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Project No. 99902071

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Submittal of X Energy, LLC (X-energy) Xe-100 Licensing Topical Report Graphite Core Assembly Material Qualification and Design Methodologies

The purpose of this letter is to submit the subject licensing topical report (LTR) to the U.S. Nuclear Regulatory Commission (NRC). This LTR describes the risk-informed and performance-based methodologies, based on the Nuclear Energy Institute 18-04 process, that ensure the Graphite Core Assembly is capable of supporting particular required safety functions during certain Licensing Basis Events. It is provided for NRC review and approval as indicated in the report and is expected to be referenced in future licensing applications using the Xe-100 technology. The specific review schedule will be coordinated by X-energy and NRC project managers. X-energy is requesting a draft safety evaluation report by June 30, 2025, which would allow X-energy to make necessary updates to the methodologies and testing plans prior to beginning the final design stage.

The subject LTR contains proprietary information. As such, X-energy requests that Enclosure 3 be withheld from public disclosure per 10 CFR 2.390, "Public inspections, exemptions, requests for withholding." Redacted information is identified using [[]]^P. Additionally, certain information in this report was determined to contain Export Controlled Information (ECI). This information must be protected from disclosure pursuant to 10 CFR 810. information is identified using [[]]^E. An affidavit certifying the basis for the request to withhold Enclosure 3 from public disclosure is included as Enclosure 1. Proprietary information and ECI has been omitted from the LTR provided in Enclosure 2 that should be made publicly available. Enclosure 3 provides a copy of the report that contains proprietary and ECI content.

This letter contains no commitments. If you have any questions or require additional information, please contact Jessica Maddocks at jmaddocks@x-energy.com.

Sincerely,

A handwritten signature in black ink that reads "S. Vaughn". The signature is written over a horizontal line.

Stephen Vaughn
Director, Licensing
X Energy, LLC



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Enclosures:

- 1) Affidavit Supporting Request for Withholding from Public Disclosure (10 CFR 2.390)
- 2) "Xe-100 Licensing Topical Report Graphite Core Assembly Material Qualification and Design Methodologies," Revision 1 (Public)
- 3) "Xe-100 Licensing Topical Report Graphite Core Assembly Material Qualification and Design Methodologies," Revision 1 (Non-Public)

cc:

X-energy, LLC

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