

PMC-EF2a

(2.01.02)

**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 AF

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000052	DE-EE0000133	GFO-0000133-059	EE133

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 \$59,000 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).

The following NEPA review is for the installation of two vertical, closed loop ground source heat pumps (GSHP) at two separate locations: 1) the Newkirk Family Health Center located at 716 S Highway 77, Newkirk, Oklahoma 74647 and 2) the Plaster home located at 105 Deepfork Circle, Edmond, Oklahoma 73013. The total tonnage of each GSHP system would be a 41 ton and an 18 ton, commercial and residential system, respectively.

The state certified and licensed driller would follow IGSHA 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. All loops would be pressure tested before and after installation.

The Newkirk Family Health Center is located on the south side of Newkirk, Oklahoma. The proposed system would consist of four, 6-ton units, one, 5-ton unit and three, 4-ton units. All heat pumps would be served by one common loop consisting of 21 boreholes. The boreholes would be spaced a minimum of ten feet apart, six inches in diameter and 400 feet deep. Loops made of HDPE pipes would be inserted into the boreholes. Manifolds would connect the loops to the heat pumps. Land disturbance of less than 15,000 square feet would occur at the project site. Approximately five yards of uncontaminated sandstone spoils would be created during the drilling of the boreholes. The spoils would be spread across the landscaping or disposed of at a sanitary landfill. Only potable water would be used in the system. The proposed project would not impact surface water, as the nearest surface water is East Lake Ponca (6 miles southeast of the site).

The Plaster home is located four miles southeast of Edmond, Oklahoma in a residential neighborhood. The proposed system would consist of four, 3-ton units and three, 2-ton units. The system would be served by three loops. Loop one would have 4 boreholes serving the one, 3-ton unit. Loop two would have 7 boreholes serving two, 2-ton units and one, 3-ton unit. Loop three would have 8 boreholes serving two, 3-ton units and one, 2-ton unit. A total of 19 boreholes would be situated at least ten feet apart, six inches in diameter and 200 feet deep. Loops made of HDPE pipes would be inserted into the boreholes. Manifolds would connect the loops to the heat pumps. Minimal land disturbance of less than 7,500 square feet would occur at the project site. Approximately three yards of uncontaminated sandstone spoils would be created during the drilling of the boreholes. The spoils would be spread across the landscaping or disposed of at a sanitary landfill. The refrigerant used in the system would be a non-toxic, food grade 15% propylene glycol and water mixture. The proposed project would not impact surface water, as the nearest surface water is Arcadia Lake (0.25 mile west of the site).

The proposed systems would not impact groundwater. There are no aquifers within 400 feet of the surface at the Newkirk Family Health Center and 250 feet of the surface at the Plaster home. If a system were to reach an aquifer, the aquifer would be protected because the system would be installed using techniques that protect the groundwater and the loop fluids from contaminating one another. The formation underlying both properties is 3 to 5 feet of clay above layers of sandstone. 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 information, DOE has determined the proposed GSHP projects would not have adverse impacts on these resources.

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.

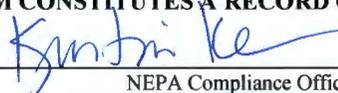
Note to Specialist :

Cristina Tyler 2.21.2012

DOE Funding: \$59,000

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____



NEPA Compliance Officer

Date: _____

2/29/2012

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: _____