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

July 3, 2023

Jennifer K. Wheeler, P.E.
Vice President, Regulatory Affairs
TRISO-X, LLC
801 Thompson Avenue
Rockville, MD 20852

SUBJECT: COMMENCEMENT OF CONSTRUCTION OF TRISO-X'S PROPOSED FUEL FABRICATION FACILITY

Dear Jennifer Wheeler:

I am writing to you regarding the U.S. Nuclear Regulatory Commission's (NRC) review of TRISO-X, LLC's (TRISO-X) license application to possess and use special nuclear material for the manufacture of high-assay, low-enriched uranium fuel at a fuel fabrication facility to be located in Roane County, Tennessee.[1] During meetings with the NRC staff, TRISO-X indicated its intent to commence construction of its proposed fuel fabrication facility before NRC staff completes either its safety or environmental reviews and reaches a final decision on the application.[2]

The NRC's position regarding commencement of construction of a facility such as TRISO-X's proposed fuel fabrication facility is codified in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 70.23(a)(7), which states:

> Where the proposed activity is processing and fuel fabrication, scrap recovery, conversion of uranium hexafluoride, uranium enrichment facility construction and operation, or any other activity which the NRC determines will significantly affect the quality of the environment, the Director of Nuclear Material Safety and Safeguards (NMSS) or his/her designee, *before commencement of construction of the plant or facility in which the activity will be conducted*, on the basis of information filed and evaluations made pursuant to subpart A of part 51 of this chapter, has concluded, after weighing the environmental, economic, technical, and other benefits against environmental costs and considering available alternatives, that the action called for is the issuance of the proposed license, with any appropriate conditions to protect environmental values. *Commencement of construction prior to this conclusion is grounds for denial to possess and use*

[1] TRISO-X submitted the safety analysis report on April 5, 2022, (Agencywide Documents Access and Management System [ADAMS] Accession Number ML22101A200) for this application and supplemented the submittal via letters dated October 13, 2022, (ML22286A144) and November 4, 2022 (ML22308A251). TRISO-X submitted the Environmental Report for this application via letter dated September 23, 2022 (ML22266A269). See 10 CFR 70.4, 70.21(f), and 70.23(a)(7) (providing requirements for this application). The NRC staff accepted the application for a detailed technical review on November 18, 2022 (ML22320A110).
[2] NRC staff Note to File - TRISO-X Plans for Construction During the Application Review Process, dated April 17, 2023 (ML23107A173).

> *special nuclear material in the plant or facility. Commencement of construction as defined in section 70.4 may include non-construction activities if the activity has a reasonable nexus to radiological safety and security.* (Emphasis added).

Commencement of construction is defined in 10 CFR 70.4, which states:

> Commencement of construction means taking any action defined as 'construction' or any other activity at the site of a facility subject to the regulations in this part that has a reasonable nexus to: (1) Radiological health and safety; or (2) Common defense and security.

Construction is defined in 10 CFR 70.4, which states, in part:

> Construction means the installation of foundations, or in-place assembly, erection, fabrication, or testing for any structure, system, or component of a facility or activity subject to the regulations in this part that are related to radiological safety or security.

Therefore, if TRISO-X commences construction prior to the Director of the Office of Nuclear Material Safety and Safeguards (or his/her designee) making a 10 CFR 70.23(a)(7) determination, it undertakes that construction at its own risk (i.e., "at-risk"). These risks include NRC's denial of the application, the need for design changes, construction rework, additional oversight activities, and project delays. Construction "at-risk" could also reduce opportunities for environmental mitigations, resulting in larger impact determinations in the Environmental Impact Statement. The staff notes that previously expended resources do not enter into the NRC's decision as to whether or not a license application meets regulatory requirements.[3]

Should TRISO-X decide to proceed with any at-risk construction, NRC inspectors will concurrently perform oversight activities for such construction during the application review. These oversight activities do not constitute an approval of the design or the application. Instead, the oversight activities are intended to verify that the applicant is constructing in accordance with the proposed design with a priority given to work that the staff can only verify during construction. In particular, the oversight activities will focus on ensuring that the facility is constructed with sufficient quality standards. For example, the NRC staff may perform oversight activities related to structural concrete, structural steel, structural welding, piping systems, electrical components and systems, mechanical components and systems, fire protection systems, and confinement systems. The NRC staff will carefully consider the adequacy of construction, implementation of management measures, and the resolution of any identified deficiencies.

As a reminder, TRISO-X may not conduct any operations within any new buildings involving the use of NRC-regulated material unless (1) the license application is approved, and (2) TRISO-X has received an NRC letter authorizing possession of licensed material. The NRC will only approve a license application after completion of the safety and environmental reviews, if it is able to make a finding that the applicant has met applicable regulatory requirements.

To maintain an effective and efficient oversight process, and to assist the staff with scheduling oversight activities, the NRC requests that TRISO-X provide construction schedules as soon as possible but at least 30 days prior to commencing construction, provide regular schedule

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[3] See 76 Fed. Reg. 56951, 56956 (Sept. 15, 2011).

updates, and hold routine status calls with the project inspector for any at-risk construction activities.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the NRC ADAMS. ADAMS is accessible from the NRC Website at http://www.nrc.gov/reading-rm/adams.html.

If you have questions pertaining to the topic discussed above, please contact Matt Bartlett, via email at matthew.bartlett@nrc.gov.

Sincerely,

Franke, Mark signing on behalf
of Lubinski, John
on 07/03/23

John W. Lubinski, Director
Office of Nuclear Material Safety
and Safeguards

Docket No. 70-7027

SUBJECT: COMMENCEMENT OF CONSTRUCTION OF TRISO-X'S PROPOSED FUEL FABRICATION FACILITY, DATED: July 3, 2023

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