

PMC-EF2a

(2.04.02)

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



RECIPIENT: Missouri DNR, Division of Energy

STATE: MO

PROJECT TITLE : Retroactive Review - Energize Missouri Homes - Pfaff Project

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-000052	EE0000131	GFO-0000131-033	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 Pfaff household (Pfaff) to receive \$10,500 in SEP funding (total project cost - \$25,948).

This NEPA Review is for an individual project that was originally proposed under MDNR's signed Template for Expedited NEPA Review. However, Pfaff installed a 6-ton Ground Source Heat Pump System (GSHP) prior to receiving an individual NEPA review (the Template's size limitation is 5.5 tons). The 6-ton system also exceeded the size that was reviewed by Missouri's State Historic Preservation Officer under Section 106.

MDNR is requesting it be allowed to issue a rebate to Pfaff for installation of the 6-ton GSHP system, which is located at 31353 Mockingbird Rd., California, MO 65018 (project).

The project is 6-ton vertical closed-loop GSHP system to service the Pfaff's 4,900 sq. ft. single-family residence. The

residence was built in 2005. The GSHP system is a 288 sq. ft. borefield adjacent to the Pfaff's residence. This is ~40 sq. ft. larger than the 5-ton system that was originally proposed. The GSHP system consists of 6 boreholes that are ~12 ft. apart and drilled to an average depth of 200 feet. A trench that is ~100 sq. ft. connects the borefield to the residence. The ground water level at this location is ~250 ft. deep and the local water supply is provided by Moniteau County. The exchange fluid is an antifreeze solution of methanol and water and a bentonite plug was used to case the boreholes from the bottom up to the top. Polyethylene piping was used for the system and it was pressure tested for leaks. In the event of a leak, the system will shut down. If there is a loss of pressure in the system, the system will shut down. The soil profiles at the residence are a mixture of clay, sandstone and limestone. . The sub-recipient stated this project followed IGSHA and NGWA guidelines for GSHP installations and was installed by a licensed contractor (Choat's Pump Service Permit # 003955-WPH). Spoils from the drilling were spread over the residence's yard and will be properly graded and re-seeded.

Golden Field Office Legal Counsel provided her opinion that the additional 40 sq. ft. of ground disturbance was a de minimis change and it is unlikely the SHPO's prior determination of no adverse effect for the originally proposed 5-ton system would change (see attached email).

Based on a review of the file and the above analysis, DOE has determined the 1-ton 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 B5.19 (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 - \$10,500.
EFa completed by Melissa Rossiter

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____



NEPA Compliance Officer

Date: 3/19/2012

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: _____