PMC-EF2a
(2.06.02)

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

RECIPIENT: Clemson University

STATE: SC

PROJECT TITLE: Clemson University 15MW Hardware-In-the-Loop (HIL) Grid Simulator

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
N/A (DNFA)	DE-EE0005723	GFO-0005723-001	

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.)
B1.31 Installation or relocation of machinery and equipment	Installation or relocation and operation of machinery and equipment (including, but not limited to, laboratory equipment, electronic hardware, manufacturing machinery, maintenance equipment, and health and safety equipment), provided that uses of the installed or relocated items are consistent with the general missions of the receiving structure. Covered actions include modifications to an existing building, within or contiguous to a previously disturbed or developed area, that are necessary for equipment installation and relocation. Such modifications would not appreciably increase the footprint or height of the existing building or have the potential to cause significant changes to the type and magnitude of environmental impacts.

Rational for determination:

Clemson University is proposing to use federal financial assistance from to DOE to purchase and install a 15MW Hardware-in-the-Loop (HIL) Grid Simulator at the campus in North Charleston, SC. The HIL Grid Simulator will be wholly located within the previously NEPA approved WT DTTF in North Charleston, SC. An Environmental Assessment (DOE/EA-1761) of that project (DE-EE0003023) resulted in a FONSI, which was signed on September 23, 2010. A review of DOE/EA-1761 determined activities described under this proposed project are consistent with activities proposed in the EA.

The financial assistance from DOE would allow Clemson University to purchase the HIL Grid Simulator that would support full-scale grid compatibility testing of multi-megawatt devices and wind turbine drivetrain testing dynamometers.

Tasks include:

Task 1: Develop 15 MW HIL Grid Simulator Specifications
Task 2: Complete Detailed Design of System Topology
Task 3: Complete Basis of Design of Facility Infrastructure
Task 4: Facility Staffing
Task 5: Complete Detailed Design of Facility Infrastructure.
Task 6: Construction (installation)
Task 7: Safety program
Task 8: Commissioning
Task 9: Facility Accreditation

Tasks 1, 2, and 3 are focused on the design of the HIL system and the WT DTTF infrastructure necessary for its operation. Work would consist of desktop research and modeling, release of design specifications for contractor bid, and subsequent purchase of key equipment.

Tasks 4 and 5 would involve the development of a staffing plan for operation of the HIL system in addition to the design work and planning necessary prior to the install of the HIL system components into the WT DTTF facility.

As a part of Tasks 7, 8 and 9, Clemson's project team would develop a safety program, a commissioning plan,

conduct a safety review prior to the actual commissioning of the system, and file and obtain ISO 17025 accreditation to be able to provider certification for new technologies being tested.

Tasks 1-5, 7 - 9 involve planning, research, document preparation, and design activities in preparation of integrating the HIL Grid Simulator into the WT DTTF facility once construction has been completed. DOE has determined that impacts to the natural and human environments are expected to be negligible for these tasks and that this project is consistent with actions covered under DOE CX A9 (information gathering, data analysis, document preparation and dissemination, and conceptual design) and therefore is categorically excluded from further NEPA review.

Task 6 involves the purchase and installation of the HIL system into the WT DTTF facility. Included in this construction would be the added facility infrastructure, purchase of the supporting equipment, and integration of the HIL system into the WT DTTF. The facility is designed with isolation from the utility so that intentionally introduced disturbances under test are not propagated back into the host utility grid.

The electrical system described in the EA included a simulated grid fault system designed for IEC 61400 -12-1, IEC 61400 – 21 testing. The HIL system would expand the capability of the WT DTTF to include full electrical testing but would not exceed the proposed electrical use discussed in the document. Agreements are in place between Clemson and the local utility company to accommodate the facilities energy needs – this system would not exceed agreed upon energy requirements. The EA concluded that the WT DTTF and future equipment installations encompassing the project would have negligible impacts on infrastructure and energy resources.

Based on the above information and the findings in the EA, DOE has determined that there would be no significant impacts associated with allowing expenditure of federal funding by Clemson for their proposed installation of the HIL system. Activities described under this project are consistent with activities proposed in the Clemson EA and comprise "installation and operation of machinery and equipment, including laboratory equipment, electronic hardware, and manufacturing machinery located in existing facilities"; therefore a DOE CX B1.31 applies

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Note to Specialist :

Review completed by Laura Margason on August 18, 2012

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Lori Gray / Lori Gray Date: 8/22/2012

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