



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

January 3, 2024

MEMORANDUM TO: William T. Jessup, Chief
Advanced Reactor Licensing Branch 1
Division of Advanced Reactors and Non-Power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

FROM: Roel A. Brusselmans, Project Manager /RA/
Advanced Reactor Licensing Branch 1
Division of Advanced Reactors and Non-Power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF THE JULY 12, 2023, PARTIALLY CLOSED
PUBLIC MEETING WITH TERRAPOWER, LLC, TO DISCUSS IN-
VESSEL DESIGN BASIS ACCIDENT WITHOUT RELEASE
METHODOLOGIES FOR THE NATRIUM DESIGN (EPID NO. L-
2021-LRM-0071)

Meeting Information:

Applicant: TerraPower, LLC (TerraPower)

Project No.: 99902100

Public Meeting Notice Agencywide Documents Access and Management System (ADAMS)
Accession No.: ML23193A838

Applicant Presentation Slides: ML23181A189

Meeting Attendees: See the enclosure for a list of meeting attendees.

CONTACT: Roel A. Brusselmans, NRR/DANU
(301) 415-0829

Meeting Summary:

On July 12, 2023, the U.S. Nuclear Regulatory Commission (NRC) staff held a partially closed public meeting with TerraPower to provide the NRC staff with an overview of the methodologies used by TerraPower to evaluate in-vessel design basis accidents (DBAs) without releases for the Sodium design. This meeting was held in anticipation of a forthcoming topical report from TerraPower regarding the same subject. Participants included representatives from TerraPower, General Electric Hitachi, Bechtel, Argonne National Lab, and members of the general public. The NRC staff conducted the meeting in accordance with NRC Management Directive 3.5, "Attendance at NRC Staff-Sponsored Meetings" (ML21180A271).

The NRC staff began the meeting with an introduction and explained that a portion of the meeting would be closed to the public to discuss proprietary information. During the public portion of the meeting, TerraPower gave an overview of the Sodium design including a discussion of project goals, plant overview, and graphics explaining the design. TerraPower described the DBA selection process and the related dose acceptance criteria in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.34, "Contents of applications; technical information." TerraPower also described its radiological release methodology, including how the methodology aligns with the Evaluation Model Development and Application Process guidance in Regulatory Guide 1.203, "Transient and Accident Analysis Methods."

During the closed portion of the meeting, TerraPower provided additional details regarding the in-vessel DBA without release methodology for the Sodium design. Specifically, TerraPower described plant modeling, reactor core modeling, reactor protection system modeling, and uncertainty quantification modeling. TerraPower and the NRC staff discussed the next steps for future interactions regarding the Sodium reactor design.

No regulatory decisions were made as a result of this meeting.

Enclosure: List of Meeting Attendees

cc: TerraPower Sodium via GovDelivery

SUBJECT: SUMMARY OF THE JULY 12, 2023, PARTIALLY CLOSED PUBLIC MEETING WITH TERRAPOWER, LLC, TO DISCUSS IN-VESSEL DESIGN BASIS ACCIDENT WITHOUT RELEASE METHODOLOGY FOR THE NATRIUM DESIGN (EPID NO. L-2021-LRM-0071)
 DATED: JANUARY 3, 2024.

DISTRIBUTION:

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ADAMS Accession Number: [ML24012A075]

NRR-001

OFFICE	NRR/DANU/UAL1:PM	NRR/DANU/UAL1:PM	NRR/DANU/UAL1:LA	NRR/DANU/UAL1:BC
NAME	RBrusselmans	MSutton	DGreene	WJessup
DATE	10/23/2023	10/26/2023	11/2/2023	12/22/2023
OFFICE	NRR/DANU/UAL1:PM			
NAME	RBrusselmans			
DATE	1/3/2024			

OFFICIAL RECORD COPY

List of Meeting Attendees

SUMMARY OF THE JULY 12, 2023, PARTIALLY CLOSED PUBLIC MEETING WITH TERRAPOWER, LLC, TO DISCUSS IN-VESSEL DESIGN BASIS ACCIDENT WITHOUT RELEASE METHODOLOGIES FOR THE NATRIUM DESIGN (EPID NO. L-2021-LRM-0071)

July 12, 2023

Name	Organization
Mallecia Sutton	U.S. Nuclear Regulatory Commission (NRC)
Michelle Hart	NRC
Roel Brusselmans	NRC
Andrew Proffitt	NRC
Bill Jessup	NRC
Alex Siwy	NRC
Candace de Messieres	NRC
Jason Schaperow	NRC
Reed Anzalone	NRC
Ryan Sprengel	TerraPower, LLC (TerraPower)
Matthew Presson	TerraPower
Hugh Luo	TerraPower
Brian Johnson	TerraPower
Emily Young	TerraPower
Richard Schultz	TerraPower
Ian Gifford	TerraPower
Jong Chang	TerraPower
Michal Pawluczyk	TerraPower
Mike Johnson	TerraPower
Moonkyu Hwang	TerraPower
Zach Mayfield	TerraPower
Chris Forrest	TerraPower
Son Pham	TerraPower
Nicholas Powell	TerraPower
Joshua Chen	TerraPower
Vince Mousseau	TerraPower
Antoine Margeride	TerraPower
Dana Miranda	TerraPower
Selim Kuran	TerraPower
Joo Seok Baek	TerraPower
Seok Hun Kang	TerraPower
Maria Pfeffer	General Electric (GE) Hitachi
Scott Pfeffer	GE Hitachi
Steve Kline	Bechtel
Acacia Brunett	Argonne National Lab (ANL)
Dan O'Grady	ANL
Tyler Summer	ANL