



## National Environmental Policy Act (NEPA) Determination Categorical Exclusion

<b>Recipient:</b>	X-Energy, LLC
<b>State:</b>	Texas
<b>Project Title:</b>	Site Characterization Activities Supporting XE-100 Deployment
<b>Funding Opportunity Announcement Number:</b>	DE-FOA-0002271 (Amendment 0002)
<b>Award Number:</b>	DE-NE0009040
<b>OCED NEPA Control Number:</b>	OCED-09040-002-CX

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:

**CATEGORICAL EXCLUSION APPENDIX, NUMBER, AND DESCRIPTION: B3.1 Site Characterization and Environmental Monitoring:** Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure (such as of a well) of characterization and monitoring devices, and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis). Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered activities include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. (This class of actions excludes activities in aquatic environments. See B3.16 of this appendix for such activities.) Specific activities include but are not limited to: (a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, radar, and temperature gradient), geochemical, and engineering surveys and mapping, and the establishment of survey marks. Seismic techniques would not include large-scale reflection or refraction testing; (b) Installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools); (c) Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells; (d) Aquifer and underground reservoir response testing; (e) Installation and operation of ambient air monitoring equipment; (f) Sampling and characterization of water, soil, rock, or contaminants (such as drilling using truck- or mobile-scale equipment, and modification, use, and plugging of boreholes); (g) Sampling and characterization of water effluents, air emissions, or solid waste streams; (h) Installation and operation of meteorological towers and associated activities (such as

assessment of potential wind energy resources); (i) Sampling of flora or fauna; and (j) Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7.

#### **Rationale for Determination:**

In October 2020, 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. Prior to entering into the cooperative agreement with X-energy, DOE completed a NEPA review and issued a categorical exclusion for design, planning, and administrative activities. The scope of the cooperative agreement includes, among other elements, the development and operation of a training facility. DOE completed a NEPA review and issued a categorical exclusion for the development and operation of this training facility in February 2023. DOE has provided initial funding to X-energy in support of those activities. Authorization of federal funding for other project activities is contingent upon additional NEPA review.

At this time, DOE's Office of Clean Energy Demonstrations (OCED) is proposing to provide funding to X-energy (XE), under the existing cooperative agreement, to conduct siting activities for the Xe-100 advanced nuclear reactor in the Gulf Coast of Texas. X-energy is proposing to perform site characterization and environmental monitoring including:

1. Geological, geophysical (such as gravity, magnetic, electrical, seismic, radar, and temperature gradient), geochemical, and engineering surveys and mapping, and the establishment of survey marks.
2. Aquifer and underground reservoir response testing;
3. Sampling, characterization and continued monitoring of a) water effluents to validate water quality assumptions and establish a baseline for monitoring, development of the REMP; b) air emissions and c) solid waste streams;
4. Noise survey to establish a baseline for impact assessment on environmental resources, the public and workers;
5. Pedestrian survey of flora or fauna (site and the vicinity, non-invasive) of ~200 acres;
6. Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 (National Historic Preservation Act - Section 106 process) in the site and vicinity which may include shovel testing and ground penetrating radar if required by the State Historic Preservation Officer (SHPO);
7. Small-scale, temporary surveying, site characterization, and research activities in aquatic environments at the site and the vicinity limited to: a) acquisition of rights-of-way, easements and temporary use permits b) flow-testing equipment for existing wells, c) natural resource inventories, data and sample collection, environmental monitoring, and basic and applied research (ex: wetlands survey for CWA Section 404 permitting) and d) surveying and mapping;
8. Use of temporary, mobile fuel-powered equipment (generators, lighting, worker heat, drill rig); and
9. Use of temporary toilet facilities (i.e., porta-potty).

DOE has considered potential impacts on resources, including those of an ecological, historical, and cultural nature. Based on preliminary research, there is potential for historic and/or cultural resources to be present at the proposed site. DOE does not anticipate adverse impacts to any sensitive resources as a result of the proposed non-ground disturbing activities.

As such, DOE has determined that ground disturbing activities may not proceed until required cultural resources surveys have been conducted and DOE has completed the Section 106 process. Ground disturbing activities include but are not limited to:

- Sampling and characterization of water, soil, rock, or contaminants (such as drilling using truck- or mobile-scale equipment, and modification, use, and plugging of boreholes);
- Installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices);
- Drilling of wells for sampling and monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells;
- Installation and operation of ambient air monitoring equipment to a) validate air quality assumptions, b) establish a baseline for monitoring environmental and worker impacts and development of the Radiological Environmental Monitoring Program (REMP), and c) to augment the use of existing monitoring data; and,
- Installation, operation and monitoring of a <200' meteorological tower to meet NRC RG 1.23 "Meteorological Monitoring Programs for Nuclear Power Plants" and to support radiological release and accident analysis assessments and air quality permitting and development of the REMP.

The proposed action (or the part of the proposal defined in the Rationale above) 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 (40 CFR 1501.9(e)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.1(g)(3)) and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

DOE has determined that 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."

The proposed action is categorically excluded from further NEPA review.

A portion of the proposed action is categorically excluded from further NEPA review.


**Notes:** This categorical exclusion applies to those activities associated with the non-ground disturbing activities for site characterization and environmental monitoring. Ground disturbing activities are restricted until required cultural resources surveys are complete and DOE completes the Section 106 review process. Any changes to the project activities or location are subject to additional NEPA review by DOE and are not authorized for federal funding unless and until the Contracting Officer provides written authorization on those additions or modifications.

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

OCED NEPA Compliance Officer Signature:

Date:

Kristin  
Kerwin

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Kerwin  
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