

PMC-EF2a

(2.0+02)

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

**RECIPIENT:** Composite Technology Development, Inc**STATE:** CO

PROJECT TITLE : High-Temperature Circuit Boards for use in Geothermal Well Monitoring Applications

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-PS36-09GO99018	DE-EE0002751	GFO-10-235	GO2751

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:**

- 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).
- 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.

Rational for determination:

Composite Technology Development, Inc. (CTD) would develop and demonstrate multilayer electronic packages for data logging in high-temperature geothermal wells. The work would take place in CTD's facilities located at 2600 Campus Drive, Suite D, Lafayette, CO 80501. Subcontractors include Sandia National Laboratory, Calumet Inc., and A-Power. Sandia would assist with testing of the circuit boards, Calumet would assist with circuit board design and fabrication, and A-Power would assist with engineering design.

The project consists of multiple tasks:

1. Design and development of high-temperature circuit board materials for use in extreme operating conditions.
2. Testing of the candidate circuit board materials identified in Task 1.
3. Downselection of high-temperature circuit materials for continued research, development, and demonstration.
4. Fabrication and testing of two-layer circuit boards fabricated using the materials and processes selected in Task 3.
5. Downselect circuit board materials using the results from Task 4.
6. Fabricate and test six-layer circuits to identify the best system for commercialization.
7. Project Management and Reporting

Reports and other deliverables would be provided in accordance with the Federal Assistance Reporting Checklist following the instructions included therein.

According to the CTD laboratory questionnaire, no additional permits are needed. Some air pollutants would be produced in the form of VOC and HAP emissions. All emission amounts are tracked and would be kept well below emissions limits set by Boulder County of the State of Colorado. The company claims that the use of solvents or chemicals that generate these pollutants would be minimized and any liquid effluent produced during the project would be solidified into a non-hazardous material and disposed of properly. CTD provides personal protection equipment, fume hoods, general room ventilation, fire alarms, and any additional equipment needed to ensure safety. According to the company, the safety program complies with local, State and OSHA regulations and is monitored by a safety team.

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: _____

NEPA Compliance Officer

Date: _____

3/10/10

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: _____