

**U.S. Department of Energy- Idaho Operations Office  
National Environmental Policy Act  
Categorical Exclusion Determination**

**Project Title:** Seismic Monitoring for Seismic Hazards Analyses

**Project Description and Purpose:**

The Idaho National Laboratory (INL) Natural Phenomena Hazards group is collecting seismic data in support New Data Collection Initiatives. Earthquake data will be collected at seismic stations in anticipation of future reactors on the INL site. These stations will collect data for at least two years using seismometers and for the long-term using accelerometers. Installation of the seismic stations is being funded by the INL IPL 724, Natural Phenomena Hazards project. Following completion of this project, long-term maintenance of the seismic station will be funded as part of BEA's annually funded INL Seismic Monitoring Program.

The earthquake recordings provide waveform data containing site-specific information of earthquake source, path attenuation, and site response that will be used to calculate ground motion model parameters and their sigma. These data will be used to assess seismic hazard design levels for INL facilities. A total of six seismic stations will be installed in FY-20250 (see maps below). These sites include two near the Central Facilities Area (CFA), one south of the Critical Infrastructure Test Rane Complex (CITRIC), two just north of Highway-20 between the CFA and the Materials and Fuels Complex (MFC). The final station will be installed just to the south of MFC. Each seismic station location has been chosen to allow other nearby data collection efforts in future fiscal years that include measuring velocities in nearby boreholes and acquiring seismic data along three to six ~1970 ft (600 m) orthogonally oriented lines. Also, each was chosen to avoid known locations of surface and subsurface contamination, and to reduce manmade vibrations (such as vehicle traffic). The latitude and longitude of each new station can be seen in table 1.

Table 1 – Locations of six new proposed stations

Site	Latitude	Longitude
1	43.5328	-112.96709
5A	43.51797	-112.94151
5C	43.51611	-112.878165
6A	43.52788	-112.75121
6B	43.53977	-112.70404
SMFC	43.56284	-112.66821

The installation of each seismic station will require disturbance to soils. A backhoe or hand-excavation will remove soil from a 4 ft diameter, 3 ft deep hole to place an enclosure for seismic instruments. The enclosure will be covered with native soils from the excavation or from a nearby approved source. Hand excavation will remove soil for a 3 x 3 x 3 ft hole to place a fiberglass box nearby. Hand excavation will also remove soil for 3 x 3 x 3 ft hole for a small concrete pad and antenna tower. Disturbance of soils will occur within a 100 ft diameter of the seismic station location. In addition, occasional use of off-road vehicles will be used for installation and maintenance.

Figure 1: Map showing Site 1 and 5A



Figure 2: Map showing Site 5C

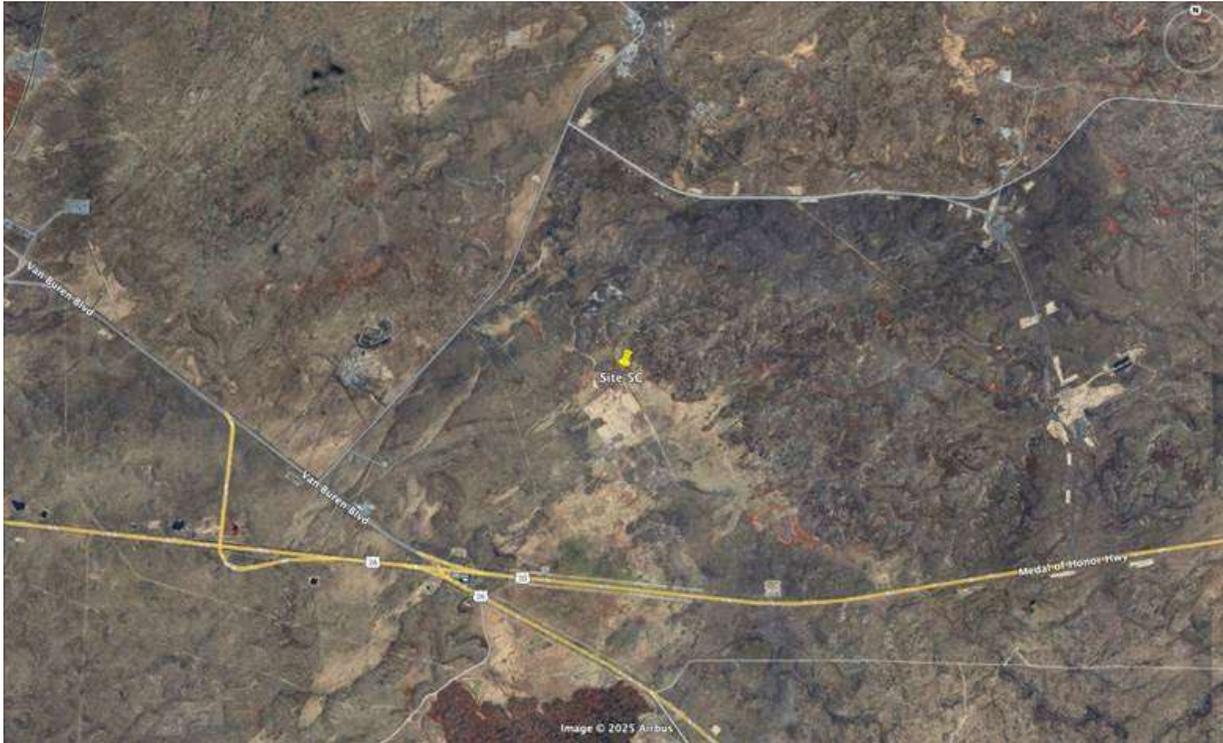


Figure 3: Map showing Site 6A and Site 6B



Figure 4: Map showing site SMFC





Figure 5. Titan SMA which will be used to measure ground acceleration



Figure 6. Trillium Horizon seismometer. This instrument will be used to measure ground velocity



Figure 7. Nanometrics Centaur digitizer. This will digitize the data from the instruments and transmit the data via a 2.4 GHz radio



Figure 8. Chaparral infrasound sensor. This instrument will be used to measure the pressure wave from the blasts.

**Environmental Aspects or Potential Sources of Impact:**

**Air Emissions**

NA

**Discharging to Surface-, Storm-, or Ground Water**

NA

**Disturbing Cultural or Biological Resources**

There is the potential for this work to impact vegetation and for project personnel to interact with various wildlife species. A Biological Resource Review will be arranged within two weeks prior to the initiation of any activities that might disturb soil or vegetation and again following completion of project activities. A nesting bird survey is included with the Biological Resource Review for actions occurring between April 1 - October 1 per compliance with the Migratory Bird Treaty Act. Bat surveys are also included with the Biological Resource Review in accordance with the INL Bat Protection Plan.

Cultural: A project-specific Section 106 review was completed under CRMO project number (BEA-25-046) and resulted in No Historic Properties Affected. However, the project location is in a culturally sensitive area, please refer to Holds Points and Project Specific Instructions.

**Generating and Managing Waste**

When wastes are generated, how they are disposed can adversely affect the environment. Managing wastes appropriately and responsibly and implementing recycling or reuse practices, where feasible, during project activities can reduce the potential impact on the environment.

**Releasing Contaminants**

When chemicals are used during the project there is the potential for spills that could impact the environment (air, water, soil).

**Using, Reusing, and Conserving Natural Resources**

NA

**Determination**

For Categorical Exclusions (CXs), the proposed action must not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, safety, and health, or similar requirements of Department of Energy (DOE) or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment or facilities; (3) disturb hazardous substances, pollutants, contaminants, or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources (see 10 CFR 1021); (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, Appendix B. The proposal has not been segmented to meet the definition of a categorical exclusion. Segmentation can occur when a proposal is broken down into small parts in order to avoid the appearance of significance of the total action. However, segmentation does not include proposals that are developed and potentially implemented over multiple phases where each phase results in a decision whether to proceed to the subsequent phase. There is no extraordinary circumstance related to the proposal that is likely to cause a reasonably foreseeable significant adverse effect or for which DOE does not know the environmental effect. Extraordinary circumstances are unique situations presented by specific proposals, including, but not limited to, scientific controversy about the environmental effects of the proposal; uncertain effects or effects involving unique or unknown risks; and unresolved conflicts concerning alternative uses of available resources.

**References:** B3.1 "Site characterization and environmental monitoring"

**Justification:** 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

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Categorical Exclusion Posting No.: DOE-ID-INL-25-023

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.]

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: 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; Installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools); 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; Aquifer and underground reservoir response testing; Installation and operation of ambient air monitoring equipment; 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); Sampling and characterization of water effluents, air emissions, or solid waste streams; Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources); Sampling of flora or fauna; and Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7.

Approved by Robert Herzog, DOE-ID NEPA Compliance Officer on: 7/24/2025