



Draft Environmental Assessment for the Commercial Disposal of Savannah River Site Contaminated Process Equipment

Summary

The *Draft Environmental Assessment for the Commercial Disposal of Savannah River Site Contaminated Process Equipment* (Draft EA) (DOE/EA-2154) evaluates the potential impacts from DOE's Proposed Action to dispose of certain Savannah River Site (SRS) contaminated process equipment at a commercial low-level radioactive waste (LLW) disposal facility outside of South Carolina licensed by either the Nuclear Regulatory Commission (NRC) or an Agreement State under 10 CFR Part 61. Implementation would be dependent on the waste meeting DOE's HLW interpretation for disposal as non-high-level radioactive waste (non-HLW), in accordance with DOE Manual 435.1-1, *Radioactive Waste Management Manual*; and the commercial facility's waste acceptance criteria, among other requirements.

What is SRS Contaminated Process Equipment?

The SRS contaminated process equipment continues to be generated during the onsite storage and treatment of reprocessing waste. The equipment addressed in the Draft EA includes the Tank 28F salt sampling drill string, glass bubblers, and glass pumps.

- **Tank 28F salt sampling drill string (Figure 1):** This singular piece of equipment was used to collect reprocessing waste samples from the waste storage tank in F-Area. The Tank 28F salt sampling drill string consists of steel piping measuring 2.25 inches outer diameter by 41 feet long, contaminated with reprocessing waste (supernatant) from Tank 28F.
- **Glass bubbler (Figure 2):** These pieces of equipment are currently used to increase efficiency of SRS Defense Waste Processing Facility (DWPF) melter operations, where high-activity tank waste is vitrified into glass under high temperature. Each glass bubbler is made up of a 3/4-inch Inconel pipe, which is inserted into the DWPF melter and through which an inert gas is introduced to increase melter efficiency. The total length of each complete bubbler assembly is between 8.8 feet and 9.4 feet. SRS currently has approximately 60 contaminated bubblers in storage and is expected to generate four contaminated glass bubblers every six months until DWPF operations are completed in the 2034 timeframe. The bubblers are currently stored inside the DWPF canyon building.
- **Glass pumps (Figure 3):** These pieces of equipment were previously used to support melter efficiency but have been replaced by the glass bubblers and therefore are no longer generated at SRS. Each glass pump includes a section of Inconel pipe, measuring approximately 3.625 inches in outer diameter. The overall glass pump is about 11 feet long. There are approximately 10 glass pumps in storage in the DWPF canyon building at SRS requiring disposal.



Figure 1. On the left is the exterior of B-36 disposal container. On the right is Tank 28F salt sampling drill string and lead blankets in the B-36 box.

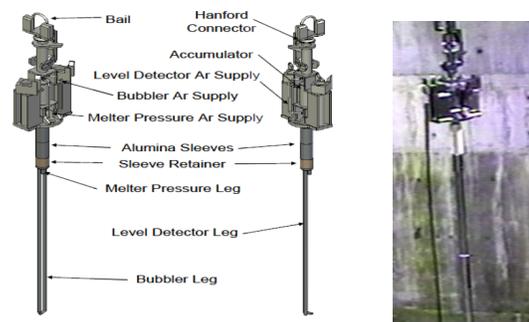


Figure 2 (Left Drawing). Glass bubblers. Figure 3 (Right Photo). Glass pump.

Proposed Action in the Draft EA

DOE’s Proposed Action is to dispose of the SRS contaminated process equipment at a commercial LLW disposal facility outside of South Carolina licensed by either the NRC or an Agreement State under 10 CFR Part 61. Prior to a disposal decision, DOE would characterize the contaminated process equipment to verify with the licensed offsite commercial LLW disposal facility whether the waste meets DOE’s HLW interpretation for disposal as non-HLW, in accordance with DOE Manual 435.1-1.

Disposal Alternatives in the Draft EA

- **Alternative 1:** If determined to be Class B or Class C LLW,¹ DOE would stabilize and package the waste at SRS and ship the waste packages to Waste Control Specialists LLC (WCS) in Andrews County, Texas, for disposal.² Implementation would be dependent upon the waste meeting the facility’s waste acceptance criteria, among other requirements.
- **Alternative 2:** If determined to be Class A LLW, DOE would stabilize and package the waste at SRS and ship the waste packages to either EnergySolutions³ in Clive, Utah, or WCS in Andrews County, Texas, for disposal. Implementation would be dependent upon the waste meeting the facility’s waste acceptance criteria, among other requirements.
- **No Action Alternative:** DOE would not conduct the Proposed Action. Instead, DOE would maintain the status quo, which is represented by the continued management of the contaminated Tank 28F salt sampling drill string, glass bubblers, and glass pumps. The contaminated process equipment would require disposition at some point in the future, and over the remaining operational life of DWPF, the amount of glass bubblers would continue to accumulate and require storage in the DWPF canyon building.

DOE HLW Interpretation

Under the HLW interpretation, defense reprocessing waste may be determined to be non-HLW if the waste meets either of the following two criteria:

1. Does not exceed concentration limits for Class C LLW as set out in 10 CFR 61.55 and meets the performance objectives of a disposal facility, **or**
2. Does not require disposal in a deep geologic repository and meets the performance objectives of a disposal facility as demonstrated through a performance assessment conducted in accordance with applicable requirements.

Table 1 summarizes the transportation actions for each alternative evaluated in the Draft EA.

Table 1. Summary of Alternatives

Alternative	Licensed Offsite Commercial LLW Disposal Facility – Distance from SRS	Potential Total Number of Shipments
1	WCS (Andrews County, Texas) – 1,400 miles	31
2	EnergySolutions (Clive, Utah) – 2,200 miles or WCS (Andrews County, Texas) – 1,400 miles	31
No Action	Not applicable	None – waste would continue to accumulate in storage at SRS

¹ In its 10 CFR Part 61 regulations, NRC has identified classes of LLW—Class A, B, or C—for which near-surface disposal is safe for public health and the environment. This waste classification regime is based on the concentration levels of a combination of specified short-lived and long-lived radionuclides in a waste stream, with Class C LLW having the highest concentration levels.

² Because the SRS contaminated process equipment would most likely result in Class B or Class C LLW, this has been identified as the first alternative.

³ EnergySolutions is currently licensed to only dispose of Class A LLW and mixed LLW; WCS is licensed to dispose of Class A, Class B and Class C LLW and mixed LLW.

National Environmental Policy Act Process

Comments on the Draft EA received during the public comment period will be considered during preparation of the Final EA. Following the public comment period—and based on the Final EA and consideration of all comments received—DOE will either issue a Finding of No Significant Impact or announce its intent to prepare an environmental impact statement.

Additional information on the Draft EA and HLW interpretation can be found at:

<https://www.energy.gov/em/program-scope/high-level-radioactive-waste-hlw-interpretation>.