

# DOE-ID NEPA CX DETERMINATION

## Idaho National Laboratory

### SECTION A. Project Title: ATR Warm Waste Treatment Facility Replacement

### SECTION B. Project Description and Purpose:

The Advanced Test Reactor (ATR) Warm Waste Treatment System has limited capability to treat radioactive wastewater. One Warm Waste Treatment Facility (WWTF) is out of service, while the other has only one operational exchange bed. Ion exchange handling systems that charge resin to and discharge resin from the ion exchange beds in the WWTFs fail frequently, restricting the change-out of depleted resin bed and causing spills of radioactive resin. Diaphragm valves in the WWTF frequently fail because of limited shelf life of rubber components. System leaks to the drain system waste thousands of gallons of clean water each month. Tanks, lines, and valves associated with no-longer-used resin regeneration functions add to the complexity and difficulty of operating the system. Radioactive monitoring portions of the system are undependable and outdated, affecting measurements associated with State of Idaho permits for operation and day-to-day discharge monitoring. Hot waste cannot be treated with present capabilities.

The proposed action replaces the current TRA-605 WWTF with a new, less complex, and maintainable system. The present resin regeneration capability will be removed, the control system updated, and the diaphragm valves eliminated. The resin addition/discharge system designs for all of the warm waste system will be changed to eliminate spills, simplify operation, and increase reliability. The source of the system leaks will be determined and eliminated. Finally, the radioactive monitoring system will be updated.

### SECTION C. Environmental Aspects or Potential Sources of Impact:

#### Air Emissions

Project activities have the potential to contribute to air emissions through the following:

- Generating air pollutants, including but not limited to radionuclides, chemical and combustion emissions. Some activities may involve stationary air emission sources, including stationary internal combustion engines.
- Generating hazardous and radiological emissions, such as by operation of fuel burning equipment, decontamination work, use of maintenance products that contain hazardous constituents, and disturbance of contaminated soils.
- Acquiring and dispositioning chemicals.
- Disturbing asbestos.
- Generating fugitive dust or other fugitive emissions.

#### Disturbing Cultural or Biological Resources

Activities included in this EC have the potential to disturb cultural or biological resources as follows:

- Maintaining or repairing facilities, structures, equipment or processes.

#### Generating and Managing Waste

Project activities will generate a variety of waste including industrial, hazardous, radioactive, and mixed waste. The following types of waste are anticipated:

- Industrial waste includes boxes, wood, paper, etc. Potential waste materials will be evaluated for waste minimization prior to generation, and industrial waste generated during project activities will be evaluated for recycling opportunities prior to disposal at the Idaho National Laboratory (INL) Landfill Complex.
- Hazardous wastes have the potential to be generated during project activities from using hazardous chemicals to clean or decontaminate equipment and systems. All waste material generated or removed will be characterized according to applicable RCRA regulations. In all cases, potential and existing hazardous waste streams will be evaluated for minimization potential and recycling opportunities prior to disposal.
- Radioactive waste will be generated during the proposed activities inside radiologically contaminated areas. Typical types of radioactive waste includes anti-contamination clothing, radiological enclosures and barriers, contaminated materials and components, contaminated high efficiency particulate air (HEPA) filters, gaskets, bolts, nuts, fittings, etc. These wastes will be packaged and disposed through Waste Generator Services (WGS).
- Mixed waste could be generated during project activities. Waste minimization techniques will be practiced, and mixed waste will be stored, treated, and disposed in accordance with applicable regulations.

All waste generated will be managed according to laboratory procedures. Pollution prevention/waste minimization would be implemented where economically practicable to reduce the volume and/or toxicity of waste generated. All waste generated would be transferred to WGS for appropriate disposition. All waste generated from these activities has established waste streams and a path for disposition.

If necessary, low-level waste will be shipped to the Remote-handled low-level waste facility or other approved waste disposal facility.

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**Releasing Contaminants**

Activities addressed by this EC have the potential to release contaminants through the following:

- Acquiring, using, storing and dispositioning chemicals
- Managing and dispositioning excess property and materials.

**Using, Reusing, and Conserving Natural Resources**

Activities addressed by this EC have the potential for use, reuse and conservation of natural resources related to the following:

- Generating landfill waste or construction and demolition wastes
- Generating recyclable materials
- Engaging in sustainable acquisition practices.

**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, B6.3 "Improvements to Environmental Control Systems"

**Justification:** Project activities are consistent with 10 CFR 1021, Appendix B, B6.3 "Improvements to environmental monitoring and control systems of an existing building or structure (such as changes to scrubbers in air quality control systems or ion-exchange devices and other filtration processes in water treatment systems), provided that during subsequent operations (1) Any substance collected by the environmental control systems would be recycled, released, or disposed of within existing permitted facilities and (2) there are applicable statutory or regulatory requirements or permit conditions for disposal, release, or recycling of any hazardous substance or CERCLA-excluded petroleum or natural gas products that are collected or released in increased quantity or that were not previously collected or released."

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: January 22, 2019