PMC-EF2a

(2.04.02)

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

RECIPIENT: University of California, Berkeley **STATE:** CA

PROJECT TITLE: Harsh Environment Silicon Carbide Sensor Technology for Geothermal Instrumentation

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-EE0000075	DE-EE0002753	GFO-10-280	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.

B3.6 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:

The University of California, Berkeley (UCB) would develop advanced sensor technology for the direct monitoring of geothermal reservoirs using Silicon Carbide (SiC) materials. All project activities would take place either at UCB or the University of Hawaii at Manoa.

The project is divided into three phases with multiple tasks:

Phase 1

Tasks 1 through 4 would design, fabricate and test first generation pressure and temperature sensors (Design #1), characterize the bonding procedure for SiC sensors to casing components, and perform exposure demonstrations on sensor materials.

Phase 2

Tasks 5 through 8 would revise the initial pressure and temperature sensor designs based on data obtained in Phase 1 to create Design #2, do preliminary bonding experiments, and perform exposure experiments on the bonding materials and sensors.

Phase 3

Tasks 9 through 12 would refine Design #2 based on data collected in Phase 2 to create Design #3 of the sensors, demonstrate the bonding process developed in Phase 1 and 2 on a reservoir casing coupler, and perform in-situ operation of the sensors in an experimental environment. Task 13 would be Project Management, Reporting, and Information Sharing. Reports and other deliverables would be provided in accordance with the Federal Assistance Reporting Checklist following the instructions therein.

According to the R&D Laboratory Questionnaire, no permits would be needed for the project. Safety protocols at the laboratories where the work would be performed follow OSHA and/or EPA standards. Small-scale experiments would be conducted underneath fume hoods and use laboratory clean room wet sinks. All liquid effluent, toxic waste, gases, chemicals, heavy metals, etc. would be handled, stored, and disposed of according to the Environmental, Health, and Safety procedures of each respective university.

This project is comprised of information gathering, data analysis, document preparation; and conventional laboratory operations; therefore the DOE has categorized this proposal into Categorical Exclusions A9 and B3.6.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 4/1/10

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