PMC-EF2a

(2.04.02)

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

RECIPIENT: Oklahoma Municipal Power Authority **STATE:** OK

PROJECT TITLE : OKLAHOMA SEP ARRA - OMPA Large Systems Request Y

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000052	DE-EE0000133	GFO-0000133-052	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:

B5.19 Ground source heat pumps

The installation, modification, operation, and removal of commercially available smallscale ground source heat pumps to support operations in single facilities (such as a school or community center) or contiguous facilities (such as an office complex) (1) only where (a) major associated activities (such as drilling and discharge) are regulated, and (b) appropriate leakage and contaminant control measures would be in place (including for cross-contamination between aquifers); (2) that would not have the potential to cause significant changes in subsurface temperature; and (3) would be 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.

Rational for determination:

DOE is proposing to provide $154,470 in SEP funding to the Oklahoma Department of Commerce, who is proposing to fund the Oklahoma Comfort Program through their sub-grantee the Oklahoma Municipal Power Authority (OMPA). DOE funds would be used to install three, 51.3 ton vertical, closed loop ground source heat pumps (GSHP) at Charles Machine Works, Inc. (Charles Machine Works).

The Charles Machine Works (1959 West Fir Avenue, Perry, Oklahoma 73077), also known as Ditch Witch, designs and manufactures underground construction equipment. The proposed site, located one mile west of Perry is industrial zoned property. The GSHP system would consist of three, 51.3 units (total of 154 tons). All three units would be served by a common loop field consisting of twenty-four separate circuits. Each circuit would have seven boreholes. The circuits would be connected to a header. There would be a total of 168 boreholes. Each borehole would be situated at least 20 feet from each other. Each vertical borehole would be six inches in diameter and 400 feet in depth. The depth is necessary due to poor soil conductivity and because the building is cooling dominated. The holes would be drilled and grouted with bentonite. Loops made of HDPE pipes would be inserted into the boreholes. Manifolds would connect the loops to the heat pumps. Approximately fifteen yard of uncontaminated sandstone spoils would be created during the drilling of the boreholes. The spoils would be controlled by silt fencing, earthen dams and vacuum systems. The spoils would be spread across the landscaping or disposed of at a sanitary landfill. The proposed project would not impact surface water, as the nearest lake is Lake Perry, 2.1 miles southwest of the proposed site. There is a ½ acre, non-navigable holding pond 500 feet south of the site. A building and a parking lot are between the proposed site and the pond.

The state certified and licensed driller would follow IGSHPA and NGWA regulations during installation. The system would use HDPE piping that is heat fused and all wells would be fully grouted with a thermally enhanced bentonite grout. The refrigerant used in the system would be a non-toxic, food grade 15% propylene glycol and water mixture. All loops would be pressure tested before and after installation. Minimal land disturbance of less than 130,000 square-feet would occur as a result of the proposed project.

The proposed system would not impact groundwater. The formations underlying the property include three to five feet of clay above sandstone layers. There are no aquifers within 400 feet of the surface. If a system were to reach an aquifer, the aquifer would be protected because the system would be installed using techniques, which protect the groundwater and the loop fluids from contaminating one another. Areas containing karst topography and related federally listed species in Oklahoma have been identified, and the proposed projects would not occur in proximity to those resources. Based on this, DOE has determined there would not be any adverse impacts to these resources as a result of the proposed GSHP projects.

As required by the OK SEO, installation of ground source heat pumps cannot commence at any proposed OCP installation site until State Historical Preservation Office (SHPO) approval has been received. OMPA must submit information about all prospective GHP installation sites to the Oklahoma State Energy Office (SEO) for review by SHPO. Under a Programmatic Agreement with SHPO, OK SEO can approve sites with buildings that are less than 45 years old. For buildings 45 years old or older, SEO must submit details to SHPO for review.

Based on this information, DOE has determined the work outlined is consistent with activities identified in categorical exclusion B5.19 (installation of ground source heat pumps).

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 12.29.2011

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 12/29/2011

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