

PMC-EF2a

(20102)

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



RECIPIENT: The University of Oklahoma

STATE: OK

PROJECT TITLE : OKLAHOMA SEP ARRA - Utility Plant 4 Combined Heat & Power System

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0000052		GFO-10-480	0

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.
- B2.2** 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, announcement and emergency warning systems, criticality and radiation monitors and alarms, and safeguards and security equipment).

## Rational for determination:

The State of Oklahoma will provide \$2,500,000 of Recovery Act funds to The Board of Regents, University of Oklahoma, to install cogeneration (i.e., combined heat and power) equipment in the University's Utility Plant No. 4, which is currently under construction. The total project cost of the power plant is estimated at \$74.4-million. The University's existing emissions permit will be modified for CHP operation.

Utility Plant #4 is to be a combined heat and power (CHP) facility that will consist of two 7.5 MW (nominal) Solar Taurus 70 combustion turbine generators, each paired with a 91 MMBtu/hr Rentech heat recovery steam boiler. A standby packaged 72 MMBtu/hr steam boiler and 600 kW diesel fuel blackstart generator will also be located at the facility. The two combustion turbine generators with heat recovery boilers are projected to run at base-load to produce steam and electricity to serve the Norman campus. Operation of the turbines has been assumed continuous for 11 months (8,000 hours) of the year, with one month (arbitrarily selected as January) allowed for turbine maintenance shutdown. The heat recovery boilers feature supplemental duct firing controls to allow increased steam production during the winter months to meet campus steam demand.

Based on manufacturers information, the CHP portion of the plant is projected to have the following emissions profile:

Two Solar Taurus Turbines:

i) NOx: 0.061 lb/MMBtu

ii) CO: 0.062 lb/MMBtu

Rentech heat recovery steam generators:

i) NOx: 0.069 lb/MMBtu

ii) CO: 0.071 lb/MMBtu

Rentech 60,000 PPH saturated-steam packaged D-type water tube boiler:

i) NOx: 0.037 lb/MMBtu, natural gas

ii) CO: 0.077 lb/MMBtu, natural gas

The estimated emissions projections are below the federal and state emission limits set for the plant. A Continuous Emissions Monitoring System (CEMS) system will be provided for turbine/HRSG emissions monitoring as required per 40 CFR 60 Subpart KKKK, which governs new turbine installations.

Construction of the plant and installation of the CHP are not viewed as connected actions for this determination. The decision to build the plant and the initiation of plant's construction preceded the university's decision to install CHP capability in the plant. Installation of the CHP will not increase or otherwise impact the footprint of the current plant

design.

Based on the information provided by the State and recipient, that the projected emission levels of the to-be-installed turbines and supporting boilers are not expected to exceed the State and Federal limits imposed on the plant and that the University will obtain the necessary operation permits for the utility plant inclusive of the CHP system, the work outlined is consistent with activities identified in Categorical Exclusion B5.1 and B2.2.

**NEPA PROVISION**

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

According to the project officer, funding for this project approximates \$2,500,000. Absent a significant change in the scope of this effort, a change in funding will not affect my determination.

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature: \_\_\_\_\_  
NEPA Compliance Officer

Date: 6/28/10

**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: \_\_\_\_\_  
Field Office Manager

Date: \_\_\_\_\_