



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

January 30, 2024

MEMORANDUM TO: Gerond A. George, Chief  
Licensing Projects Branch  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

FROM: Daniel G. King, ATF Project Manager */RA/*  
Licensing Projects Branch  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF THE JANUARY 19, 2024, PHENOMENON  
IDENTIFICATION AND RANKING TABLE PANEL FOLLOW-UP  
DISCUSSION ON HIGH BURNUP FUEL DISPERSAL AND ITS  
CONSEQUENCES PUBLIC MEETING

On January 19, 2024, the U.S. Nuclear Regulatory Commission (NRC) staff and Information System Laboratories, Inc. (ISL) held a hybrid phenomenon identification and ranking table (PIRT) panel public meeting with representatives from the nuclear industry to discuss high burnup uranium dioxide fuel fragmentation, relocation, and dispersal. The purpose of the meeting was to provide a follow-up to the December 2023 PIRT panel meeting (Agencywide Documents and Management System (ADAMS) Accession No. ML23352A274), to ask questions of the NRC staff or make comments about issues related to the scope of the PIRT. The meeting notice can be found in the ADAMS under Accession No. ML24017A004.

Key observations from the meeting discussions:

- The PIRT panelists agreed that the fuel particle size distribution is a key phenomenon that influences fuel dispersal during a loss-of-coolant accident (LOCA).
- The panelists agreed that the mechanisms leading to transient fission gas release and high burnup fuel dispersal during a LOCA would not be active during a fuel handling accident.
- Fuel dispersal is likely not a concern during a reactivity-initiated accident; however, panelists need more time to develop and finalize their rankings of phenomena for this type of accident.

Contact: Daniel G. King, NRR/DORL/LLPB  
301-415-1233

James Corson, RES/DSA/FSCB  
301-415-2458

The following schedule going forward was agree upon by the NRC staff, ISL, and panelists. Note that the panelists will be performing their own rankings individually with a consolidated table being constructed in January 2024.

January 2024	Panel members complete ranking remaining phenomena, individually.
February 2024	ISL distribute draft report capturing outcomes to NRC staff and panelists for comment.
February 2024	ISL submits draft final report to NRC for publication.

No comments were received during the public comment portion of the meeting. Additional information on Accident Tolerant Fuel PIRTs can be found at:

<https://www.nrc.gov/reactors/power/atf/pirt.html>

No regulatory decisions were made in the meeting.

Enclosure:  
List of Attendees

## List of Attendees

PHENOMENON IDENTIFICATION AND RANKING TABLE PANEL FOLLOW-UP DISCUSSION  
ON HIGH BURNUP FUEL DISPERSAL AND ITS CONSEQUENCES PUBLIC MEETING  
January 19, 2024

<b>U.S. Nuclear Regulatory Commission (NRC)</b>	
<b>First Name</b>	<b>Last Name</b>
Steve	Bajorek
Andrew	Bielen
Philip	Benavides
Kristy	Bucholtz
Shawn	Campbell
Alice	Chung
James	Corson
Vic	Cusumano
David	Garmon
Gerond	George
Victor	Hall
Daniel	King
Joseph	Messina
Ashley	Smith
Ted	Smith
Joseph	Staudenmeier
Josh	Whitman

<b>Non-NRC</b>		
<b>First Name</b>	<b>Last Name</b>	<b>Organization (if provided)</b>
Colleen	Armoruso	Information System Laboratories (ISL)
Carl	Beyer	Pacific Northwest National Laboratory
Jana	Bergman	
Francis	Bolger	Electric Power Research Institute (EPRI)
Nathan	Capps	Oak Ridge National Laboratory
Kris	Cummings	NuScale Power
Dave	Kropaczek	Veracity Nuclear
Wade	Marcum	Oregon State University
Kurshad	Muftuoglu	EPRI
Vesselin	Palazov	ISL
H.	Scott	
Charlyne	Smith	
Gretar	Tryggvason	Johns Hopkins University
Jason	Williams	ISL
Gordo	Wissinger	Framatome Inc. (Framatome)

Note: Attendance list based on Microsoft Teams participant list and in person attendee sign in sheet. This list does not include individuals who did not provide their last name either in registering for the meeting or by a follow-up email.

SUBJECT: SUMMARY OF THE JANUARY 19, 2024, PHENOMENON IDENTIFICATION AND RANKING TABLE PANEL FOLLOW-UP DISCUSSION ON HIGH BURNUP FUEL DISPERSAL AND ITS CONSEQUENCES PUBLIC MEETING  
 DATE: JANUARY 30, 2024

**DISTRIBUTION:**

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RidsNrrDnrl	SKrepel, NRR	VCusumano, NRR
RidsNrrDss	JMessina, NRR	JWhitman, RES
RidsNrrDssSfnb	ASmith, NRR	JStaudenmeier, RES
AKock, NRR	KWebber, RES	ABielen, RES
BPham, NRR	VHall, RES	PBenavides, NMSS
GGeorge, NRR	HEsmaili, RES	TSmith, NMSS
DHarrison, NRR	SBajorek, RES	

**ADAMS Accession No.:  
 ML24023A577 (Meeting Summary)**

OFFICE	NRR/DORL/LLPB/PM	RES/DSA/FSCB	NRR/DORL/LLPB/LA	RES/DSA/FSCB/BC
NAME	DKing	JCorson	DHarrison	HEsmaili
DATE	1/24/2024	1/24/2024	1/26/2024	1/26/2024
OFFICE	NRR/DORL/LLPB/BC	NRR/DORL/LLPB/PM		
NAME	GGeorge	DKing		
DATE	1/30/2024	1/30/2024		

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