PMC-ND
(1.08.09.13)

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

RECIPIENT: University of Texas at Dallas **STATE:** TX

PROJECT TITLE : A Platform Technology for High-throughput Atomically Precise Manufacturing: Mechatronics at the Atomic Scale

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001465	DE-EE0008322	GFO-0008322-001	GO8322

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 Texas at Dallas (UT Dallas) for the design, development, fabrication, integration, and characterization of devices for high-throughput and high-speed atomically precise manufacturing. Fabrication activities and initial characterizations would take place at the UT Dallas laboratory and cleanroom in Richardson, TX and National Institute of Standards and Technology (NIST) research laboratory and cleanroom in Maryland. Integration and further characterization would be conducted at the Zyvex Labs also in Richardson, Texas.

The proposed activities would require the use and handling of various hazardous materials, including industrial solvents, (acetone, isopropyl alcohol), bases (metal ion containing developers), low concentration acids (buffered hydrofluoric acids), hydrogen gas, and nanoscale material. The handling of these materials would occur in dedicated research facilities with hazardous material handling and disposal practices. Each location has its own environmental health and safety office that would enforce safety policies, and provide protective equipment in order to minimize health and safety risks. 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 are primarily silicon, silicon dioxide, silicon nitride, gold, chromium, and aluminum nitride, which pose minimal health risks. The materials would mostly be used in microscale features but some nanoscale materials could be generated as particulate. These materials would be handled in the cleanrooms in accordance with federal, state and local environmental regulations with proper protective equipment.

Work proposed to be conducted at the NIST laboratory may be subject to additional NEPA review by the cognizant National Institute of Standards and Technology NEPA compliance authority for the laboratory prior to initiating such work. Further, any work conducted at the NIST 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 National Institute of Standards and Technology (NIST) laboratory may be subject to additional NEPA review by the cognizant NIST NEPA compliance authority for the laboratory prior to initiating such work. Further, any work conducted at the NIST 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 04/10/18

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Casey Strickland Date: 4/11/2018

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