



# Environmental Bulletin

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*from the Savannah River Site*

## **Removal Site Evaluation Report/Engineering Evaluation/Cost Analysis (RSER/EE/CA) For the In Situ Decommissioning of the 105 C Disassembly Basin**

The U. S. Department of Energy (DOE) is proposing to perform a non-time critical removal action for the In Situ Decommissioning of the 105-C Disassembly Basin of the C Area Operable Unit (CAOU). 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, 40 Code of Federal Regulations 300.415. The purpose of this RSER/EE/CA is to identify the objectives of the removal action and to develop alternatives that address the potential threats from release of contaminants to the environment from this subunit. This document will be available for public review and copying at the locations listed below. The public comment period is scheduled for March 23, 2011 to April 22, 2011.

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 U. S. Environmental Protection Agency-Region 4 (EPA) and the South Carolina Department of Health and Environmental Control (SCDHEC) to ensure the remedial approach is consistent with all applicable environmental requirements.

DOE, EPA, and SCDHEC have reviewed the risks associated with this subunit and have evaluated cleanup alternatives. The preferred removal action is In Situ Decommissioning with Forced Evaporation of Basin Water, which meets the effectiveness, implementation, cost, and acceptance criteria.

The CAOU is one of the area OUs identified at Savannah River Site (SRS). The CAOU is located approximately 4.0 km (2.5 mi) southwest of the geographical center of SRS and approximately 9.0 km (5.6 mi) east-southeast of the nearest site boundary. The C Area is located in the central portion of SRS. The C-Area Reactor began operating in 1955 and was shut down in 1986. During operation of the Reactor, fuel and targets were activated in the reactor vessel during a production cycle and then transferred to the disassembly basin where they were stored underwater to allow for thermal cooling and high activity radioactive isotopes to decay.

The preferred removal action is Alternative 2, In Situ Decommissioning (ISD) with Forced Evaporation of Basin Water. Alternative 2 is comprised of two components: 1) Dewatering the disassembly basin (DB), sand filters, settler tank, and 500,000 gallons of water from the Emergency Cooling System tank, by forced evaporation, and 2) ISD of the DB.

ISD will consist of stabilization/isolation of remaining contaminated water, sediment, activated reactor equipment, and scrap metal by filling the DB with underwater nonstructural grout to the appropriate grade-level. The roof over the DB will be preserved for historical significance and will prevent the infiltration of precipitation. Evaporation is a form of treatment that will reduce the volume of contaminated basin water. Irradiated materials and sediment will be treated by solidification/isolation thus reducing their mobility and reducing radiation exposure of future industrial workers, and creating an engineered barrier to prevent access to the contaminants by the future industrial worker and intruders.

The grouting in the basin will also provide a low permeability barrier to retard pore-water velocity beneath the basin, thus minimizing any potential transport of contaminants to the aquifer. This alternative will not preclude any additional remediation of the CAOU and is consistent with the current and future land use.

The waste streams generated as part of the selected alternative will be characterized and transported to the appropriate disposal facilities. Radioactive contaminated waste will be characterized in accordance with DOE requirements for disposal and will be sent to the SRS the E-Area Low Level Waste Facility, a CERCLA Off-Site Rule approved facility.

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 Government Information Section 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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## **The SRS Environmental Bulletin**

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