PMC-EF2a
(2.04.02)

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

**RECIPIENT:** 3M Company **STATE:** MN

**PROJECT TITLE :** High Performance, Durable, Low Cost Membrane Electrode Assemblies for Transportation Applications

| Funding Opportunity Announcement Number | Procurement Instrument Number | NEPA Control Number | CID Number |
|---|---|---|---|
| DE-FOA-0000360 | DE-EE0005667 | GFO-0005667-001 | GO5667 |

**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 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. |
| **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.) |

Rational for determination:

The Department of Energy (DOE) is proposing to provide federal funding to the 3M Company (3M) to develop materials and components that comprise hydrogen fuel cells (Membrane Electrode Assemblies – MEAs). Work would be performed at the following existing laboratory facilities:

3M Company, 3M Center, Building 201 St. Paul, MN 55144
3M Company, Menomonie Wisconsin Plant, 1425 Stokke Parkway, Menomonie, WI 544751
Michigan Technological University (MTU) 1400 Townsend Drive, Houghton, MI 49931
General Motors, LLC (GM), 10 Carriage Street, Honeoye Falls, NY 14472
Lawrence Berkeley National Laboratory (LBNL), 1 Cyclotron Road, Berkeley, CA 94720

This proposed project would integrate materials and components into an experimental hydrogen fuel cell and add to the general understanding of fuel cell MEA components. The project activities would include information gathering, modeling, laboratory work, and reporting distributed among each laboratories.

3M would test, model, and evaluate the materials for the hydrogen fuel cells. GM would test, and evaluate the hydrogen fuel cells. MTU and LBNL would model, and evaluate the materials for the hydrogen fuel cells. All five laboratories would complete project management for tasks completed.

An R&D laboratory questionnaire addressing laboratory safety protocols, risk management, chemical handling and waste disposal was completed for each location. No hydrogen cell prototypes would be tested outside the laboratory environment.

According to the completed 3M R&D laboratory questionnaire, both 3M laboratories have applicable permits in place to conduct research on site (including Title V R&D Air Permits, and Industrial Waste Water Permits). Laboratory fume hoods with alarms and scrubbers are used for tasks dealing with chemicals. No additional permits are needed for the proposed project activities. Toxic waste materials are disposed of properly at a licensed Treatment, Storage & Disposal facility. Waste water effluent is released to the sewer consistent with existing waste water permit. Safety Operating and Chemical Hygiene Plans are in place per OSHA, state, local, and industry standards. A site Environmental/Lab Safety and Health group as well as division representatives ensure compliance with standards. According to the MTU R&D laboratory questionnaire: no additional permits are needed, and there would be no generation of air emissions associated with this work; any liquid effluent determined to be hazardous would be

disposed of properly by a licensed hazardous waste carrier, however no hazardous chemicals would be used for this work; safety and hazardous manuals are in place per the Michigan Occupational Safety & Health Administration (OSHA) and industry standards] monitored by the Lab Facilities Manager, Michigan Tech Safety Officer, and Michigan OSHA. Chemicals and gases are handled and stored properly according to the chemical or gas per university safety manual.

According to the completed GM R&D laboratory questionnaire, no additional permits are needed. Laboratory fume hoods with sensors, alarms, inert glove boxes, and exhaust are used for tasks dealing with chemicals. No air emissions would be generated completing the proposed tasks. Proposed laboratory tasks would generate <1,000 gallons of waste water with trace contaminants. Toxic waste is stored and disposed of properly or recycled. Although the proposed tasks are not expected to generate any hazardous waste, if hazardous materials would be generated, it would be disposed of under site EPA ID # NYD053627873. Laboratory materials are kept in approved containers that are stored in a manner and at locations that are congruent to the existing Chemical Hygiene Plan. GM Health and Safety protocols follow the Code of Federal Regulations (CFR): 29 CFR1910.103 Hydrogen, 29 CFR 1910.119 Process Safety Management of Highly Hazardous Chemicals in Laboratories, 29 CFR 1910.1450 Occupational Exposure to Hazardous Chemicals in Laboratories. Corporate auditors, Health and Safety Manager, and Safety Review Board ensure GM Health and Safety protocols are compliant.
The Lawrence Berkeley National Laboratory is required to follow all applicable local, state, and federal regulations.

This project comprises information gathering, analysis, and laboratory operations; therefore the DOE has categorized this into Categorical Exclusions A9 and B3.6.

Federal share: $3,450,000
Cost share: $862,500

**NEPA PROVISION**

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

The EF2A by Christopher Carusona

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature: Electronically Signed By Lori Gray / Lori Gray Date: 8/2/2012
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