



**X Energy, LLC**  
801 Thompson Avenue  
Rockville, MD 20852  
+1 301.358.5600

July 12, 2024

XE-2024-05

Project No. 99902118

U.S. Nuclear Regulatory Commission  
Document Control Desk  
11555 Rockville Pike  
Rockville, MD 20852

**Re: Submission of X-energy, LLC, XENITH™ Topical Report on Analytical Methods**

I am pleased to submit on behalf of X-energy, LLC (X-energy), an enclosed Controlled Unclassified Information (CUI) version of X-Energy's Next-Generation Integrated Transportable High-Temperature (XENITH) microreactor pre-application licensing topical report (TR) that describes the development of the Analytical Methods (AM) used to assess the XENITH microreactor plant systems. The XENITH topical report on Analytical Methods (TRAM) was developed using the guidance from the U.S. Nuclear Regulatory Commission (NRC) Regulatory Guide (RG) 1.203, "Transient and Accident Analysis Methods," RG 1.231, "Acceptance of Commercial-Grade Design and Analysis Computer Programs Used in Safety-Related Applications for Nuclear Power Plants," NEI 18-04, "Risk-Informed Performance-Based Technology Inclusive Guidance for Non-Light Water Reactor Licensing Basis Development," as well as XENITH-specific plant safety functions and design requirements.

The enclosed XENITH TRAM document is provided to the NRC for review and approval as indicated in the report and is expected to be referenced in future XENITH licensing applications. X-energy requests that an acceptance review, and the associated schedule/ budget assessment of occurs within 60 days of TRAM's submittal; and that a review duration is discussed with the X-energy staff before a schedule is published as constraints may need to be applied to the NRC staff's review hours due to XENITH budgetary constraints.

This submittal contains CUI and identified proprietary information from X-energy that are identified with CUI headers/ footers, and redacted proprietary information using [[ ]]<sup>P</sup>. This information shall not be distributed and/or disseminated outside of its intended audience without the consent of the Department of Defense's Strategic Capabilities Office. In conformance with the requirement of 10 CFR Section 2.390, as amended, of the NRC's regulations, we are enclosing with this submittal an Affidavit. The Affidavit sets forth the basis on which the information identified as CUI and identified proprietary information should be withheld from public disclosure.



**X Energy, LLC**  
801 Thompson Avenue  
Rockville, MD 20852  
+1 301.358.5600

---

This letter contains no commitments. Should you have any questions or require additional information, please contact Michael Dudek at [mdudek@x-energy.com](mailto:mdudek@x-energy.com).

Sincerely,

Michael I. Dudek  
Licensing Manager, XENITH Microreactor Program  
X-energy, LLC

Cc:

X-energy, LLC

Tom Nixon  
Carol Tansley  
Brad Rearden  
Steve Vaughn

U.S. Nuclear Regulatory Commission

Stephen Philpott  
Patrick Boyle  
Ondra Dukes

Enclosures:

- (1) Enclosure 1 - XENITH Microreactor TRAM - Affidavit
- (2) Enclosure 2 – XENITH Microreactor TRAM - CUI & PROP (Non-Public)