

DOE-ID NEPA CX DETERMINATION

Idaho National Laboratory

SECTION A. Project Title: New Seismic Station

SECTION B. Project Description and Purpose:

Earthquake data is needed to develop ground motion models for the Idaho National Laboratory (INL) Senior Seismic Hazard Analysis Committee (SSHAC) Level 3 Probabilistic Seismic Hazard Analysis (PSHA) near a proposed location for a small modular reactor (SMR) shown in Figure 1. Waveform data with site-specific information on earthquake source, path attenuation, and site response will be gathered and used to calculate ground motion model parameters and their sigma for this area of the INL Site. The information could also be used to assess seismic hazard design levels of the proposed SMR.

INL proposes to install a seismic station at the location shown in Figure 1. The seismic station is needed for the SSHAC PSHA, and the station will be used to collect data regardless of whether or not an SMR is developed.

Installation requires disturbance to soils within a 50 ft radius around the seismic station location. The soil disturbances include:

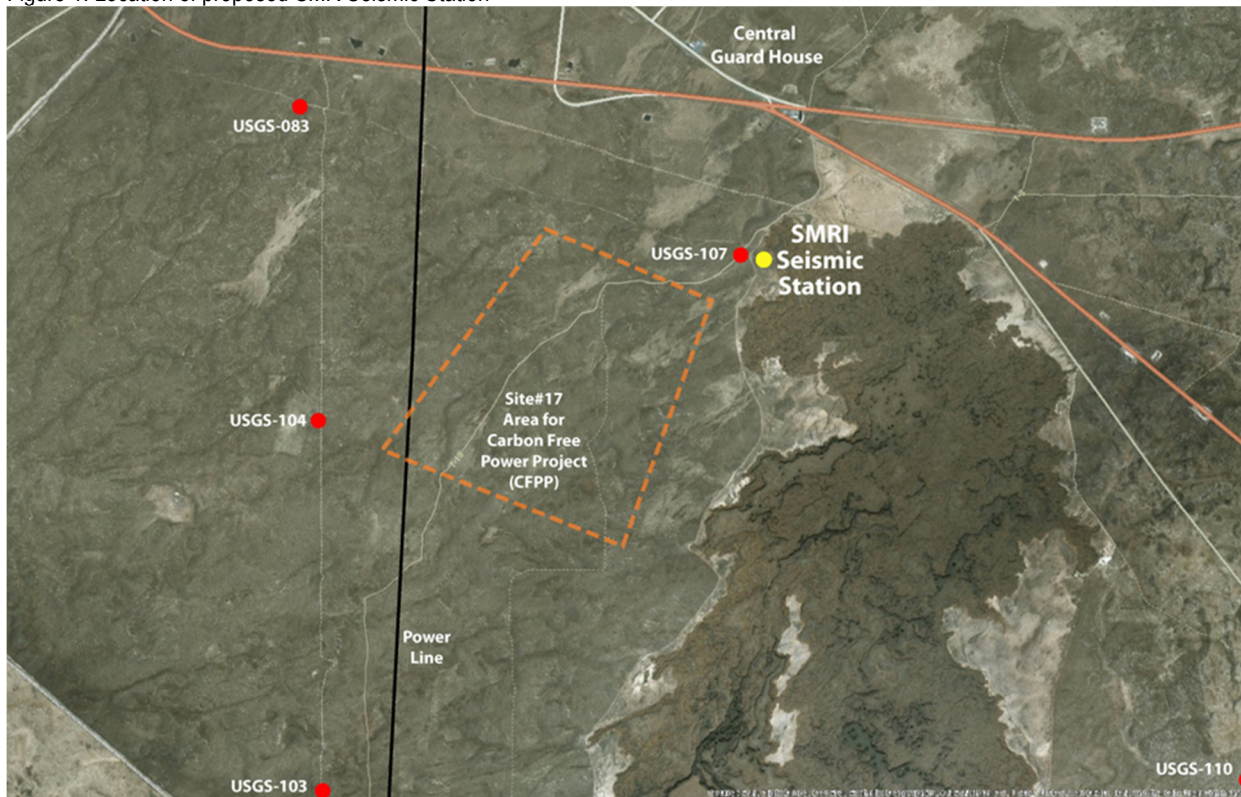
- Install 4 ft-diameter concrete circular pad for a circular culvert enclosure (4 ft high) with steel lid and handle
- Hand auger a 12-inch diameter hole to a depth of 3 or 4 ft to place a steel rod in concrete
- Hand excavate a 3 ft x 3 ft base for a 10' tower in 1 to 2 ft of concrete
- Cover cables (about 30 ft long) from the culvert enclosure and the steel rod to the tower.

The seismic station will contain the following instrumentation:

- A datalogger, three-component broadband seismometer, and three-component accelerometer housed in the culvert enclosure
- Two solar panels and one antenna attached to the tower
- Global Positioning System (GPS) antenna attached to the top of the steel rod
- Digital 2.4G radio and GPS receiver in a small enclosure on the tower
- A 2 x 3 ft steel box set on the soil surface adjacent to the tower to house two or more sealed 12 volt, 100 amp/hr Gel Cell batteries.

The seismic station is anticipated to be permanent. If data is no longer needed from the station in the future, the equipment and tower will be removed by the INL seismic program.

Figure 1. Location of proposed SMR Seismic Station



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SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions

Fugitive dust and emissions from mobile equipment may be generated during excavation activities.

Disturbing Cultural or Biological Resources

The proposed action has the potential to disturb Cultural and Biological resources.

Generating and Managing Waste

The project may generate small amounts of industrial waste such as concrete, scrap metal/wire, packaging material, etc. Hazardous waste is not expected to be generated. Batteries will be used while operating the seismic stations and will need to be replaced on occasion. All waste will be appropriately characterized and disposed at the direction of Waste Generator Services. Program personnel will incorporate waste minimization measures and recycling where practical.

Releasing Contaminants

Typical construction chemicals such as fuels, lubricants, adhesives, etc. will be used while constructing the seismic stations. Pesticides and fertilizers may also be used if revegetation becomes necessary. Although not anticipated, there is a potential for spills when using chemicals or fueling equipment. In the event of a spill, notify facility PEL. If the PEL cannot be contacted, report the release to the Spill Notification Team (208-241-6400). Clean up the spill and turn over spill cleanup materials to WGS.

Using, Reusing, and Conserving Natural Resources

All applicable waste would be diverted from disposal in the landfill when possible. Program personnel would use every opportunity to recycle, reuse, and recover materials and divert waste from the landfill when possible. The program would practice sustainable acquisition, as appropriate and practicable, by procuring construction materials that are energy efficient, water efficient, are bio-based in content, environmentally preferable, non-ozone depleting, have recycled content, and are non-toxic or less-toxic alternatives.

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.

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). In addition, no extraordinary circumstances related to the proposal exist that would affect the significance of the action. In addition, the action is not "connected" to other action actions (40 CFR 1508.25(a)(1) and is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1608.27(b)(7)).

References: 10 CFR 1021, Appendix B, B3.1 "Site characterization and environmental monitoring"

Justification: Project activities are consistent with 10 CFR 1021, Appendix B, B3.1 "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 Resource Conservation and Recovery Act (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 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;

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- e) 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);
- f) Sampling and characterization of water effluents, air emissions, or solid waste streams;
- g) Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources);
- h) Sampling of flora or fauna; and
- i) Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7.

Is the project funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act) Yes No

Approved by Jason Sturm, DOE-ID NEPA Compliance Officer on: 8/10/2018