the staff was notified by the American Nuclear Society (ANS) that the representation of ANS's letter should be clarified because the NEI and ANS positions were not identical. ANS position is summarized as follows:

While no new reprocessing facilities are planned in the United States at this time, this in itself should not be the rationale for suspending rulemaking. Rulemaking is a deliberative process, and it is important to establish a comprehensive regulatory framework prior to any license application being submitted. Moreover, completing the reprocessing rulemaking would support future options for, and potential innovations toward, used fuel management as well as clean energy generation using advanced reactors.

The NRC staff provided an overview of the Oak Ridge National Laboratory report, "Proposed Guidance for Preparing and Reviewing a Molten Salt Non-Power Reactor Application" (ADAMS Accession No. ML20219A771), which was developed in response to NEIMA as the NRC staff identified an opportunity to enhance its readiness to license non-power reactors that will use MSR technology. The staff noted that they plan to endorse the report for use by potential non-power MSR applicants by January 2021 and that subsequently, the report will likely be incorporated in the next revision of NUREG-1537, "Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors."

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 October 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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PUBLIC MEETING DATED: DECEMBER 8, 2020

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JSegala, NRR

JHoellman, NRR

ADAMS Accession No.: ML20317A303

NRC-001

OFFICE	NRR/DANU/UARP/PM	NRR/DANU/UARP/BC	NRR/DANU/UARP/PM
NAME	JHoellman	JSegala	JHoellman
DATE	11/19/2020	11/23/2020	12/8/2020

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PUBLIC MEETING
U.S. NUCLEAR REGULATORY COMMISSION
Thursday, August 20, 2020
10:00 a.m. – 3:00 p.m.

List of Attendees (on phone)	
Blank Fields = Indecipherable Information	
Name	Organization
Amy Cabbage	U.S. Nuclear Regulatory Commission (NRC)
John Segala	NRC
Jordan Hoellman	NRC
Hanh Phan	NRC
Jo Jacobs	NRC
Christy Galster	NRC
Bill Reckley	NRC
Jason Shaparow	NRC
Eric Oesterle	NRC
Ben Beasley	NRC
Martin Stutzke	NRC
Juan Uribe	NRC
Victoria Anderson	NRC
Michelle Gonzalez	NRC
Tim Lupold	NRC
Andrea Kock	NRC
Jonathan Marcano	NRC
Anthony Rossi	NRC
Adrian Muniz	NRC
Mo Shams	NRC
Kati Austgen	Nuclear Energy Institute (NEI)
Marc Nichol	NEI
Cyril Draffin	U.S. Nuclear Industry Council (USNIC)
Dave Grabaskas	Argonne National Laboratory (ANL)
Kurt Vedros	Sandia National Laboratory (SNL)
Marlon Bosca	
Hong Bin	
Billy Blamey	
Andre Alfonso	
Tanju Sofu	ANL
William Kennedy	NRC
Greg Casto	NRC
Nan Valliere	NRC

Alex Runner	Oklo, Inc
Alice Caponiti	US Department of Energy (DOE
Aaren Sida	BRC
Agustus	Kairos Power
Alan Kuritzky	NRC Office Of Research
Alex Chereskin	NRC
Alex Hashemian	AMS
Alex Renner	OOKLA INC
Alyssa Beasoey	NRC
Alyssa Easley	NRC
Amir Afzali	Southern Company
Andrea	NRC
Andrew Barto	US NRC
Andrew Clark	Sandia National Laboratories
Andy Zock	Senate
Anthony Bowers	NRC
Antonio	NRC
Antonio Barrett	NRC
April Rice	ELS
Ark Rictar	NEI
Ashley Meredith	NRC
Augustus Merwin	Augustus Merwin
Ben Beasley	NRC
Bhet Sigmon	Duke Energy
Bill Horack	Brook Haven National Laboratory
Bob Fitzpatrick	US NRC
Brad Beeny	Sandia National Labs
Brandon Marlow	Southern Nuclear
Brian Johnson	Terra Power
Brian Smith	NRC
Brian Thomas	NRC
Casper Son	NRC
CBA	CBA
Charles Heck	GNF
Chris Faucet	Sandia National Labs
Chris Van Wert	NRC
Clint Medlock	Southern Company
Corey Dukehart	NRC
Damon Miranda	Okla
Dan Barss	NRC
Dan Clayton	Sandia National Labs
Dan Vars	NRC
Dana Daughtery	NRC

Dana Dorty	NRC
Daniel Aushew	NRC
Daniel Jew	NRC
Darrell Gardner	Karios Power
David Bars	NRC
David Desaulniers	NRC
David Hinderla	GE Hitachi
David Hindes	DEH
David Louie	MDNS Laboratory
David Luxat	Sandia National Labs
Dawn Alver	NRC
Derrek Widyamer	NRC
Don Algama	NRC
Donald Palmrose	NRC
Donna Williams	NRC
Douglas Osborn	Sandia Labs
Earl Saito	GEH
Ed Mckenzie	ID National Laboratory
Ed Wallace	GMBC Associates
Edwin Lyman	Union of Concerned Scientists
Eric Oesterle	NRC
Eric Schrader	NRC
Esse Grayseefur	NRC
Evans Modnay	NRC
Everett Redmond	NEI
Farshid Shahrokhi	Framatome
Fred Gelbard	Sandia National Labs
Frostie White	GE
Gary Jenkins	NRC
George Wadkins	GE Hitachi
Gustavo Reyes	ID National Laboratory
Guzmo Siddique	NRC
Hassan Quidambi	Consultant
Hossein Smilie	US NRC
Hunt Phan	NRC
Husain Esmile	NRC
Ian Jung	NRC
Irene Wu	NRC
Jamal Malmond	SNL
James Hammelman	NRC
James Rubenstone	NRC
Jana Bergman	Curtis-Wright
Jane Mazza	NRC

Jane Opamondo	Morgan Lewis
Jason Chaparo	NRC
Jason Christensen	ID National Laboratory
Jason Redd	Southern Nuclear
Jeffrey Schmidt	NRC
Jennifer Leute	Sandia National Labs
Jim Hammelman	NRC
Jim Kinley	Idaho National Labs
Joanna Mcfarlane	Oak Ridge National Laboratory
Joe Giacinto	NRC
John Bolin	General Atomics
John Bolton	Sanida National Labs
John Bowlen	General Atomics
John Masse	NRC
John Tomon	NRC
Jon Barr	NRC
Jong Chang	Terra Power
Jordan Hagueman	Kairos Power
Juan Arella	RC
Kace Gonsonny	Member of the Public
Kamel	Southern Conference
Karen Sida	OAC
Kasaad Kadamby	Consultant
Kayla Gamin	NRC
Keith Compton	US NRC
Kenneth Armstrong	US NRC
Kenneth Wagner	MD National Labs SNL
Kim Weber	nark
Larry Humphries	Sandia National Labs
Leanna Gulonick	Public Citizen
Len Moe	ID National Laboratory
Louis Caponi	NRC
Louis Lanese	GE Hitachi
Lucks Albright	San Dia
Lynn	ID National
Mallecia Sutton	NRC
Margaret Ellenson	Kairos Power
Margaret Wilson	Kairos Tower
Marilyn Diaz	NRC
Marsha Carpentier	NRC
Martain Stuskey	NRC
Martin Karr	Centrus Energy Corp
Martin O'Neill	NEI

Maryam Khan	NRC
Matthew Denman	Karios Power
Meraj Rahimi	NRC
Michelle Gonzalez	NRC
Michelle Hart	NRC
Michelle Hayes	NRC
Mike Case	NRC
Mike Kay	NRC
Mike Mayfield	Self
Mike Poore	ORNL
Mu Magadee	NRC
Nathan Peck	GE Hitachi
Nicholas McMurray	Clearpath
Nicholas Moran	Attorney Nuclear Regulatory Staff
Nichole Zahey	Pac NW National Lab
Nicole Layhey	Pacific NW National Lab
Nicole Schlischtig	Kairos Power
Nicole Schwit	Kairos
Nu Volly	Pacific NW National Laboratories
Olive Runner	Oklo Inc
Pamela Branon	US NRC
Pete Gaillard	Perra Power
Peyton Douv	USNRC
Philip Sharpe	Sutudsvki Power
Philly E	NRC
Prasad Pradanvi	Consultant
Provided Earlier	TEA
Randall Belles	ORNL
Rayjoon Wang	NRC
Ren Sid	
Ricardo Torres	US NRC
Richard Chang	NRC
Richard Rivera	US NRC
Rick Paese	
Rob Burg	Engineering Planning and Management
Rob Chess	US Senator
Rob Taylor	US NRC
Rob Vurg	Engineering Planning and Management
Robert Beall	US NRC
Robert Carroll	OKLO
Rod Mccullum	Nuclear Energy Institute
Rudy Norwiggy	

Russ Felts	NRC
Ryan Henderson	Southern Nuclear
Sam Duadrado	NRC
Scott Bussey	USNRC
Scott Pfeffer	GE Hitachi
Shakur Moore	NRC
Shawn Harwell	NRC
Shayan Shahabizi	OR National Laboratory
Stephanie	NRC
Steve Bujoreck	NRC
Steve Nesbit	
Steve Skutmik	Oak Ridge National Laboratory
Steven Dolly	
Steven Vitto	NRC
Stew Mgrew	US NRC
Sue Maganis	NRC
Susan Rodriguez	NRC
Tammy Moran	
Thomas Hennek	GE Hitachi
Tim Lutold	US NRC
Timothy Hooker	NRC
Tom Hicks	Idaho National Lab
Tom King	INL
Tom Voice	NRC
Tony Naknishi	Commission Office
Travis Chapman	X-energy
Tyler Beck	NRC
Valerie Gray	NRC
Wayne	ID National Lad
Wendy Reed	US NRC
William Kennedy	NRC
William Wieselquist	Oak Ridge National Lab
Wing Mo	ID National
Zander Nausol	Terra Power