

DOE-ID NEPA CX DETERMINATION

Idaho National Laboratory

SECTION A. Project Title: Advanced Test Reactor Complex Utility Corridor Extension

SECTION B. Project Description and Purpose:

The combined potable water and firewater, sewage, power, and voice/data systems at the Advanced Test Reactor (ATR) Complex need additional capabilities to support anticipated future growth. The proposed action designs, constructs, and expands utility services (communication systems, electrical power, fire and potable water, and sewer). Expansion extends utility services to the ATR Complex southwest quadrant. The project also supplies new utilities to planned and future buildings such as the Maintenance Support Building (TRA-1643) and a new security building. The new utility corridor will be designed for efficient connection to facilities that may be planned in the future.

Stamped drawings for the potable water system will be submitted to the State of Idaho Department of Environmental Quality (DEQ) for review following final design. A Preliminary Engineering Report (PER) may be required for sanitary sewer system modifications and will be submitted to the DEQ, if required. Professional Engineer (PE) stamped, signed, and dated, plans and specifications for the sewer system will be submitted to DEQ for review and approval. If the project decides to modify the industrial wastewater system, PE stamped, signed, and dated, plans and specifications will be submitted to DEQ for review and approval.

The proposed action includes the following facility systems:

Communication and Electrical: The existing electrical distribution system routes through underground, concrete encased duct banks. The proposed action feeds medium voltage power from the new substation using a looped feed to improve availability and reliability.

New construction installs, terminates, and tests the following:

- A. Fire Alarm System, Emergency Communications, telephone, and data systems
- B. Lightning protection, power system grounding, data, and communication system grounding.
- C. Normal and emergency lighting including lighting controls
- D. Normal and standby power distribution including controls
- E. Power distribution equipment including transformers, feeders, panels, and safety switches.

Project scope includes the following:

- A. Disconnect and remove abandoned outlets
- B. Maintain access to existing electrical installations that remain active
- C. Remove, relocate, and extend electrical components to accommodate new construction
- D. Remove abandoned conduit
- E. Remove abandoned wiring to source of supply
- F. Repair components damaged during demolition and extension work.

Fire and Potable Water: The original direct buried fire-water piping was installed in the 1950s and abandoned in place in 1982 when a new system was installed throughout the complex. The system includes five National Fire Protection Association (NFPA) rated firewater pumps, four tanks, an underground buried piping distribution system with post indicator valves (PIVs) and fire hydrants. Most buildings are equipped with sprinkler systems and associated monitoring and alarm systems. The proposed action designs and installs underground fire water supply system including pipe, fittings, mechanical restraints, thrust blocks, rodded connections, supports, bracing, expansion joints, valving, fire hydrants, and other necessary components. DOE-STD-1066-2012 requires reliable and adequate water supply for fire suppression. Design features to provide reliability include a looped and gridded distribution system with sectional valves and redundant supplies.

The underground potable-water distribution system is also constructed from ductile-iron piping and isolation valves. Flow and pressure testing indicate leaks that need to be identified and repaired or piping needs replaced. The new supply mains and control valves comply with these requirements and enhance the potable water supply to the ATR Complex.

Sanitary Sewer: Concrete bell and spigot piping installed in the 1950s composes most of the underground sanitary-sewer system. Prior to 1995, sanitary wastewater from the ATR Complex was collected and treated at a mechanical wastewater treatment plant and discharged to a subsurface disposal system. Deterioration of this wastewater treatment plant and the need for a lower maintenance system led to its replacement with an evaporation (i.e. total containment) lagoon system. Gravity lines collect and convey sanitary wastewater from the ATR Complex to the influent pump station. The duplex pump station then pumps the wastewater to the evaporative lagoon system for disposal via evaporation. The ATR Complex also generates industrial wastewater divided into "warm" waste and "cold" waste flows, but these flows do not enter the sanitary wastewater collection system and are discharged to other lagoons in the vicinity.

The proposed action uses a combination of gravity and pressure collection systems. Air release valves at high points in the force main protect the pipeline system and maintain efficiency. Lift stations contain a 48-inch diameter wet well with pre-packaged duplex, submersible, non-clog pumps. The pumps alternate on pumping cycles, which allows maintenance of one pump while keeping the lift station in service. A high-level float switch turns on both pumps to provide for extra-large peak flows, which may occur at infrequent intervals. The pumps grind sewage into a slurry and pump to either a force main or gravity main. Alarm outputs in the control panel include power failure, pump failure, high water level, and low water level alarms.

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Excavation includes removal and disposal of pavement, underground components and utilities, and soil. The activities listed are performed as part of trench excavation for pipelines, structures, and other features:

- A. Backfill excavation for slabs and sidewalks
- B. Backfill trenches including pipe bedding
- C. Install locator ribbon above utilities
- D. Install tracer wire on plastic (all non-metallic) piping
- E. Place aggregate material
- F. Compact backfill and subgrade
- G. Rough grade and finish grade for surface drainage
- H. Test compaction.

Asphalt and concrete repairs are required where excavation disturbs these surfaces. For repair, base material is removed and replaced, then compacted, and the concrete or asphalt is then replaced. Paving and concrete are seal coated as required. Parking areas will be restriped to match preconstruction conditions.

SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions

Project activities have the potential to create fugitive dust.

Mobile generators, welders, heavy equipment, and compressors will contribute to air emissions during construction.

Discharging to Surface-, Storm-, or Ground Water

Project activities have the potential to excavate near or through stormwater ditches.

The project will tie-in to existing wastewater lines, so there is a potential for some discharge during tie-in.

Disturbing Cultural or Biological Resources

The proposed project activities as described in EC INL-19-042 are exempt as Routine Maintenance and Safety Systems (INL Cultural Resource Management Office 2016, 51).

Based on the project description in EC INL-19-042, there are no historic properties located in the area of potential effect (APE) for the project (Figure 1, below); all buildings and structures located in the APE are either exempt or not eligible for listing on the National Register (Table 1, below). Additionally, structures directly affected by project activities are exempt as subsurface and utility structures (INL Cultural Resource Management Office 2016, 49).

There are no effects anticipated for historic properties; as such the project may proceed as described without further cultural resource review.

Generating and Managing Waste

Industrial waste such as concrete, asphalt, scrap wood, scrap metal, packaging material, rags, insulation, wire, pipe scrap, etc., will be generated during the project.

Hazardous waste generation is not anticipated, although paint waste, adhesive waste, and spill material have the potential for being hazardous.

Oil and lubricants from electrical ducts and raceways and pre-1980 facility components and electrical equipment have the potential to contain PCBs.

Releasing Contaminants

Typical construction chemicals such as fuels, lubricants, adhesives, paints, concrete, concrete cure, asphalt, refrigerants, etc., will be used on the project.

Although not anticipated, there is a potential for spills when using chemicals or fueling equipment. In the event of a spill, notify facility PEL. If the PEL cannot be contacted, report the release to the Spill Notification Team (208-241-6400). Clean up the spill and turn over spill cleanup materials to WGS.

Using, Reusing, and Conserving Natural Resources

Recycled materials will be used to the greatest extent practicable in the selection of building materials.

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SECTION D. Determine Recommended Level of Environmental Review, Identify Reference(s), and State Justification: Identify the 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, 1.26 "Small water treatment facilities," B2.2 "Building and equipment instrumentation," and B4.11 "Electric power substations and interconnection facilities."

Justification: Project activities are consistent with 10 CFR 1021, Appendix B, B1.26 "Siting, construction, expansion, modification, replacement, operation, and decommissioning of small (total capacity less than approximately 250,000 gallons per day) wastewater and surface water treatment facilities whose liquid discharges are externally regulated, and small potable water and sewage treatment facilities;"

B2.2 "Installation of, or improvements to, building and equipment instrumentation (including, but not limited to, remote control panels, remote monitoring capability, alarm and surveillance systems, control systems to provide automatic shutdown, fire detection and protection systems, water consumption monitors and flow control systems, announcement and emergency warning systems, criticality and radiation monitors and alarms, a and security equipment);" and

B4.11 "Construction or modification of electric power substations or interconnection facilities (including, but not limited to, switching stations and support facilities)."

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

Approved by Jason Sturm, DOE-ID NEPA Compliance Officer on: 4/03/2019