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25 September 2023

2023-XE-NRC-030

Project No. 99902071

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

**Submission of X Energy, LLC (X-energy) Xe-100 Licensing Topical Report: Atmospheric Dispersion and Dose Calculation Methodology, Revision 2**

The purpose of this letter is to submit Revision 2 of the subject Licensing Topical Report to the U.S. Nuclear Regulatory Commission (NRC) on behalf of X Energy, LLC (X-energy). The enclosed revision updates proprietary markings and includes minor editorial changes. It is intended to supersede other revisions. This submission provides both proprietary and non-proprietary versions of the report. It is provided for NRC review and approval as indicated in the report and is expected to be referenced in future Xe-100 licensing applications. The specific review schedule will continue to be developed with X-energy's NRC project manager.

The report contains commercially sensitive, proprietary information; as such, it is requested that Enclosure 3 be withheld from public disclosure per 10 CFR 2.390, "Public inspections, exemptions, requests for withholding" paragraph (a)(4). Redacted information is identified using [[ ]]<sup>P</sup>. An affidavit certifying the basis for the request to withhold Enclosure 3 from public disclosure is included as Enclosure 1. Proprietary information has been omitted from the presentation materials provided in Enclosure 2 that should be made publicly available.

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

Sincerely,

A handwritten signature in cursive script that reads "Jon Facemire".

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Jon Facemire  
Licensing Manager - Standard Design, Xe-100 Program  
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: Atmospheric Dispersion and Dose Calculation Methodology, Revision 2" Non-Proprietary (Public)
- 3) "Xe-100 Licensing Topical Report: Atmospheric Dispersion and Dose Calculation Methodology, Revision 2" Proprietary (Non-Public)

cc:

X-energy, LLC

David Bannister  
Steve Miller  
Martin van Staden  
Jessica Maddocks

U.S. Nuclear Regulatory Commission

Michael Wentzel  
Adrian Muñiz  
Jorge Hernández Muñoz  
Zackary Stone

U.S. Department of Energy – Office of Clean Energy Demonstrations:

Jeff Ciocco  
Carl Friesen

**Enclosure 1: Affidavit Supporting Request for Withholding from Public Disclosure (10 CFR 2.390)**

I, Travis Chapman, Director, Reactor Licensing & Regulatory Affairs, of X Energy, LLC (X-energy) do hereby affirm and state:

1. I am authorized to execute this affidavit on behalf of X-energy. I am further authorized to review information submitted to or discussed with the U.S. Nuclear Regulatory Commission (NRC) and apply for the withholding of information from disclosure. The purpose of this affidavit is to provide the information required by 10 CFR 2.390(b) in support of X-energy's request for proprietary treatment of certain commercial information submitted in Enclosure 3 to X-energy's letter 2023-XE-NRC-030 from myself to the NRC which provides, "Xe-100 Licensing Topical Report Atmospheric Dispersion and Dose Calculation Methodology Revision 2."
2. I have knowledge of the criteria used by X-energy in designating information as sensitive, proprietary, confidential, and export-controlled.
3. Pursuant to the provision of paragraph (b)(4) of 10 CFR 2.390, the following is furnished for consideration by the NRC in determining whether the information sought to be withheld from public disclosure should be withheld.
  - a. The information sought to be withheld from public disclosure in Enclosure 3 is owned by X-energy. This information was prepared with the explicit understanding that the information itself would be treated as proprietary and confidential and has been held in confidence by X-energy.
  - b. The information sought to be protected in Enclosure 3 is not available to the public.
  - c. The information contained in Enclosure 3 is of the type that is customarily held in confidence by X-energy, and there is a rational basis for doing so. The information X-energy is requesting to be withheld from public disclosure includes technical information related to the design, analysis and operations associated with our Xe-100 high-temperature, gas-cooled, pebble bed advanced reactor design that directly impact our business development and commercialization efforts. X-energy limits access to this proprietary and confidential information in order to maintain confidentiality.
  - d. Enclosure 3 contains information about the planned activities of X-energy related to the development of the Xe-100 design bases, TRISO-X fuel design bases, forecast design development timeframes, and relate to the commercialization strategy for our Xe-100 advanced reactor. Public disclosure of the information contained in Enclosure 3 would create substantial harm to X-energy because it would reveal valuable technical information regarding X-energy's design development, competitive expectations, assumptions, current position and strategy. Its use by a competitor could substantially improve the competitor's position in the design, manufacture, licensing, construction, and operation of a similar competing product.
  - e. The Proprietary Information contained in Enclosure 3 is transmitted to the NRC in confidence and under the provisions of 10 CFR 2.390; it is to be received in confidence by the NRC. The information is properly marked using [[ ]]<sup>P</sup>.



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I declare under the penalty of perjury that the foregoing is true and correct. Executed on this 25<sup>th</sup> day of September 2023.

Sincerely,

A handwritten signature in black ink, appearing to read 'T. Chapman', written over a horizontal line.

Travis Chapman  
Director, Reactor Licensing & Regulatory Affairs  
Xe-100 Program  
X Energy, LLC