

PMC-EF2a

(204.02)

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



RECIPIENT: ElectraTherm, Inc.

STATE: NV

PROJECT TITLE : Small Scale Electrical Power Generation from Low-Temperature Geothermal Process Water Utilized in a Mining Operation

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000318	DE-EE0004435	GFO-0004435-001	0

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** Onsite and offsite site characterization and environmental monitoring, including siting, construction (or modification), operation, and dismantlement or closing (abandonment) 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. Activities covered include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. Specific activities include, but are not limited to:
- B3.6** Siting, construction (or modification), operation, and decommissioning of facilities for indoor bench-scale research projects and conventional laboratory operations (for example, preparation of chemical standards and sample analysis); small-scale research and development projects; and small-scale pilot projects (generally less than two years) conducted to verify a concept before demonstration actions. Construction (or modification) will be within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible).

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.

The project is divided into three phases with multiple tasks. This NEPA determination is specific to Phase I activities. As part of the requirements of the Funding Opportunity Announcement that this project was selected under (DE-FOA-0000318), a down select process will determine which projects will move forward to Phase II. If this award is selected to move forward, more specific project data would be submitted for Phase II/Phase III activities and another NEPA determination would be needed at that time.

Phase I: Feasibility Study and Engineering Design and Permitting

1. ORC Design and Optimization
2. Economic Feasibility Study for Proposed-Site Power Production
3. Site Analysis – field site survey, water analysis, and treatment plan
4. Remote-Site Electricity Storage Feasibility Study
5. Geothermal Fluid ORC Supply Loop Design
6. ORC Condensing Design
7. Synchronous Power Generation Feasibility Study
8. Control System Design
9. In-House Testing and Engineering Analysis – testing would occur in a laboratory setting
10. Remote Monitoring/Communications Design
11. Phase 1 Reporting

Phase II: Procurement, Installation and Commissioning of Equipment

Phase III: Operation and Maintenance

According to the R&D laboratory questionnaire, no additional permits are needed and there would be no air emissions,

liquid effluents, or toxic substances produced from this work during Phase I activities.

Condition of Approval: Allowable – Phase I (all tasks); Prohibited – Phase II (all tasks) and Phase III (all tasks).

Based upon the information provided, Phase I (all tasks) is categorically excluded under CX A9 "Information gathering/data analysis/document preparation/dissemination", CX B3.1 "Site characterization/environmental monitoring", and CX B3.6 "conventional laboratory operations."

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 II (all tasks) and Phase III (all tasks)

This restriction does not preclude you from:

Phase I (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.

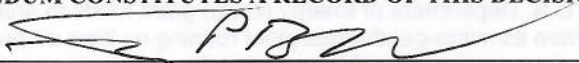
Note to Specialist :

This project involves tasks which are unallowable prior to further environmental analysis of Phase II (all tasks) and Phase III (all tasks). NEPA requests that this project be placed on ASAP Approval.

EF2a prepared by Casey Strickland

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:



NEPA Compliance Officer

Date:

10/18/10

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:

Field Office Manager

Date:
