PMC-ND
(1.08.09.13)

U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION

RECIPIENT: NREL **STATE:** CO

PROJECT TITLE: NREL-21-005 ESIF LVOTA Capstone Microturbine Generator – STM Campus

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-AC36-08GO28308	NREL-21-005	GO28308

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:
Description:

DOE/EA-1968 (NREL STM) SITEWIDE ENVIRONMENTAL ASSESSMENT, U.S. DOE NATIONAL RENEWABLE ENERGY LABORATORY, SOUTH TABLE MOUNTAIN CAMPUS, GOLDEN, COLORADO

Rationale for determination:

The U.S. Department of Energy's (DOE) National Renewable Energy Laboratory (NREL) proposes to remove Research Generator #1 and #2 and install and operate four new generators at the Low Voltage Outdoor Test Area (LVOTA) of the Energy Systems Integration Facility (ESIF) located at the NREL South Table Mountain (STM) campus in Golden, Colorado.

The generators that would be installed would support distributed energy resource research to test power systems control at the LOVTA, which is used to test and evaluate electrical distribution-level equipment. The four new generators that would be installed include:
(a) two Capstone 200kW Gas Microturbine Generators (model: C200S ICHP; double-walled construction);
(b) one HiPower 500kW diesel genset (model: HRVW-625 T4F, 600 gallon tank capacity); and
(c) one Cummins 150kW diesel genset (model: C150D2RE, 255 gallon tank capacity).

Removal of Generators and Demolition of Infrastructure
The two research generators to be removed are a 100 kW diesel generator and an 80 kW diesel generator. The generators would be disconnected and drained before being lifted by a crane onto a truck. The generators would be delivered to NREL's Flatirons Campus to support other research activities. Once removed, the concrete pad the generators sat on would be demolished and supporting infrastructure would be removed. Sections of fencing and gravel would also be removed to prepare for the new concrete pads and fencing needed to support the new generators.

Installation of New Generators and Infrastructure
To support the four new generators, an electrical raceway, concrete grade beams, and concrete slab would be installed. An area of approximately 800 square feet (with depths of 18 inches to up to 4 feet) would be excavated, producing approximately 90 square yards of crushed gravel and 45 cubic yards of soil. Once excavated, the underground electrical raceway and new structural concrete grade beams would be installed and connected to existing piers. The area would be backfilled, and a 9-inch thick structural concrete pad would be poured over the area (approximately 800 square feet).

The two Capstone 200 kW generators would be installed above ground and connected to the existing natural gas supply tap. An electrical bridge, measuring approximately 15 feet wide and 12 feet high above grade, would be installed to connect the generators into the existing electrical vault. A new heat recovery system from the ESIF to the Capstone generators would be installed which would use facility water on a closed-loop system. Research hot water lines would be installed on the existing retraining walls or on grade and would tie into pad-mounted heat exchangers, expansion tanks, and pumps.

A crane would be used to lift one HiPower 500 kW diesel geneset and one Cummins 150 kW genset into place on the concrete pad.

Finally, new fencing would be installed and would extend approximately 6 feet beyond where the previous fence was. The space between the old and new fencing would be filled in by the concrete slab.

The proposed project would take approximately six months to complete and is proposed to begin in March 2021. The equipment is anticipated to be permanently placed and operated. Once the equipment reaches its research end-of-life, it would be removed from the LVOTA and either repurposed, disassembled and recycled, or disposed of in appropriate landfills. All ground disturbance would occur in previously disturbed areas and would be conducted in accordance with existing NREL policies and procedures that guide such work. Erosion control measures would be implemented and maintained during construction to minimize any potential erosion and/or stormwater impacts.

Project activities would not affect cultural resources, threatened or endangered species, wetlands, floodplains, or prime farmlands and would not alter the use, operation, or mission of the LVOTA. The 500 kW generator would require an Air Pollutant Emissions Notice, which would be obtained prior to operation. A migratory bird nesting survey would be completed if project activities involving ground disturbance occur between March 15 and September 15. If nests or eggs are found, the area would be cordoned off with a proper buffer until nestlings fledge.

All waste generated would be reused, recycled, or disposed of in accordance with applicable regulations and NREL policy and procedures. Clean topsoil unearthed from excavation activities would be staged onsite for future use. Mobile air emissions from construction equipment would be negligible and short-term. Construction-related noise would consist of a short-term, intermittent increase in ambient noise levels and would follow applicable noise ordinances. Operation of the generators could result in increases in air emissions and noise, but these effects are anticipated to be intermittent and minor.

Individuals working on this project could be exposed to physical, chemical, and electrical hazards. Existing corporate health and safety policies and procedures would be followed including employee training, work/worker authorization, proper protective equipment, engineering controls, and monitoring, as well as obtaining a Safe Work Permit. Additional policies and procedures would be implemented as necessary if new health and safety risks are identified.

Based on the review of the project, DOE has determined that the proposed project fits within the scope of activities that were analyzed in Section 3.2.1, “Research Activities, Laboratory Activities, and Site Operations Enhancements”, of the 2014 Final Site-Wide Environmental Assessment of the NREL STM (DOE/EA-1968). DOE has determined that the proposed project is bound by the environmental impact analysis contained in this EA and its respective FONSI, and no further NEPA review is required.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assisstance agreement:

A migratory bird nesting survey shall be completed if project activities involving ground disturbance occur between March 15 and September 15.

The required APEN shall be obtained prior to operating the 500 kW generator.

Notes:

NREL
Nicole Serio, 2/17/2021

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Lisa Jorgensen Date: 2/18/2021
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

☑ Field Office Manager review not required
☐ Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____

Field Office Manager