PMC-EF2a

(2.04.02)

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

RECIPIENT: Weisenberger Mills, Inc. **STATE:** KY

PROJECT TITLE: Demonstration of Variable Speed Permanent Magnet Generator at Small, Low-Head Hydro Site

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000486	DE-EE0005429	GFO-0005429-001	EE5429

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.)

B2.2 Building and equipment instrumentation
Installation of, or improvements to, building and equipment instrumentation (including, but not limited to, remote control panels, remote monitoring capability, alarm and surveillance systems, control systems to provide automatic shutdown, fire detection and protection systems, water consumption monitors and flow control systems, announcement and emergency warning systems, criticality and radiation monitors and alarms, and safeguards and security equipment).

B5.15 Small-scale renewable energy research and development and pilot projects
Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

B5.25 Small-scale renewable energy research and development and pilot projects in aquatic environments
Small-scale renewable energy research and development projects and small-scale pilot projects located in aquatic environments. Activities would be in accordance with, where applicable, an approved spill prevention, control, and response plan, and would incorporate appropriate control technologies and best management practices. Covered actions would not occur (1) within areas of hazardous natural bottom conditions or (2) within the boundary of an established marine sanctuary or wildlife refuge, a governmentally proposed marine sanctuary or wildlife refuge, or a governmentally recognized area of high biological sensitivity, unless authorized by the agency responsible for such refuge, sanctuary, or area (or after consultation with the responsible agency, if no authorization is required). If the proposed activities would occur outside such refuge, sanctuary, or area and if the activities would have the potential to cause impacts within such refuge, sanctuary, or area, then the responsible agency shall be consulted in order to determine whether authorization is required and whether such activities would have the potential to cause significant impacts on such refuge, sanctuary, or area. Areas of high biological sensitivity include, but are not limited to, areas of known ecological importance, whale and marine mammal mating and calving/pupping areas, and fish and invertebrate spawning and nursery areas recognized as being limited or unique and vulnerable to perturbation; these areas can occur in bays, estuaries, near shore, and far offshore, and may vary seasonally. No permanent facilities or devices would be constructed or installed. Covered actions do not include drilling of resource exploration or extraction wells, use of large-scale vibratory coring techniques, or seismic activities other than passive techniques.

Rational for determination:

DOE is proposing to provide federal funding to Weisenberger Mills, Inc. (Weisenberger) to replace an existing, inefficient hydro generator system with a variable speed permanent magnet generator at a small, low-head hydro site.

The proposed site is an existing mill located 1.5 miles southeast of Midway, Kentucky on the South Elkhorn Creek (2545 Weisenberger Mill Road, Midway, Kentucky 40347-9791). The site is surrounded by agriculture and the nearest neighbor is 1,000 feet north of the site. The existing hydro system consists of an inefficient, 50 kW conventional induction generator and belt drive speed increaser. The proposed project would replace the existing system with a direct-drive variable-speed permanent magnet generator. In order to collect baseline information prior to installation of the proposed system, the local power utility company would install an electricity meter, which would record the power output from the generator as a function of time. A flow meter would also be installed upstream of the turbine to measure the net head available.

The existing generating system, located inside of the mill, is mounted on two steel frames that span from the concrete wall at the end of the generator room to a large wooden beam that runs through the center of the room. Because the

new generator would be 2.5 times the weight of the existing generator, a steel beam would be installed below the floor to reinforce the existing wooden floor and center beam. This new beam would run between the concrete walls on each side of the room. In addition to the added structural support, a new generator mounting frame would be added to the facility. The new generator would be located above the area where the existing generator is mounted and connected to the turbine with a new coupling. The inverter would then be installed above flow waters and connected to the generator and output lines. The inverter would be connected to the new control system and programmed to control the generator at a given turbine speed based on required power output.

On June 20, 2011, the Federal Energy Regulatory Commission stated the proposed project (modernization of the generator) would be considered "maintenance" and as such "does not require prior Commission authorization" (FERC License Exemption Project No. 9684). After review of the USFWS list of species, the proposed project is not located in an area where threatened and endangered species are known to occur. The mill is not listed as an historic property by the Kentucky Heritage Council or on the National Register of Historic Places.

Based on this information, DOE has determined the work outlined is consistent with activities identified in categorical exclusion A9 (information gathering), B2.2 (building and equipment instrumentation), B5.15 (small-scale renewable energy research and development and pilot projects) and B5.25 (small-scale renewable energy research and development and pilot projects in aquatic environments).

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 :

Cristina Tyler 1.4.2012

DOE Funding: $56,000
Cost Share: $56,078
Total Project Cost: $112,078

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 01/04/2012
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