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

April 27, 2026

Mr. Simon Irish
Chief Executive Officer
Terrestrial Energy USA, Inc.
2730 W. Tyvola Rd., Suite 100
Charlotte, NC 28217

SUBJECT: TERRESTRIAL ENERGY USA, INC. - FINAL SAFETY EVALUATION FOR TOPICAL REPORT TITLED: "POSTULATED INITIATING EVENTS FOR THE IMSR400," REVISON C (EPID L-2025-TOP-0000)

Dear Mr. Irish:

By letter dated December 27, 2024, Terrestrial Energy USA, Inc. (TEUSA) submitted a Topical Report (TR) titled "Postulated Initiating Events for the IMSR400," Revision A, as part of a submittal package titled "Submittal of Topical Report on Postulated Initiating Events for the IMSR400, Revision A" (ML25006A141), for the U.S. Nuclear Regulatory Commission (NRC) staff's review. TEUSA subsequently submitted Revisions B and C of the TR on October 1, 2025, and March 30, 2026, respectively (ML25320A004 and ML26092A411). This safety evaluation (SE) is based on the information provided in Revision C of the TR. The TR describes TEUSA's methodology for developing a set of postulated initiating events (PIEs) for the Integral Molten Salt Reactor (IMSR) design and provides a preliminary set of PIEs consistent with the design's maturity.

The NRC staff's Final SE for the TR is enclosed. Enclosure 1 is the redacted version of the SE and will be made publicly available. Enclosure 2 contains proprietary information and access to this document will be controlled consistent with the regulations in 10 CFR 2.390, "Public inspections, exemptions, requests for withholding."

The NRC staff concluded that TEUSA proposed a systematic, technically sound, and reasonable methodology for the identification, scoping, categorization, and classification of PIEs for the IMSR400 design.

If you have any questions, please contact Kevin Roche via email at Kevin.Roche@nrc.gov.

Sincerely,

Signed by Neuhausen, Alissa
on 04/27/26

Alissa Neuhausen, Branch 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: TEUSA IMSR GovDelivery
dokeefe@terrestrialenergy.com

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ADAMS Accession Nos.:
Package: ML26106A225
Letter: ML26110A298
Enclosure 1: ML26117A170 (Non-Proprietary)
Enclosure 2: ML26110A138 (Proprietary)