Project/Activity Title: *TA-3 Substation Replacement Project*	**PRID**: 09P-0059 V2	**Date**: February 16, 2016

Purpose: The proposed demolition and replacement of the Los Alamos National Laboratory's (LANL) Technical Area (TA)-3 electrical power substation is needed to provide reliable and efficient electrical distribution systems with sufficient electrical capacity to support the national security missions. The electrical distribution systems and infrastructures were built over 50 years ago. As a result, the systems are at capacity and have substantial distribution imbalances based on the power demands from mission growth over the many years of operations and struggle to meet LANL's current demand for power. In addition, the Department of Energy (DOE) is required to supply power to the Los Alamos County (LAC), where the power demand is steadily growing as well. If these systems are not upgraded and updated, then current development and progress will be hampered.

The increase in capacity is required to meet the 50 years of mission growth at LANL (i.e., high performance computing, core LANL functions, etc.). The need to provide electrical service to LAC is based on a signed agreement between the DOE and LAC. The separate feed to the County will reduce the life-cycle cost to DOE by transferring maintenance and operation LAC.

The capability to safely and reliably distribute adequate electrical power is critical to the successful accomplishment of the LANL Stockpile Stewardship missions. This capability is considered key to the infrastructure needs of the site, and it must operate continuously without interruption. Consistent with the long-term mission requirement, this capability must have a minimum service life of 40 years to align its availability with planned strategic mission timeframes. In addition, this upgrade will provide the versatility to adapt to increasingly stringent safety, security, environmental regulations, and new technology. Inherent in this capability is the minimization (to the greatest extent possible) of environmental impacts and construction waste produced as a result of this upgrade.

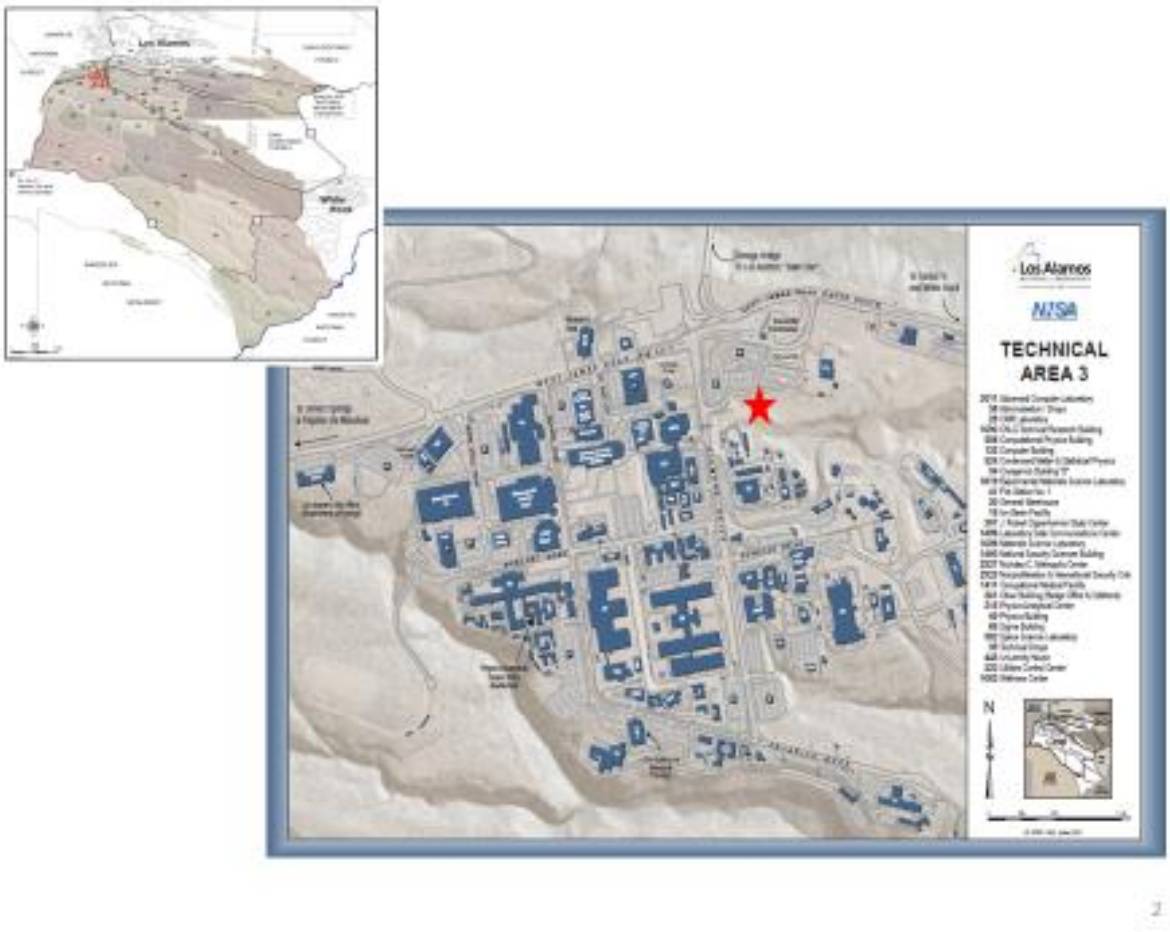
Location: TA-3 Substation	**NA-LA Project Manager**: Bonita A Rogozinsky, (505) 667-4669

Existing NEPA Coverage: DOE NEPA Implementing Regulations 10 CFR 1021, Appendix B to Subpart D of Part 1021—Categorical Exclusions Applicable to Specific Agency Actions, B. Conditions That Are Integral Elements of the Classes of Actions in Appendix B

B4.10 Removal of Electric Transmission Lines and Substations
Deactivation, dismantling, and removal of electric transmission facilities (including, but not limited to, electric transmission lines, substations, and switching stations) and abandonment and restoration of rights-of-way (including, but not limited to, associated access roads).

B4.11 Electric Power Substations and Interconnection Facilities
Construction or modification of electric power substations or interconnection facilities (including, but not limited to, switching stations and support facilities) that are not for the interconnection of a new generation resource into a Power Marketing Administration's transmission system, unless: (1) The new generation resource would be eligible for categorical exclusion under this part and (2) the new generation resource would be equal to or less than 50 average megawatts.

DESCRIPTION OF PROPOSED ACTION:
The project entails the design and construction of a new electrical substation to replace the existing LANL TA-3 substation. The proposed location for the replacement substation is at TA-3 just south of Embudo Road within a disturbed site that was previously occupied by an asphalt batch plant – see map and photographs below.



Map: Technical Area-3. Red Star designates general location of existing and proposed substations

South Side of Existing Substation

North Side of Proposed Substation Facing Southwest. Existing Substation is in the background.

Center of the Proposed Substation Looking Northeast.

The replacement substation would have updated infrastructure that would connect into the existing transmission grid and is not for the interconnection of a new generation resource. The anticipated capacity increase is from 66 megavolt ampere (MVA) to 112 MVA and the replacement substation would provide separate power feeds to both the Laboratory and to LAC. Post construction, the current TA-3 substation would be demolished and some equipment and materials salvaged.

The TA-3 Substation Replacement Project scope is summarized below.
Design and construction of a new 115kV substation adjacent to the existing TA-3: Substation would include two 56 MVA transformers; a ring bus with 5 active bays and room for a sixth; capability to receive power from two 115 kV transmission lines with accommodations for a third future 115 kV line; onsite control house; 13.8 kV switchgear to serve current loads and future LANL Strategic Computing Complex (SCC) load along with 2 circuits to LAC.

Installation of a new ductbank from the new substation to TA-03 1682 Main Distribution Building (1682 MDB): The main distribution building contains two existing 2000A breakers and cubicles that presently serve TA-03 and LAC; work would connect the 1682 MDB to the new TA-3 substation via a new 18-way ductbank; the new substation would feed the two existing 2000A breakers; work would install ductbank to 1682 MDB and core drill exterior wall below grade; work would route new 13.8 kV cables through same cable tray path – feasibility of using existing trays is being evaluated, otherwise, plans will include removing existing tray and re-installing wider cable trays; work would also relocate communications JungleMux to 1682 MDB.

Installation of a ductbank stub-out for future SCC circuits: Work includes installation of ductbank stub-outs for future circuit connections; ducts classified as stub-outs would be plugged inside a maintenance hole or building

and tagged, identifying them as stub-outs and capped on the far end to prevent soil and water from entering the duct; a locator ball may be placed at the stub out location to facilitate future locating of the stub out.

Route 115 kV Transmission Lines into new TA-3 substation: work includes connecting the existing LANL 115kV transmission grid to the new substation. Connections include the existing WT transmission line from the West Testing Area (WTA) substation and the MP 115kV transmission line from TA-53 substation to the new substation, with connections through an 115kV ring bus at the new substation. Transmission lines TC-1 and TC-2 will be rerouted as part of this project.

Demolition of the existing TA-3 substation: Work includes deactivation, decommissioning, and demolition of the existing TA-3 substation with resulting material disposition (e.g., disposal) after the new TA-3 substation is online and operational.

PROJECT SPECIFIC CONSIDERATIONS

A TA-3 Substation Replacement Project Environmental Permitting Plan will be developed to understand and track the schedules for environmental compliance activities and deliverables during project design and construction relating to air quality, biological resources, cultural resources, pollution prevention, Resource Conservation and Recovery Act, and water quality. See Table 1 and the following text for a synopsis of the potential effects to the human environment from project construction and operation.

Table 1. Environmental Factors Checklist

Environmental Factor	Analysis
Land Use	Compatible with current land use.
Visual	Removal of the substation and substation replacement would not introduce new visual elements. Structure would be compatible with current land use.
Geology and Soils (geologic hazards, soil productivity, capability, erodibility, and mass failure)	No special considerations. Best Management Practices would be implemented during construction to minimize erosion.
Water (surface and groundwater quality and quantity, groundwater recharge, streamflow regimes)	See Storm Water Pollution Prevention Section below.
Non - radiological Air Quality	See Air Emissions Section below.
Radiological Air Quality	N/A
Noise	Construction noise would be localized and temporary.
Ecological (floodplains, wetlands, threatened or endangered species and habitat, migratory birds, exotic organisms)	See Biological Section below.

Environmental Factor	Analysis
Human Health – Radiological Impacts on the Public	N/A
Human Health – Chemical Impacts on the Public	N/A
Human Health – Worker Health	A comprehensive ES&H program to ensure environmental protection, and the health and safety of workers and the public would be in place prior to construction and throughout operation. EM 385-1-1 Safety and Health implements the worker safety and health requirements and is consistent with 10 CFR 851. These apply to all subcontractors.
Cultural Resources (archeological and historical)	None present. See cultural and historic resource sections below.
Socioeconomics	Beneficial effects for LANL and LAC.
Infrastructure (roads, utility corridors, communications systems, energy & fuels, distribution systems, and water)	Necessary infrastructure is present.
Waste Management	The project will ensure that waste minimization and pollution prevention receive high priority throughout the duration of the project. All waste will be managed in compliance with applicable environmental requirements and regulations. See Waste Management Section Below.
Transportation	Very minor increase from construction traffic.
Environmental Justice	N/A

Environmental Factor	Analysis
Facility Accidents	Safety and health activities are planned and implemented over the full life cycle of the Project to ensure that the facility design incorporates features that demonstrate the facility can be built and operated in a manner that protects workers, the public, and the environment. The integration of safety requirements into the Project are driven by DOE O 440.1, Worker Protection Management for DOE Federal and Contractor Employees, and 10 CFR 851, Worker Safety and Health Program.

Air Emissions: A permit may be needed for the work at LANL; and a notification to New Mexico Environment Department (NMED) may be required. Project personnel will notify ENV-ES at least 15 working days before work to determine the need for reporting. Once the start of construction approaches, the project personnel will work closely with ENV-ES to determine if advance notification to NMED is required. No air emissions permit is anticipated.

Waste Management: The location for the replacement substation is on land previously occupied by an asphalt batch plant. There are Potential Release Sites (PRSs) located in the project area. However, the PRSs are located outside the proposed construction boundaries.

Storm Water Pollution Prevention: The project scope of work will require coverage under a National Pollutant Discharge Elimination System Construction General Permit for Storm Water Discharge and an associated Storm Water Pollution Prevention (SWPP) Plan. The Project will use the LANL SWPP.

Biological Resources: If project construction activities at the site of the TA-3 Substation begins before the Mexican Spotted Owl breeding season (March 1 through August 31), construction will continue undisturbed until completion. If construction initiation is delayed until the start of the breeding season, however, a survey for the species would need to be conducted by LANL ENV-ES staff before work begins.

Cultural Resources: The proposed LANL site does not contain identified archeological areas. If any buried archaeological resource, remains, or items of cultural significance are encountered during construction, site activities would cease until the significance of the items could be determined by a trained archaeologist, and appropriate actions taken.

Historic Resources: No historic resources will be affected by the Project work.

NEPA Determination

Based on my review of the proposed action, as NEPA Compliance Officer (as authorized under DOE Order 451.1B), I have determined that the proposed action as described herein, falls within the DOE NEPA Implementing Regulations 10 CFR 1021, Appendix B to Subpart D of Part 1021—Categorical Exclusions Applicable to Specific Agency Actions, B. Conditions That Are Integral Elements of the Classes of Actions in Appendix B, and no additional NEPA analysis is required. If changes are made to the scope of the action so that it is no longer bounded by the enclosed description, or the project is changed to encompass other actions, NEPA requirements for the action will need to be reassessed at that time and further analysis may be required.

NNSA NEPA Compliance Officer: Jane Summerson	**Date:**
Signature:	2/17/16