



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 AUGUST 17, 2023, PUBLIC MEETING
WITH TERRAPOWER, LLC, TO DISCUSS THE SEVERE
ACCIDENT MITIGATION DESIGN ALTERNATIVES 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.: ML23227A029

Applicant Presentation Slides: ML23221A186

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

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

Meeting Summary:

On August 17, 2023, the U.S. Nuclear Regulatory Commission (NRC) staff held an observation (open) public meeting with TerraPower to provide the NRC staff with an overview of the Severe Accident Mitigation Design Alternatives (SAMDA) for the Natrium design. Participants included representatives from TerraPower, General Electric (GE) Hitachi, Bechtel, 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 with introductions, described the meeting intent, and stated that the meeting was an observation-type public meeting. TerraPower provided an overview of the Natrium design, including a discussion of the project goals, plant overview, and graphics explaining the design. TerraPower discussed its methodology for SAMDAs and noted that it does not intend to deviate from the methodology of NEI 05-01, "Severe Accident Mitigation Alternatives (SAMA) Analysis," Revision A. The SAMDA process flow chart was presented and discussed, ending with an overview of the potential risk determination utilizing probabilistic risk assessment. Lastly, TerraPower described Natrium-specific considerations, including the Natrium definition of a severe accident, and integration of the design with the SAMDA process.

TerraPower representatives and the NRC staff discussed the next steps for future interactions regarding the Natrium reactor design. The NRC staff expects to review a draft of the environmental report, including an evaluation of SAMDAs, as part of a forthcoming preapplication readiness assessment.

No regulatory decisions were made during this meeting.

Enclosure: List of Meeting Attendees

cc: TerraPower Natrium via GovDelivery

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DISTRIBUTION:

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MSutton, NRR

SDevlin-Gill, NRR

CBanks, NRR

RBrusselmans, NRR

RAnzalone, NRR

WJessup, NRR

DGreene, NRR

HPhan, NRR

DPalmrose, NMSS

MHart, NRR

ZGran, NRR

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IBaek, NRR

JSchaperow, NRR

SFlanagan, NRR

ADAMS Accession Number: [ML24012A081]

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	10/20/2023	10/26/2023	11/1/2023	12/22/2023
OFFICE	NRR/DANU/UAL1:PM			
NAME	RBrusselmans			
DATE	1/3/2024			

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List of Meeting Attendees

SUMMARY OF THE AUGUST 17, 2023, PUBLIC MEETING WITH TERRAPOWER, LLC, TO DISCUSS THE SEVERE ACCIDENT MITIGATION DESIGN ALTERNATIVES FOR THE NATRIUM DESIGN (EPID NO. L-2021-LRM-0071)

August 17, 2023

Name	Organization
Mallecia Sutton	U.S. Nuclear Regulatory Commission (NRC)
Courtney Banks	NRC
Roel Brusselmans	NRC
Reed Anzalone	NRC
Hahn Phan	NRC
Donald Palmrose	NRC
Michele Hart	NRC
William Jessup	NRC
Zackary Gran	NRC
Michael Salay	NRC
Inseok Baek	NRC
Jason Schaperow	NRC
Seamus Flanagan	NRC
Ryan Sprengel	TerraPower, LLC (TerraPower)
John Biersdorf	TerraPower
Ethan Graven	TerraPower
Zach Mayfield	TerraPower
Mike Montecalvo	TerraPower
Nick Kellenberger	TerraPower
CJ Standridge	TerraPower
Tara Neider	TerraPower
Brian Johnson	TerraPower
Ian Gifford	TerraPower
Barry Mingst	TerraPower
Tim Enfinger	General Electric (GE) Hitachi
Jonathin Li	GE Hitachi
Shane Gardner	GE Hitachi
Alice Carson	Bechtel
Ken Jha	Bechtel