



TRISO-X, LLC  
801 Thompson Avenue  
Rockville, MD 20852  
+1 301.358.5600

TX0-LTR-0001

**THE ENCLOSURES TO THIS LETTER CONTAIN SAFEGUARDS,  
SECURITY-RELATED, EXPORT CONTROLLED, AND PROPRIETARY /  
FINANCIAL INFORMATION – WITHHOLD IN ACCORDANCE WITH 10 CFR 2.390**

*HAND DELIVERY*

April 5, 2022

Director, Office of Nuclear Material Safety and Safeguards  
U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Reference: Docket No. 70-7027

Subject: **TRISO-X Fuel Fabrication Facility License Application Submittal**

In accordance with Title 10 Code of Federal Regulations (CFR) Sections 70.5(a) *Communications* and 70.21(a)(1) *Filing*, TRISO-X, LLC (TRISO-X) is submitting an application to possess and use special nuclear material in the TRISO-X Fuel Fabrication Facility in accordance with the requirements of 10 CFR Parts 70, 30, and 40. This proposed fuel fabrication facility will utilize uranium enriched to less than 20% to produce TRISO-based particle fuel products to support a variety of advanced reactors being considered and planned by the energy and chemical sectors, the Department of Defense, and the National Aeronautics and Space Administration. Advanced reactors are being designed to provide clean, reliable energy and provide a viable alternative to the aging, economically challenged, existing nuclear and fossil electric generation stations. TRISO-X, LLC, is a wholly owned subsidiary of X Energy, LLC. The facility will be located in Roane County, Tennessee, within the western limits of the City of Oak Ridge.

**Prior NRC Approvals**

1. On July 21, 2021, the U.S. Nuclear Regulatory Commission (NRC) approved the proposed Safeguards Reviewing Official.
2. On October 4, 2021, the NRC approved the TRISO-X Safeguards Protection Program in accordance with 10 CFR 73.21 and 73.22 requirements applicable to fuel fabrication facilities, as required by 10 CFR 70.22(1).
3. On March 17, 2022, the NRC approved an exemption from 10 CFR 70.21(f) and 51.60(a) to allow submittal of the TRISO-X Fuel Fabrication Facility Environmental Report (ER)

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separately from and after the remainder of the license application is submitted. Therefore, the ER is not included with this submittal and will be submitted at a later time.

**Requests for Withholding**

Portions of the enclosed application contain information that TRISO-X requests be withheld from public disclosure. The following regulations and guidance were consulted to develop the document markings and specific withholding requests as noted in the description of each enclosure's contents.

- 10 CFR 2.390, *Public inspections, exemptions, requests for withholding*
- 10 CFR 73.21(a)(1)(i) and 73.22(a)(1-2), *Protection of Safeguards Information*
- 10 CFR 110, *Export and Import of Nuclear Equipment and Material*, and other related regulations 10 CFR 810 and 15 CFR 730-774
- NRC Regulatory Issue Summary 2005-31, Revision 1, *Control of Security-Related Sensitive Unclassified Non-Safeguards Information Handled by Individuals, Firms, and Entities Subject to NRC Regulation of the Use of Source, Byproduct, and Special Nuclear Material*

**Summary of this Submittal**

TRISO-X hereby submits the safety and safeguards portions of the TRISO-X Fuel Fabrication Facility License Application. The enclosed application meets the applicable requirements of 10 CFR 70.22, *Contents of Applications*. The following documents are enclosed with this letter.

**Enclosure 1 – Affidavit**, as required by 10 CFR 2.390(b) to support TRISO-X requests to withhold the below-mentioned proprietary / financial information.

**Enclosure 2 – License Application Chapters 1-13** meet the applicable requirements in 10 CFR 70; is considered *Non-Proprietary*, and reflect guidance provided in NUREG-1520, *Standard Review Plan for Fuel Cycle Facilities License Applications*, Revision 2, dated June 2015.

**Enclosure 3 – Sensitive Addendum** includes sensitive information pertaining to License Chapter 1 that is considered *Security-Related* and *Proprietary*. The sensitive information has been moved from Enclosure 1 to a separately marked "Sensitive Addendum" that TRISO-X requests be withheld from public disclosure per 10 CFR 2.390(a)(4) and NRC RIS 2005-31.

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**Enclosure 4 – Fundamental Nuclear Material Control Plan (FNMCP)**, as required by 10 CFR 70.22(b). The FNMCP describes the program for the control and accounting of special nuclear material and contains information that is considered *Security-Related, Export Controlled, and Proprietary*, and TRISO-X requests that this document be withheld from public disclosure pursuant to 10 CFR 2.390(a)(4) and NRC RIS 2005-31.

**Enclosure 5 – Physical Security Plan (PSP)**, as required by 10 CFR 70.22(g) and (k). The PSP describing the physical and transportation security programs contains information that is considered *Safeguards Information*, and TRISO-X requests that this document be withheld from public disclosure pursuant to 10 CFR 2.390(a)(3) and 70.22(l).

**Enclosure 6 – Site Emergency Plan (SEP)**, as required by 10 CFR 70.22(i)(1)(ii). The SEP contains information that is considered *Security-Related and Proprietary*, and TRISO-X requests that this document be withheld from public disclosure pursuant to 10 CFR 2.390(a)(4) and NRC RIS 2005-31.

**Enclosure 7 – Integrated Safety Analysis (ISA) Summary**, as required by 10 CFR 70.65. The ISA Summary contains information that is considered *Security-Related, Export Controlled, and Proprietary*, and TRISO-X requests that this document be withheld from public disclosure pursuant to 10 CFR 2.390(a)(4), 10 CFR 110, and NRC RIS 2005-31.

**Enclosure 8 – Decommissioning Funding Plan (DFP)**, as required by 10 CFR 70.22(a)(9) and 70.25. The DFP contains information that is considered *Proprietary*, and TRISO-X requests that this document be withheld from public disclosure pursuant to 10 CFR 2.390(a)(4).

**Enclosure 9 – Financial Qualifications**, as required by 10 CFR 70.22(a)(1) and (NOTE). This document contains information that is considered *Proprietary*, and TRISO-X requests that this document be withheld from public disclosure pursuant to 10 CFR 2.390(a)(4).

**Not Included in this Submittal**

10 CFR 70.22(i)(4) requires the applicant to allow the offsite response organizations expected to respond in case of an accident to review and comment on the emergency plan before submitting it to NRC. At least one of the offsite response organizations that would respond to the TRISO-X site allows public interaction on actions before them. Due to the timing of the public announcement of the location of the site being immediately prior to this submittal, the emergency plan is being sent out to the offsite response organizations for review concurrently with this submittal. The agencies have verbally agreed to return comments within a timeframe that will allow for them to be submitted within the NRC's acceptance review period.

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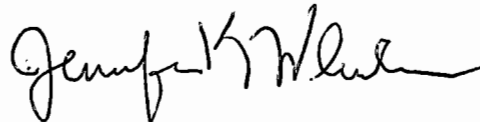
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If there are questions or if additional information is required, please contact Jennifer Wheeler at (865) 850-0893 or [jwheeler@x-energy.com](mailto:jwheeler@x-energy.com).

Sincerely,



Dr. Peter J. Pappano  
President



Jennifer K. Wheeler, P.E.  
Director, Regulatory Affairs

Copy: Mr. Matthew Bartlett, US NRC, NMSS  
TRISO-X Regulatory Records File

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## **ENCLOSURE 1**

### **AFFIDAVIT**

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**AFFIDAVIT  
PROPRIETARY / FINANCIAL INFORMATION**

I, Jennifer K. Wheeler, Director of Regulatory Affairs for TRISO-X, LLC, (TRISO-X) that to the best of my knowledge and beliefs, make the following representation contained herein:

- A. The following document(s) which TRISO-X requests to have withheld from public disclosure pursuant to Title 10 of the Code of Federal Regulations (10 CFR) 2.390 is:

Enclosure 3 – Sensitive Addendum  
Enclosure 4 – Fundamental Nuclear Material Control Plan  
Enclosure 6 – Site Emergency Plan  
Enclosure 7 – Integrated Safety Analysis Summary  
Enclosure 8 – Decommissioning Funding Plan  
Enclosure 9 – Financial Qualifications

- B. The information contained in the document(s) cited in A above has been held in confidence by TRISO-X, in that it contains financial information as defined in 10 CFR 2.390(a) that is not customarily disclosed to the public.
- C. The information contained in the document(s) cited in A above has been held in confidence by TRISO-X, in that it contains trade secrets or commercial information as defined in 10 CFR 2.390(a) that is not customarily disclosed to the public.
- D. The public disclosure of the information contained in the document(s) cited in A above would likely cause substantial economic harm to the competitive advantage held by TRISO-X because it contains distinguishing aspects of a process, methodology, or components which provide a competitive advantage in product optimization or marketability.
- E. Unrestricted disclosure of the information contained in the document(s) cited in A above would jeopardize the position of TRISO-X in the market and, thereby give a market advantage to any competitors who would benefit from access to substantial TRISO-X sensitive information related to the company's nuclear fuel manufacturing methods.
- F. The public disclosure of the information contained in the document(s) cited in A above is likely to cause substantial harm to the competitive position of TRISO-X because it would enhance the ability of competitors to address similar safety, regulatory and licensing issues without commensurate expenses.
- G. The information that TRISO-X requests to be withheld from public disclosure is contained in the entire document(s) as so marked. Non-proprietary versions of the documents would essentially be blank pages and are therefore not provided.

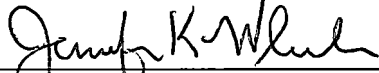
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Therefore, TRISO-X requests the versions of the submitted information marked as proprietary / financial be withheld from the public disclosure pursuant to 10 CFR 2.390(b) and Section 103(b) of the Atomic Energy Act of 1954, as amended.

The averments of fact set forth in this Affidavit are true and correct to the best of my knowledge, information, and belief:

 4/5/2022  
Jennifer K. Wheeler Date  
Director, Regulatory Affairs  
TRISO-X, LLC

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