

Recommendation #269
**Semi-Annual Review of the Inputs and
Assumptions Used to Develop the Liquid Waste System Plan**

Background:

The Savannah River Operations Office (DOE-SR) recently awarded a new Liquid Waste (LW) contract with Savannah River Remediation LLC (SRR). The contract is to optimize Liquid Waste system performance, i.e. accelerate tank closures and maximize waste throughput at the Defense Waste Processing Facility (DWPF).

The Liquid Waste System Plan reflects the new contractor's strategy to achieve the goals outlined in the contract. These goals include; closing twenty two waste tanks in eight years, changing the last/final non-compliant tank closure date from 2022 (Rev. 14) to 2018, complete all sludge processing by 2023 instead of 2030, increase DWPF canister throughput from 200 to 400 and the total number of canisters from ~6,300 to ~7,200, and finally reduce the Cesium concentration in the Saltstone Waste Processing Facility (SWPF) from 4.8 Ci/gal to <1 Ci/gal.

Key to the success of achieving these goals are the following planned technology improvements/developments; 1) DWPF melter bubbler, rotary microfiltration, feed preparation improvements and low temperature aluminum dissolution of sludge, 2) enhanced chemical cleaning of tanks after the bulk waste has been removed, and 3) optimization of the tank closure process.

In addition to these required technology improvements, there are number of assumptions that need to be realized. The assumptions include the following; 1) funding for the project and operations will be available, 2) issuance of two Secretarial Waste Determinations, South Carolina Department of Health and Environmental Control (SCDHEC) approvals, and DOE approval of amendments to waste determination documents will be completed, 3) doubling the Actinide Removal Process (ARP)/Modular Caustic-Side Solvent Extraction Unit (MCU) through put to 40,000 gal/week, 4) decreasing the batch qualification time between batches to less than two months, 5) ARP and MCU facilities will permanently shutdown no later than six months prior to the startup of the Salt Waste Processing Facility (SWPF) allowing for SWPF tie-ins, 6) SWPF will be operational by May 2013 with SCDHEC approval, 7) SWPF tie-ins will only require a four month outage of DWPF operations beginning February 2013, 8) Tank 48 waste treatment will be complete and available for unrestricted service by December 2014, and 9) Tank 50 will be available for unrestricted service with higher levels of radioactivity by October 2011, and 10) the design life time of the DWPF melter remains at 68 months even though the melter will be processing significantly more canisters per year. (It should be noted that the simulation software, "SpaceMan Plus", integrates facilities tied directly to the tank farms including salt processing facilities, DWPF, and Saltstone Processing Facility (SPF). The software was designed to improve planning for the Liquid Waste activities and has been in use since 2004.)

Comments:

The Liquid Waste System Plan is an excellent planning document. It discusses the critical paths that must be followed/completed to successfully achieve the goals of the Plan. It is anticipated that the Plan will be a living document and will require multiple revisions as additional information becomes available. In fact, SRR contract requires that the system plan be reviewed and revised annually. The Plan contains many technical and programmatic challenges that will require careful management by both DOE and SRR and its success will require close coordination of many large operating facilities.

Savannah River Site Citizens Advisory Board

Because of the required technology improvements and large number of assumptions that must be realized to meet the goals outlined in the Liquid Waste System Plan it is important that the public and the Citizens Advisory Board be informed of the progress and status of the Plan. This request is documented in the Recommendation given below.

Recommendation:

The Savannah River Site Citizens Advisory Board (SRS CAB) recommends the following:

1. Semi-annual review, starting the 4Q 2010, be conducted that discusses the status of the bases inputs and assumptions for the Liquid Waste System Plan. If these inputs and assumptions have changed then the impact of these changes should be discussed.
2. Semi-annual review of Salt and Sludge Processing Operations including MCU & ARP, DWPF, Saltstone, and base operations supporting these facilities.
3. Semi-annual review of Tank Closure timing and the overall program Critical Path items with emphasis on changes from the previous review.
4. Review of the ten highest programmatic risks that are embedded in the Liquid Waste Plan.
5. Review/status of the criticality studies relating to plutonium disposal in DWPF.