



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

June 25, 2024

MEMORANDUM TO: Josh M. Borromeo, 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 DECEMBER 5, 2023, OBSERVATION
MEETING WITH TERRAPOWER, LLC TO DISCUSS
MATERIALS QUALIFICATION FOR THE NATRIUM DESIGN
(EPID NO. L-2021-LRM-0071)

Meeting Information:

Applicant: TerraPower, LLC (TerraPower)

Project No.: 99902100

Meeting Title: Pre-Application Meeting with TerraPower to discuss Material Qualification for the Natrium design

Meeting Date: December 5, 2023

Meeting Type: Observation

Public Meeting Notice Agencywide Documents Access and Management System (ADAMS)
Accession No.: ML23339A132

Applicant Presentation Slides ADAMS Accession No.: ML23326A148

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

Meeting Summary:

On December 5, 2023, the U.S. Nuclear Regulatory Commission (NRC) staff held an observation meeting with TerraPower to provide the NRC staff with an overview of the materials qualification approach proposed for the Natrium design. Participants included representatives from TerraPower, General Electric-Hitachi, and members of the public. The NRC staff conducted the meeting in accordance with NRC Management Directive 3.5, "Attendance at NRC Staff-Sponsored Meetings" (ML21180A271).

The meeting began with TerraPower providing an overview of the Natrium design, including discussion of project goals and a plant overview. TerraPower next gave an overview of the Natrium material qualifications, including a summary of materials utilized in the design, material test processes, and examples of different processes and explained its ongoing testing programs including university associations. TerraPower then presented on tribology, the study of friction, lubrication, and wear between surfaces, including frictional data, wear, and self-welding behavior. TerraPower provided an overview of the tribology approach it plans to take for the Natrium design.

At the end of the meeting, the TerraPower representatives and the NRC staff discussed the next steps for future interactions regarding the Natrium design.

No regulatory decisions were made as a result of this meeting. No public comments were received in the meeting.

Enclosure:
List of Attendees

cc: TerraPower Natrium via GovDelivery

SUBJECT: SUMMARY OF THE DECEMBER 5, 2023, PUBLIC MEETING WITH TERRAPOWER, LLC, TO DISCUSS MATERIALS QUALIFICATION FOR THE NATRIUM DESIGN (EPID NO. L-2021-LRM-0071) DATED: JUNE 25, 2024

DISTRIBUTION:

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MSutton, NRR

SDevlin-Gill, NRR

RBrusselmans, NRR

JBorromeo, NRR

ACHereskin, NRR

CDeMessieres, NRR

YDiaz-Castillo, NRR

FVega, NRR

HOzaltun, NRR

RBass, NRR

ANeller, NRR

ADAMS Accession No.: ML24178A027

NRR-001

OFFICE	NRR/DANU/UAL1:PM	NRR/DANU/UAL1:LA	NRR/DANU/UAL1:BC	NRR/DANU/UAL1:PM
NAME	RBrusselmans	DGreene	JBorromeo	RBrusselmans
DATE	6/9/2024	6/12/2024	6/25/2024	6/25/2024

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List of Attendees

Summary of the December 5, 2023, Observation Meeting with TerraPower, LLC, to Discuss Materials Qualification for the Natrium Design (EPID NO. L-2021-LRM-0071)

December 5, 2023

Name	Organization
Reed Anzalone	U.S. Nuclear Regulatory Commission (NRC)
Ryann Bass	NRC
Roel Brusselmans	NRC
Alexander Chereskin	NRC
Candace De Messieres	NRC
Yamir Diaz-Castillo	NRC
William Jessup	NRC
Alec Neller	NRC
Hakan Ozaltun	NRC
Mallecia Sutton	NRC
Frankie Vega	NRC
Patrick Donnelly	TerraPower, LLC (TerraPower)
Bridgette Hannifin	TerraPower
Gary Harding	TerraPower
Kelly Harrington	TerraPower
Nick Kellenberger	TerraPower
Ryan Sprengel	TerraPower
Greg Vetterick	TerraPower
Tim Enfinger	General Electric – Hitachi (GEH)
Gabrielle Schreier	GEH