

SECTION A. Project Title: Antares Reactor Support
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SECTION B. Project Description and Purpose:
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This Idaho National Laboratory (INL) project involves the technical support for the design of a nuclear microreactor that would be capable of producing up to 500 kilowatts of electricity for 4 to 6 years without refueling. Additionally, the microreactor would be able to operate in austere environments and would fill multiple commercial, Department of Defense (DoD), and National Aeronautics and Space Administration (NASA) needs.

The tasks include:

- Task 1 – Procure Tristructural ISOTropic (TRISO) Fuel for the Antares Reactor Demonstration
 - Prepare High-Assay Low-Enriched Uranium (HALEU) from feedstock material provided by Antares, fabricate up to 200 kg U of TRISO fuel, and transport the TRISO fuel to INL. This fuel is needed to perform demonstration of the ANTARES reactor. It is anticipated that INL will subcontract to have the HALEU prepared and fabricated into TRISO. It is also anticipated that INL will subcontract to transport the fuel INL.
- Task 2 – Provide Technical and Project Management Support to Antares during completion of this Project Task Statement (PTS).
- Task 3 – Provide technical support for the ANTARES reactor design effort.
 - Provide support to develop the decontamination and decommissioning plan for the Antares reactor.
- Task 4 – Complete National Environmental Policy Act (NEPA) Documentation.
- Task 5 – Support Development of Safety Basis Documentation Needed to support the Antares Reactor Demonstration.
 - Complete the safety basis documentation needed for the reactor demonstration. This includes facility upgrades needed to support the demonstration (e.g., MFC-793) and for the operations needed to demonstrate the ANTARES reactor.
- Task 6 – Provide Design Authority and Functional Organization Support for Antares Reactor Demonstration.
 - Provide design authority support for demonstration of the ANTARES reactor. This includes upgrades to MFC-793, development of the safety basis documentation, demonstration of readiness to operate, and operations.
 - Complete review of preliminary and final design to support operations of Antares reactor at INL.
 - Provide design authority and functional organization support throughout the Antares reactor demonstration lifecycle.
- Task 7 – Support development of training materials and complete training of operations personnel.
- Task 9 - Complete cleanup to MFC-793 for demonstration of reactor
 - Removal of obsolete contaminated equipment and ancillary system components
 - Removal of containment curbing (requires Resource Conservation Recovery Act permit modification)
 - Removal of caisson/alcohol tank
 - Removal of obsolete fire protection equipment
 - Removal of obsolete nitrogen tank
 - Removal of obsolete steam piping

SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions

N/A

Discharging to Surface-, Storm-, or Ground Water

NA

Disturbing Cultural or Biological Resources

CULTURAL: This federal undertaking aligns with INL's technical support activities which include review and oversight. The proposed activity results in no historic properties affected.

Generating and Managing Waste

Waste will include removed equipment and associated items. Items may have the potential for PCBs from paint.

Releasing Contaminants

NA

Using, Reusing, and Conserving Natural Resources

NA

SECTION D. Determine Recommended Level of Environmental Review, Identify Reference(s), and State Justification: Identify the applicable categorical exclusion from 10 Code of Federal Regulation (CFR) 1021, Appendix B, give the appropriate justification, and the approval date.

References: B1.30 "Transfer actions", B1.31 "Installation or relocation of machinery and equipment", B3.6 "Small-scale research and development, laboratory operations, and pilot projects", DOE/EIS-0240 "June 1996 Final Environmental Impact Statement for the Disposition of Surplus Highly Enriched Uranium and Record of Decision (August 1996); 2007 Supplement Analysis to the EIS for Disposition of Surplus Highly Enriched Uranium (DOE/EIS-0240-SA1) and the August 2011 Amended Record of Decision " Summary of Environmental Assessment and Finding of No Significant Impact for Exemption to Licensed Physician Requirements for BWX Technologies, Inc., Lynchburg, VA, 03-28499 (68 FR 64665).

Disposition of Surplus Highly Enriched Uranium Final Environmental Impact Statement (DOE/EIS-0240) ("HEU EIS") (DOE, 1996b) – The HEU EIS analyzed disposition of 200 metric tons of surplus HEU. The HEU EIS also evaluated the transportation of HEU from DOE's Y-12 National Security Complex to likely downblending sites, including the Nuclear Fuel Services (a subsidiary of BWXT) facility, in Erwin, Tennessee, and the BWXT facility in Lynchburg, Virginia. The Supplement Analysis, Disposition of Surplus Highly Enriched Uranium (DOE/NNSA, 2007) summarized the status of HEU disposition activities conducted to date for the 200 metric tons of surplus HEU and evaluated the potential impacts of continued program implementation. Specifically in the 2007 Supplement Analysis (SA), DOE evaluated three new/revised initiatives: (1) supplying potential new end-users with low-enriched uranium (LEU) from surplus HEU (approximately 17.4 metric tons) in support of the Reliable Fuel Supply Initiative; (2) establishing new disposition pathways for HEU discard material (approximately 18 metric tons); and (3) downblending additional quantities of HEU (approximately 20 metric tons)

Environmental Assessment Related to the Renewal of NRC License No. SNM-42 for BWX Technologies, Inc. (NRC, 2005) – The NRC completed an EA and FONSI in 2005 for renewing Materials License SNM-42 for BWXT, Lynchburg, Virginia. Materials License SNM-42 authorizes BWXT to possess nuclear materials, manufacture reactor fuel components, fabricate research and university reactor components, fabricate compact reactor fuel elements, perform research on spent fuel performance, and handle the resultant waste streams, including recovery of scrap uranium. The EA is relevant because the receipt of HEU and TRISO fuel production at the BWXT Lynchburg, Virginia, facility would be performed within the operating envelope of Materials License SNM-42 and within the impacts described in the EA.

For the DOE procedures regarding categorical exclusions, including the full text of each categorical exclusion, see 10 CFR 1021.102 and Appendix B to 10 CFR Part 1021, and also Section 5.4 (Applying one or more categorical exclusions to a proposal) and Appendices B and C of DOE's National Environmental Policy Act Implementing Procedures (June 30, 2025). Requirements and guidance in 10 CFR 1021.102 and DOE's NEPA Implementing Procedures: (See full text in regulation and in Implementing Procedures)

The proposal fits within a class of actions that is listed in Appendix B to 10 CFR Part 1021 or Appendix B and C of DOE's NEPA Implementing Procedures (June 30, 2025). To fit within the classes of actions listed in Appendix B to 10 CFR Part 1021, or Appendix B of DOE's NEPA Implementing Procedures, a proposal must satisfy the conditions that are integral elements of the classes of actions in Appendix B of both 10 CFR Part 1021 and DOE's NEPA Implementing Procedures.

There are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal. DOE or an applicant may modify the proposal to avoid reasonably foreseeable adverse significant effects such that the categorical exclusion would apply.

The proposal has not been segmented to meet the definition of a categorical exclusion.

[Note: For proposals that fit within the categorical exclusions listed in Appendix C of DOE's NEPA Implementing Procedures, see DOE's notice of adoption for the subject Appendix C categorical exclusion for additional considerations. DOE notices of adoption for other agency categorical exclusions may be found on DOE's Section 109 webpage.]

Based on my review of the proposed action, as NEPA Compliance Officer, I have determined that the proposed action fits within the specified class(es) of action, the other requirements and guidance set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

DOE-ID NEPA CX DETERMINATION
Idaho National Laboratory

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Approved by Jason L Anderson, DOE-ID NEPA Compliance Officer on: 6/26/2025