DOE-ID NEPA CX DETERMINATION
IDAHO NATIONAL LABORATORY

EC Document No.: DOE-ID-INL-12-003

SECTION A. Project Title: Auxiliary Canal Fill Project at Test Reactor Area (TRA)-670

SECTION B. Project Description:

Although the ATR canal meets all design basis criteria, lessons learned following the earthquake and tsunami events at the Fukushima-Daiichi Nuclear Power Plant in March of 2011 indicate that an auxiliary water supply to the fuel storage canal with a fill connection located outside of the facility would have been valuable following the beyond design basis event. As a result of these lessons learned, the Department of Energy (DOE) has allocated additional funding to the Idaho National Laboratory (INL) to mitigate beyond design basis events similar to the Fukushima-Daiichi disaster. The Auxiliary Canal Fill Project is one of the projects being funded from this additional Fukushima related funding allocation.

The technical and functional requirements for the new auxiliary canal fill system can be obtained in the engineering job (EJ) file (reference EJ #7.8.9-55). A summary of the high level requirements is provided below. Old paint and pre 1980 wall installation may be encountered. Paint on the stairwell or walls will need to be removed prior to drilling or other activities that would generate heat. Appropriate directions have been described in the environmental aspects (section c) of this environmental checklist. The removal and disposal of paint will be carried out in accordance with company procedure.

- The system is intended to provide a new auxiliary source of water to the irradiated fuel storage portion of the ATR canal.
- The system is not intended to replace or otherwise detract from the existing emergency canal fill systems.
- The supply point will be located outside of the TRA-670 reactor facility and will allow for connection by such sources as fire hydrants, fire engines, and water trucks.
- The entry point into TRA-670 for the new system will be through the west wall of the building next to the west roll-up door in the canal area.
- The entry point will be through the lower portion of the exterior wall of the building, which is constructed of concrete masonry units (CMU). A hole will be drilled through the exterior wall to accommodate the pipe.
- The pipe will also penetrate the west stairwell wall before it enters the canal area of the building. This penetration will also be through a CMU wall.
- The stairwell is part of building confinement. The penetrations will be resealed and a building leak rate test will be performed
- The system will consist of a 4-inch pipe that will be routed from the entry point of the building on the floor along the north side of the canal to the irradiated fuel storage area (IFSA) of the canal. Four sections of 1 1/2-inch discharge piping will then branch off the 4-inch pipe, be routed through existing ports in the canal wall and terminate over the surface of the water in the IFSA . These discharge spool pieces will terminate with a 90-degree elbow to provide a downspout over the canal.
- The system will require approximately 150 feet of 4-inch stainless steel piping and 20 feet of 1 1/2-inch stainless steel piping.
- The system will remain empty during normal reactor and canal operations. After testing, the piping will only be filled to mitigate a canal draining event.
- The design will meet the following General Design Criteria (GDC) from Chapter 3 of SAR-153, Upgraded Final Safety Analysis Report for the Advanced Test Reactor:
  - Criterion 1 – Quality Standards & Records
  - Cirterion 2 – Design Bases for Protection Against Natural Phenomena
  - Criterion 4 – Environmental & Dynamic Effects Design Bases
- The system shall be capable of surviving a seismic event two times the magnitude of a Design Basis Earthquake (DBE) for ATR.
- The piping system shall be designed in accordance with ASME B31.1, Power Piping Code. 4” piping was selected based on the connection sizes and types for fire hydrants, fire trucks and water trucks that will be used to fill the pipe. Piping is schedule 40S type 304 stainless steel per ASTM A312.

Projected start date: June 01, 2012
Projected end date: August 31, 2012
Estimated cost: $ 600,000

SECTION C. Environmental Aspects / Potential Sources of Impact:

Air Emission: If the scope of work specified in the work package identifies an amount of regulated asbestos-containing material (RACM) to be removed that equals or exceeds the threshold quantity (260 linear feet on pipes / 160 square feet on other facility components / 35 cubic feet on facility components where the length or area could not be measured previously) specified in 40 CFR 61.145, contact the Asbestos Coordinator and provide the necessary information for completion of a 10-Day Demolition or Renovation Notification. Instructions provided in LWP-8000 Section 4.3 will be implemented where applicable.

Cultural/Historical Resource Disturbance: TRA-670 is eligible for nomination to the National Register of Historic Places. As described, the project is exempt from cultural resource review under exemptions 6 and 8 ("INL Cultural Resource Management Plan", Table 2, exemptions 6 and 8).

Generating and Managing Waste: . All radioactive, asbestos containing, and other waste will be managed in accordance with company procedures and established waste streams to ensure compliance with DOE O 435.1. All waste will be dispositioned through Waste Generator Services (WGS). See Section F for project instructions.

Pollution prevention will be implemented where economically practical to reduce the volume and/or toxicity of waste generated.

Releasing Contaminants: All chemicals utilized by this activity will be managed in accordance with company procedure. There is a possibility for PCB contamination. See Section F for project instructions.

Using, Reusing, and Conserving Natural Resources: All materials will be reused and recycled where economically practical and as accepted by the customer. All applicable waste will be diverted from disposal in the landfill where conditions allow.

SECTION D. Recommended Level of Environmental Review (or Documentation) and Reference(s): Identify the applicable categorical exclusion from 10 CFR 1021, Appendix B, give appropriate justification, and the approval date.

Note: 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, including requirements of DOE orders; 2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment 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) adversely affect environmentally sensitive resources. 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 Categorical Exclusion B2.5 "Facility safety and environmental improvements."

Justification: The purpose of this project is to provide an auxiliary water supply to the fuel storage canal with a fill connection located outside of the facility to mitigate canal draining associated with a beyond design basis event and is consistent with 10 CFR 1021 Appendix B to Subpart D B2.5 "Safety and environmental improvements of a facility (including, but not limited to, replacement and upgrade of facility components) that do not result in a significant change in the expected useful life, design capacity, or function of the facility and during which operations may be suspended and then resumed."

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: February 23, 2012