

DOE-ID NEPA CX DETERMINATION Idaho National Laboratory

SECTION A. Project Title: Idaho National Laboratory (INL) Smart Grid Test Bed Revision 2

SECTION B. Project Description and Purpose:

The purpose of revising this EC (Revision 2) is to describe additional work needed to complete the original work scope (see below). Power management may need to place gravel on two power line access roads (not wider than current two-tracks) to prevent equipment (bucket trucks and other vehicles) from becoming stuck in soft road conditions. Power Management needs to continue this work to restore power to PBF-614, which houses a deep well pump. Power management proposes to place gravel on the power line access road that services circuit 57 from CITRC substation to building PBF-623 (see Figure 1). In addition, where power poles are not close enough to the road, power management proposes placing a gravel pad off the access road allowing vehicles to set up and reach the power poles. Power management will have gravel pads placed only where they cannot reach the pole from the road. Most work will occur from the access road. Power management may also need to place gravel on the access road between the substation and the new distribution pad and the control shelter pad; no off-road pads are necessary on this part of the access road (see Figure 1). Gravel for the distribution pad and control shelter pad is included in the original scope.

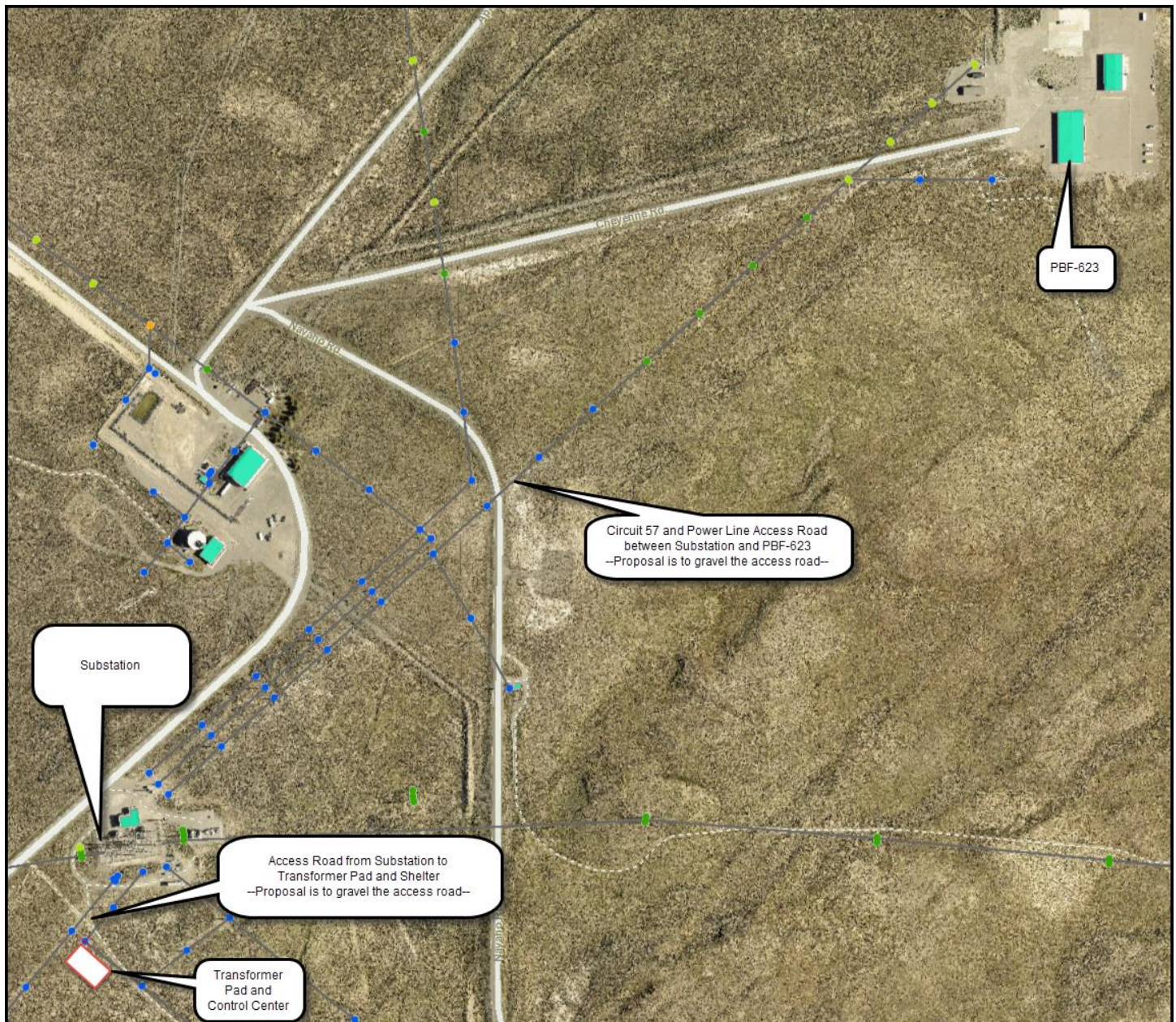


Figure 1. Proposed areas of placing gravel (Revision 2).

Revision 1 of this EC describes mowing vegetation along the proposed route for new power lines to reduce the potential for wildland fire initiated by vehicles used to dispense and install power poles and wire.

DOE-ID NEPA CX DETERMINATION

Idaho National Laboratory

Original Project Description and Revision 1: The original project description, including changes in Revision 1 apply, along with project impacts, conditions, and project-specific instructions.

A path about 12 feet wide would be mowed, once, to reduce wildland fire potential as described above. A patch 12 feet by 35 feet would be mowed, as necessary, to install new poles. The amount of sagebrush destroyed by the mowing would be included in the revegetation plan required in the previous version of this environmental checklist (EC). ESER personnel would evaluate the mowed areas before and after mowing to determine the amount of replanting required and to allow ESER personnel to recommend revegetation requirements, if necessary, in the mowed area.

Both Cultural Resources and Biological Resources personnel must survey the proposed mowing routes/locations no more than two weeks before mowing. Discovery of an active bird nest may delay mowing. Consultation with the State Historical Preservation Office and Native American Tribes may also delay mowing. A Battelle Energy Alliance, LLC (BEA) Cultural Resources representative's presence may be required during mowing.

The original EC work scope is described below:

The purpose of this work is to construct and operate a Smart Grid Test Bed (SGTB) at the old Power Burst Facility (PBF), now part of the Critical Infrastructure Test Range Complex (CITRC) at Idaho National Laboratory. The SGTB would allow users (smart grid developers or utilities) to install and interconnect smart grid equipment and systems on distribution electrical power distribution networks that have the ability to selectively operate at various voltages 12.47kV, 24.9kV, and 34.5kV. There are twelve user locations where users can locate and connect field equipment to both the test and instrumentation power and to the communications network as needed.

Power to the CITRC area facilities is supplied by a 3 phase 13.8kV (#2 ACSR) overhead line (OHL) network supplied from the CITRC substation. To avoid having to buy and install more transformers to allow the CITRC complex facilities to operate at the various test bed voltages, the project plans to leave the 13.8kV distribution system in place and operating at 13.8kV.

The PBF area includes two Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites, which are under Institutional Controls; these are PBF-613, located north of the former PBF-620 reactor, and ORD-03, the Naval Proving Ground impact area. New construction would avoid PBF-613. Institutional Controls for ORD-03 include surveys for unexploded ordnance before beginning work. The detailed requirements are outlined in Department of Energy Idaho Operations Office (DOE/ID)-11042, Rev 9, INL Site-Wide Institutional Controls, and Operations and Maintenance Plan for CERCLA Response Actions, Appendix A.

The PBF area also includes several former CERCLA sites designated as "No Action" sites under various CERCLA Records of Decision. Construction activities would avoid these locations, if possible. In cases where avoiding those areas is not possible, project personnel would work closely with Battelle Energy Alliance, LLC (BEA) Radiological Control (RadCon) and other organizations.

Additional project activities Include:

Overhead Lines

The project would extend the 13.8kV pole line radials including poles, crossarms, insulators and 3 phase conductors (#2 ACSR) as needed to supply the instrumentation power to the user locations (See Figure 1). The 13.8kV extension would be the lower circuit on in place and proposed poles where the extension is made to the user locations. The upper circuits throughout the network would be the new test power circuits. The extended 13.8kV OHL would supply a continuous source of power to operate any user required instrumentation or communications and control functions independent of the multi voltage test power circuits/lines. Thus, if faults occur causing power outages in the test power circuits, separate power on the 13.8kV OHL would continue to serve the user locations for instrumentation or control related power needs.

The 13.8 kV circuits would become an under build used to feed normal CITRC facility and area loads and customer loads at test connection points for uninterrupted power during testing. Power lines would be extended along the two track roads or otherwise disturbed areas as much as possible to minimize disturbing new areas. Extension routes established around buildings would be arranged to avoid road crossings where possible. New pole line routes would need some clearing, grubbing, and grading to support access for installation and maintenance.

User Access Locations

User locations would be established for smart grid equipment developers or utilities for locating and interconnecting user specific equipment to the SGTB test power mesh networks (See Figure 1).

User locations would be designated on existing concrete or asphalt pad areas where possible, [i.e., where the power connections are near facilities (PBF 612, 613 and 623)]. New test bed user locations near the perimeter road would be established in designated 50 × 50 ft cleared, grubbed, and graded areas near key SGTB test power grid and instrumentation power poles. Fire-defensible space may be established around each user location through mowing and weed control.

Three phase pole top fused cutouts would be installed at user locations to supply connections to both test-power and instrumentation-power service lines. Service drop equipment below the fused cutout, [i.e., risers, conduit and power cable, fuse links (for cut outs)], terminations, etc., would be user specified and supplied by the SGTB user as part of the specific user's equipment installation (not included as part of the construction contract).

Each user location would be supplied with a local pole mounted fiber optic patch panel for interconnection of user specific to (or through) the test bed communications network. Conduits and fiber interconnection from the patch panels to the user specific equipment would be specified and supplied by the SGTB user.

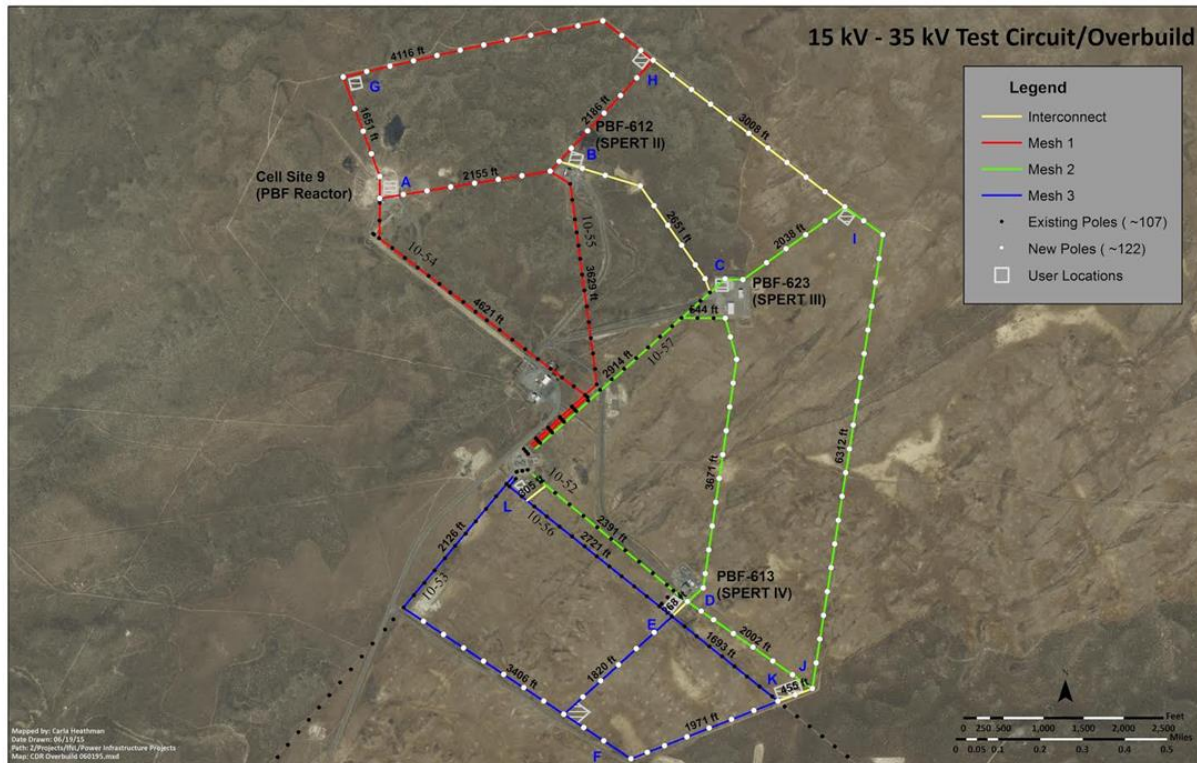


Figure 2.

Command and Control Shelter

A prefabricated 10 × 20 ft. (minimum) command and control shelter and designated parking area (See Figure 2) would be centrally located near the CITRC substation. The shelter would house the test bed communications patch panels, remote power switching controls, and data collection center. It would also shelter equipment and personnel during test events. The basic shelter electrical power service entrance would be from the instrumentation power distribution (13.8kV) via a 15kVA, 120/240V pole mounted transformer.

Certain areas will need the test circuit to run underground (Figure 2). The design team will work closely with the CRMO to minimize impacts and meet technical requirements. In areas where cultural resources prevent soil disturbance, project personnel will use jersey barriers or other surface solutions.

Supervisory Control and Data Acquisition (SCADA) System

A test bed SCADA system would be installed in the command and control shelter to allow test bed operators to observe, manage, and manipulate test line configurations, and record test bed operating parameters.

Ancillary Equipment

Installing power system loads, power converters, and fossil-fueled electrical generators are expected and required as part of the SGTB. Future SGTB additions could include test devices and systems such as photovoltaic systems, wind-powered generators, power converters, energy storage systems, etc., as defined and limited by the applicable National Environmental Policy Act (NEPA) Categorical Exclusion. Addition, or use, of fossil-fueled electrical generators would comply with state and Federal air emission regulations.

Site Development

User areas, user-area access roads, pole-line access roads, and the area around the prefabricated command and control shelter (SGCS) would be grubbed, graded, and backfilled to support construction and user access. Full access road improvements, i.e., designed drainage, road base development, run-off management, culvert repairs, grading for year-round access, etc., and additional user access area improvements would be engineered and installed.

Revegetation

The terrain is typical of upper mountain desert climate. The terrain is largely flat with some elevation changes. The vegetation mainly consists of sagebrush, rabbitbrush, prickly pear cactus, and taper tip hawksbeard, with some areas invaded by non-native species such as cheat grass. Any disturbed area of soil,

DOE-ID NEPA CX DETERMINATION Idaho National Laboratory

except fire-defensible perimeters, where vegetation has been removed would be graded level and re-seeded as required by a review by ESER personnel. Project management would develop and approve a revegetation plan before any re-seeding occurs. Project management would use spraying to control noxious and invasive weeds in fire-defensible perimeters.

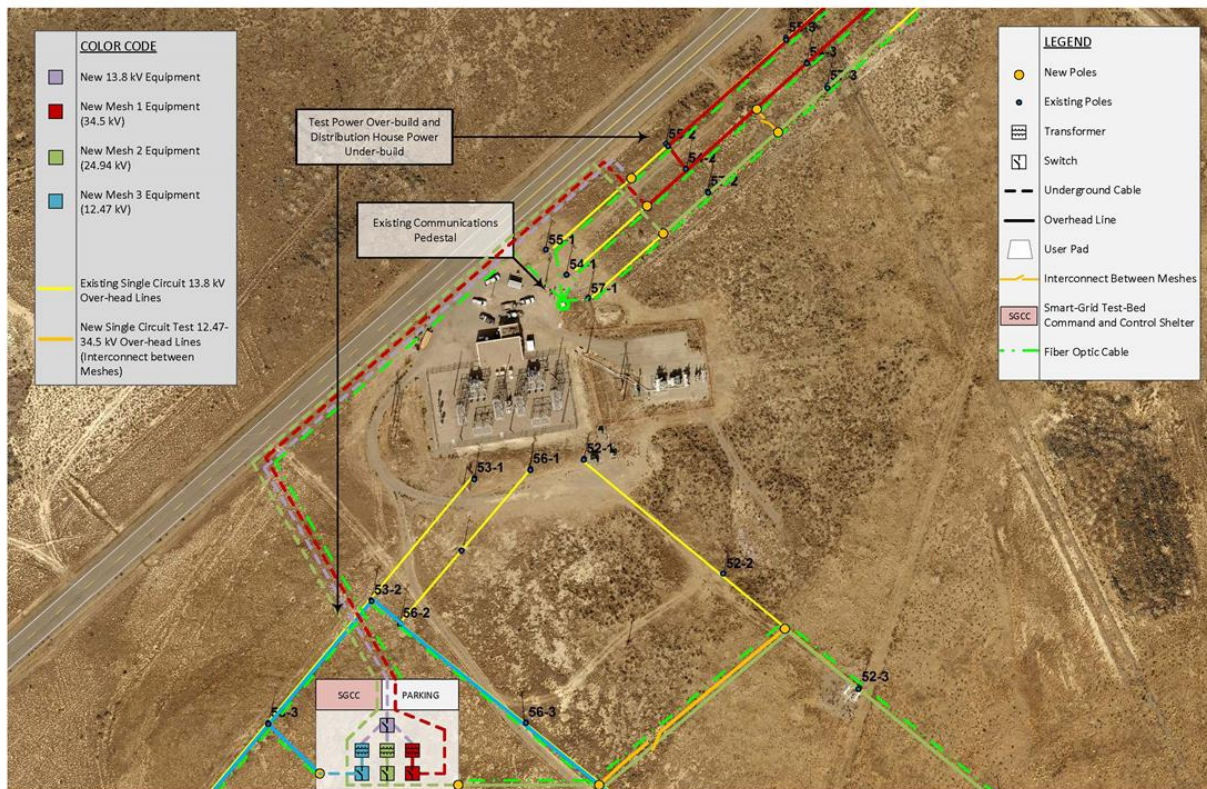


Figure 3.

Cultural Resources

The PBF area is rich in Cultural Resources. A BEA Cultural Resources representative would be required to be present during earth-disturbing activities (clearing, grubbing, digging, or drilling). Discovery of significant Cultural Resources would cause a work stoppage pending investigation, exhumation, or other response.

Test Bed Operations

This Environmental Checklist (EC) focuses on installing and constructing the SGBT and identifies the intent to conduct future testing. Each "project" conducting testing at the SGBT will be reviewed under a separate EC which will be approved under the current CITRC Overarching EC, INL-05-002, or its successor Overarching EC.

SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions

- Construction activities have the potential to generate fugitive dust. Fugitive dust must be controlled/minimized.
- Emissions from mobile and portable electrical generators are exempt. Air emissions from stationary generators must comply with state and Federal regulations. Contact the PEL before purchasing/procuring stationary fossil-fueled electrical generators. An Air Permit Applicability Determination (APAD) is required for emergency generators before requisition.

Discharging to Surface-, Storm-, or Ground Water

- None

Disturbing Cultural or Biological Resources

- The work described in this EC has the potential to disturb both Cultural and Biological Resources.
- Section 10.2.3 of the CCA exempts areas within current footprints, including CITRC, from sagebrush conservation measures identified in the CCA. Despite the exemption, this project expects to carry out many Best Management Practices (BMPs). BMPs which will be implemented include: 1) co-locating new infrastructure within current infrastructure areas; 2) fit new

DOE-ID NEPA CX DETERMINATION

Idaho National Laboratory

double-hung power poles (located at turns and end-poles) with perch/nest deterrents; 3) install no new power poles within 1 km of a known lek; and 4) revegetate disturbed areas (except fire-defensible perimeters, quickly with approved seed mixes. Re-seeded areas may need routine watering over several summer seasons.

- Areas outside current footprints will follow measure described in the CCA.
- Cultural resource sensitivity is very high throughout the PBF/CITRC area. Surveys have revealed 39 archaeological resources in or near SGTB developments (transmission lines, user locations, command/control area); including two sites where Native American human remains have been discovered. Project management will implement recommendations by INL cultural resources personnel during construction and operation of the SGTB to avoid impacts to sensitive sites. INL cultural resource personnel, including Shoshone-Bannock tribal representatives, must monitor all ground disturbances, even in previously disturbed areas, for additional finds. If sensitive cultural materials are discovered during construction monitoring, work must be stopped and Inadvertent Discovery procedures must be implemented to assess the find and begin formal consultations with DOE-ID, Idaho State Historic Preservation Office, Shoshone-Bannock Tribes, and Butte County Law Enforcement. Cultural resource reviews will occur at all stages of SGTB construction, including mandatory 30-day review periods for the State Historic Preservation Office and Shoshone-Bannock Tribes each time new components are added to the construction schedule.

Generating and Managing Waste

The proposed action would generate a variety of waste, including the following:

- Construction activities are expected to generate a variety of Industrial wastes including scrap metal, cleaning materials, wire spools, and common trash. Industrial waste will be recycled to the extent practicable. Operations at the test bed are expected to generate small amounts of common trash and industrial waste.

Releasing Contaminants

- Typical construction chemicals such as lubricants, fuels, adhesives, paints, etc., would be used by the subcontractor.

Using, Reusing, and Conserving Natural Resources

- Waste will be diverted from disposal in the landfill when possible

SECTION D. Determine Recommended Level of Environmental Review, Identify Reference(s), and State Justification: Identify applicable categorical exclusion from 10 Code of Federal Regulation (CFR) 1021, Appendix B, give the appropriate justification, and the approval date.
--

For Categorical Exclusions (CXs), the proposed action must not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, safety, and health, or similar requirements of Department of Energy (DOE) or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment or facilities; (3) disturb hazardous substances, pollutants, contaminants, or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources (see 10 CFR 1021). In addition, no extraordinary circumstances related to the proposal exist that would affect the significance of the action. In addition, the action is not "connected" to other action actions (40 CFR 1508.25(a)(1) and is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1608.27(b)(7)).

References: 10 CFR 1021, Appendix B, B4.12 "Construction of powerlines" and B4.13 "Upgrading and rebuilding existing powerline"

Justification: Project activities are consistent with 10 CFR 1021, Appendix B, B4.12 "Construction of electric powerlines about 10 miles in length or less, or about 20 miles in length or less within previously disturbed or developed powerline or pipeline rights-of-way;" and B4.13 "Upgrading or rebuilding about 20 miles in length or less of electric powerlines, which may involve minor relocations of small segments of the powerlines."

Is the project funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act) Yes No

Approved by Jack Depperschmidt, DOE-ID NEPA Compliance Officer on: 3/14/2017