

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 : Energize Missouri Homes - Rutt

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-000052	EE0000131	GFO-0000131-012	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, 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 Missouri Department of Natural Resources (DNR) proposes to provide up to \$10,000 of SEP funds to Joan Rutt for the installation of two ground source heat pumps adjacent to her existing residence at 2708 Purvis Road, Sunrise Beach, MO. Ms. Rutt would install a 5-ton vertical, closed-loop GSHP system and a 3-ton vertical closed-loop GSHP system in a 1008 square foot borefield. Ground disturbance would include 8 boreholes/wells spaced 12 feet apart at an average depth of 150 feet. A thermal grout would be used to case the boreholes/wells. The exchange fluid would be a mixture of potable water and ethanol. The contractor installing the GSHPs would be certified and follow IGSHPA guidelines. All waste would be disposed of in accordance with all applicable regulations

The US Fish and Wildlife Service – Ecological Service Office in Columbia, MO has determined there is no suitable habitat for threatened and endangered species and no impacts are expected.

The Missouri SHPO has determined that no historic properties would be adversely affected by the proposed project.

The US Fish and Wildlife's on-line mapping tool was used to determine that the property is not located in a wetland or floodplain. Erosion would be controlled and the area returned to its original condition.

There are five typical geologic and hydrologic characteristics associated with the sensitive karst environment in Missouri: sink areas, sink holes, caves, springs and losing or gaining streams. The Missouri DNR on-line GIS mapping tool was used to determine whether the proposed project is located in a karst region. The Rutt residence is within a region where DNR has mapped known caves. It is not feasible to map all individual cave locations so the DNR maps the number of caves per 1:24,000 scale. Caves are mapped at five density levels ranging from 1 – 296 caves per quadrangle. The density level in the vicinity of the Rutt residence ranges from 1 – 9 caves per quadrangle. Therefore, there is a low potential of encountering a cave with this GSHP system. Should a void be encountered, the contractor stated that the small 2'-3'- to 5' openings can usually be dealt with extra plug and pea gravel. Larger openings up to 10' may have to be cased out. In that instance the most economical solution would be to move the project to a different location if possible (more header pipe is cheaper).

None of the other characteristics of a karst environment are present on or near the Rutt property.

All supporting documentation is attached in the PMC.

DOE has reviewed the information for the proposed projects and determined that these projects do not pose a significant impact to human health and/or environment. Therefore these projects are Categorical Excluded 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:

Note to Specialist :

Prepared by Chris Paulsen.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  Date: 5/26/11
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