



Savannah River Site

Citizens Advisory Board

Recommendation 159

Low-Curie Salt to Saltstone

Background

The tailored treatment approach for Salt Processing at the Savannah River Site (SRS) is being considered as a three-prong approach (Ref. 1). DOE decided to implement the Caustic Side Solvent Extraction (CSSX) process for the separation of radioactive cesium from SRS salt wastes (Ref 2 and Ref 3). As part of the Record of Decision (ROD), DOE, in parallel with the procurement for the CSSX process, is also evaluating two other salt processing alternatives, actinide removal and low curie salt treatment. If successful and unimpeded, the three Salt Disposition strategies provided by DOE ensure that High Level Waste (HLW) in the storage tanks is processed by the 2028 Site Treatment Plan (STP) regulatory commitment date. Any delay in these operations would result in more challenges (higher risks) to accomplish the HLW mission of stabilizing waste to reduce risk, closing tanks, and supporting other SRS missions (Ref. 4).

HLW tank closure is important because the first SRS High Level Waste (HLW) tanks were placed in service in the early 1950's. In total, 51 HLW tanks were constructed at SRS. These HLW tanks were not intended to be a permanent storage method for HLW but were only considered as interim storage. Almost fifty years later, only two tanks have been closed leaving 49 underground HLW storage tanks still in operation at the Savannah River Site (SRS). Twenty-four of the original 51 tanks are classified as Type I, II, and IV tanks and do not meet present secondary containment requirements. They are considered non-compliant tanks. Five of the twelve Type I tanks, all four of the Type II tanks, and two of the eight Type IV tanks have leaked (Ref. 5). One of the Salt Processing options and a key to the success of tank space capacity and flexibility, is the disposal of low-curie salt to Saltstone. If successful, this process would create tank space to support more waste removal, feed preparation, and accelerated closure of non-compliant tanks.

Comment

The primary concern of the SRS Citizens Advisory Board (CAB) is to accelerate the HLW Tank closure schedule and to have a salt processing facility operational by 2010 (Ref 6,7,8,9,10). As stated numerous times, any delay in the Federal Facility Agreement closure schedule is considered unacceptable to the SRS CAB. The low-curie salt to Saltstone treatment is extremely important to accelerating this schedule.

The SRS CAB has voiced its concerns about potential procedural roadblocks (Ref. 11). However, a couple of these issues are looming as "show stoppers" and may actually suspend all work on low curie salt treatment as soon as four months from now. One issue is the Waste Incidental to Reprocessing (WIR) determination and the other is the modification to the wastewater and landfill permit for low curie salt to increase the radionuclide loading.

The WIR determination is currently in litigation. The Natural Resource Defense Council (NRDC), the Yakama Indian Nation, and the Snake River Alliance filed the suit against the WIR determination because of their concern about the re-classifying of HLW. This is a lawsuit against the WIR "process" not against the Low Curie Salt treatment or HLW tank

closure. However, pending resolution of the lawsuit, the permits allowing Low Curie Salt treatment and SRS HLW tank closure may be significantly delayed (Ref. 12).

This is of great concern to the SRS CAB and is further heightened by the fact that activities associated with disposition of low curie salt are essential in order to accelerate risk reduction and tank closure. The importance of cleanup and risk reduction was highlighted in the October 11, 2002, letter from then Governor Hodges concerning the lawsuit (Ref.10). The SRS CAB is also sensitive to the recent report from the SC Governor's Nuclear Advisory Council questioning some of the low curie salt to Saltstone processes (Ref. 13). These issues are a primary focus of the SRS CAB and something the three parties should be working on together to accomplish.

Recommendation

The SRS CAB is sensitive to the public's interest and to the potential technical difficulties associated with the Salt Disposition strategies. Furthermore, the SRS CAB believes the WM Committee needs additional information and study to make informed and technically accurate input. The objective of this intensive study is to learn how to empty the HLW tanks sooner, increase the operational flexibility of the HLW system, and accelerate risk reduction. To accomplish these objectives a team effort will be required; therefore, the SRS CAB recommends the following:

1. Regardless of the WIR litigation ongoing in Idaho, SRS focus on cleanup and risk reduction while maintaining, and if possible accelerating, the current HLW Tank closure schedule and the need to have a salt processing facility operational by 2010.
2. The three agencies support a short series of in-depth WM Committee meetings focused entirely on the Salt Disposition topic to enable a better understanding of the topic and to educate interested stakeholders.

References

1. Salt Processing Update, presentation to the WM Committee by Joe Carter, March 4, 2003.
2. Salt Processing Update, presentation to the WM Committee by Terrel Spears December 11, 2001.
3. Record of Decision: Savannah River Site Salt Processing Alternatives, Federal Register Volume 66, Number 201, October 17, 2001.
4. "Savannah River Site High Level Waste System Plan", Westinghouse Savannah River Company, Report HLW-2002-00025, Revision 13, March 2002.
5. "Salt Team Focus Group Update", presentation to the WM Committee by Mike French, November 11, 2000.
6. Citizens Advisory Board Recommendation No. 69 (adopted November 17, 1998), "Selection of HLW Salt Disposition Alternatives".
7. Citizens Advisory Board Recommendation No. 81 (adopted March 23, 1999), "High Level Waste Salt Disposition Alternatives to the In-tank Precipitation Process Supplemental Environmental Impact Statement".
8. Citizens Advisory Board Recommendation No. 112 (adopted January 25, 2000), "Selection of HLW Salt Processing Alternative".
9. Citizens Advisory Board Recommendation No. 137 (adopted April 25, 2001), "Salt Processing Alternatives Draft Supplemental Environmental Impact

Statement".

10. Citizens Advisory Board Recommendation No. 147 (adopted January 15, 2002), "Parallel salt Disposition Strategy".

11. Potential Impacts of Decision in Idaho District Court on the Savannah River Site High Level Waste Program, presentation to the SRS CAB by C, E, Anderson, January 14, 2003.

12. Letter from Governor Hodges to the Honorable Spencer Abraham U. S. Department of Energy, October 11, 2002.

13. S. C. Governor's Nuclear Advisory Council Report on US-DOE SRS EM Top-To-Bottom Review (http://www.state.sc.us/energy/PDFs/Rusche_Report_05.pdf) December 20, 2002.

Agency Responses

[Department of Energy-SR \(PDF\)](#)

[South Carolina Department of Health and Environmental Control \(PDF\)](#)

[Environmental Protection Agency \(PDF\)](#)