

TERRESTRIAL ENERGY USA

May 6, 2022

Project Number: 99902076

TEUSA Letter: #220506

US Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: Terrestrial Energy USA, Inc. Report 220506: IMSR® Core-unit Definition – Applicable Structures, Systems and Components – Revision 1

Document Control Desk,

Terrestrial Energy USA (TEUSA) is submitting its updated white paper titled "IMSR® Core-unit Definition – Applicable Structures, Systems and Components – Revision 1" for NRC review and feedback. The white paper represents the completion of substantial additional engineering and contains greater detail, compared to previous versions of the subject white paper, on the major plant structures, systems, and components (SSCs) that make up the IMSR® power plant. In addition, the white paper provides details related to the design and operation of important SSCs that comprise the IMSR® Core-unit. The IMSR® Core-unit will be the major portion of the IMSR® power plant for which TEUSA will be seeking a Standard Design Approval (SDA) in a future license application under Part 52. This white paper will also be a substantial reference supporting a future topical report on the subject of Principal Design Criteria that will be submitted later this year.

TEUSA respectfully requests that NRC review the subject white paper and provide written feedback and questions on areas where the white paper does not provide sufficient enough detail for NRC 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. Since the Core-unit covers many systems, TEUSA expects that the NRC review will involve a multi-disciplinary technical team. However, because this white paper is an overview of the system design and provides substantial engineering detail, TEUSA requests that the NRC complete its multi-disciplinary review in no more than 225 staff hours.

TEUSA requests that NRC complete its review and provide its written feedback or any questions on the subject document within 60 days of receipt of this letter. If the TEUSA schedule and resource requests cannot be met, TEUSA is prepared to discuss the review outcomes sought, the staff resource requirements, and the schedule for completing the review.

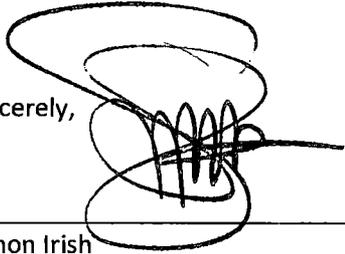
Portions of the enclosed white paper are proprietary, and TEUSA requests that it be withheld from public disclosure in accordance with the provisions of 10 CFR 2.390. Enclosure 1 provides the proprietary version of the white paper and Enclosure 2 provides the non-proprietary white paper. An affidavit supporting the withholding request is provided in Enclosure 3.

If you have any questions or need any additional information, please contact Robin Rickman by email at rickman@terrestrialusa.com or by phone at 646-687-8212 ext. 523.

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NRR

Sincerely,



Simon Irish
Chief Executive Officer
Terrestrial Energy USA

Enclosures:

Enclosure 1: "IMSR® Core-unit Definition – Applicable Structures, Systems and Components – Revision 1" (Proprietary)

Enclosure 2: "IMSR® Core-unit Definition – Applicable Structures, Systems and Components – Revision 1" (Non-proprietary)

Enclosure 3: Affidavit Supporting Request for Withholding from Public Disclosure

CCs

Mohammed Shams, Director - Division of Advanced Reactors and Non-Power Utilization Facilities (DANU)–Office of Nuclear Reactor Regulation (NRR)

Jeremy Bowen, Deputy Director – DANU-NRR

John Segala, Branch Chief - Advanced Reactors Policy Branch – DANU-NRR

Benjamin Beasley, Branch Chief - Advanced Reactors Licensing Branch - DANU-NRR

Adrian Muniz, Project Manager - Advanced Reactor Licensing Branch – DANU-NRR

Michelle Hayes, Branch Chief, Advanced Reactors Technical Branch – DANU-NRR

Enclosure 3 to TEUSA Letter L220506

Terrestrial Energy USA Affidavit for Enclosure 1

TERRESTRIAL ENERGY USA

AFFIDAVIT

I, **Simon Irish**, state as follows:

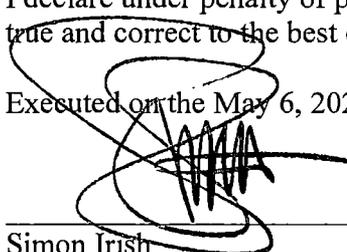
- (1) I am the Chief Executive Officer of Terrestrial Energy USA ("TEUSA") and have reviewed the information described in paragraph (2) which is sought to be withheld, and I am the authorizing official for TEUSA to apply for its withholding.
- (2) The information sought to be withheld is contained in Enclosure 1 of TEUSA Letter L220506, "*IMSR® Core-unit Definition – Applicable Structures, Systems and Components – Revision 1.*" The disclaimer included in the header of each page of the Regulatory Engagement Plan refers to paragraph (3) of this affidavit, which provides the basis for the commercially sensitive determination.
- (3) In making this application for withholding of commercially sensitive information of which it is the owner or licensee, TEUSA relies upon the exemption from disclosure set forth in the *Freedom of Information Act* ("FOIA"), 5 U.S.C. Sec. 552(b)(4), and the *Trade Secrets Act*, 18 U.S.C. Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4), and 2.390(a)(4) for trade secrets (Exemption 4). The material for which exemption from disclosure is here sought also qualifies under the narrower definition of trade secret, within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, *Critical Mass Energy Project v. Nuclear Regulatory Commission*, 975 F.2d 871 (D.C. Cir. 1992), and *Public Citizen Health Research Group v. FDA*, 704 F.2d 1280 (D.C. Cir. 1983).
- (4) The information sought to be withheld is considered commercially sensitive for the reasons set forth in paragraphs (4)b and (4)c shown below. Some examples of categories of information that fit into the definition of commercially sensitive information are:
 - a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by TEUSA's competitors without license from TEUSA constitutes a competitive economic advantage over other companies;
 - b. Information that, if used by a competitor, would reduce their expenditure of resources or improve their competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product;
 - c. Information that reveals aspects of past, present, or future TEUSA development plans and programs, resulting in potential products to TEUSA;
 - d. Information that discloses trade secrets or potentially patentable subject matter, or both, for which it may be desirable to obtain patent protection.
- (5) To address 10 CFR 2.390(b)(4), the information sought to be withheld is being submitted to NRC in confidence. The information is of a sort customarily held in confidence by TEUSA, and is in fact so held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by TEUSA, not been disclosed publicly, and not been made available in public sources. All disclosures to third parties, including any required transmittals to the NRC, have been made, or must be

made, pursuant to regulatory provisions, or to proprietary or confidentiality agreements that provide for maintaining the information in confidence. The initial designation of this information as commercially sensitive, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in the following paragraphs (6) and (7).

- (6) Initial approval of commercially sensitive treatment of a document is made by the manager of the originating component, who is the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge, or who is the person most likely to be subject to the terms under which it was licensed to TEUSA. Access to such documents within TEUSA is limited to a "need to know" basis.
- (7) The procedure for approval of external release of such a document typically requires review by a vice president for technical content, competitive effect, and determination of the accuracy of the commercially sensitive designation. Disclosures outside TEUSA are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary or confidentiality agreements, or both.
- (8) The information identified in paragraph (2), above, is classified as commercially sensitive because it contains detailed information regarding TEUSA's licensing plans.
- (9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to TEUSA's competitive position and foreclose or reduce the availability of profitmaking opportunities. The information is part of TEUSA's licensing strategy. The development of TEUSA's chosen licensing path comprises a substantial investment of time and money by TEUSA. The precise value of the expertise to use in devising this licensing path is difficult to quantify, but it clearly is substantial. TEUSA's competitive advantage will be lost if its competitors are able to use the results of the TEUSA's experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions. The value of this information to TEUSA would be lost if the information were disclosed to the public. Making such information available to competitors without them having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive TEUSA of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing its licensing strategy.

I declare under penalty of perjury that the foregoing affidavit and the matters stated therein are true and correct to the best of my knowledge, information, and belief.

Executed on the May 6, 2022



Simon Irish
Chief Executive Officer
Terrestrial Energy USA, Inc.