

## SAFETY EVALUATION REPORT

DOCKET: 70-7027

LICENSEE: X-Energy, LLC

SUBJECT: APPROVAL OF TRISO-X EXEMPTION REQUEST TO SUPPORT SUBMITTAL OF THE SAFETY AND SAFEGUARDS ANALYSIS REPORT IN ADVANCE OF THE ENVIRONMENTAL REPORT (ENTERPRISE PROJECT IDENTIFIER L-2022-LLE-0007)

### THE EXEMPTION REQUEST

The Triso-X, LLC (Triso-X) exemption request seeks authorization to submit its application in multiple parts: the safety and safeguards analysis report (SAR), followed by the environmental report (ER). Triso-X requests the exemption because it anticipates the SAR will be ready for submittal several months in advance of the ER. The development of the ER has been delayed by the selection of a new site in 2021. The exemption would allow Triso-X to submit the SAR when it is completed, while allowing time to continue to compile site-specific environmental data and finalize the ER.

### BACKGROUND

Triso-X, a wholly owned subsidiary of X-Energy, LLC, submitted a letter dated February 4, 2022 (Agencywide Documents Access and Management System Accession No. ML22039A050), requesting an exemption from requirements in Title 10 of the *Code of Federal Regulations* (10 CFR), sections 51.60(a), “Environmental report—materials licenses” and 70.21(f), “Filing.” Triso-X plans to submit a license application in 2022 to possess and use special nuclear material for processing and fuel fabrication at a facility in Tennessee, as discussed in pre-application meetings<sup>1</sup> with the U.S. Nuclear Regulatory Commission (NRC).

The NRC’s regulation at 10 CFR 70.21(f) states:

An application for a license to possess and use special nuclear material for processing and fuel fabrication, scrap recovery or conversion of uranium hexafluoride, or for the conduct of any other activity which the Commission has determined pursuant to subpart A of part 51 of this chapter will significantly affect the quality of the environment shall be filed at least 9 months prior to commencement of construction of the plant or facility in which the activity will be conducted, and shall be accompanied by an Environmental Report required under subpart A of part 51 of this chapter.

10 CFR 51.20(b)(7) states that the issuance of a license to possess and use special nuclear material for processing and fuel fabrication under 10 CFR Part 70 is one type of action that requires an environmental impact statement (EIS). The relevant requirements in 10 CFR 51.60(a) provide in part, that an applicant for a Part 70 license “shall submit with its application”

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<sup>1</sup> Meeting summaries for the pre-application meetings are available at ADAMS Accession Nos. ML19283B204 and ML19283B206 (September 11, 2019 meeting); ADAMS Accession No. ML19011A194 (January 17, 2019 meeting).

“a separate document, entitled ‘Applicant's Environmental Report’” that contains the information specified in 10 CFR 51.45. Under these regulations an applicant seeking a Part 70 license for a fuel fabrication facility must submit a complete application that includes a safety evaluation report and an environmental report.

## DISCUSSION

Under 10 CFR 70.17(a), the Commission may issue an exemption from the regulations in Part 70 that it determines is “authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest.” Similarly, under 10 CFR 51.6, the Commission may grant an exemption from the regulations in Part 51 that it determines is “authorized by law and is otherwise in the public interest.”

Triso-X specifically requests an exemption from the requirements of 10 CFR 51.60(a) and 10 CFR 70.21(f). If granted, the exemption would permit the submission of a split license application, with the SAR submitted first without the ER. Triso-X proposes to submit the ER to the NRC for review in two parts, after submission of the SAR. Part 1 of the ER would contain the topical content and conclusions based on summer and fall seasonal data collected in 2021; Part 2 of the ER would provide the seasonal data for winter and spring that is currently being collected and would be submitted within one year of filing the SAR.

The submittal of the ER must conform to the requirements in 10 CFR Section 2.101, “Filing of application.” Consistent with 10 CFR 2.101, the initial submittal of the Part 1 of the ER will be evaluated by the technical staff to determine whether Part 1 of the ER contains sufficient information to accept the submittal for docketing and formal review.

The criteria for granting specific exemptions to the NRC’s regulations under 10 CFR 51.6 and 10 CFR 70.17(a) are discussed in more detail below.

### **Authorized by Law:**

The exemption request is submitted under the NRC’s regulations for specific exemptions at 10 CFR 51.6 and 10 CFR 70.17(a). Triso-X plans to submit a split application, with the complete SAR to be submitted for acceptance and docketing without an accompanying ER. The requested exemption would allow the staff to begin its review of the safety and safeguards portions of the license application while the ER is completed. After submission of the complete ER, the NRC staff will evaluate the ER and develop the EIS. The delay in submittal of the ER will not negatively affect the NRC staff’s environmental review or findings, because the EIS will be finalized prior to completion of the license application review, as required by 10 CFR 51.20(b)(7). The EIS will be developed in accordance with requirements in 10 CFR 51, which implements Section 102(2) of the National Environmental Policy Act (NEPA) of 1969, as amended, and the staff will use the guidance in NUREG-1748, “Environmental Review Guidance for Licensing Actions Associated with NMSS Programs” in conducting its review. The NRC staff finds that the proposed phased submission of the ER, following the SAR, will ensure the procedural protections afforded by NEPA, and that the NRC’s regulations would be fully implemented as part of its review of the split application. The NRC staff also determined that granting this exemption is permissible under the Atomic Energy Act of 1954, as amended, and that no other prohibition of law or the Commission’s regulations exists to preclude the activities that would be authorized by the exemption. Therefore, the NRC staff finds the exemption is authorized by law, as required by both 10 CFR 51.6 and 10 CFR 70.17(a).

### **Does Not Endanger Life or Property or Common Defense and Security:**

The regulation at 10 CFR 70.21(f) provides procedural requirements to ensure that environmental considerations are properly evaluated by the NRC staff prior to issuance of a license to possess and use special nuclear material for processing and fuel fabrication. Triso-X has not yet submitted its application and granting the exemption would not authorize the possession and use of special nuclear material. The NRC staff will evaluate Triso-X's complete application, including the SAR and ER, before reaching a decision on whether to issue them a license. Because the exemption will not authorize the possession or use of special nuclear material, the NRC staff finds that the proposed exemption does not endanger life or property of the common defense and security, as required by 10 CFR 70.17(a).

### **In the Public Interest:**

The NRC's regulations for specific exemptions at 10 CFR 51.6 and 10 CFR 70.17(a) require that the staff determine whether the proposed request is in the public interest. The early submittal of the SAR is expected to help the NRC staff better manage the agency's resources and allow for a more efficient and effective review of Triso-X's application. Further, early submission and public notice of receipt of the SAR will provide interested members of the public with additional time to review the safety portions of the application before the NRC completes its docketing review. For these reasons, the staff finds that granting the exemption is in the public interest, as is required by both 10 CFR 51.6, and 10 CFR 70.17(a).

### **ENVIRONMENTAL REVIEW**

The NRC's regulations in 10 CFR 51.22(a) provide that licensing and regulatory actions that fall within the categories of actions that the Commission has found do not individually or cumulatively have a significant effect on the human environment are categorically excluded from an environmental review. 10 CFR 51.22(c)(25)(i-v) and (vi)(G) states the granting of an exemption from the requirements of any regulation of Title 10, is categorically excluded from an environmental review, provided that—(i) There is no significant hazards consideration; (ii) There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite; (iii) There is no significant increase in individual or cumulative public or occupational radiation exposure; (iv) There is no significant construction impact; (v) There is no significant increase in the potential for or consequences from radiological accidents; and (vi) The requirements from which an exemption is sought involve: (G) Scheduling requirements.

For the reasons described below, Triso-X's request meets the criteria for a 10 CFR 51.22(c)(25)(i-vi) categorical exclusion. There are no special circumstances in this request that require an environmental assessment or environmental impact statement. There is no Part 70 license at this time and this exemption is limited to timing of the submission of an application, so there is no significant hazards consideration. Because the request by Triso-X pertains to an exemption concerning the timing for submission of the application to obtain a Part 70 license, there are no effluents or offsite releases or significant increase in radiation exposure to workers or members of the public associated with this request. There are no construction activities associated with this request, so there is no significant construction impact. There is no significant increase in the potential for any radiological accidents associated with this request because granting the exemption does not permit facility operations. Finally, given that the exemption concerns the timing of the submission of required sections of an application, the exemption is related to a scheduling requirement under 10 CFR 51.22(c)(25)(vi)(G). Therefore, pursuant to 10 CFR 51.22(b) and 10 CFR 51.22(c)(25)(vi)(G), no environmental impact

statement or environmental assessment need be prepared in connection with the approval of this exemption request.

The NRC staff determined the requested exemption to allow the phased submittal of a complete license application, with the ER to be submitted after the SAR, rather than both documents at the same time, meets the criteria in 10 CFR 51.22(c)(25)(i-v) and (vi)(G). Therefore, this is an action that does not require a site-specific environmental review. The staff notes that a full site-specific environmental review will be conducted by the NRC, after receipt, acceptance, and docketing of a complete license application.

### CONCLUSION

The staff finds that granting the exemption is authorized by law, will not endanger life or property or common defense and security, and is otherwise in the public interest. Therefore, the staff grants Triso-X a temporary exemption from the requirements of 10 CFR 70.21(f) and 10 CFR 51.60(a), until one year after official receipt of the SAR in the Agencywide Documents Access and Management System.

### PRINCIPAL CONTRIBUTORS

Matthew Bartlett, NMSS/DFM