



National Environmental Policy Act (NEPA) Determination Categorical Exclusion

Recipient: X-Energy, LLC

State: Maryland

Project Title: Support Testing Activities Supporting Xe-100 Deployment

Funding Opportunity Announcement Number: DE-FOA-0002271

Award Number: DE-NE0009040

OCED NEPA Control Number: OCED-09040-014-CX

Categorical Exclusion Appendix, Number, and Description:

B1.15 Support buildings Siting, construction or modification, and operation of support buildings and support structures (including, but not limited to, trailers and prefabricated and modular buildings) within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible). Covered support buildings and structures include, but are not limited to, those for office purposes; parking; cafeteria services; education and training; visitor reception; computer and data processing services; health services or recreation activities; routine maintenance activities; storage of supplies and equipment for administrative services and routine maintenance activities; security (such as security posts); fire protection; small-scale fabrication (such as machine shop activities), assembly, and testing of non-nuclear equipment or components; and similar support purposes, but exclude facilities for nuclear weapons activities and waste storage activities, such as activities covered in B1.10, B1.29, B1.35, B2.6, B6.2, B6.4, B6.5, B6.6, and B6.10 of this appendix.

Rationale for determination: In February 2021, the U.S. Department of Energy's (DOE) Advanced Reactor Demonstration Program entered into a cooperative agreement with X-energy for the development and demonstration of an advanced nuclear reactor.

DOE's Office of Clean Energy Demonstrations (OCED) is proposing to provide funding to X-energy (XE), under the existing cooperative agreement, to support early-stage non-nuclear prototyping and testing activities, either subcontracted or performed in-house in a leased space referred to as the Xperimental Test Facility (XTF). The proposed testing and related activities would include, but are not limited to:

- Long lead procurement.
- Building lease and agreement.
- Fuel-free graphite pebble structural/thermal properties.
- Graphite structural/thermal properties and block assembly.
- Steam Generator System (SGS) subscale thermal performance and stability.

- Special tooling integration with plant components.
- Instrumentation and Controls (I&C) integration and hardware-in-the-loop.
- Helium leak testing of valves, seals, welds, graphite block interfaces, etc.
- Aero tests for pumps, blowers, and circulators.
- Subscale mockups for fit checks and assembly.
- Material properties (seals, welds, motor windings, electronics etc.) under mechanical/thermal cycling

The equipment used may consist of:

- Measurement instrumentation that only requires standard electrical utilities.
- Instrumentation and processes that would not be structurally, permanently, built into the XTF.
- Small mechanical and chemical processes and materials that only require standard electrical utilities and small amounts of physical/chemical materials that would be disposed of according to Federal and state regulations.

Neither XTF nor subcontracted development testing would involve any construction of buildings, utilities, roads or other infrastructure.

DOE does not anticipate adverse impacts to any sensitive resources as a result of the proposed activities.

Related regulatory requirements: All cultural resource identification activities (e.g., archaeological, historic above ground, historic visual assessments) must be completed in accordance with applicable guidelines and standards provided by the State Historic Preservation Office (SHPO) or Tribal Historic Preservation Office (THPO) and the Secretary of the Interior's Identification Standards. Coordination with DOE is required to establish an Area of Potential Effects (APE) and scope of effort (i.e., research design) prior to cultural resource field investigations. DOE will initiate Section 106 consultation prior to cultural resource field investigations in order to support coordination with SHPO/THPO, Tribes, and other Section 106 consulting parties.

Signature of this Categorical Exclusion determination affirms that:

The proposed action (or the part of the proposal described in 'rationale for determination') fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not:

- (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders;
- (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities;
- (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases;

(4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B (4) of 10 CFR Part 1021, Subpart D, Appendix B;

(5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B (5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal. The proposed action has not been segmented to meet the definition of a categorical exclusion.

This proposal is not connected to other actions with potentially significant impacts, is not related to other actions with individually insignificant but cumulatively significant impacts, and is not precluded by any applicable regulation concerning limitations on actions during preparation of an environmental impact statement.

Any work to be carried out outside of the United States, its territories and possessions is exempt from further review pursuant to Section 5.1.1 of the DOE Final Guidelines for Implementation of Executive Order 12114; “Environmental Effects Abroad of Major Federal Actions.”

Conditions:

1. If the Recipient proposes to add to or modify the activities or locations described herein, those new activities/locations will be subject to additional NEPA review.
2. All required permits and approvals must be obtained before work can begin and all work must be completed in accordance with all required permits and approvals.
3. All cultural resource identification activities (e.g., archaeological, historic above ground, historic visual assessments) must be completed in accordance with applicable guidelines and standards provided by the State Historic Preservation Office (SHPO) or Tribal Historic Preservation Office (THPO) and the Secretary of the Interior’s Identification Standards. Coordination with DOE is required to establish an Area of Potential Effects (APE) and scope of effort (i.e., research design) prior to geotechnical surveys and cultural resource field investigations. DOE will initiate Section 106 consultation prior to any geotechnical surveys and cultural resource field investigations in order to support coordination with SHPO/THPO, Tribes, and other Section 106 consulting parties.

Signature of this memorandum constitutes a record of this decision.

OCED NEPA Compliance Officer Signature:

Date: