



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 16, 2025

Mr. Michael Dudek, Licensing Manager
XENITH™ Microreactor Program
X Energy, LLC.
530 Gaither Road, Suite 700
Rockville, MD 20850

SUBJECT: X ENERGY, LLC. - U.S. NUCLEAR REGULATORY COMMISSION STAFF'S
FEEDBACK REGARDING THE WHITE PAPER TITLED "XENITH
PROBABILISTIC RISK ASSESSMENT (PRA) WHITE PAPER"
(EPID NO. L-2024-LRO-0066)

Dear Mr. Dudek:

By letter dated April 3, 2025 (Agencywide Documents Access and Management System Accession No. package ML25093A300), X Energy, LLC. (X-energy), submitted the white paper, MRA-00-220-WP-2000586, "XENITH Probabilistic Risk Assessment (PRA) White Paper," for the U.S. Nuclear Regulatory Commission (NRC) staff's review. This white paper describes X-energy's current concepts and path forward for conducting an initial PRA for X-energy's Next-Generation Integrated Transportable High-Temperature (XENITH™) microreactor. X-energy requested that the NRC staff perform a review of this white paper and provide written feedback. The NRC staff has completed its review of the submittal. The enclosure to this letter provides the NRC staff's detailed observations.

The enclosure contains controlled unclassified information as designated by the Department of Defense. Access to the enclosed document will be controlled consistent with NRC policies and procedures. The enclosure also contains proprietary information. This information will be withheld from public disclosure in compliance with the regulations in Title 10 of the *Code of Federal Regulations*, section 2.390, "Public inspections, exemptions, requests for withholding.

The enclosure to this letter contains controlled unclassified and proprietary information. When separated from the enclosure, this letter is DECONTROLLED.

M. Dudek

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If you have questions regarding this matter, please contact Patrick Boyle at (301) 415-3936 or via email at Patrick.Boyle@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Stephen Philpott". The signature is fluid and cursive, with a large initial "S" and a long, sweeping underline.

Stephen Philpott, Acting Chief
Advanced Reactor Licensing Branch 2
Division of Advanced Reactors and Non-Power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

Project No.: 99902118

Enclosure:
As stated

M. Dudek

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ADAMS Accession Nos.:

Pkg: ML25163A149

Letter: ML25167A225

Enclosure: ML25167A223 (Proprietary, CUI)

NRR-106

OFFICE	NRR/DANU/UAL2:PM	NRR/DANU/UTB3:BC	NRR/DANU/UAL2:BC (A)
NAME	PBoyle	GOberson	SPhilpott
DATE	06/12/2025	06/16/2025	06/12/2025

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