



X-energy: News Release

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TRISO-X TF3 (License)

TRISO-X Submits First Ever High-Assay Low-Enriched Uranium Fuel Fabrication Facility License Application to the Nuclear Regulatory Commission

The TRISO-X Fuel Fabrication Facility (TF3) will be the nation's first 10 CFR 70 Category II fuel facility dedicated exclusively to fueling HALEU based reactors

Today TRISO-X, LLC, a wholly owned subsidiary of X-energy LLC, delivered a Category II special nuclear material license application to the Nuclear Regulatory Commission (NRC) for the nation's first High-Assay Low-Enriched Uranium (HALEU) fuel fabrication facility. The [TRISO-X Fuel Fabrication Facility](#) (TF3) will produce fuel exclusively for the projected fleet of advanced and small modular reactors in the United States and worldwide.



Artist rendering of the proposed TRISO-X World Headquarters and Commercial Fuel Facility at the Horizon Center Industrial Park, Oak Ridge, TN.

“Our team has been working on this application for over three years, putting our all into this process to ensure we meet each and every requirement associated with operating a HALEU and TRistructural ISOtropic (TRISO) based fuel facility, from receipt of incoming uranium to processing and shipping of final product fuel elements,” said Dr. Pete Pappano, President of TRISO-X. “In the end, it all came together in a series of documents that we’ve submitted to the NRC, with a great amount of pride.”

Initially, the TF3 will produce 8 metric tons of fuel per year (MTU/year), supporting about 16 advanced reactors, including X-energy's [Xe-100](#) design. The TRISO-X team aims to expand the facility's capacity to 16 MTU/year by the early 2030s, filling a crucial gap in the advanced reactor fuel supply chain.



From Left to Right: **John Tappert** (NRC: Director, Nuclear Material Safety and Safeguards, Division of Rulemaking, Environmental, and Financial Support), **Jonathan Rowley** (NRC: Licensing Project Manager, Nuclear Material Safety and Safeguards/Division of Fuel Management/Fuel Facilities Licensing Branch), **Jacob Zimmerman** (NRC: Branch Chief, Nuclear Material Safety and Safeguards/Division of Fuel Management/Fuel Facilities Licensing Branch), **Matthew Bartlett** (NRC: Licensing Project Manager, Nuclear Material Safety and Safeguards/Division of Fuel Management/Fuel Facilities Licensing Branch), **Tim Beville** (DOE: Program Manager, Advanced Reactor Demonstration Program), **Jennifer Wheeler** (TRISO-X: Director of Regulatory Affairs), **John Lubinski** (NRC: Director, Office of Nuclear Material Safety and Safeguards), **Pete Pappano** (TRISO-X: President), **Jill Caverly** (NRC: Environmental Project Manager, Nuclear Material Safety and Safeguards/Division of Rulemaking, Environmental, and Financial Support/Environmental Review and Materials Branch), **Shana Helton** (NRC: Director, Nuclear Material Safety and Safeguards, Division of Fuel Management)

“Today is the pinnacle moment in my several decades-long career in the nuclear industry,” said Jennifer Wheeler, Director of Regulatory Affairs at TRISO-X. “I’m honored to have led the team that will make history with this first-of-a-kind submission to the NRC and I look forward to working with the commission toward realization of the first-of-a-kind facility dedicated to manufacturing HALEU fuel products.”

The review of the application is expected to take 24-36 months, with issuance of the special nuclear material (SNM) license and operation of the TF3 in the 2025 timeframe. The NRC review and TRISO-X’s interactions with the NRC over this period of time are activities carried out under X-energy’s Advanced Reactor Demonstration Program (ARDP) [cooperative agreement](#) with the U.S. Department of Energy office of Nuclear Energy.

“The TRISO-X organization has done an outstanding job in meeting this important licensing milestone,” said Andrew Griffith, Acting Assistant Secretary for Nuclear Energy, “which is a critical step in achieving the goals of the Department’s Advanced Reactor Demonstration Program.”

Earlier this week TRISO-X announced the [acquisition of a 110-acre](#) lot in Oak Ridge Tennessee’s Horizon Center industrial park. The TF3 will be built in parallel with the license application review, following all requirements associated with the construction and operation of a nuclear fuel facility thus ensuring safety to the public and facility operators.

Key Facts:

- First of a kind application for a facility dedicated exclusively to handling and processing uranium enriched to less than 20%, in support of the coming fleet of advanced and small modular reactors in the U.S. and worldwide
- The NRC review is expected to take 24-36 months with facility operations in the 2025 timeframe, well in advance of the first set of advanced reactors, thus eliminating a key risk to the fuel supply chain
- This 10 CFR 70 Category II fuel facility license application took approximately three years to develop, at a cost of almost \$20 million.
- The TF3 will be commissioned in Oak Ridge, TN, with support from the U.S. Department of Energy's Advanced Reactor Demonstration Program, a part of the Bipartisan Infrastructure Law.

About X-energy

X-energy is redefining nuclear energy. Through TRISO-X, it manufactures fuel that seals uranium particles in a protective coating, which makes meltdown impossible and retains the waste inside forever. X-energy also designs plants that unlock the fuel's potential in a process that's as clean as wind or solar. When combined, the result is reliable carbon-free baseload power, produced more safely and affordably than ever before and available anywhere, at any time. For more information, visit <https://x-energy.com> or connect with us on [Twitter](#), [LinkedIn](#) or [Instagram](#).

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