PMC-EF2a
(2.04.02)

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

RECIPIENT: ELECTRATHERM, Inc. **STATE:** NV

PROJECT TITLE : "Small Scale Electrical Power Generation from Heat Co-Produced in Geothermal Fluids: MiningOperation"

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA0000336	DE-EE0004435	GFO-0004435-002	GO4435

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, analysis, and dissemination	Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)
B3.6 Small-scale research and development, laboratory operations, and pilot projects	Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.
B5.2 Modifications to pumps and piping	Modifications to existing pump and piping configurations (including, but not limited to, manifolds, metering systems, and other instrumentation on such configurations conveying materials such as air, brine, carbon dioxide, geothermal system fluids, hydrogen gas, natural gas, nitrogen gas, oil, produced water, steam, and water). Covered modifications would not have the potential to cause significant changes to design process flow rates or permitted air emissions.
B5.15 Small-scale renewable energy research and development and pilot projects	Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

Rational for determination:

ElectraTherm (ET) would use U.S. Department of Energy (DOE) grant funds to analyze, design, test, optimize, build, install, run and report results from its micro-geothermal plant running on heat co-produced in geothermal fluid at a mining operation. Product development includes design and testing innovations in the use of operating fluids, condensing design, variations in power block options, power use and/or storage, hardware interface with a corrosive environment and heat source, as well as remote monitoring. Laboratory work would occur at ET's headquarters in Reno, Nevada. Field portions of the project would occur at the Florida Canyon Mine located 40 miles southwest of Winnemucca, Nevada.

Phase I of this project was previously approved by GFO-0004435-001 on October 18, 2010. As part of the requirements of the Funding Opportunity Announcement that this project was selected under (DE-FOA-0000318), a down select process was completed and this project was selected to move forward with Phase II and Phase III activities. This NEPA determination is specific to Phase II and Phase III activities. For details of each specific task in Phase II and Phase III see the Statement of Project Objectives.

Phase II: Procurement, Installation and Commissioning of Equipment
A 50 to 65 kW Organic Rankine Cycle (ORC) "micro geothermal" power plant would be built and tested at ET's manufacturing facility in Reno. Once testing is complete, the ORC would be transported by truck to the Florida Canyon Mine to be installed on an existing concrete slab at an existing well presently utilized in mining operations. The ORC would be installed in between the well and the mine to produce electricity from the undesirable heat that is not needed in the mining operation. All permits are handled by the Florida Canyon Mine and no additional permits beyond those already in place are needed for project activities.

Phase III: Operation and Maintenance – this phase includes site visits, remote monitoring, performance evaluations, reporting, and project management.

Funds associated with this NEPA determination: $344,606 (DOE) 344,605 (cost share)

Remaining project activities are categorized as information gathering, data analysis, and document preparation; laboratory operations; modifications to pumps and piping; and small-scale renewable energy research and development and pilot project; therefore the DOE has categorized this proposal into Categorical Exclusions A9, B3.6, B5.2, and B5.15.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

EF2a prepared by Casey Strickland

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 5/31/2012

NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

☐ Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

☐ Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.

☐ Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____

Field Office Manager