PMC-EF2a

(2.06.02)

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 AD

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000052	DE-EE0000133	GFO-0000133-057	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 $39,220 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 three vertical, closed loop ground source heat pumps (GSHP) at three separate locations: 1) the Zewdie home at 2808 Lamond Hill, Edmond, Oklahoma 73034, 2) the Spena home at 8300 East South Avenue, Ponca City, Oklahoma 74604 and 3) the Doornbos home at 520 South Rock Cliff Road, Ponca City, Oklahoma 74604. The total tonnage of each system would be 14 tons, 6.2 tons and 19 tons, respectively.

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. Only potable water would be used in the proposed systems. All loops would be pressure tested before and after installation. Minimal land disturbance of less than 5,000 square feet would occur at each project site.

The Zewdie home is located northeast of Edmond, Oklahoma in a residential area. The proposed system would consist of one, 3.2-ton unit and two, 5.4-ton units. Three vertical boreholes, six inches in diameter and 200 feet deep and eight vertical boreholes, six inches in diameter and 250 feet in depth would be drilled and grouted with bentonite. The boreholes would be spaced a minimum of twenty feet apart. Loops made of HDPE pipes would be inserted into the boreholes. Manifolds would connect the loops to the heat pumps. Approximately one yard 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 proposed project would not impact surface water, as the nearest surface water is Coffee Creek (1.5 miles east of the site) and Lake Arcadia (3.2 miles southeast of the site).

The Spena home is located 5 miles east of Ponca City, Oklahoma. The nearest neighbor is 500 feet away. The proposed system would consist of one, 4-ton unit and one, 2.2-ton units. Both units would be served by a common loop. The loop would consist of 4 boreholes. Each borehole would be situated at least thirty feet apart, six inches in diameter and 300 feet deep. Loops made of HDPE pipes would be inserted into the boreholes. Manifolds would connect the loops to the heat pumps. Approximately one yard 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 proposed project would not impact surface water, as the nearest surface water is the Arkansas River (0.5 mile southwest of the site) and Lake Ponca (3.2 miles northwest of the site).

The Doornbos home is located 6 miles east of Ponca, City, Oklahoma. The nearest neighbor is 600 feet away. The proposed system would consist of one, 5.4-ton unit, one, 5.03-ton unit, two 3.18-ton units and one 2.22-ton unit. All

five units would be served by a common loop consisting of 12 boreholes. Each borehole would be situated at least twenty feet apart, be six-inches in diameter and 310 feet deep. 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 one yard 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 proposed project would not impact surface water, as the nearest surface water is the Arkansas River (0.75 miles south of the site) and Lake Ponca (3.5 miles northwest of the site).

The proposed systems would not impact groundwater. There are no aquifers within 350 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 that protect the groundwater and the loop fluids from contaminating one another. The formation underlying the 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 2.1.2012

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 2/10/2012

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