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August 16, 2024

XE-2024-06

Project No. 99902118

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

**Re: Submission of X-energy, LLC, XENITH™ White Paper on Concept of Operations**

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 white paper (WP) that describes, at a conceptual level, the set of expected deployment and operational phases that characterize the life cycle of the XENITH plant from its constituent pieces being delivered from factories through its operation, shutdown, and final decommissioning. This Concept of Operations (ConOps) WP was developed using regulations and guidance from the U.S. Nuclear Regulatory Commission (NRC), as well as with XENITH-specific contractual safety and design requirements imposed by X-energy's customers.

The enclosed XENITH ConOps WP 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 the NRC provide specific insights and/or feedback on any area identified in the WP that might be contrary to X-energy's vision for ConOps. X-energy also requests that any associated feedback be provided within 60 days of WP's submittal; and that a limited scope of 100 hours be applied to the review. If the NRC staff is unable to provide substantive and/or meaningful feedback within the stated budgetary constraints, X-energy requests that additional discussions may be needed before the requested timeframe for the WP is completed.

This submittal contains CUI and identified proprietary information from X-energy that are identified with CUI headers/ footers, and redacted proprietary information using [[ ]]. 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.



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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:

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Tom Nixon

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Enclosures:

(1) Enclosure 1 - XENITH Microreactor ConOps - Affidavit

(2) Enclosure 2 – XENITH Microreactor ConOps - CUI & PROP (Non-Public)