

The Savannah River Site Environmental Bulletin

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U. S. Department of Energy Conducts Phased Submittals of the Fifth Five Year Remedy Review at Savannah River Site

Second Phase: Savannah River Site Operable Units with Groundwater Remedies

The U. S. Department of Energy (DOE) is conducting the Fifth Five-Year Remedy Review for remedial actions implemented at the Savannah River Site (SRS). The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires that remedial actions that result in hazardous substances, pollutants, or contaminants remaining at an operable unit at levels unsuitable for unrestricted exposure be subject to a five-year remedy review. The purpose of this review is to determine whether the remedies remain protective of human health and the environment and to evaluate the implementation and performance of the selected remedies. The U. S. Environmental Protection Agency (EPA) and South Carolina Department of Health and Environmental Control (SCDHEC) will review and approve whether the five-year remedy review adequately addresses the protectiveness of each remedy. The methods, findings, and conclusions of the five-year remedy review will be documented in a report that will be made available to the public.

SRS occupies approximately 310 square miles of land adjacent to the Savannah River, principally in Aiken and Barnwell counties of South Carolina. SRS is located approximately 25 miles southeast of Augusta, Georgia, and 20 miles south of Aiken, South Carolina. During the early 1950s, SRS began to produce materials used in nuclear weapons. Chemical and radioactive wastes are by-products of nuclear material production processes. These wastes have been treated, sorted, and in some cases disposed of at SRS. Hazardous substances, as defined by CERCLA, are currently present in the environment at SRS, with past disposal practices resulting in soil and groundwater contamination.

Each SRS operable unit is unique in size, location, environmental factors, and contaminant type. Contaminants may include chemicals (e.g., trichloroethylene, tetrachloroethylene, etc.), metals, pesticides, polychlorinated biphenyls, and radionuclides (e.g., tritium, cesium-137, etc.). Contaminants may be found in surface soils, subsurface soils, and/or groundwater. Operable unit-specific remedial actions are designed to address the contaminants for the protection of human health and the environment. In general, contaminated media are either covered, stabilized in place, treated, removed, or managed with land use controls (LUCs). Common remedies implemented at SRS include LUCs, cover systems (i.e., soil covers, geosynthetic covers), excavation and disposal actions, removal systems (i.e., soil vapor extraction, electrical resistance heating, dynamic underground stripping), treatment systems (i.e., enhanced bioremediation, chemical oxidation), stabilization (i.e., in situ grouting), mixing zones, and monitored natural attenuation.

Previous five-year remedy reviews were conducted for all SRS operable units that have implemented a remedial action with the results documented in a single report. This strategy was altered for the Fifth Five-Year Remedy Review Report, which will conduct phased remedy reviews for operable unit groupings based on remedy similarity rather than combining all operable unit reviews in a single report. The operable units will be grouped by the following remedy types: (1) native soil cover and/or LUCs, (2) groundwater, (3) compacted clay cover system, (4) geosynthetic or stabilization/solidification cover system, and (5) operating equipment. The remedy reviews for each group will be performed in successive years, so that all groups/reviews

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are completed within five years from the Fourth Five-Year Remedy Review Report, which was issued on February 4, 2014. The phased submittal of the Fifth Five-Year Remedy Review Report allows for levelized use of resources and funding, instead of a single comprehensive review of over fifty remedies every fifth year, which requires considerable effort and funds. The phased submittals also allow DOE, EPA, and SCDHEC to effectively identify and resolve issues for similar remedies simultaneously and efficiently implement optimization initiatives. The phased approach began with the submittal of the Fifth Five-Year Remedy Review Report for Savannah River Site Operable Units with Native Soil Covers and/or Land Use Controls in December 2014.

The five-year remedy review will address three major questions:

- Are the remedies functioning as intended by the decision document?
- Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of remedy selection still valid?
- Has any other information emerged that could call into question the protectiveness of the remedy?

The second phased submittal of the Fifth Five-Year Remedy Review Report will focus on SRS operable units with groundwater remedies. DOE will notify the public when the Fifth Five-Year Remedy Review Report for Savannah River Site Operable Units with Groundwater Remedies is complete and is available to the public. The report is currently planned to be available to the public in February 2017.

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