PMC-ND
(1.08.09.13)

U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION

RECIPIENT: University of Maryland **STATE:** MD

PROJECT TITLE : Fabrication of Advanced Nanocarbon-Metal Composites for Improved Energy Efficiency

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001465	DE-EE0008313	GFO-0008313-001	GO8313

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.)
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.
B3.15 Small-scale indoor research and development projects using nanoscale materials	Siting, construction, modification, operation, and decommissioning of facilities for indoor small-scale research and development projects and small-scale pilot projects using nanoscale materials in accordance with applicable requirements (such as engineering, worker safety, procedural, and administrative regulations) necessary to ensure the containment of any hazardous materials. Construction and modification activities would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible).

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to the University of Maryland to design, develop, fabricate and test nanocarbon metal composites with higher electrical conductivity and mechanical strength than pure metal or metal alloys. Activities would include multiscale testing of mechanical, electrical, and thermal properties of the materials. Project work would occur at various laboratories located on the campus of the University of Maryland in College Park, Maryland, the U.S. Army Research Laboratory's Aberdeen Proving Ground facility in Maryland, GDC Industries, LLC's industrial manufacturing facility in Ohio, and General Cable Corporation's technology center in Indiana.

The proposed activities would require the use and handling of various hazardous materials, including metals, carbon powder, industrial solvents, and carbon nanostructures. The handling of these materials would occur in research laboratories and dedicated manufacturing facilities with hazardous material handling and disposal practices to ensure employee safety, environmental protection, and compliance with federal and state laws. Each location has its own environmental health and safety office that would develop and enforce safety policies, provide protective equipment, maintain controls, and perform monitoring, to reduce risks to employees and the public. Additionally, each facility has previously completed work that is similar to the activities included in the proposed project, therefore no modifications, new permits or change in the use, mission, or operation of any of the facilities would be required.

The nanoscale materials to be used would include different forms of carbon nanostructures such as, activated carbon, graphene sponge and synthetic graphite powder. The carbon nanostructures are stored in a fume hood. Appropriate personal protective equipment would be used to protect against inhalation as well as other hazards.

Work proposed to be conducted at the U.S. Army Research Laboratory may be subject to additional NEPA review by the cognizant U.S. Army NEPA compliance authority for the laboratory prior to initiating such work. Further, any work

conducted at the U.S. Army Research Laboratory must meet the laboratory's health and safety requirements.

Based on the review of the proposal, DOE has determined the proposal fits within the class of action(s) and the integral elements of Appendix B to Subpart D of 10 CFR 1021 outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410 (2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. This proposal is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved. If the Recipient moves forward with activities that are not authorized for Federal funding by the DOE Contracting Officer in advance of a final NEPA decision, the Recipient is 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:
Work proposed to be conducted at the U.S. Army Research Laboratory may be subject to additional NEPA review by the cognizant U.S. Army NEPA compliance authority for the laboratory prior to initiating such work. Further, any work conducted at the U.S. Army Research Laboratory must meet the laboratory's health and safety requirements.

Note to Specialist :

This NEPA Determination requires a tailored NEPA provision.
Advanced Manufacturing Office
Diana Heyder 03/12/18

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Casey Strickland Date: 3/12/2018

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