



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

May 17, 2023

Mr. Travis Chapman
Director, Reactor Licensing
& Regulatory Affairs
X-Energy, LLC.
801 Thompson Avenue
Rockville, MD 20852

SUBJECT: X ENERGY, LLC. – FINAL SAFETY EVALUATION FOR X ENERGY, LLC –
“XE-100 LICENSING TOPICAL REPORT: CONTROL ROOM STAFFING
ANALYSIS METHODOLOGY, REVISION 2” (EPID L-2021-TOP-0028)

Dear Mr. Chapman:

By letter dated January 4, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession Number ML22004A333), as supplemented by letters dated August 24, 2022 (ML22236A665), and October 19, 2022 (ML22293B806); X-Energy, LLC (X-energy), requested for the U.S. Nuclear Regulatory Commission (NRC) staff’s review and approval of a topical report (TR) addressing the proposed control room staffing analysis methodology for the Xe-100 reactor facility design.

As part of its review, the NRC staff developed a set of preliminary questions and sent them to X-energy on August 1, 2022 (ML22235A697). Subsequently, on August 24, 2022, X-energy supplemented its TR to the NRC staff, addressing the set of preliminary questions (ML22236A665). Further in its review, the NRC staff developed a second set of questions and sent them to X-energy on September 29, 2022 (ML22349A688). Subsequently, on October 19, 2022, X-energy supplemented its TR to the NRC staff, addressing the second set of questions (ML22293B806).

On February 27, 2023, the NRC staff provided X-energy a draft of the safety evaluation (SE) for the purpose of identifying proprietary information (ML23058A433). On March 28, 2023, X-energy confirmed that the SE did not include proprietary information. The NRC staff’s final SE for, “Xe-100 Licensing Topical Report: Control Room Staffing Analysis Methodology, Revision 2,” is enclosed.

In accordance with the NRC staff published information for TR’s are available at <https://www.nrc.gov/about-nrc/regulatory/licensing/topical-reports.html>, the NRC staff requests that X-energy publish an accepted version of this TR within 3 months of receipt of this letter. The accepted version should incorporate this letter and the enclosed SE. Also, the accepted version must contain historical review information, including requests for additional information (RAI) and/or preliminary questions and respective responses. The accepted version should include an “-A” (designated accepted) following the TR identification number.

As an alternative to including the RAI and RAI responses (or preliminary questions), if changes to the TR were provided to the NRC staff to support the resolution of any RAI responses, and the NRC staff reviewed and approved those changes, there are two ways that the accepted version can capture the RAI:

1. The RAI and RAI responses (or preliminary questions) can be included as an Appendix to the accepted version.
2. The RAI and RAI responses (or preliminary questions) can be captured in the form of a table (inserted after the final SE) which summarizes the changes as shown in the accepted version of the TR. The table should reference the specific RAI and RAI responses (or preliminary questions) which resulted in any changes, as shown in the accepted version of the TR.

If you have any questions or comments concerning this matter, please contact Stephanie Devlin-Gill at (301) 415-5301 or via email at Stephanie.Devlin-Gill@nrc.gov.

Sincerely,



Signed by Proffitt, Joseph
on 05/17/23

Joseph A. Proffitt, Acting Branch Chief
Advanced Reactor Licensing Branch 1
Division of Advanced Reactors and Non-Power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

Project No.: 99902071

Enclosure: As stated

cc: GovDelivery Subscribers

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DATED: MAY 17, 2023

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