

DOE-ID NEPA CX DETERMINATION

Environmental Checklist

SECTION A. Project Title: Test Reactor Area (TRA)-771 Secondary Cooling Tower Repair

SECTION B. Project Description:

Refurbishment of the TRA-771 Advanced Test Reactor (ATR) secondary cooling system cooling tower was completed in 2002. The 2002 modification included removal of the wood framed tower, design and installation of a new fiberglass framed tower, replacement of the tower piping, fans, fire protection equipment, and modification of the basin. Since 2002, the tower casing, cell partitions, and decks have degraded due to weather and ultraviolet (UV) exposure. Biological growth within the tower basin has also proven difficult to control.

Reliable operation of the TRA-771 ATR cooling tower is required to support continued safe operation of the ATR. The ATR secondary coolant system and cooling tower provide the ultimate heat sink for the ATR. Increasing the secondary temperature or decreasing the secondary flow rate would result in an undesirable decreased heat removal rate for the ATR. Modification, repair, and maintenance of the ATR cooling tower is required to maintain reliable operation of the secondary coolant system and ensure that the probability of loss of heat sink accident scenarios are minimized.

To provide continuing support for reactor operations and in order to maintain the efficiency of the cooling tower, selective demolition, removal, disposal, and fabrication and replacement of the following is needed:

- Casing
- Fan stacks
- Wind walls
- Partition walls (fire resistant)
- Handrails/UV coating
- Louvers
- Tower fill
- Distribution nozzles
- Drift eliminators

Installation of new components would include all associated hardware and/or associated support structures. New handrails, mid rails, and toe plate would be installed around the entire periphery of the fan deck. Damaged decking (approximately 6 pieces) would be removed and replaced. Ultraviolet (UV) coating would be applied to the entire fan deck surface area and each of the fan stacks. Replacement of distribution nozzles would not require modification of the piping system.

Additionally, sodium hypochlorite would be added to the system to eliminate algae/microbial growth.

Project activities would take place during a reactor outage.

SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions: Project activities have the potential to generate fugitive dust. Reasonable precautions (water, dust suppressant chemicals, etc.) would be taken by the subcontractor to prevent dust from becoming airborne during construction. If control methods are needed, the method used must be documented in daily logbooks for compliance with the Idaho National Laboratory (INL) Tier I Air Permit.

Generating and Managing Waste: The proposed action would generate construction and industrial waste. All waste generated from this activity would be managed in accordance with laboratory procedures and established waste streams to ensure compliance with Department of Energy (DOE) Order 435.1. 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 Waste Generator Services (WGS) for appropriate disposition.

Releasing Contaminants: Sodium hypochlorite would be added to the system and discharged to the cold waste pond. A Waste Management Authority (WMA) would be conducted and approved on the discharge prior to release.

Typical Construction chemicals such as lubricants, cleaners, paints, etc., would be used on the project. All subcontractor chemicals and associated Material Safety Data Sheets (MSDS's) would be submitted for approval on a chemical inventory list prior to bringing them on site. These chemicals would be entered into the Comply Plus Chemical Management System by the appropriate Chemical Coordinator.

Using, Reusing, or Conserving Natural Resources: All materials will be reused and/or recycled where economically practicable. All applicable waste will be diverted from disposal in the landfill where conditions allow. New equipment will meet either the Energy Star or Significant New Alternatives Policy (SNAP) requirements as appropriate (see <http://www.sftool.gov/GreenProcurement/ProductCategory/14>). In addition, the project will practice sustainable acquisition, as appropriate and practicable, by procuring construction materials that are energy efficient, water efficient, are bio-based in content, environmentally preferable, non-ozone depleting, have recycled content, or are non-toxic or less-toxic alternatives.

**DOE-ID NEPA CX DETERMINATION
Environmental Checklist**

SECTION D. Determine the Recommended Level of Environmental Review (or Documentation) and Reference(s): Identify the applicable categorical exclusion from 10 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 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 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 which would affect the significance of the action, and the action is not "connected" nor "related" (40 CFR 1508.25(a)(1) and (2), respectively) to other actions with potentially or cumulatively significant impacts.

References: 10 CFR 1021, Appendix B to Subpart D item B1.5 "Existing steam plants and cooling water systems"

Justification: The proposed action is consistent with 10 CFR 1021, Appendix B to Subpart D, item B1.5 categorical exclusion, "Existing steam plants and cooling water systems" that covers "Minor improvements to existing steam plants and cooling water systems (including, but not limited to, modifications of existing cooling towers and ponds), provided that the improvements would not: (1) Create new sources of water or involve new receiving waters; (2) have the potential to significantly alter water withdrawal rates; (3) exceed the permitted temperature of discharged water; or (4) increase introductions of, or involve new introductions of, hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products."

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: 3/10/2014