PMC-EF2a

(2.06.02)

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

RECIPIENT: County of Waukesha, WI **STATE:** WI

PROJECT TITLE : EECBG- Energy Distribution - Project Activity 5

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA000013	DE-EE0000841		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.

Rational for determination:

The County of Waukesha would use EECBG funds to install a 40 ton vertical closed loop ground source heat pump system to service its Retzer Nature Center (14,000 square feet) and Maintenance Building (4,700 square feet). The system will consist of twenty boreholes drilled to a depth of approximately 300 feet. The area of the well field will be 4,800 square feet. The heat exchange fluid will consist of a mixture of potable water and propylene glycol. 1" diameter high density polyethylene SDR-11 piping will be used and joined by heat fusion welding conforming to the piping manufacturer's recommendations. Thermally enhanced bentonite grout will be used to case the well. Piping will be pressure tested at 150% of operating pressure to mitigate the risk of fluid leakage. The system will be installed on an existing service road, therefore all boreholes will be located within a previously disturbed area. The trenching from the borefield to the header manifold in the building will be routed through a portion of the site that has been frequently disturbed with other utility work. The drilling will be performed by a state licensed driller, and installation of the ground source heat pump system will follow all guidelines set forth by the International Ground Source Heat Pump Association and the National Ground Water Association.

Using EPA's NEPAssist tool, DOE has confirmed that there are no wetlands or floodplains present, and the area is not in a coastal zone. The Wisconsin Department of Natural Resources mapping does not indicate the presence of species of concern or critical habitat. There are no known threatened and endangered species or critical habitat existing within the proposed construction limits.

The Wisconsin Historical Society states that there are no historic properties are located within the project area. There are no major lakes or streams adjacent to the project area; however, there are two unnamed tributaries. The first tributary is approximately 500 feet to the west and is an unnamed tributary to Brandy Brook. The second is approximately 1,600 feet to the east and is an unnamed tributary to Pebble Creek. Both Brandy Brook and Pebble Creek are classified by the Wisconsin Department of Natural Resources (DNR) as Cold Water Communities. There is greater than 100ft separating the proposed project from the surface water resources, which is an adequate buffer to prevent any adverse effects to the stream communities from the geothermal installation.

According to groundwater contour maps, groundwater flows northwest to southeast. The nearest private well, downstream of groundwater flow, is 3,500 feet away. Well drilling records for Retzer Nature Center from the mid-1980's show that the groundwater is located 28 feet from the surface. The borehole was drilled to a depth of 278 feet. Limestone bedrock is located at a depth of 151 feet. There is a shale layer that separates the deep aquifer from the shallow aquifer. The installation will be above this layer minimizing any potential for surface-water to aquifer contamination.

No permits are required by the local municipality, the Town of Genesee. Wisconsin DNR requires permitting for a

closed loop system (Form 3300-255: Closed Loop Heat Exchange Well Application), the applicant will obtain this permit before project implementation.

Waukesha County Land Resources Department administers a Storm Water Management & Erosion Control Ordinance. A storm water permit will be required for this project. All plans will be reviewed to ensure that the erosion control requirements are being met and that the storm water permit is obtained prior to drilling. In regard to erosion control, the drilling contractor will be required to install compost filled filter socks as checkdams downslope from the borehole locations. Dewatering of the bore holes will meet Wisconsin Department of Natural Resources requirements for "Geotextile Filter Bags" under WDNR Technical Standard 1061 – "Dewatering." Sediment materials will be raked back to disturbed areas and overlaid with certified compost meeting WDNR Technical Standard S100. Disturbed areas will then be seeded with a meadow mix consisting of native grasses and wildflowers, as well as an annual nurse crop of oats or annual rye.

All waste materials from the drilling of boreholes and trenching will be utilized on-site as fill material. Construction waste materials will be subject to Wisconsin WasteCap requirements for recycling and re-use where feasible.

Along with the proposed ground source heat pump project for the Retzer Nature Center, the County of Waukesha is proposing to install two, roof mounted solar hot water systems on two different buildings.

One of the solar hot water systems will be installed on the Law Enforcement Center which houses 197 jail inmates and approximately 80 office employees. The proposed system is a 2,560 square foot gross collector area with between 2,560 and 3,200 gallons of solar storage to be placed on the roof of the existing Law Enforcement Center.

The second solar hot water system will be installed on the jail which houses 346 inmates and approximately 50 office employees. The proposed system is a 3,360 square foot gross collector area with between 3,360 and 4,200 gallons of solar storage to be placed on the roof of the existing Jail. These two proposed projects will occur on existing buildings, will not necessitate any expansion of the existing buildings or new construction, and will not create any new land disturbance. These two proposed projects will not have any adverse effects to wetlands, floodplains, coastal zones, threatened and endangered species, or cultural resources.

Through a review of the above information, it has been determined that the proposed projects will not have a significant impact to human health and/or environment. Therefore the proposed project is hereby Categorically Excluded from further NEPA review under B5.1 "actions to conserve energy."

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:
Ensure the safety and structural integrity of any repair, replacement, construction, and or alteration performed under this project (Solar Thermal Project).

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 4/28/10
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