

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 7, 2001

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director

**FROM:** R. T. Davis/ T. D. Burns

**SUBJECT:** SRS Report for Week Ending December 7, 2001

Staff members Andrews, Bamdad, Coones, Deplitch, and Shackelford were on-site this week to review storage and disposition plans for site inventories of thorium and depleted, natural, and low-enriched uranium. The staff also looked at the integration between the various hazards assessments for the facilities associated with storage of these materials.

**Salt Processing:** A Request for Proposals was issued on Wednesday for the design, construction, and commissioning of a pilot-scale Salt Waste Processing Facility to demonstrate Caustic Side Solvent Extraction technology. It is envisioned that this pilot facility would have the capability to process a portion of the salt waste inventory for final disposal. DOE intends to award two competing contracts through facility conceptual design, and then down-select to one contractor for subsequent design development and construction.

**HEU Blend Down:** In late August, WSRC submitted the project baseline (i.e., critical decision 2) to DOE for approval (site rep weekly 8/31/01). Subsequently, an external independent review team reviewed the baseline and identified several findings. WSRC has responded to these issues and NNSA currently expects to approve the baseline next week. One key remaining issue is verification that the LEU product will meet TVA purity specifications. Analysis of HEU solutions after processing through 2<sup>nd</sup> Uranium Cycle indicates that the material will meet specifications for plutonium and neptunium contamination. Additional samples will be analyzed and tanks will be cleaned to help ensure product purity. However, WSRC did identify unacceptable levels of iron and sulfur in the HEU product stream, which were approximately 2 and 4 times the TVA specification, respectively. Analysis results of HEU contained in the Enriched Uranium Storage tank in 1998 showed significantly less iron and sulfur (i.e., within the TVA specification). The most likely source of this contamination is carryover of ferrous sulfamate in a 2<sup>nd</sup> Uranium Cycle mixer-settler. WSRC is verifying the source, evaluating operating parameters, and performing plant testing to resolve this issue.

**Tritium Consolidation & Modernization:** On Wednesday, NNSA completed their validation review of the WSRC Readiness Assessment for restart of the modified Z-Bed recovery system (site rep weekly 11/16/01). Upon WSRC completion of corrective actions for three relatively minor pre-start issues, NNSA signed out a letter Thursday approving start-up. The system is being brought up to temperature in preparation for the first recovery run expected this weekend.

**HB-Line Phase II:** WSRC performed a root cause analysis to address issues associated with the presence of cesium in the plutonium solution received from H-Canyon (site rep weekly 11/30/01). Corrective actions include revision of procedures to ensure impurities are considered and development of a formal technical baseline for transfer of process materials between facilities. DOE-SR will validate closure of corrective actions. WSRC plans to proceed with equipment calibrations next week.