

memorandum

Idaho Operations Office

Date: May 28, 2004

Subject: Approval to Proceed with Preparation of an Engineering Evaluation/Cost Analysis (EE/CA) for Decommission and Dismantlement of PBF-620, Power Burst Facility Reactor, Idaho National Engineering and Environmental Laboratory (INEEL)

To: INEEL CERCLA Administrative Record

Background:

The Power Burst Facility (PBF) is one of the formerly used facility areas included in the INEEL Federal Facility Agreement and Consent Order (FFA/CO), Waste Area Group 5. The Operable Unit 5-12 Comprehensive Remedial Investigation/Feasibility Study Record of Decision (ROD), signed in 2000, is being implemented.

The PBF reactor (PBF-620) was constructed in 1970 to support the Thermal Fuel Behavior Program's testing of pressurized-water reactor fuel rods under hypothetical reactor accident conditions. The PBF reactor began operation in 1972, was put on standby in 1985, and was shut down in 1998. A remedial action for the PBF corrosive waste sump and evaporation pond was completed in 1995. All spent nuclear fuel (SNF) was removed from the reactor pools in 2003 and is now in dry storage at the Idaho Nuclear Technology and Engineering Center (INTEC). In addition, decommissioning of the PBF cooling tower will be completed in 2004.

Threat to Human Health and/or Environment:

The PBF reactor poses a future threat to human health and the environment, if current engineering and administrative controls cease, or if the reactor infrastructure deteriorates to the point where contamination might be released to the underlying soils. The potential contaminants of concern for the PBF reactor are structural/shielding lead and radionuclides. Section 8.6 of the OU 5-12 ROD established remedial action objectives (RAOs) for cleanup of contaminated soils near the PBF reactor as follows:

- Inhibit direct exposure to radionuclide COCs that would result in a total excess cancer risk greater than, or equal to, 1 in 10,000 for current and future workers and future residents
- Inhibit dermal adsorption of contaminants of concern that would result in a total excess cancer risk greater than, or equal to, 1 in 10,000, or a hazard index of 2, or greater, for current and future workers and future residents
- Inhibit ecological receptor exposures to contaminated soil with concentrations of contaminants greater than or equal to 10 times background values and that result in a HQ (*hazard quotient*) greater than, or equal to 10.

If no action is taken, failure to provide surveillance and maintenance activities at the PBF reactor could result in eventual deterioration of the structure and release of radionuclides and metals to the environment such that RAOs for the area would be exceeded.

Enforcement Actions:

The PBF reactor has not been identified as a release site or potential release site under the INEEL FFA/CO. The remediation of contaminated soil in the PBF area has been completed. The Remedial Action Report for the OU 5-12 ROD will be submitted in 2005.

The Action Plan for the Voluntary Consent Order (VCO) between NE-ID and the Idaho Department of Environmental Quality (IDEQ) requires characterization and management of 44 items at PBF and disposition of any hazardous waste pursuant to the Idaho Hazardous Waste Management Act (HWMA) and the federal Resource Conservation and Recovery Act (RCRA). These activities have been completed for 43 of the items. The remaining item to be completed is VCO site NEW-PBF-001, fission product detection system lead (VCO Tracking Number PBF002). This activity will be completed in accordance with the VCO Action Plan for NEW-PBF-001.

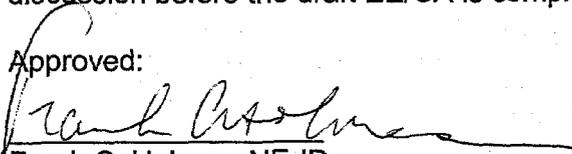
Proposed Project and Cost:

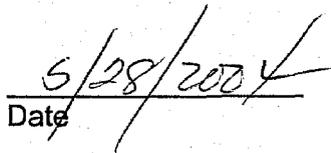
A CERCLA non-time critical removal action (NTCRA) to decommission and dismantle the PBF reactor is proposed. A NTCRA will reduce risk to the Snake River Plain aquifer. An Engineering Evaluation/Cost Analysis (EE/CA) will be performed to evaluate suitable alternatives and provide cost estimates for decommissioning and dismantlement of the PBF reactor. The EE/CA will be submitted to the FFA/CO Program Managers for consideration and, with their agreement, will be made available for public review and comment. All significant public comments will be considered in the selection of the alternative.

Approval to Prepare an Engineering Evaluation and Cost Analysis:

DOE approves the preparation of an EE/CA for the decommissioning and dismantlement of the PBF reactor. James Cooper is designated the spokesperson for this EE/CA. A matrix showing alternatives under consideration will be provided to the FFA/CO Program Managers for discussion before the draft EE/CA is completed.

Approved:


Frank C. Holmes, NE-ID


Date