PMC-EF2a
(2.06.02)

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

RECIPIENT: Advanced Magnet Lab, Inc. **STATE:** FL

PROJECT TITLE : A Lightweight, Direct Drive, Fully Superconducting Generator for Large Wind Turbines

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000439	DE-EE0005140	GFO-0005140-002	GO5140

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.)

Rational for determination:

Advanced Magnet Labs, Inc is proposing to use DOE funding to assist in the development of a FSG (fully superconducting generator), a wind turbine technology that would be used to create large turbine generators (10+ MW) with increased capacity of torque at reduced costs.

A previous determination was made for activities proposed in budget period 1 of this project. These activities received a categorical exclusion (CX) A9 that allowed for conceptual designs, computer modeling, cost analyses and risk analyses. For budget period 2, Advanced Magnet Labs (AML) has expanded task 6. Tasks 1-5 and 7-8 have not changed and the previous CX A9 determination made on August 11, 2011 is still applicable to those activities.

Task 6 has been revised to incorporate advanced designs, manufacturing, and laboratory testing of physical components. Task 6 is broken down into six sub-tasks:

Subtask 6.6.1 – MgB2 mini-cable Build and Test
6.1.1 Design - AML, Columbus Superconductor
6.1.2 Manufacture - TBD
6.1.3 Test - TBD

Subtask 6.6.2 – Structural Composite Analysis
6.2.1 Design - AML, Emerson (Kato)
6.2.2 Manufacture - TBD
6.2.3 Test - TBD

Subtask 6.6.3 – Conductor Containment Fatigue Analysis
6.3.1 Design - AML, Emerson (Kato)
6.3.2 Manufacture - AML
6.3.3 Test - TBD

Subtask 6.6.4 – Sub-scale Torque Tube Temperature Cycling
6.4.1 Design - AML, Emerson (Kato), Argonne National Lab
6.4.2 Manufacture - TBD
6.4.3 Test - Argonne National Lab

Subtask 6.6.5 - Characterization of AC losses in MgB2 Superconductor
6.5.1 Design - AML

6.5.2 Manufacture - AML
6.5.3 Test - TBD

Subtask 6.6.6 – Fault Current Limitation Measurement
6.6.1 Design - AML
6.6.2 Manufacture - AML
6.6.3 Test - TBD

Design work, manufacture of prototype components and testing of such components will take place at Advanced Magnet Labs, Argonne National Lab and additional sub-recipient facilities, many which are unidentified at this time or are missing information on facility safety protocols and disposal procedures. Prototype manufacturing and testing cannot move forward until the design work is completed. Until then, the location and availability of testing facilities cannot be specifically identified and a NEPA review cannot be completed. Therefore the manufacture and testing of design components (6.x.2 – 6.x.3, etc…) are conditioned pending submission of an R&D questionnaire and an additional NEPA determination.

Sub-tasks 6.1.1, 6.2.1, 6.3.1, 6.4.1, 6.5.1, and 6.6.1 comprise advanced design work being conducted via desktop or computer modeling. These sub-tasks are consistent with CX A9 (Information gathering, data analysis, computer modeling, and feasibility studies) and are categorically excluded from further NEPA review.

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:
Sub-tasks 6.1.2-3, 6.2.2-3, 6.3.2-3, 6.4.2-3, 6.5.2-3, 6.6.2-3
This restriction does not preclude you from:
Sub-tasks 6.1.1, 6.2.1, 6.3.1, 6.4.1, 6.5.1, and 6.6.1
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.

Insert the following language in the award:

You are required to:
Submit a new EF1 and include a DOE Golden Field Office R&D questionnaire for all sub-contractors conducting testing activities as part of this project.

Note to Specialist :

Review completed by Laura Margason on September 10, 2012

Funding released under this NEPA action = DOE ($530,104), Cost share ($353,405)

Funding released under prior (BP1 2011) NEPA action = DOE ($1,501,200), Cost share ($1,562,800)

Funding held pending further NEPA review = DOE ($795,792), Cost share ($530,528)

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Lori Gray / Lori Gray — NEPA Compliance Officer Date: 9/11/2012

FIELD OFFICE MANAGER DETERMINATION

☐ Field Office Manager review required