PMC-EF2a
(2.0.4.02)

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

RECIPIENT: NREL **STATE:** CO

PROJECT TITLE : STM 15MW Electrical Upgrade; NREL Tracking No. 13-007

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-AC36-08GO28308	NREL-13-007	GO28308

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 (NREL STM)	Final Site-Site Wide Environmental Assessment of the National Renewable Energy Laboratory's (NREL) South Table Mountain Complex (February 2003)
DOE/EA 1440 S-I (NREL STM)	Final Supplement to Final Site-Wide Environmental Assessment of the National Renewable Energy Laboratory's (NREL) South Table Mountain Complex (May 2008)
DOE/EA 1440 S-II (NREL STM)	Final Supplement-II to Final Site-Wide Environmental Assessment of the National Renewable Energy Laboratory's (NREL) South Table Mountain Complex (November 2009)
B4.13 Upgrading and rebuilding existing powerlines	Upgrading or rebuilding approximately 20 miles in length or less of existing electric powerlines, which may involve minor relocations of small segments of the powerlines.

Rational for determination:

B4.6 Additions and modifications to transmission facilities
Additions or modifications to electric power transmission facilities within a previously disturbed or developed facility area. Covered activities include, but are not limited to, switchyard rock grounding upgrades, secondary containment projects, paving projects, seismic upgrading, tower modifications, load shaping projects (such as the installation and use of flywheels and battery arrays), changing insulators, and replacement of poles, circuit breakers, conductors, transformers, and crossarms.

The U.S. Department of Energy (DOE) proposes to the installation and operation of new electrical infrastructure for the National Renewable Energy Laboratory (NREL) South Table Mountain (STM) site in located in Golden, Colorado.

PROPOSED ACTION
The project would upgrade the electric utility feed at the STM site from 10 MW to 15 MW. The project is required to accommodate the increasing electrical demands of the site, including the addition of the high performance Energy System Integration Facility's (ESIF) data center. To achieve the proposed upgrade, the project would require offsite activities and limited improvements onsite within existing utility easements by NREL's electrical utility provider, Xcel Energy (Xcel). This portion of the electrical upgrade project conducted by Xcel would not be completed utilizing federal funding, equipment, or personnel, but is a connected action and analyzed under this determination.

Proposed Xcel Activities:
The map (BMPseries_Xcel10th&Johnson.pdf) uploaded to the PMC illustrates the scope of the Xcel project area extending from the Xcel Lookout Substation to a crossing at Research Road on the STM site. All work would be conducted by Xcel or their contractors. The Xcel project would be broken up into two phases. The first phase would include multiple borings to cross underneath roads and pull cables within existing utility easements along West 10th Avenue and Quaker Street. The second phase would involve work on the NREL STM site within the utility easement. Along Quaker Street north of South Golden Road, the electrical lines would transition from belowground to aboveground. Where the lines are aboveground on Quaker Street and Denver West Parkway, a majority of utility poles would be replaced with additional six poles to be added. The last step of Xcel's Phase II would be to bore underneath Research Parkway south of Denver West Parkway to tie in this new line to a new primary meter located at the intersection of Research Road and Denver West Parkway.

Proposed NREL Activities:
The proposed activities that would be undertaken by NREL and its subcontractors would occur only on NREL property to meet the following objectives:

1. To complete electrical loops on the STM in order to create redundancy in the electrical infrastructure. This would enable the power to be shut off to individual areas/buildings instead of having to shut down the entire site.
2. Provide a dedicated distribution feed of capable of 10MW supply for the ESIF data center.
3. Relocate electrical equipment with STM mission and future construction in mind.

The completion of electrical loops would involve installation of three vaults and six manholes. The vault, manhole, and duct bank installations are detailed in plans (STM 15MW – DuctBankInstallationPlanWest-East.pdf) uploaded to the PMC. A total of 5,420 feet of trenching would be required to install new electrical duct banks to carry electrical lines underground. Duct bank trenching would be 3 feet wide and would accommodate the various sized duct banks required, as specified in the Electrical Upgrade – Phase I Site Distribution drawings (Site Distribution–Phasel.pdf) uploaded to the PMC. Remaining locations would use existing duct banks to complete the loops. The size of the encased duct banks is dependent on the number of conduits needed at certain locations. The new scientific computing data center at ESIF would require a dedicated distribution feed of 10MW at full build out. The upgrade would allow the data center to run fully loaded when built out without taxing the power required to support the rest of the site. Additionally, a number of Vista switches would also be installed for future campus improvement and growth. The NREL portion of this project would begin construction in April, 2013 and be completed by October.

Finally, the Xcel and NREL improvements would need to be connected together to complete the project. This would include modification of the primary meter and utility connections by installing a new Vista switch and modifications to existing utility connection switch cabinets A1 and C1 at the utility connection point. This would entail moving the above mentioned equipment from the SE corner of the intersection of Denver West Parkway and Research Way to the SW corner. Additionally, NREL subcontractor would relocate the existing grounding transformer and reactor for the parking garage PV array from the SE corner to the SW corner as well. With this new infrastructure in the SW corner, one tree would have to be removed as well as three utility poles. Additionally, a mounting pad would need to be installed in the SE corner where a junction cabinet would be located. A 20 inch high by 15 feet long retaining wall would be located in this SE corner as well to stabilize the mounting pad.

PREVIOUS NEPA DETERMINATIONS

The construction and operation of onsite STM infrastructure improvements, including electrical infrastructure, were within the scope of proposed actions analyzed in the July 2003 NREL STM Site-Wide Environmental Assessment (DOE/EA-1440), as well as its two supplements (DOE/EA-1440-S-I May 2008 and DOE/EA-1440-S-II November 2009). These three NEPA documents and their Findings of No Significant Impact (FONSIs) are hereby incorporated by reference.

IMPACTS OF PROPOSED ACTION

Stormwater quality and erosion impacts would be minimal. Industry standard construction Best Management Practices (BMPs) for stormwater management would be utilized and maintained. Xcel estimates the total soil disturbance would be 0.4 acres within their project area. Under the NREL scope and within the STM site, a total disturbance area is estimated to be 20,800 square feet (0.48 acres). The vault, manhole, and duct bank installations are located and detailed in the uploaded plans (STM 15MW DuctBankInstallationPlanWest-East.pdf). Most of the trenching would be done along Denver West Parkway and through the previously disturbed areas of the IBRF, Ingress/Egress, Café, RSF, and ESIF projects. The remaining areas are within the utility easements along existing buildings. An alternate route for loop B trenching would trench a new line behind the IBRF and the Maintenance Shed to existing lines west of the Maintenance Shed. This would be a newly disturbed area of approximately 3,660 square feet (0.08 acres). The construction and subsequent restoration activity on the NREL STM site would abide by established procedures, specifications, and processes of NREL Lab Level Procedure 6-2.15 Stormwater Pollution Prevention for Construction Activities: South Table Mountain Site.

There are no floodplains, wetlands, or Waters of the United States in the vicinity of the proposed project area. NREL has received a Jurisdictional Determination from the U.S. Army Corps of Engineers for the ephemeral drainages on the STM site.

The proposed action would include the installation of several new electrical Vista switches at the NREL STM site. Each switch would contain approximately 25 pounds of sulfur hexafluoride (SF6), which is a regulated greenhouse gas (GHG). The total amount of SF6 at the STM is below the reporting threshold for EPA. In addition, the switches are excluded from mandatory GHG reporting since the SF6 is within hermetically sealed-pressure equipment. For maintenance, the switch would be taken out of service, removed and sent to the factory for repairs by qualified personnel. Total amounts of SF6 would be reported to the NREL EHS department for the NREL GHG inventory. Fugitive particulate air emissions from the construction would be controlled in accordance with the existing STM land disturbance air permit (APCD# 08JE0889L), including mitigation measures like dust suppression. The construction phases would require the utilization of mobile point emission sources, such as front-end loaders and dump trucks, but these emissions would be negligible given the size and duration of the construction activity.

In the 2010-2011 site-wide wildlife survey, no threatened, endangered, or candidate wildlife species were observed at STM, nor was habitat for such species identified. Similarly, the vegetation survey during the same time period found no rare plants or habitat that may support federally protected plant species in the area proposed for this project. A

migratory bird nesting survey would be conducted prior to any ground or vegetation disturbing activities if these activities are conducted after March 15th and before September 15th. If nests or eggs are found, the particular area would be cordoned off with a proper buffer until nestlings fledge. This would ensure that no migratory birds, nests or eggs are destroyed during construction.

Archeological and cultural resources on STM site were assessed in DOE/EA-1440, DOE/EA-1440-S-I and DOE/EA-1440-S-II, including Section 106 consultations with the Colorado State Historic Preservation Office. The proposed project would not impact known cultural resources at the STM site. Furthermore, construction contractors would be briefed on the possibility of resources being unearthed, and to stop work and contact NREL EHS should any features or structures be discovered during excavation or trenching activities.

There would be noise typical of construction equipment during construction. Work would be conducted only during daylight hours. Construction-related noise would consist of a short-term increase in ambient noise levels. Noise impacts would vary with the phase of construction and occur intermittently. Construction activities would comply with applicable noise ordinances. Traffic impacts would be minimal and coordinated with the proper agencies of jurisdiction. Construction and operation of new electrical infrastructure would comply with existing NREL safety protocols and procedures.

NEPA DETERMINATION
DOE has determined based upon the information above, there are no extraordinary circumstances presented by this proposed action. The proposed NREL actions at the STM site are bounded by environmental impact analysis contained in DOE/EA-1440, DOE/EA-1440-S-I, and DOE/EA-1440-S-II, and their Findings of No Significant Impact. DOE has determined Xcel's portion of the proposed project is consistent with the actions contained in DOE categorical exclusions B4.6 "additions and modifications to transmission facilities," and B4.13 "upgrading and rebuilding existing powerlines," and is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Note to Specialist :

EF2a prepared by Rob Smith on 2/22/2013

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 2/25/2013
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