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

Fourth Phase: Savannah River Site Operable Units with Geosynthetic or Stabilization/Solidification Cover Systems

The U.S. Department of Energy (DOE) is conducting the Sixth Five-Year Remedy Review for some 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 (OU) 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 OU 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. OU-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.

DOE, EPA, and SCDHEC previously agreed to conduct phased remedy reviews for OU groupings based on remedy similarity rather than combining all OU reviews in a single report. The OUs are grouped by the following remedy types: (1) native soil cover and/or LUCs, (2) groundwater, (3) engineered cover system, (4) geosynthetic or stabilization/solidification cover system, and (5) operating equipment. These groupings were selected to provide the opportunity to implement optimization initiatives for similar projects.

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?

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The fourth phased submittal of the Sixth Five-Year Remedy Review Report will focus on SRS OUs with geosynthetic or stabilization/solidification cover systems. Geosynthetic cover systems are used at SRS when there is a concern that contamination may leach to groundwater above acceptable levels. Geosynthetic cover systems are designed to meet layer/liner criteria requirements and a specific conductivity (usually 1 x 10-7 centimeter per second or less). In some cases, a stabilization/solidification technology (i.e., in-situ-grouting) may be used with a low permeability cover (i.e., compacted clay, concrete, etc.) to deter contaminant migration and provide another layer of protection to prevent intrusion and exposure to contaminated material.

The Sixth Five-Year Remedy Review Report for SRS OUs with Geosynthetic or Stabilization/Solidification Cover Systems includes a review of the following OUs:

- B-Area Operable Unit
- C-Area Reactor Seepage Basins (904-66G and 904-68G)
- D-Area Expanded Operable Unit [Comprised of D-Area Ash Basin (488-D) and D-Area Rubble Pit (431-2D)]
- E-Area Low-Level Waste Facility (643-26E) (Slit Trench Disposal Units 1-5)
- F-Area Retention Basin (281-3F)
- F-Area Tank Farm (Waste Tanks 5 to 6 and 17 through 20)
- General Separations Area Consolidation Unit [Comprised of Old Radioactive Waste Burial Ground (including Solvent Tanks) (643-E), HP-52 Ponds, H-Area Retention Basin (281-3H) and Spill on 05/01/1956 of Unknown Amount of Retention Basin Pipe Leak (NBN), Warner's Pond (685-23G) and Spill on 03/08/1978 of Unknown Seepage Basin Pipe Leak in H-Area Seepage Basin (NBN) and Spill on 02/08/1978 of Unknown H-Area Process Sewer Line Cave-In (NBN)]
- H-Area Tank Farm (Waste Tanks 12 and 16)
- K-Area Reactor Seepage Basin (904-65G)
- L-Area Oil and Chemical Basin (904-83G)
- L-Area Reactor Seepage Basins (904-64G) and C-Area Reactor Seepage Basin (904-67G)
- Old F-Area Seepage Basin (904-49G)
- P-Area Operable Unit
- P-Area Reactor Seepage Basins (904-61G, 904-62G, and 904-63G)
- R-Area Burning/Rubble Pits (131-R and 131-1R) and Rubble Pile (631-25G)
- T-Area Operable Unit

DOE will notify the public when the Sixth Five-Year Remedy Review Report for Savannah River Site Operable Units with Geosynthetic or Stabilization/Solidification Cover Systems is complete and is available to the public. The report is currently planned to be available to the public in January 2023.

For additional information about the five-year remedy review process at SRS, please contact Ms. Angie Benfield at the address listed below:

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