PMC-ND
(1.08.09.13)

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

RECIPIENT: AZ Board of Regents on behalf of Arizona State University **STATE:** AZ

PROJECT TITLE: Enhancing grid reliability and resilience through novel DER control, total situational awareness and integrated distribution-transmission representation

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-EE0008773	GFO-0008773-001	GO8773

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), 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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Arizona State University (ASU) to design, develop, and test various software algorithms and tools along with small-scale hardware prototypes of PV inverters and edge intelligent devices related to advanced electric grid integration of solar photovoltaic (PV) systems.

The scope of the proposed project would be limited to data analysis, computer modeling, software development, and laboratory research and development (R&D). Integrated software/hardware testing activities would consist of hardware-in-loop (HIL) based validation using existing datasets of field measurements and models of distribution feeders. Software development and computer simulations would be undertaken by ASU (Tempe, AZ) in addition to subrecipients Iowa State University (ISU; Ames, IA), Hitachi America, LTD (Santa Clara, CA), Poundra, LLC (Tempe, AZ), and the National Renewable Energy Laboratory (NREL; Golden, CO). Hardware development, fabrication, and testing would occur at ASU's Power Electronics Research Laboratory and Poundra. HIL testing would be performed at both ASU and ISU. No change in the use, mission, or operation of existing facilities would arise out of these efforts.

Hardware development activities would not involve the use or handling of hazardous materials. Laboratory R&D activities would include the operation of power tools, heavy equipment, and electrical systems at high voltage levels. All such work would be conducted in-lab at dedicated, fully-equipped and permitted facilities with extensive operational safety features. Existing health and safety policies and procedures would be followed, including employee training, proper protective equipment, engineering controls, monitoring, job hazard analysis, and internal assessments.

Non-hazardous wastes generated by multiple iterations of hardware fabrication and testing would consist of minor quantities of assembled electronic components, metal wires, wire insulation, and damaged nuts and bolts. All waste would be collected and removed per established university or corporate protocols. Upon completion of the proposed project, some hardware prototypes would be disassembled and the electronic parts would be properly disposed of or

recycled. Other developed hardware as well as high performance computers procured for project purposes would also be retained for future research.

All project activities would take place at facilities that were purpose-built for the type of activities being proposed; therefore, no adverse impacts to sensitive resources are expected as a result of the proposed activities at any project location. Any work proposed to be conducted at a DOE laboratory may be subject to additional NEPA review by the cognizant DOE NEPA Compliance Officer for the specific DOE laboratory prior to initiating such work. Further, any work conducted at a DOE laboratory must meet the laboratory's health and safety requirements.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assisstance agreement:

Any work proposed to be conducted at a federal facility may be subject to additional NEPA review by the cognizant federal official and must meet the applicable health and safety requirements of the facility.

Notes:

Solar Energy Technologies Office
This NEPA determination does not require a tailored NEPA Provision. Include the standard DOE lab language in the NEPA provision.
NEPA review completed by Whitney Doss, 6/13/2019

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Kristin Kerwin Date: 6/14/2019

NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

☑ Field Office Manager review not required

☐ Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____

Field Office Manager