



Environmental Bulletin

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from the Savannah River Site

REMOVAL SITE EVALUATION REPORT/ENGINEERING EVALUATION/COST ANALYSIS (rsr/ee/ca) FOR THE HEAVY WATER COMPONENTS TEST REACTOR AT THE B AREA OPERABLE UNIT

The U. S. Department of Energy (DOE) is proposing to perform a non-time critical removal of the Heavy Water Components Test Reactor (HWCTR) at the B Area Operable Unit (BAOU). Under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) the Removal Site Evaluation Report/Engineering Evaluation/Cost Analysis (RSER/EE/CA) describes how the proposed removal action meets the criteria established in the National Oil and Hazardous Substances Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) 300.415. The purpose of this RSER/EE/CA is to identify the objectives of the removal action of the HWCTR at BAOU, and to develop alternatives that address the potential threats from release of contaminants to the environment. This document will be available for public review and copying at the locations listed below. The public comment period is scheduled for February 8, 2010 to March 10, 2010.

The RSER/EE/CA was completed to meet the terms of CERCLA, a law governing the investigation and cleanup of waste units. The DOE has worked with the United States Environmental Protection Agency-Region 4 (USEPA) and the South Carolina Department of Health and Environmental control (SCDHEC) to ensure the remedial approach is consistent with all applicable environmental requirements.

The HWCTR was a pressurized heavy water reactor designed to test candidate fuel designs for heavy water power reactors. The HWCTR facility operated from March 1962 until December 1964 when the facility was placed in a standby condition including the removal of fuel and heavy water. The radiation levels in most accessible areas of the HWCTR containment building are low and the residual radioactivity and contamination from operation and maintenance of the reactor and its associated components remain inside the containment building.

The DOE, USEPA and SCDHEC have reviewed the risks associated with the HWCTR at the BAOU and have evaluated cleanup alternatives. Based on a comparative analysis of the alternatives against effectiveness, implementability, and cost, Alternative 3 (In Situ Decommissioning with Reactor Vessel and Steam Generator Removal) has been selected as the preferred removal action. Under this alternative, the reactor vessel, steam generators, steel containment dome, and all above-grade components of the facility would be removed with the exception of the transfer coffin refueling machine and disposed of at appropriate disposal facilities. Following removal of these components, the transfer coffin refueling machine will be placed in the reactor vessel void and the below-grade portions of the facility would be sealed in place with a grout material to form a stabilized structure. The area would then be covered with concrete at the ground surface to prevent infiltration of precipitation and eliminate direct exposure. Land use controls and ongoing surveillance and maintenance activities would be implemented with the preferred alternative.

The purpose of the proposed removal action is to protect future industrial workers from exposure to radionuclides and hazardous constituents in the reactor vessel, steam generators and associated equipment in the HWCTR, and to prevent potential migration of radionuclides and hazardous constituents from the HWCTR so they will not contribute contamination to the groundwater above the maximum contaminant levels.

The HWCTR facility is located on approximately 8,094 m² (2 acres) in the northwest quadrant of the SRS in an area formally known as U Area. This area is now part of B Area, which is composed primarily of administrative, protective force operations, laboratory and warehouse facilities.

Upon completion of the public comment period, an Action Memorandum with a Responsiveness Summary that addresses public comments will be prepared.

Copies of the RSER/EE/CA are available in the administrative record. The administrative record is available in the information repositories listed below:

- DOE Public Reading Room at the Gregg-Graniteville Library at the University of South Carolina Aiken campus in Aiken, SC; and
- Thomas Cooper Library Government Documents Department at the University of South Carolina in Columbia, SC.

Hard copies of the RSER/EE/CA are available at the following:

- Reese Library at Augusta State University in Augusta, GA; and
- Asa H. Gordon Library at Savannah State University in Savannah, GA.

An electronic copy of the RSER/EE/CA is posted at the following address: <http://www.srs.gov/general/programs/soil/pub/pubinv.html>

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