

PMC-EF2a

(2.04.02)

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



RECIPIENT:NREL

STATE: CO

PROJECT**TITLE :**

Solar Radiation Research Laboratory (SRRL) Expansio; NREL Tracking No. 10-008

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
		NREL-10-008	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:

- DOE/EA-1440** Final Site-Site Wide Environmental Assessment of the National Renewable Energy Laboratory's (NREL) South Table Mountain Complex (February 2003)
- DOE/EA-1573** Finding of no significant impact and final environmental assessment of three site development projects at The National Renewable Energy Laboratory South Table Mountain Site
- 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 proposed project consists of the expansion of the Solar Radiation Research Laboratory (SRRL) building in the NREL South Table Mountain complex and the conversion of its existing HVAC system to a geothermal exchange system to heat and cool the existing building and the proposed addition. The addition to the SRRL would consist of a 1600-SQFT building expansion plus 2600-SQFT access drive. The geothermal exchange vertical well field would disturb approximately 5625 SQFT, bringing the total project disturbance to 9825 SQFT. The closed loop ground surface heat pump would consist of a 10.9-ton system with 23 wells to a depth of 300 feet below ground surface. Each well would be piped back to SRRL building in a trench approximately 4 feet wide and 6 feet deep with each of the two pipes from each of the wells attached to an aboveground manifold in the mechanical room in the SRRL. The pipes are a close loop system where the joints and pipe fittings are fusion welded and the wells would be completed with proper thermally enhanced bentonite grout meeting the Colorado Division of Water Resources requirements. The pipes will be completely encased in grout for the entire length of the boreholes. Given the known geology at the site, the aquifer is approximately 300 feet deeper than the bottom of the boreholes. This configuration would minimize the potential of a release into the environment or aquifer. The system would utilize a 25% propylene glycol (Safe-T-Therm) to 75% water blend. The system would be installed by Major Geothermal, an IGSHPA certified contractor, and in accordance with the Colorado Division of Water Resources Geothermal Well Rules (2 CCR 402-10).

Impacts to the human and natural environment by NREL construction on the mesa top have been previously assessed by DOE/NREL in the July 2003 Final Site-Wide Environmental Assessment of the National Renewable Energy Laboratory's (NREL) South Table Mountain Complex (DOE/EA 1440) as well as the July 2007 Final Environmental Assessment of Three Site Development Projects at the National Renewable Energy Laboratory South Table Mountain Site (DOE/EA 1573). Findings of no significant impacts were determined for each EA. The proposed expansion of the SRRL and the installation of the GSHP would not impact any cultural resources, designated wetlands or floodplains, federally listed endangered or threatened species, designated critical habitat, or prime farmlands. The land disturbance caused by this proposed project (9825 SQFT) is far less than the threshold (1 acre or 43560 SQFT) for requiring a storm water associated with construction activity permit with Region VIII EPA. However, to limit potential erosion and promote sediment control, NREL would implement Best Management Practices as per their STM Storm Water Pollution Prevention Plan. The proposed SRRL build-out would include an additional bathroom facility as well as facilitate an additional three full-time domiciled employees, thus increasing the amount of sanitary wastewater generated by the facility. Wastewater is managed onsite by an existing individual wastewater disposal system, septic and leach field system, with a rated capacity of 450 gallons per day and the capability to service up to 25 people per day. Therefore, the existing sewage system is adequately sized for the proposed action and would comply with State

of Colorado and Jefferson County IWDS regulations. Ground nesting bird surveys would be required prior to clearing, grading, or drilling activities can occur.

Based upon information above, as well as the assessments and findings by the July 2003 Final Site-Wide Environmental Assessment of the National Renewable Energy Laboratory's (NREL) South Table Mountain Complex (DOE/EA 1440) and July 2007 Final Environmental Assessment of Three Site Development Projects at the National Renewable Energy Laboratory South Table Mountain Site (DOE/EA 1573), this project's impacts to the human and natural environment can be deemed less than significant and this project would qualify for Categorical Exclusion B5.1.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Lori Plummer *Lori Plummer* Date: 4/12/2010
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

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