



Environmental Bulletin

Volume 16, Number 18
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from the Savannah River Site

Dear Reader:

Welcome to the first expanded version of the Savannah River Site (SRS) Environmental Bulletin dedicated to Deactivation and Decommissioning (D&D) project activities.

With this edition, we begin a quarterly publication of a *Bulletin* that contains information that will keep you up-to-date on current D&D projects at SRS. The *Bulletin* will describe current D&D activities and future plans, and include notices for opportunities for public involvement.

As always, we encourage your feedback and input in our decision-making processes at SRS and look forward to your comments regarding the D&D program. I hope you find this Bulletin helpful and informative in keeping you abreast of our progress.

Sincerely,

Helen Belencan
U.S. Department of Energy

The SRS Facility Deactivation & Decommissioning Project Story

In February 2002, the U.S. Department of Energy initiated actions to expedite cleanup, focus on significant and early risk reduction, and reduce costs. In response, the Savannah River Site embarked upon a project focused on completing the decommissioning of inactive facilities in T, D, and M Areas, areas that are outside the Site's central core, by 2006.

In June 2003, the Department of Energy (DOE), South Carolina Department of Health and Environmental Control (SCDHEC), and Environmental Protection Agency (EPA) endorsed a Memorandum of Agreement concerning cleanup at the SRS. The vision of the Agreement is that SRS will reduce its operations footprint to establish a buffer zone at the perimeter of the Site, while the central core area of the Site will be reserved for continuing or future long-term operations. DOE, EPA, and SCDHEC agreed that establishing this buffer zone and appropriately sequencing environmental restoration and decommissioning activities can lead to early completion of the areas. This vision is embodied in the concept of Area Completion – which integrates operations, deactivation and decommissioning, and soils and groundwater cleanup into a time-phased approach to completing all the work necessary to address the Cold War legacy. Deactivation and decommissioning addresses the “footprint” of the building or structure, while the soils and groundwater project address any environmental remediation that may be required in the surrounding soils or groundwater. T Area will be the first area completion – it is scheduled for completion in 2006. This area is located adjacent to the Savannah River and was used to perform research and development. T Area contained 28 industrial and administrative buildings and warehouses, all of which had no identified future missions and have been demolished.

In September 2003, SRS published the Savannah River Site Environmental Management Integrated Deactivation and Decommissioning Plan to support this Area Completion effort. This comprehensive plan addressed the final disposition and physical end state of all Environmental Management facilities throughout the SRS and provided a preliminary planning schedule that would complete all D&D activities by the end of FY2025. Facilities and structures will either be demolished to the foundation or decommissioning may be achieved through closure in-place. The D&D project presently encompasses 1,013 facilities scheduled for decommissioning by 2025.

SRS D&D Project Story

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Significant accomplishments have been made in the D&D program to date. An organization and infrastructure for conducting a substantial D&D project has been developed; a highly productive workforce has been trained; and equipment has been procured to sustain a continued D&D program. As of May 31, 2005, 140 facilities, located across the site and representing a footprint of over 1 million square feet, have been decommissioned.

Key to success of the D&D program is the graded approach to decommissioning based on facility hazards, contaminants, complexity and regulatory agreements. Based upon consideration of these factors, a Facility Decommissioning Evaluation (FDE) is prepared. Its purpose is to determine which decommissioning "model" should apply to the facility – there are three to consider (Simple Model, Integrated Sampling Model, and Engineering Evaluation/Cost Analysis (EE/CA) Model). The FDE is submitted to DOE, EPA and SCDHEC for review and concurrence on the selected model. This approach, described in the June 2003 Memorandum of Agreement, also implements a 1995 Environmental Protection Agency and Department of Energy memorandum which established "that decommissioning activities will be conducted as a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) non-time critical removal action, unless the circumstances at the facility make it inappropriate."

The simplest decommissioning actions, such as guard houses or office buildings are identified as Simple Model facilities. These facilities are demolished to the foundation using conventional demolition techniques.

The next level of complexity, the Integrated Sampling Model, is applied to facilities that may have been exposed to chemical or radiological contamination due to its operational history. This model requires characterization to determine if contamination is present and cleanup is needed.

Facilities with the highest level of complexity are decommissioned as a CERCLA, non-time-critical removal actions. This process involves development of an EE/CA, conducting community relations activities, and documenting the removal action decision. The EE/CA provides the framework for evaluating alternative decommissioning actions. It identifies the objectives of the decommissioning action and analyzes the effectiveness, implementability, and costs of various alternatives. The EE/CA is available for public review during a 30-day comment period. A notice of availability will be published in local newspapers and in the Environmental Bulletin. Following the public comment period, the DOE will issue an EE/CA Removal Action Memorandum to document the selected decommissioning action.

The end-state of facilities decommissioned under the Integrated Sampling Model and the EE/CA model will also be considered in the Record of Decision for each Area Completion. Additional remediation actions may or may not be required, depending upon the final end state for the entire area.

Common industrial hazards in most all SRS facilities are asbestos (insulation or transite wall panels) and lead based paints. Some facilities also have chemical and/or radiological hazards. Waste generated from decommissioning activities is disposed of as appropriate in on-site Low-Level Waste-Disposal facilities or the construction and debris landfill. Sanitary, hazardous, and mixed (chemical and radiological) waste is disposed of off-site according to state and federal regulations.

The below table summarizes the number of facilities within each model type and the completion status as of June 30, 2005.

	Demolition Completed	FDE Concurrence Received	FDE Pending	Total
Simple Model	113	42	13	168
Integrated Sampling Model	36	15	17	68
EE/CA Model	0	3	0	3
Total	149	60	30	239

The SCDHEC, EPA, and DOE have concurred on the FDEs for the following facilities, although decommissioning has not yet been completed.

Integrated Sampling Model Buildings:

- 305-A, Test Pile Building - Located near M Area, this building was constructed in 1953. It was originally used as a laboratory and a reactor test facility. It continued to function as a research and development facility until it was shutdown in 2005. It is a single story building with transite and steel siding on a concrete slab. The facility will be demolished to the slab. The facility is potentially contaminated with uranium.
- 777-10A, Site Utilities Office Facility (Physics Assembly Laboratory) – Located near M Area, this building was constructed in 1953. It was originally used as a physics laboratory and housed four experimental reactors. These reactors were shutdown and defueled in the late 1970's and the building was refurbished into an administration building. It was removed from service in 2002. The facility will be demolished. It is potentially contaminated with uranium and trace amounts of beryllium.
- 723-F, Laundry Building – This facility was constructed in 1954 and served as a laundry facility for worker clothing for the entire site. The facility was shutdown in 1995. It is a single story steel framed building with transite siding. The facility will be demolished to slab. This facility is potentially contaminated with various radionuclides, including uranium and plutonium. During deactivation, beryllium contamination was identified and abated.
- 230-H, Demonstration Waste Incinerator – This facility was constructed in the 1982 to demonstrate incineration of radioactive solids and liquids. It was shutdown in the late 1980s. It is a steel framed building on a concrete slab. It will be demolished to slab. This facility is potentially contaminated with various radionuclides and chemical solvents, such as tributylphosphate (TBP).
- 901-1K, Polyphosphate Unloading and Storage Facility – This facility was placed in service in 1993 for bulk storage and distribution of water treatment chemicals. It ceased operations in 2001. It is a single story light steel frame structure erected over a concrete slab. It will be demolished to slab. This facility is potentially contaminated with various water treatment chemicals, such as polyphosphate.
- 183-4L, Clarification Plant – This facility was built in the 1950s to treat water from local wells and the Savannah River. It ceased operations in 2004. It is a steel frame building with transite siding. It will be demolished to slab. This facility is potentially contaminated with various water treatment chemicals, such as sodium hypochlorite.
- 315-4M, M-Area Pad – This pad is a Resource Conservation and Reuse Act (RCRA) permitted interim storage facility that was used to store containerized hazardous and mixed wastes. It was permitted in 1991. It is no longer used to store waste and the final closure plan is with SCDHEC for approval. The pad will be closed in accordance with the RCRA closure plan, no demolition will be required.
- 316-M, Mixed Waste Storage Shed - This facility is a RCRA permitted interim storage facility that was used to store containerized hazardous and mixed wastes. It was permitted in 1991. It is no longer used to store waste and the final closure plan is with SCDHEC for approval. The facility will be closed in accordance with the RCRA closure plan. Upon completion of closure activities, the steel frame fabricated structure over the pad will be removed.
- 321-M, Fuel Fabrication Facility – This building was constructed in 1956. It was used to manufacture aluminum clad fuel elements for the site production reactors. It operated until the reactors were shut down, and was permanently shutdown in 1995. Deactivation of the facility was completed in 2004. It is a single story steel frame building with transite and steel siding on a concrete pad. The facility will be demolished to the slab. It is potentially contaminated with uranium.
- 341-1M, Interim Treatment and Storage Facility – This facility was constructed in the mid 1980s to treat the wastewater sludge generated by the M Area production facilities. It was shutdown, closed, and deactivated in 2000. It is a single story steel frame building erected over a concrete pad. It will be demolished to the slab. It is potentially contaminated with uranium and the chemicals used in the treatment process, such as nitric acid.

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- 341-8M, Vendor Treatment Facility - This facility was constructed in the 1996 to vitrify the wastewater sludge generated by the M Area production facilities. Operations ceased in 2000. It is a single story steel frame building erected over a concrete pad. It will be demolished to the slab. It is potentially contaminated with uranium and the chemicals used in the treatment process, such as nitric acid.
- 717-11N, Electrical Linemen's Office/Warehouse – This facility was built in the early 1950's as a construction shop for pipe welders and included an acid pickling process. The pickling process was removed in the 1970's and the building was then used for a storage area. It is a single story, wood framed building with metal siding erected over a concrete slab. It will be demolished to the slab. It is potentially contaminated with chemicals used in the pickling process, such as nitric acid.
- 717-12N, Construction Sort Building – This facility was built in 1983 for storage of construction items. It is a single story, wood framed building with metal siding erected over a concrete slab. From 1990 to 2003 the building was used to store hazardous waste, excess chemicals, and burned out fluorescent bulbs. In addition to storage bulb crushing, puncturing and emptying of aerosol cans was performed in this building. It is potentially contaminated with mercury, metal pigments, and solvents.
- 183-2P, Filter and Softener Plant - This facility was built in the 1950s to treat water from local wells and the Savannah River. It ceased operations in 1998. It is a steel frame building with transite siding. It will be demolished to slab. This facility is potentially contaminated with various water treatment chemicals, such as polyphosphate.
- 183-4P, Clarification Plant - This facility was built in the 1950s to treat water from local wells and the Savannah River. It ceased operations in 1998. It is a steel frame building with transite siding. It will be demolished to slab. This facility is potentially contaminated with various water treatment chemicals, such as hydrochloric acid.

Simple Model Buildings

- 703-A, Administration Building
- 703-37A, Cooling Water Pump Enclosure A/Comp Rm
- 703-38A, Cooling Water Pump Enclosure B/Comp Rm
- 703-71A, Pumphouse
- 719-A, Medical and Employment Building
- 720-A, Patrol Headquarters
- 607-9C, Air Compressor Building
- 211-1F, Control House
- 221-33F, Material Access Center Warehouse
- 254-5F, Diesel House
- 254-7F, FB-Line Diesel Generator
- 284-10F, E&I Safeguards and Security Shop
- 701-1F, Patrol Headquarters Building
- 185-K, Cooling Tower
- 185-3K, K Cooling Tower
- 186-1K, Sodium Hypochlorite Tank Storage
- 607-21K, De-chlorination Building
- 614-2K, Effluent Monitoring Building
- 110-L, Helium Storage Facility
- 183-3L, Diesel Generator Associated with Building 183-3L
- 191-L, Standby Pumphouse

- 614-2L, Effluent Monitoring Building
- 723-1L, Clothing Change Facility
- 723-2L, Clothing Change Facility
- 723-3L, Clothing Change Facility
- 315-M, Radiological Operations Support Center
- 316-1M, Chemical Storage Pad
- 278-2N, Ice House
- 607-38N, Chemical Feed Facility
- 704-2N, Concrete Office Building
- 710-N, Excess Storage
- 763-106N, Storage Building
- 186-1P, Sodium Hypochlorite Tank Storage
- 607-22P, Chemical Feed Facility
- 607-24P, Equalization Basin
- 614-2P, Effluent Monitoring Building
- 701-2P, Gatehouse Entrance at Building 105-P
- 151-2R, Primary Substation (High Volt 115/13.8)
- 183-1R, Clarification Plant (Cooling Water)
- 183-2R, Filter and Softener Plant (Standby)
- 186-R, Cooling Water Reservoir (Standby)
- 190-R, Cooling Water Pump House (Standby)



Building 321-M before decommissioning activities began (left), and following decommissioning (below).



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