



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

November 15, 2022

Mr. Simon Irish
Chief Executive Officer
Terrestrial Energy USA, Inc.
537 Steamboat Road, Suite 200
Greenwich, CT 06830

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION OBSERVATIONS ON
TERRESTRIAL ENERGY USA, INC'S INTEGRAL MOLTEN SALT REACTOR
CORE-UNIT DEFINITION WHITE PAPER (EPID NO.: L-2021-LRO-0052)

Dear Mr. Irish:

By letter dated May 6, 2022 (Agencywide Documents Access and Management System (ADAMS) Package Accession No. ML22138A340), Terrestrial Energy USA, Inc. (TEUSA), submitted a white paper titled "IMSR® Core-unit Definition – Applicable Structures, Systems and Components," for the U.S. Nuclear Regulatory Commission (NRC) staff's review. The white paper provides details related to the design and operation of important structures, systems, and components (SSCs) that make up the Integral Molten Salt Reactor (IMSR) power plant.

TEUSA requested the NRC staff to review the white paper and provide written feedback and questions on areas where the white paper does not provide sufficient detail for the NRC staff to have a clear understanding of the design basis and operation of the IMSR power plant, and more specifically on those SSCs that are important to the safe operation of the IMSR Core-unit. The NRC staff's observations are provided in Enclosure 1 (Proprietary) and Enclosure 2 (Non-Proprietary) of this document.

If you have any questions regarding this matter, please contact Adrian Muñiz at (301) 415-4093 or via e-mail at Adrian.Muniz@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Wentzel".

Signed by Wentzel, Michael
on 11/15/22

Michael Wentzel, Chief
Advanced Reactor Licensing Branch 2
Division of Advanced Reactors and Non-Power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

Project No.: 99902076

Enclosures:
As stated

cc: rickman@terrestrialusa.com
dcarleton@terrestrialusa.com

Enclosure 1 to this letter contains Proprietary information. When separated from Enclosure 1, this document is DECONTROLLED.

S. Irish

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DATED: NOVEMBER 15, 2022

DISTRIBUTION:

Public (Letter and Enclosure 2 only)

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MHayes, NRR

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MWentzel, NRR

KSong, NRR

ADAMS Accession Nos.:

Package: ML22278B100

Cover Letter: ML22278B098 (Public)

Enclosure 1: ML22278B099 (Non-Public)

Enclosure 2: ML (Redacted- Public)

NRR-106

OFFICE	NRR/DANU/UAL2:PM	NRR/DANU/UAL2:LA	NRR/DANU/UTB1:BC	NRR/DANU/UAL2:BC
NAME	AMuñiz	CSmith	MHayes	MWentzel
DATE	10/7/2022	10/19/2022	11/2/2022	11/15/2022

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