PMC-EF2a

(2.0.6.02)

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

RECIPIENT: Missouri Department of Natural Resources, Division of Energy **STATE:** MO

PROJECT TITLE: Energize Missouri HUG Carlson

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-000052	EE0000131	GFO-0000131-037	EE131

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 or water (a) Actions to conserve energy or water, demonstrate potential energy or water conservation, and promote energy efficiency that would not have the potential to cause significant changes in the indoor or outdoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, manufacturers, and designers), organizations (such as utilities), and governments (such as state, local, and tribal). Covered actions include, but are not limited to weatherization (such as insulation and replacing windows and doors); programmed lowering of thermostat settings; placement of timers on hot water heaters; installation or replacement of energy efficient lighting, low-flow plumbing fixtures (such as faucets, toilets, and showerheads), heating, ventilation, and air conditioning systems, and appliances; installation of drip-irrigation systems; improvements in generator efficiency and appliance efficiency ratings; efficiency improvements for vehicles and transportation (such as fleet changeout); power storage (such as flywheels and batteries, generally less than 10 megawatt equivalent); transportation management systems (such as traffic signal control systems, car navigation, speed cameras, and automatic plate number recognition); development of energy-efficient manufacturing, industrial, or building practices; and small-scale energy efficiency and conservation research and development and small-scale pilot projects. Covered actions include building renovations or new structures, provided that they occur in a previously disturbed or developed area. Covered actions could involve commercial, residential, agricultural, academic, institutional, or industrial sectors. Covered actions do not include rulemakings, standard-settings, or proposed DOE legislation, except for those actions listed in B5.1(b) of this appendix. (b) Covered actions include rulemakings that establish energy conservation standards for consumer products and industrial equipment, provided that the actions would not: (1) have the potential to cause a significant change in manufacturing infrastructure (such as construction of new manufacturing plants with considerable associated ground disturbance); (2) involve significant unresolved conflicts concerning alternative uses of available resources (such as rare or limited raw materials); (3) have the potential to result in a significant increase in the disposal of materials posing significant risks to human health and the environment (such as RCRA hazardous wastes); or (4) have the potential to cause a significant increase in energy consumption in a state or region.

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:

The U.S. Department of Energy (DOE) provided funding to the Missouri Department of Natural Resources - Division of Energy (MDNR) under the DOE's American Recovery and Reinvestment Act of 2009 State Energy Program (SEP). MDNR selected the Carlson household (Carlson) to receive $17,500 in SEP funding (total project cost - $23,494).

This NEPA Determination is for an individual project that was originally proposed under MDNR's signed Template for Expedited NEPA Review. However, in addition to installing a 4-ton Ground Source Heat Pump System (GSHP), Carlson also replaced windows on his home prior to completion of Section 106 consultation under the National Historic Preservation Act and prior to receiving an individual NEPA review for the project. Although these activities are within the bounds of the NEPA Template, an individual NEPA review and completion of Section 106 consultation was required for this project because the house is eligible for listing on the National Register of Historic Places.

MDNR is requesting it be allowed to issue a rebate to Carlson for installation of the 4-ton GSHP system and installation of 10 new ENERGY STAR rated windows, installation of insulation to walls/ceilings; and the sealing,

insulating and foaming of the exterior of a residential 2475 sq. ft. single-family residential home, which is located at 1600 W. 51st Street, Kansas City, MO 64112-1149 (project).

The Carlson residence was constructed in 1924 in the "Folk Victorian Vernacular Style." The home is not located in a Historic District nor listed on the National Register. The home has undergone significant additions and remodels overtime that have substantially diminished the integrity of the house; therefore it is not eligible for listing National Register of Historic Places.

The window replacement involved replacing 10 existing windows, which were a combination of vinyl windows (10-12 years-old) and original single-pane wood-framed windows with 10 new ENERGY STAR rated vinyl windows. The GSHP installed was a 4-ton GSHP with two independent 2-ton, 2-stage/variable speed vertical closed-loop geothermal loops. The system consists of two 400 foot deep boreholes that are 6 inches in diameter and are spaced 15 feet apart. The bore field was approximately 500 sq. feet. Trenching (approximately 3.5 feet deep and 25 feet long) occurred between the two boreholes to run 1 inch polyethylene (HDPE) pipe supply/return lines into the boreholes and to the residence. The GSHP is located in the residence's front yard. Bentonite grout was used from bottom to top in each borehole. Drilling was performed by a state-licensed driller and IGSHP Association guidelines were followed as well as all Missouri-DNR GSHP codes. The exchange fluid used was an antifreeze solution of 20% Methanol, 80% water. All drilling spoils were hauled off to a demolition landfill and the disturbed areas of the property were re-graded, covered in 2-3 inches of top-soil and covered with sod to return it to its previous condition. The water table was not reached during installation; there are no wetlands are on this property, and the project does not have the potential to impact any threatened and endangered species that may occur in the project vicinity.

On 2/21/2012, DOE obtained an opinion from the Advisory Council on Historic Preservation (ACHP) that the activities described in project did not have the potential to adversely affect historic resources and that the DOE could determine that this project has successfully completed a Section 106 review.

Based on a review of the file and the above analysis, DOE has determined the increase in size is negligible. Therefore, DOE has determined the project did not significantly impact the human environment and it is categorically excluded from further NEPA review under CX B5.1 (actions to conserve energy or water) and B5.19 (ground source heat pumps).

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

DOE funding - $17,500
EF2a prepared by Melissa Rossiter

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Kristin Kerwin Date: 5/23/2012
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