PMC-EF2a
(2.04.02)

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

RECIPIENT: Ohio Department of Development **STATE:** OH

PROJECT TITLE: University of Cincinnati

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-EE0000052	DE-EE0000165	GFO-0000165-033	GO0

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:

B5.1 Actions to conserve energy, demonstrate potential energy conservation, and promote energy-efficiency that do not increase the indoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, designers), organizations (such as utilities), and state and local governments. Covered actions include, but are not limited to: programmed lowering of thermostat settings, placement of timers on hot water heaters, installation of solar hot water systems, installation of efficient lighting, improvements in generator efficiency and appliance efficiency ratings, development of energy-efficient manufacturing or industrial practices, and small-scale conservation and renewable energy research and development and pilot projects. The actions could involve building renovations or new structures in commercial, residential, agricultural, or industrial sectors. These actions do not include rulemakings, standard-settings, or proposed DOE legislation.

Rational for determination:

DOE is proposing to provide $1,000,000 in SEP ARRA funding to the University of Cincinnati to convert the East Campus Powerhouse Boilers #3 and #4 from burning coal only to burning a variable mixture of wood chips and coal. The project would consist of converting the existing boilers to have wood-firing capability, and to install a wood chip delivery system to carry the wood fuel to the boilers.

The East Campus Powerhouse (3220 Eden Avenue, Cincinnati, Ohio 45221) is a cogeneration facility, which utilizes waste heat to supply the University's district heating system. The facility is surrounded by campus buildings. The University buys an annual maximum of 35,000 tons of low sulfur and low ash coal. The existing coal handling system is a pneumatic dense phase system, which was designed to only move coal of a certain size and density. Adding light wood chips to the fuel mix would require a new materials handling system. The new system would replace the current one in an almost one-for-one physical space arrangement.

The activities and equipment would include the following:

- 6 combination coal and wood-fired stoker feeders;
- Coal chute modifications and one new chute;
- Replacement of the over-fire air fan system;
- Variable frequency drive (VFD) added to the motor for the stoker drive;
- VFD added to the fuel delivery fan motors;
- Mechanical cyclone filter;
- Wood storage containment with fuel delivery system to the stoker feeder;
- Modification of the ash collection system to handle the addition of wood ash;
- Fuel scales;
- Wood fuel delivery system, including fans, chutes, and augers.

All work would be completed inside the existing facility and on the roof. No observable changes would be made to the building. The two existing boilers would be altered to accommodate the new fuel mix. The new materials handling equipment and fuel feeder equipment would be incorporated into the current building. The existing ground-level dump grate location inside the fence line of the plant would be reconfigured to accommodate the new fuel deliveries. This location would continue to be used for both wood and coal, and no new ground disturbance would be required. No significant visual changes would be made to the existing plant. The new machinery would generate less off-site noise than the current equipment.

In a letter dated July 5, 2011, the Ohio Historic Preservation Officer determined "no historic properties located within the Area of Potential Effects (APE)."

The emissions of major pollutants coming from the upgraded boilers would either remain approximately the same (SO2, lead, sulfuric acid mist, etc), or would decline due to improved combustion efficiency and a different fuel mix (NOx, CO, VOCs, particulate emissions, etc.). The boiler improvement would not result in the emission of any air contaminant not previously emitted, and boiler utilization would not increase.

University of Cincinnati personnel and consultants met with Hamilton County Department of Environmental Services personnel on June 15, 2011, to introduce the project and to discuss the air permit process. The two phases of the project were discussed: 1) changes to the over-fire air system, and 2) the change in boiler fuels and related modifications to the fuel feed systems and the related boilers. For the first phase, Hamilton County requested the University submit its plan for the over-fire air system to the environmental agency for approval as an "environmentally beneficial project," highlighting expected emission reductions and thereby avoiding the need for a permit. The University's letter was submitted on July 25, 2011, and is currently awaiting approval. As advised by the agency, the University is making the case that the project is not a "major modification," will result in an environmentally beneficial outcome, and should, therefore, proceed without the necessity of a permit. For phase 2, Hamilton County suggested that the University pursue a course which would add the combustion of wood chips only to the fuel mix, rather than the broader array of combustion materials the University was once contemplating – including paper pellets, tire-derived fuels, etc. The environmental agency suggested that this would expedite the air permit process and pointed out that if additional combustible materials are desirable later, a permit modification would be possible at that time. Any permit application will also include the necessary modifications to the fuel handling system.

Based on this information, DOE has determined that the work outlined is consistent with activities identified in Categorical Exclusion B5.1 (actions to conserve energy).

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 :

Based on discussions with the PO, the recipient has until December 31, 2011 obtain the air permit, or for EPA to determine that a permit is not required. The program intends to condition the funds for this award until this deadline is met.

DOE Funding: $1,000,000
Cost Share: $1,400,000
Total Project Cost: $2,400,000.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 10/11/11
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