PMC-EF2a
(2.04.02)

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

RECIPIENT: Faulk County **STATE:** SD

PROJECT TITLE: Faulk County Geothermal heating and cooling system

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000119			EE0

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.

A9 Information gathering (including, but not limited to, literature surveys, inventories, audits), data analysis (including computer modeling), document preparation (such as conceptual design or feasibility studies, analytical energy supply and demand studies), and dissemination (including, but not limited to, document mailings, publication, and distribution; and classroom training and informational programs), but not including site characterization or environmental monitoring.

Rational for determination:

Faulk County is proposing to use ARRA funds provided by DOE to install a geothermal heating and cooling system in the County Courthouse. The 50 ton geothermal heating and cooling system will be located within the Courthouse in a first floor closet. The closet will house components of the geothermal system that will take up approximately 8 x 2 feet of space. The heat and cooling will be distributed to individual rooms through new piping that will be installed. The heat and cooling will be distributed through two different methods: ceiling units will be placed above drop ceilings with a register providing heat and console style heat pumps will be located in individual rooms, placed below existing windows. The recipient will dispose of old heat registers, piping and other miscellaneous waste at the municipal landfill.

The wells for the geo-thermal system will consist of approximately 50 wells 200 feet deep covering an area of approximately 40 x 90 feet. The well field is proposed to be located near the building on the southwest side in an existing parking lot. Therefore drilling will occur on previously disturbed land. The recipient verified that installation of the boreholes will be drilled by a state licensed or certified driller and a state drilling permit will be obtained. Drilling slurry will be removed and hauled to appropriate waste facilities to avoid contamination of the site. All boreholes will be grouted in a thermally enhanced bentonite grout that is designed to withstand cracking from the changes in temperature between the ground and the heat exchange pipe. This ensures that the area around the borehole is sealed to keep any surface runoff from contaminating ground water. A geo-clip process will be used to ensure conductivity and efficiency. The system will employ high density polyethylene pipe that is heat fused at the joints which greatly minimizes the risk of leaks in the system preventing possible contamination of soil and ground water sources. The recipient confirmed that the system installation will follow National Ground Water Association recommendations, therefore, the proposed system will employ a non-toxic environmentally approved mixture of antifreeze solution either potable water, propylene glycol, and potassium acetate. These standards will minimize the risk of contamination to soil and ground water sources. Due to the setting of the project location in an urban area there will be no adverse impacts to wetlands, floodplains, coastal zones, or threatened and endangered species.

Piping will run along the building underground and will enter underground into an existing tunnel that connects the courthouse and jail facility. The tunnel has access to the first floor closet which has a wooden floor and there currently is a small hole already providing access to the tunnel. No alterations will be made to the outside of the building. The installation of the geo-thermal system will provide the County Courthouse with air conditioning allowing for the removal of

the less efficient window air conditioning units.

The Courthouse building is listed on the national register of historic places and was constructed in 1904. The state Historic Preservation Office issued a letter agreeing that "No Adverse Effect on historic properties" providing that: new pipes be concealed as much as possible above dropped ceilings and visible pipes be painted to match the existing wall cover and thus make them less noticeable. The recipient states that both of the conditions will be easy to accommodate and will be met.

After a thorough review of the information submitted for the proposed project, it has been concluded that the proposed project will not have a significant impact to human health and /or the environment. Therefore the proposed project is hereby Categorically Excluded under A9 "information gathering and analysis" and B5.1 "actions to conserve energy," from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Insert the following language in the award:

You are required to:
obtain the necessary permits before any use of DOE funds occurs.

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 4/14/10

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