PMC-EF2a

(2.04.02)

U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION

RECIPIENT: Board of Regents, NSHE, obo University of Nevada, Reno **STATE:** NV

PROJECT TITLE : Development of a Low Cost Method to Estimate the Seismic Signature of a Geothermal Field from Ambient Seismic Noise Analysis

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000522	DE-EE0005518	GFO-0005518-001	

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

CX, EA, EIS APPENDIX AND NUMBER:

Description:

A9	Information gathering (including, but not limited to, literature surveys, inventories, audits), data analysis (including computer modeling), document preparation (such as conceptual design or feasibility studies, analytical energy supply and demand studies), and dissemination (including, but not limited to, document mailings, publication, and distribution; and classroom training and informational programs), but not including site characterization or environmental monitoring.
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.

Rational for determination:

Board of Regents, NSHE, obo University of Nevada, Reno (hereafter UNR) would utilize DOE and cost share funds to research cost-effective characterization of geothermal reservoir properties from which drilling targets would be identified by utilizing existing and newly acquired seismic survey data to test and validate a cost-effective, non-invasive, seismic exploration method based on seismic interferometry. Laboratory work would take place at the Nevada Seismological Laboratory, on the University of Nevada, Reno premises: 1664 N. Virginia St., Reno, NV 89557.

This project includes two Phases but this NEPA review is for Phase 1 only. Prior to initiating Phase 2 activities, there would be a go/no-go decision point after which DOE would determine whether or not to fund Phase 2 activities. Additional NEPA review will be required if this project is selected to continue with Phase 2 activities.
PHASE 1 – Proof of Concept: method development, feasibility assessment and validation (see SOPO for additional details of each task)

1. Permitting and environmental documentation
2. Preliminary P/S seismic velocity model estimation using passive seismic arrays
3. Reflection line deployment and ambient-noise analysis
4. Analysis of New Geothermal Field Seismic Characteristics
5. Assess Seismic Model Resolution and Accuracy
6. Statistically Assess Geothermal Reservoir Favorability

PHASE 2 - Application of the prototype method to a new area of interest
Phase 2 will require additional NEPA review if the project is selected to continue with Phase 2 activities.

Phase 1 includes fieldwork that would take place at Magma Energy's Soda Lake property near Fallon, Nevada in Churchill County on public and private leases. For federally managed lands in the project area, subsurface geothermal resources are managed by the Bureau of Land Management (BLM) and the Bureau of Reclamation (BOR) is the surface management agency. UNR has received an approved Notice of Intent to Conduct Geothermal Resource Exploration Operations for project activities occurring on federally managed lands. For project activities occurring on private lands, UNR has contacted and received approval for survey activities from many of the private landowners within the project area. Private landowners are still being contacted for approval of additional stations that could improve deployment coverage. The survey can be completed without additional landowner approvals. Geophones and digitizers would be deployed for the passive seismic system on the surface with minimal surface disturbance required for installation. Vehicle and equipment travel would be limited to previously-identified established roads and construction or by overland travel. Prudent speed limits would be observed on unpaved roads throughout the project area in order to reduce dust emissions. Any unplanned discovery of cultural resources, items of cultural patrimony, sacred objects, funerary items, or human remains would require that UNR cease all activity in the vicinity of the find and immediately notify the Field Manager of the Stillwater Field Office of the BLM and the DOE Project Officer. UNR would not publicly disclose the location of the find and would ensure that any human remains would be secured and preserved in place until a Notice to Proceed is issued by the authorized officer.

Phase 1 of this project is comprised of information gathering, analysis, and dissemination; and site characterization and environmental monitoring; therefore the DOE has categorized this into Categorical Exclusions A9 and B3.1.

NEPA PROVISION

DOE has made a conditional NEPA determination for this award, and funding for certain tasks under this award is contingent upon the final NEPA determination.

Insert the following language in the award:

You are restricted from taking any action using federal funds, which would have an adverse affect on the environment or limit the choice of reasonable alternatives prior to DOE/NNSA providing either a NEPA clearance or a final NEPA decision regarding the project.

Prohibited actions include:
Phase 2 (all tasks)
This restriction does not preclude you from:
Phase 1 (all tasks)
If you move forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

Insert the following language in the award:

You are required to:
Any unplanned discovery of cultural resources, items of cultural patrimony, sacred objects, funerary items, or human remains would require that UNR cease all activity in the vicinity of the find and immediately notify the Field Manager of the Stillwater Field Office of the BLM and the DOE Project Officer. UNR would not publicly disclose the location of the find and would ensure that any human remains would be secured and preserved in place until a Notice to Proceed is issued by the authorized officer.

Note to Specialist :

EF2a prepared by Casey Strickland

Phase 1 Budget: $207,890 (DOE) $3,807 (cost share)

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 9/11/2012
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION