

TERRESTRIAL ENERGY USA

January 6th, 2021

Project Number: 99902076

TEUSA Letter: L210106

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

Subject: Revised White Paper on Principal Design Criteria for IMSR® Structures, Systems and Components

Terrestrial Energy USA, Inc. (TEUSA) is submitting a revised white paper entitled "*Principal Design Criteria for IMSR® Structures, Systems and Components*." This white paper identifies and describes the principal design criteria (PDC) for those systems that provide important functions in support of the operation and safety of the IMSR® plant. The PDC are developed based on the key design features of IMSR® technology and the guidance provided in Revision 0 of Regulatory Guide 1.232, "Guidance for Developing Principal Design Criteria for Non-Light-Water Reactors."

This letter transmits a revision to the original white paper on IMSR® PDC that TEUSA submitted to NRC in June 2020. This revised version of the white paper contains modifications made in response to the NRC feedback provided to TEUSA in August 2020. In addition, an attachment to this letter provides TEUSA's responses to each item of feedback received from NRC on the original IMSR® PDC white paper.

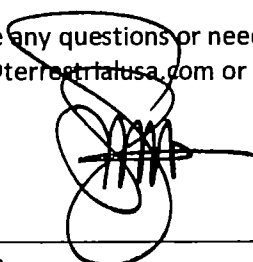
TEUSA is providing this revised white paper and our responses to NRC feedback in order that NRC can continue its review of IMSR® PDC. TEUSA requests that the NRC complete its review of the attached documents and provide its feedback and any requests for information within 45 days of receipt of this letter. TEUSA also requests that the staff review not exceed a total of 370 total staff hours, including review hours that have already been incurred from review of the first version of this white paper. TEUSA will provide its final PDC white paper after this next round of NRC feedback for which TEUSA will request issuance of a final safety evaluation.

If TEUSA's schedule or resource requests cannot be met, TEUSA requests that the NRC notify TEUSA within 3 working days of receipt of this letter and establish a time for NRC and TEUSA to discuss the outcomes sought, any additional staff resource requirements, and the schedule for completing the review.

Portions of the enclosed white paper and response summary are proprietary, and TEUSA requests that they be withheld from public disclosure in accordance with the provisions of 10 CFR 2.390. Enclosures 1 and 2 provide the proprietary and non-proprietary versions of the revised white paper. Enclosures 3 and 4 provide the proprietary and non-proprietary responses to NRC feedback. An affidavit supporting the withholding request is provided in Enclosure 5.

If you have any questions or need any additional information, please contact Robin Rickman by email at rrickman@terrestrialusa.com or by phone at 646-687-8212 ext. 531.

Sincerely,



Simon Irish
Chief Executive Officer

D120
NRR

Enclosures:

Enclosure 1: *"Principal Design Criteria for IMSR® Structures, Systems and Components"* (Proprietary)

Enclosure 2: *"Principal Design Criteria for IMSR® Structures, Systems and Components"* (Non-Proprietary)

Enclosure 3: TEUSA Response to NRC Feedback Questions and Observations Related to the TEUSA Principal Design Criteria (PDC) White Paper (Proprietary)

Enclosure 4: TEUSA Response to NRC Feedback Questions and Observations Related to the TEUSA Principal Design Criteria (PDC) White Paper (Non-Proprietary)

Enclosure 5: Affidavit Supporting Request for Withholding from Public Disclosure

CC:

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

Brian Smith, 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 5 to TEUSA Letter L210106

Terrestrial Energy USA Affidavit and Request for Withholding from Public Disclosure
(10 CFR 2.390)

TERRESTRIAL ENERGY USA

AFFIDAVIT

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

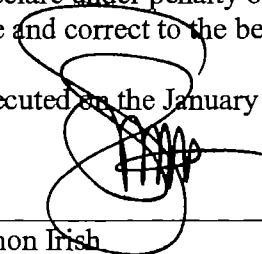
- (1) I am the Chief Executive Officer of Terrestrial Energy USA ("TEUSA") and have reviewed the information described in paragraph (2) which is sought to be withheld, and I am the authorizing official for TEUSA to apply for its withholding.
- (2) The information sought to be withheld, in its entirety, is contained in Enclosures 1 and 3 of TEUSA Letter L210106, "*Principal Design Criteria for IMSR® Structures, Systems and Components*" and "*TEUSA Response to NRC Feedback, Questions and Observations Related to the TEUSA Principal Design Criteria White Paper*."
- (3) I am making this request for withholding, and executing this affidavit in support thereof, pursuant to the provisions of 10 CFR 2.390(b)(1).
- (4) In making this application for withholding of proprietary and 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).
- (5) The information sought to be withheld is considered proprietary and/or 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.
- (6) 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 proprietary and/or commercially sensitive, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in the following paragraphs 6 & 7.

- (7) Initial approval of proprietary and 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.
- (8) 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 proprietary and/or 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.
- (9) The information identified in paragraph (2), above, is classified as proprietary and/or commercially sensitive because it contains detailed information regarding TEUSA's licensing plans and technical details about the Integral Molten Salt Reactor (IMSR®) which TEUSA is developing for US deployment.
- (10) 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 contains proprietary technical details of the IMSR® design and details regarding 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 January 6, 2021



Simon Irish

Chief Executive Officer, Terrestrial Energy USA, Inc.