

DOE-ID NEPA CX DETERMINATION

Idaho National Laboratory

SECTION A. Project Title: Advanced Test Reactor (ATR) Primary Coolant Leak Rate Determination System Equipment Replacement

SECTION B. Project Description:

The purpose of this project is to automate the ATR Primary Coolant Leak Rate Determination System by replacing existing flow transmitters and installing new transmitters to provide a redundant signal. This project is part of an overall effort to implement Leak Before Break (LBB) at the ATR, and will improve accuracy and timeliness, provide consistency with licensed reactor leak monitoring requirements, and will reduce operator burden. Essentially, the proposed action is to ensure the system works properly, meets its intended function, and to improve system reliability.

The instrumentation associated with the leak rate determination system is located in the demineralizer corridor and the demineralizer equipment room in the Test Reactor Area (TRA)-670 second basement and consists of five flow transmitters that measure known flow paths that affect the overall inventory of the primary coolant system. These flow transmitters (FT), which include FT-1-25, FT-1-7C, FT-18-29, FT-1-8A or FT-1-8B and FT-9-166, will be replaced. Additionally, 5 new transmitters will be installed at each of these locations to provide redundant signals to the Distributed Control System (DCS). The new signal will be routed to the same DCS cabinet as the existing transmitters; however, they will be connected to independent analog input modules to improve system reliability. The actual leak rate calculation, which is now performed manually by an operator, will be performed by the DCS and displayed to the operator in the reactor control room. In addition to this display, alarm indications will also be provided to the operator.

Expected waste streams related to this project include the radioactively contaminated transmitters and associated tubing and valves (all stainless steel) that will be removed as well as any contaminated primary coolant liquid that is drained from the system prior to removal. As this primary coolant liquid is only associated with the small diameter sensing lines, overall quantities are expected to be small. The transmitters contain electronics/circuit boards. Concrete dust will be generated from drilling through an 8" concrete/block wall located in the demineralizer equipment room.

Projected Start Date: October of 2013
Projected End Date: September of 2014
Estimated Cost: Approximately \$440,000

SECTION C. Environmental Aspects or Potential Sources of Impact:

Generating and Managing Waste: Waste to be generated includes 5 stainless steel (SS) transmitters with internal electronics/circuit boards, approximately 25 feet of 3/8" outside diameter (OD) SS tubing, 30 3/8" isolation valves and various compression type fittings, anti-Cs, booties, etc. from working in a rad area, and concrete dust from drilling a hole through a wall. The tubing would likely contain primary coolant that would be absorbed into "floor dry". Most of the waste will be rad waste. Because the transmitters contain electronics/circuit boards, they would likely be mixed waste. The transmitters need to be separated from the rest of the waste. Project personnel would coordinate waste disposal activities through Waste Generator Services to ensure proper characterization and disposition path. All radioactive waste would be managed in accordance with company procedure and established waste streams to ensure compliance with Department of Energy Order (DOE O) 435.1. Pollution prevention would be implemented where economically practicable to reduce the volume and/or toxicity of waste generated.

Releasing Contaminants: All chemicals utilized by this project would be managed in accordance with laboratory procedures.

Using, Reusing, and Conserving Natural Resources: All materials would be reused and/or recycled where economically practicable. All applicable waste would be diverted from disposal in the landfill where conditions allow.

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. 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>).

SECTION D. Determine the Recommended Level of Environmental Review (or Documentation) and Reference(s): Identify the appropriate 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.

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References: 10 CFR 1021, Appendix B to Subpart D item B2.2 "Building and equipment instrumentation."

Justification: The proposed action is consistent with 10 CFR 1021, Appendix B to Subpart D, item B2.2 categorical exclusion, "Building and equipment instrumentation" that covers "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, and safeguards and security equipment)."

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: 7/24/2013