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 : Bulk Liquid Nitrogen and Storage Requirements for the FTLB and SERF; NREL Tracking No. 14-025

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-AC36-08GO28308	NREL-14-025	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)

Rationale for determination:

The U.S. Department of Energy (DOE) proposes the recompetition of bulk liquid nitrogen service and infrastructure at the Field Test Laboratory Building (FTLB) and Solar Energy Research Facility (SERF) located at the National Renewable Energy Laboratory (NREL) South Table Mountain (STM) campus in Golden, Colorado. Within the STM campus, the FTLB and SERF are located in Campus Development Zone 4 – Central Campus.

PROPOSED ACTION

Currently, NREL operates a vendor-provided 6,000-gallon bulk liquid nitrogen tank located at the FTLB and a NREL-owned 6,000-gallon and a vendor-provided 3,000-gallon bulk liquid nitrogen tanks located at the Solar Energy Research Facility (SERF). The FTLB tank provides gaseous nitrogen to the FTLB laboratories and has two vendor-provided dewar filling stations to transfer liquid nitrogen into 60 portable cryogenic storage dewars (dewars). Dewars are a 52-gallon specialized type of vacuum cylinders designed for storing cryogenic gases, like liquid nitrogen. The SERF tank provides liquid nitrogen to the SERF gas distribution system and a NREL-owned dewar filling station. Therefore, the 6,000-gallon FTLB and the 3,000-gallon SERF bulk tanks plus their pressure regulating assemblies, the FTLB dewar filling stations and vaporizer and the dewars are vendor-owned and maintained.

NREL proposes to contract for bulk liquid nitrogen service and infrastructure for a five year period. The existing vendor-provided infrastructure would be removed. The new vendor would provide a 6,000-gallon liquid nitrogen tank and dewar fill stations at the FTLB, increase the size of the tank at the SERF from the existing 3,000-gallon tank to either a 6,000-gallon or a 9,000-gallon tank, and decrease the number of dewars from 60 to 50. Installation of a new vendor-owned 9,000-gallon tank at the SERF would require the contractor to relocate the existing NREL-owned 9,000-gallon tank to ensure both tanks fit on the existing concrete pad. More details of the service and infrastructure to be provided can be found in the Statement of Work uploaded to the PMC database. The vendor would also conduct annual operation/safety inspections, required maintenance activities, and fill the liquid nitrogen storage tanks as needed.

PREVIOUS NEPA DETERMINATIONS

Operation and maintenance of new and modified facilities was included within the scope of the Proposed Action analyzed in the July 2003 NREL STM Site-Wide Environmental Assessment (DOE/EA-1440). Specifically, the Proposed Action of DOE/EA-1440 included routine operation and maintenance tasks, including coordinating with service subcontractors, within Site Development Zone 4. DOE/EA-1440 and its Finding of No Significant Impact (FONSI) are hereby incorporated by reference.

IMPACTS OF PROPOSED ACTION

The proposed project would not require any ground disturbance activities and all vendor-provided equipment would be

placed on existing concrete pads outside in the FTLB and SERF. Therefore no stormwater quality or erosion impacts are anticipated. There are no floodplains, wetlands, or Waters of the United States in the vicinity of the proposed project area.

The installation of vendor-provided bulk liquid nitrogen infrastructure would require the utilization of mobile point emission sources, such as a crane, support trucks, etc., but these emissions would be negligible given the size and duration of the installation activity. Transportation of liquid nitrogen to the STM campus via tanker trucks over the five year period would also create particulate matter and airborne pollutants. However, the increase in size of the SERF bulk liquid nitrogen tank from 3,000 gallons to 6,000 or 9,000 gallons would reduce the number of trips necessary to supply the SERF.

There would be noise typical of construction equipment during the infrastructure installation. Work would be conducted only during daylight hours. Construction-related noise would consist of a short-term increase in ambient noise levels. Removal of the existing vendor-provided infrastructure would require the venting any remaining quantities of liquid nitrogen to the atmosphere. This process of venting would generate noise levels above background levels for up to 20 minutes and may be audible throughout the STM campus and adjacent residential neighbors. Project activities would comply with applicable noise ordinances.

Handling of liquid or gaseous nitrogen can be hazardous to workers and subcontractor. Existing NREL health and safety policies and procedures would be followed including employee training, proper protective equipment, engineering controls, monitoring, and internal assessments. Appropriate hazard identification and control reviews would be conducted as well as Readiness Verifications prior to the systems being brought online. If any liquid nitrogen is left in tanks being removed from the STM campus, this excess nitrogen would have to be vented to the atmosphere. This may create a vapor cloud that may limit visibility of the FTLB or SERF buildings for up to 20 minutes and could potentially cause asphyxiation hazards. This cloud would dissipate quickly and would only be visible for 10 to 20 minutes depending on weather conditions and the purge rate. Coordination would occur with the NREL Building Area Engineers and EHS personnel would assist with the activity by noting climatic conditions (e.g. wind direction, wind speed, ambient temperature, etc.) and conduct air monitoring. An exclusion zone or restricted traffic area would be set up and monitored in close coordination with vendor in charge of purging the tank. It is anticipated that the nitrogen levels of the cloud would not significantly raise nitrogen levels above the 78% nitrogen that is present in the atmosphere, but the position and density of the cloud would be monitored and if concerns arise, the EHS personnel would instruct the subcontractor to decrease the purge rate to lessen the cloud.

Periodic vehicle traffic to the STM campus by the selected subcontractor over the five year contract would occur for annual operation/safety inspections, required maintenance, and the filling of the bulk liquid nitrogen tanks. Typically, bulk deliveries of liquid nitrogen would occur outside standard business hours (8am to 5pm, Monday through Friday). Vehicle traffic generated by this proposed action would the same as current levels or less given the larger capacity of the proposed SERF liquid nitrogen tank.

NEPA DETERMINATION
NREL's subcontracting for bulk liquid nitrogen services and continued use of liquid nitrogen at the STM campus would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined that these activities are bounded by the environmental impact analysis contained in DOE/EA-1440, and its Findings of No Significant Impact. No further NEPA review is required.

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 :

National Renewable Energy Laboratory
NEPA Review completed by Robert Smith on 10/30/2014.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Kristin Kerwin
NEPA Compliance Officer

Date: 10/30/2014