

**DOE-ID NEPA CX DETERMINATION
IDAHO NATIONAL LABORATORY**

SECTION A. Project Title: Test Reactor Cask Implementation.

SECTION B. Project Description:

This proposed action is a process and facility modification.

Background / Purpose & Need

The Advanced Test Reactor (ATR) uses the Naval Reactors (NR) Casks to transport test trains between the Naval Reactors Facility (NRF) Expanded Core Facility and the ATR. The Naval Reactor (NR) Casks, however, are approaching the end of their design life. In 1997, Bettis initiated a contract for construction of the NR Cask replacement, the Test Reactor Cask (TRC). The TRC is a revised and updated design of the NR cask and will be more robust structurally and provide more shielding than the current NR Casks. Construction of two TRCs is nearly finished and the INL must now modify the ATR facility and update ATR safety analyses/procedures to support use of the new casks. Replacement of the NR casks with the new TRCs is necessary to continue the transport and handling of NR in-pile loop experiments and maintain a long term working partnership between ATR and NRF. This environmental checklist addresses preparation of the ATR facility to receive and manage the new TRCs.

ATR experiment casks are moved to and from a truck-transporter, or to and from the cask storage area, to those locations where experiments are removed from or inserted into the casks. These locations are the Canal Transfer Station, where experiments may be discharged to or received from the ATR working canal, and the reactor top Transfer Shield Plate where experiments may be inserted into or removed from an in-pile tube. Modifications will be made to the Canal Transfer Station and Transfer Shield Plate to allow experiment transfer to and from the TRCs. Once these modifications have started, operation with the existing NR casks will no longer be possible.

The ATR building has a 40-ton bridge and trolley crane used to lift ATR experiment casks and other heavy lifts. The cranes are used to lift loads other than casks; however, the heaviest and most frequently lifted loads are casks. The largest cask currently handled by the 40-ton reactor-building crane is the O. G. Kelley experiment-handling cask (28.6 ton). The TRCs, however, are significantly heavier than both the O. G. Kelley cask and the NR casks now in use at ATR. The TRCs will weigh up to 40 tons when fully loaded and would therefore approach the maximum weight for the 40-ton crane.

Potential consequences associated with cask handling are discussed in Safety Analysis Report (SAR-153) and the ATR Probabilistic Risk Assessment (PRA). Analyses associated with ATR cask handling are being reviewed/updated to ensure safe handling and reduce the potential for property damage that could occur with the heavier TRCs. Engineering Calculation and Analyses Reports (ECARs) will document these updated analyses.

Facility / Process Modifications

The floor storage area is being evaluated and will be laid out to accommodate the TRCs for commissioning and training. The current casks are stored in the cask storage area of the reactor main floor, with allowable floor loading up to 5000 pounds per square foot (psf). Other locations on the main floor of the ATR building have a 1000 or a 2000 psf loading limit depending on the exact location.

Electrical and mechanical utilities will be modified to support the new casks. The TRCs require an increase in power to 480 VAC and changes to the demineralized water delivery system will be made to service the new casks.

Two new Storage Stands that are compatible with the TRCs will be designed and procured. These stands will be fabricated in-house or by subcontract off site.

A new Maintenance Stand for the TRC will be obtained for ATR. An outside vendor has previously designed and built a TRC-compatible Maintenance Stand and this design will be further evaluated to determine if it will fit within available ATR floor space and meet the structural engineering requirements for use at the ATR. The new Maintenance Stand will also be designed to double as a Storage Stand. The ATR design will meet ATR design requirements as well as the requirements for maintenance and load testing.

The Maintenance/Storage Stands will be fabricated by ATR Maintenance or by subcontract and will be completed prior to the TRCs arriving at ATR. A method of connecting the cask to the cask winch control console will also be designed and built in preparation for implementation of the TRCs. After receipt of the TRCs, the commissioning, modifications and load testing will be completed on the ATR main floor.

Interim storage for the TRCs and tractor-trailers will be inside TRA-634. Building 634 is currently used for interim storage of experiments in NR casks that are being transported either to or from the ATR, but the building does not directly support operation of the ATR. Modifications to the two high-bar rollup doors of TRA-634 will be completed. Due to the longer length of the new TRC trailers, the tractors may need to be disconnected from the trailers when the trailers are stored inside Building 634. Further evaluation of the overall tractor-trailer length will be done to determine whether the tractor-trailer can fit inside the building and a floor loading evaluation will be completed to ensure that the building floor can adequately support both the tractor and trailer. The TRCs will arrive on flatbed trailers and the TRC tractor-trailers will arrive separately.

Projected Start Date: February 2010
Projected Finish Date: October 2012
Estimated Cost: \$1.9M

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SECTION C. Environmental Aspects / Potential Sources of Impact:

Air Emissions - There is a potential for disturbing asbestos containing material during modifications to TRA-670. Controls will be in place to ensure asbestos materials are not released. All asbestos work will be conducted in accordance with the applicable sections of LWP-8000. Some air emissions may also be released during welding operations

Disturbing Cultural/Biological Resources - TRA-670 is eligible for nomination to the National Register of Historic Places and removal of original features will adversely impact this historic property. To mitigate the impact, the project will ensure that photographs are taken and engineering drawings are archived depicting the original configuration and equipment. Contact Julie Braun Williams (526-0926) for further information.

Generating and Managing Waste - Fabrication of materials and installation activities have the potential to generate radioactive low-level waste (LLW), mixed LLW, hazardous waste, PCB bulk product waste and industrial waste. Pollution prevention will be incorporated wherever economically practicable to reduce the volume of waste generated from this activity. All waste disposal activities will be coordinated through Waste Generator Services (WGS) to ensure proper characterization and disposal.

Releasing Contaminants - There is a potential for some internal structures to be covered in paint that contains PCB's and/or lead (Pb). There will be no cutting of any painted material / surface utilizing a cutting torch, grinder or any other tool that would generate enough heat to cause the paint to burn. Any painted surface that is scheduled to be cut / welded, must have the paint removed in accordance with the National Association of Corrosion Engineers standard. All work on surfaces or equipment that are suspected of being coated with paint that potentially contains PCB's and/or Pb shall be conducted in accordance with the appropriate sections of LWP-8000.

SECTION D. Determine the 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.

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, B2.5

Justification: This project will complete facility and process modifications that will enable the ATR to safely receive, open, and store a new generation of NRF transport casks. This will enable ATR to continue a long term reactor experiments program with NRF. Activities to be conducted under this EC are appropriately covered under CX B2.5 "Safety and environmental improvements of a facility ..."

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 4/12/2010