



Savannah River Site

Citizens Advisory Board

Recommendation 242

Disposition Processing Plan Critical Elements

Background

The Disposition Processing Plan (DPP) defines the business plan for liquid waste activities at the Savannah River Site (SRS) through 2012. It has three major elements: salt waste treatment and disposal; sludge batch preparation and processing; and tank closures (Ref. 1). The programmatic objectives of the DPP are to continue safe operation; to achieve Federal Facility Agreements (FFA) for tank closures; to sustain Defense Waste Processing Facility (DWPF) operations to process sludge waste; and high-capacity salt waste processing through the Salt Waste Processing Facility (SWPF).

The key critical elements of the DPP are: disposing Tank 41 waste through the deliquification, dissolution, and adjustment (DDA) treatment; start-up and operating the Actinide Removal Process (ARP)/Modular Caustic Side Solvent Extraction Unit (MCU); maintaining viability of evaporator systems; and staging of sludge from old style tanks into new style tanks. In addition, other key critical elements include constructing a new Saltstone Feed Lag Storage System; converting Tank 50 to high-level waste (HLW) service; treating the Tank 48 organic-bearing waste in order to return the tank to general service; and improving the Waste Determination Process (Ref. 2). As well as the need for technology development for the Tank 48 organic destruction process, other technology gaps exist related to the sludge mass reduction, tank annulus cleaning techniques, and improved chemical and mechanical cleaning for tanks (Ref. 3). All of these elements are necessary to the long-term objective and ultimate critical element of providing high-capacity salt waste processing through SWPF operations.

A major accomplishment toward beginning the disposition of the Tank 41 waste through the DDA process was achieved by the issuance of the draft industrial solid waste landfill permit modification for the SRS Saltstone disposal facility. The draft permit modification has a 45-day comment period, which ends November 17, 2006. The draft permit modification limits the amount of radioactive waste that can be disposed of in Saltstone; sets deadlines for start up of treatment facilities (ARP/MCU – by September 30, 2007 and SWPF – by September 30, 2011); and requires the Department of Energy (DOE) to take all necessary steps to obtain timely funding in support of the permit conditions (Ref. 4). The permit imposes significant monetary penalties if the DOE fails to meet its commitments.

Comment

The SRS Citizens Advisory Board (CAB) applauds the coordination and cooperation efforts of South Carolina Department of Health and Environmental Control (SCDHEC) and DOE in the preparation of the draft permit modification. The SRS CAB understands the level of effort expended by both organizations to accomplish this milestone and is very appreciative of their hard work. In addition, the SRS CAB Waste Management Committee is writing a letter to strongly support issuing the SCDHEC permit. A similar declaration of support is being expressed by the Georgia Department of Natural Resources in its response to the draft permit (Ref. 5).

Instead of using the permit-established dates for start up of treatment facilities as deadlines, the SRS CAB believes DOE should try to accomplish these activities well ahead of schedule, wherever possible. Furthermore, even though the permit did not set a date for start up of the DDA process, the DOE should expedite operational startup as soon as possible. The SRS CAB is interested in the operational impacts of concurrent operation of the three treatment facilities (DDA, ARP & MCU) and DOE's plan to ensure their success.

Although recovery of Tank 48 poses significant technical issues, restoration of Tank 50 is limited primarily by the resources applied to the effort. The SRS CAB believes that the DOE needs to apply additional resources to initiate the recovery of Tank 50 and accelerate the construction of lag storage to replace Tank 50 as the feed system.

The deployment of new technology for tank closure is tied to the decision to develop new performance modeling of environmental and health impacts and the Point of Compliance (POC) that will be used in the Waste Determination process. With tank closure currently one year behind schedule and with an anticipated three-year timeline to accomplish the potential deployment of new tank closure technology and/or new performance modeling, the current FFA closure commitments could be delayed up to four years. The SRS CAB believes that a decision on the POC, new performance modeling, and technology deployment needs to be accelerated.

Recommendation

In an effort to expedite the critical elements of the DPP and to assure that these activities and associated dates are specified in any new revisions the SRS CAB recommends that DOE:

1. Initiate DDA operations in Tank 41 as soon as possible after the permit modification is issued by SCDHEC, but no later than March 15, 2007.
2. Initiate radioactive operations of ARP/MCU as soon as possible, but no later than June 1, 2007.
3. Provide the SRS CAB by January 22, 2007, a presentation explaining how concurrent operations of the three treatment facilities (DDA, ARP & MCU) will be accomplished. Identify critical elements and plans to ensure their success.
4. As soon as possible, initiate the removal of radioactive waste from Tank 50 with a target date for its recovery on or before January 5, 2007.
5. Accelerate the construction of the lag storage for Saltstone feed by two years (2008 instead of 2010).
6. Make a decision on the Point of Compliance (POC), new performance modeling, and technology deployment by January 22, 2007.

References

1. Savannah River Site Liquid Waste Disposition Processing Plan (LWDPP), presentation to the Citizens Advisory Board by Tony Polk – DOE-SR, September 25, 2006.
2. Disposition Processing Plan Update, presentation to the Waste Management Committee by Larry Ling – DOE-SR, October 17, 2006.
3. Technology Development Initiatives, presentation to the Waste Management Committee by Sherri Ross – DOE-SR, October 17, 2006.
4. Saltstone Disposal Facility, presentation to the Waste Management Committee by Shelly Sherritt – SCDHEC, October 17, 2006.
5. Letter from Georgia Department of Natural Resources Environmental Protection Division to SCDHEC, November 17, 2006.

Agency Responses

[Department of Energy-SR](#)