

**Informational Webinar:
Overview of *Draft Environmental Assessment for the
Commercial Disposal of Savannah River Site
Contaminated Process Equipment***

**Office of Waste and Materials Management (EM-4.2)
U.S. Department of Energy-Office of Environmental Management**

January 11, 2022

- Welcome and Introduction
- High-level Radioactive Waste (HLW) Interpretation Key Milestones
- National Environmental Policy Act (NEPA) Process for Savannah River Site (SRS) Contaminated Process Equipment
- Overview of the *Draft Environmental Assessment for the Commercial Disposal of Savannah River Site Contaminated Process Equipment* (DOE/EA-2154) (Draft EA)
- Next Steps
- Questions?

The Draft EA will be the second analysis proposing to apply the Department of Energy's (DOE) HLW interpretation to a particular waste stream.

Summary of HLW Interpretation: Key Milestones

DOE has proceeded deliberately with proactive stakeholder engagement throughout the HLW interpretation process.



NEPA Process for SRS Contaminated Process Equipment

The NEPA process provides transparency and gives the public including underserved and disadvantaged communities the ability to provide public comment.

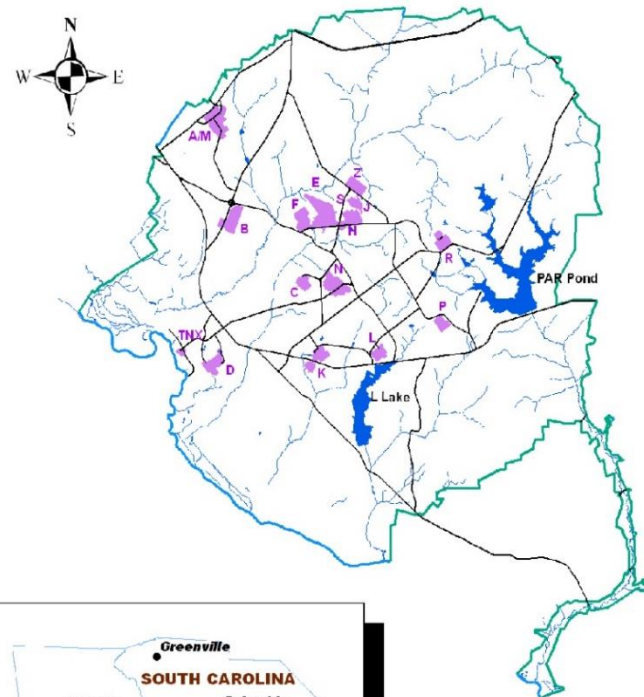


Proposed Action

Dispose of SRS contaminated process equipment at a commercial LLW disposal facility outside of South Carolina licensed by either the Nuclear Regulatory Commission (NRC) or an Agreement State under 10 CFR Part 61.

Purpose and Need

- Currently there is no disposal pathway for the SRS process equipment contaminated with reprocessing waste.
- Disposal of the SRS contaminated process equipment would help to mitigate onsite storage constraints, improve worker safety, and support accelerated completion of the environmental cleanup mission at SRS by removing the waste from the site.



SCALE 0 1 2 3 4 MILES

LEGEND

- █ Savannah River Site Boundary
- █ Administrative and Technical Areas

Location of SRS

Draft EA: Background on SRS Reprocessing Waste

- Over the years, the primary SRS mission has been the production of special radioactive isotopes to support national defense programs.
- As a result, SRS generated large quantities of liquid radioactive waste.
 - This waste was placed into underground storage tanks.
 - Waste is in three physical forms: sludge, saltcake, and salt supernatant (**Fig. 1**).
- The sludge portion, along with high activity constituents from the salt stream, are being transferred to the on-site Defense Waste Processing Facility (DWPF) for vitrification into borosilicate glass to immobilize radioactive and chemical constituents (**Fig. 2 & 3**).
- The SRS process equipment analyzed in the Draft EA is contaminated with SRS reprocessing waste.

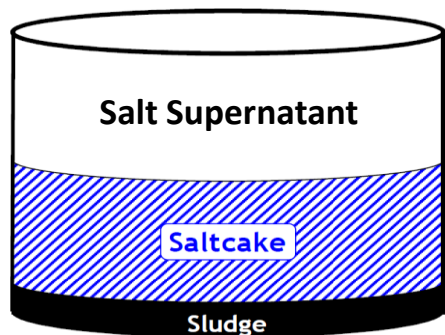


Fig. 1. Tank Waste

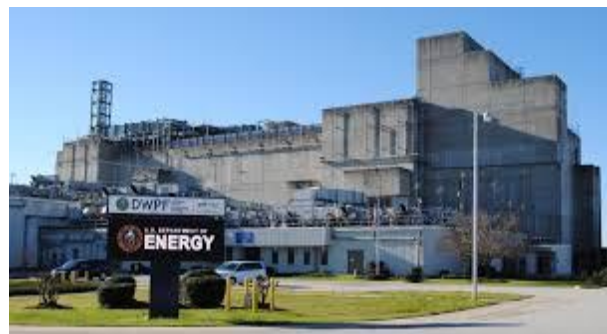


Fig. 2. DWPF

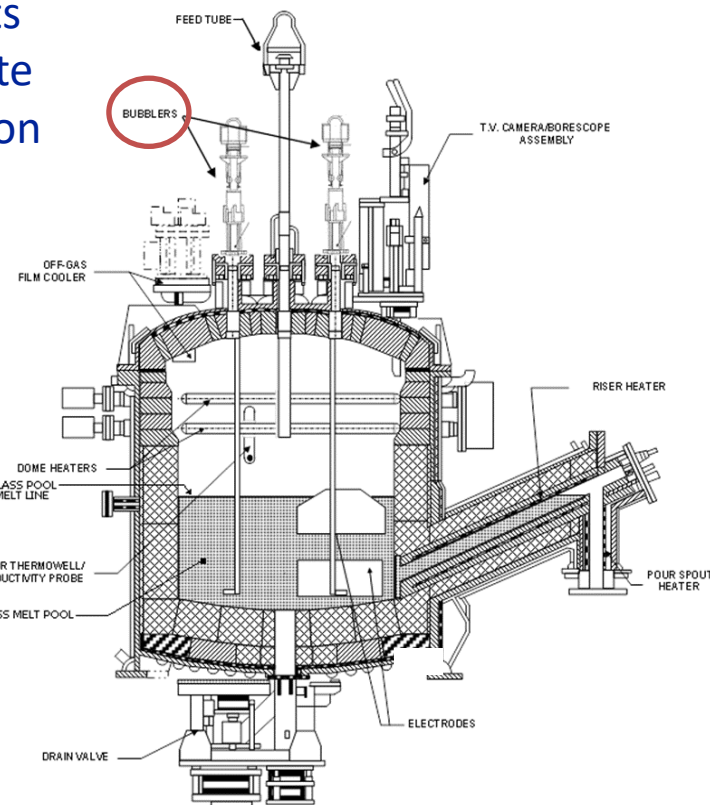


Fig. 3. DWPF Melter

| Waste | Description | Quantity |
|--|---|--|
| Tank 28F Salt Sampling Drill String (Fig. 4) | Used to collect reprocessing waste samples from the waste storage tank in F-Area. | 1 |
| Glass Bubbler (Fig. 5) | Currently used to increase efficiency of SRS DWPF melter operations. | ~60 in storage as of January 2021; ~4 expected every 6 months until 2034 |
| Glass Pumps (Fig. 6) | Previously used to support DWPF melter efficiency but have been replaced by the glass bubblers. | ~10 in storage |

Fig. 6. Glass Pump



Fig. 4. Exterior of B-36 Disposal Container and Actual Tank 28F Salt Sampling Drill String and Lead Blankets in B-36 Box

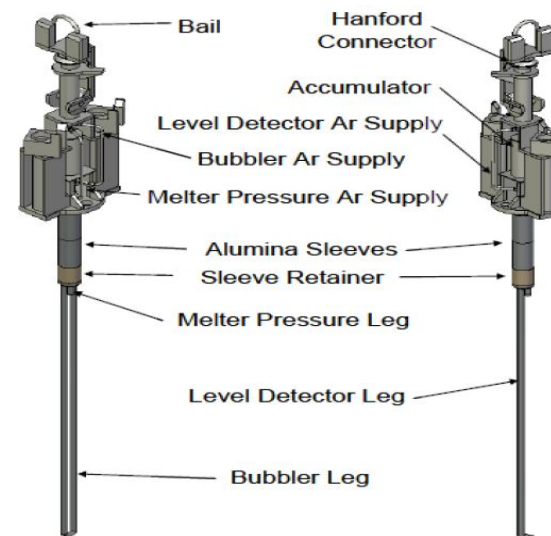


Fig. 5. Glass Bubbler

Draft EA: Alternatives

Alternative 1

If determined to be Class B or Class C LLW, stabilize and package the waste at SRS and ship the waste packages to Waste Control Specialists LLC (WCS) in Andrews County, Texas, for disposal.*

Alternative 2

If determined to be Class A LLW, stabilize and package the waste at SRS and ship the waste packages to either EnergySolutions in Clive, Utah, or WCS in Andrews County, Texas, for disposal.*

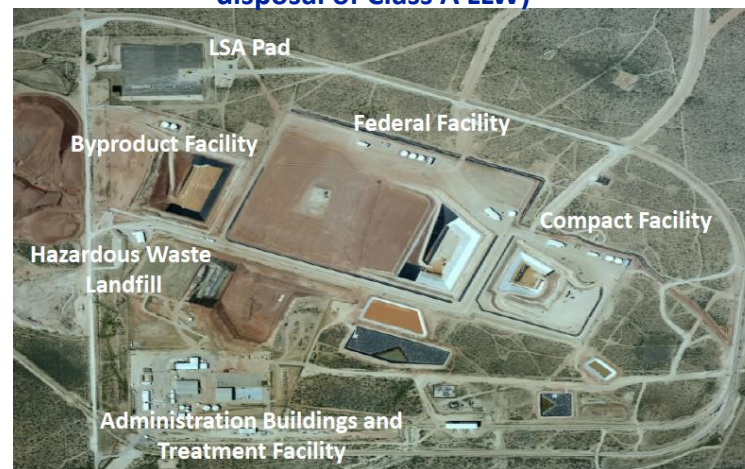
No Action Alternative

- DOE would not conduct the Proposed Action.
- Maintain continued management of the contaminated Tank 28F salt sampling drill string, glass bubblers, and glass pumps at SRS.
- 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.

**For Alternatives 1 and 2, implementation would be dependent upon the waste meeting the facility's waste acceptance criteria, among other requirements.*



EnergySolutions, Clive, Utah (currently licensed for disposal of Class A LLW)



WCS Facility, Andrews County, Texas (currently licensed for disposal of Class A, B, and C LLW)

Transportation Actions for Each Alternative

| Alternative | Licensed Commercial Off-Site 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 at this time – waste would continue to accumulate in storage at SRS but would require shipment in the future |

Potential environmental impacts for the two action alternatives are expected to be minor.

- No ground disturbance or routine releases of radiological or hazardous materials.
- Minor impacts to air quality, human health (under the following scenarios: normal operations, accidents, and intentional destructive acts), and waste management.
 - Transportation (assumes 31 potential truck shipments)
 - Potential (but low probability) for non-radiological fatalities during a truck accident.
 - In the very unlikely event the transportation container failed during a severe accident, the contents would be a solid waste form that would be contained within the disposal container. Because the solid form would not be dispersible, impacts to water and ecological resources would be extremely unlikely.
 - Assumed waste disposal volumes would not exceed capacities of the WCS or EnergySolutions LLW disposal facilities.

Draft EA: Preliminary Assessment

- Appendix A of the Draft EA provides estimated radionuclide concentrations for the SRS contaminated process equipment.
- Preliminary assessment – stabilized and packaged Tank 28F salt sampling drill string would be Class B LLW; glass bubblers and glass pumps would be Class C LLW.

Prior to a disposal decision, DOE would:

- Characterize the waste to verify it meets the DOE HLWI for disposal as non-HLW in accordance with DOE Manual 435.1-1, *Radioactive Waste Management Manual*.
- Demonstrate compliance with waste acceptance criteria and all other requirements (e.g., *Resource Conservation and Recovery Act*) of the disposal facility and applicable U.S. Department of Transportation requirements for packaging and transportation from SRS to the commercial disposal facility.

NRC LLW Classification System (10 CFR 61.55)

- Class A LLW contains the least radioactivity, most of which comes from relatively short-lived radionuclides that decay to background levels within a few decades.
- Class B LLW is also relatively short-lived but contains larger concentrations of short-lived radionuclides than Class A LLW.
- Class C LLW can contain larger concentrations of both short-lived and long-lived radionuclides.

Next Steps

- Public comment period on the Draft EA through February 4, 2022. DOE will consider all public comments submitted within this designated time period.
- Please direct written comments on the Draft EA to: **SRSequipmentEA@em.doe.gov**
 - Please submit comments in Microsoft™ Word or PDF file format (as an attachment to the email) or in the email body; please do not use encryption.
 - Because your comments will be made public, you are solely responsible for ensuring that your comments do not include any Confidential Business Information that you or a third party may not wish to be posted. DOE's policy that all comments will be included in the public docket, without change and as received, including any personal information provided in the comments (except information deemed to be exempt from public disclosure).
- After the public comment period has concluded, DOE-EM will issue:
 - Final EA after consideration of public comments and any changes made to the Draft EA;
 - Either a FONSI or a determination to prepare an EIS; and
 - If a FONSI, a technical evaluation and waste determination will also be issued and made available on the HLW interpretation website.

The Draft EA and other related information can be found at:
<https://www.energy.gov/em/high-level-radioactive-waste-hlw-interpretation>

Questions?