

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 11, 1998

**MEMORANDUM FOR:** G. W. Cunningham, Technical Director  
**FROM:** J. Kent Fortenberry  
**SUBJECT:** SRS Report for Week Ending December 11, 1998

**Soil-Structure Interaction Modeling Errors** - As a result of the potential misapplication and resulting modeling errors using the computer program *System for Analysis of Soil-Structure Interaction* (SASSI) reported at INEEL recently, a review was conducted of all SASSI analyses performed for SRS facilities. WSRC has completed these reviews and has concluded that the potential modeling error was not made in any SASSI analysis performed for SRS facilities.

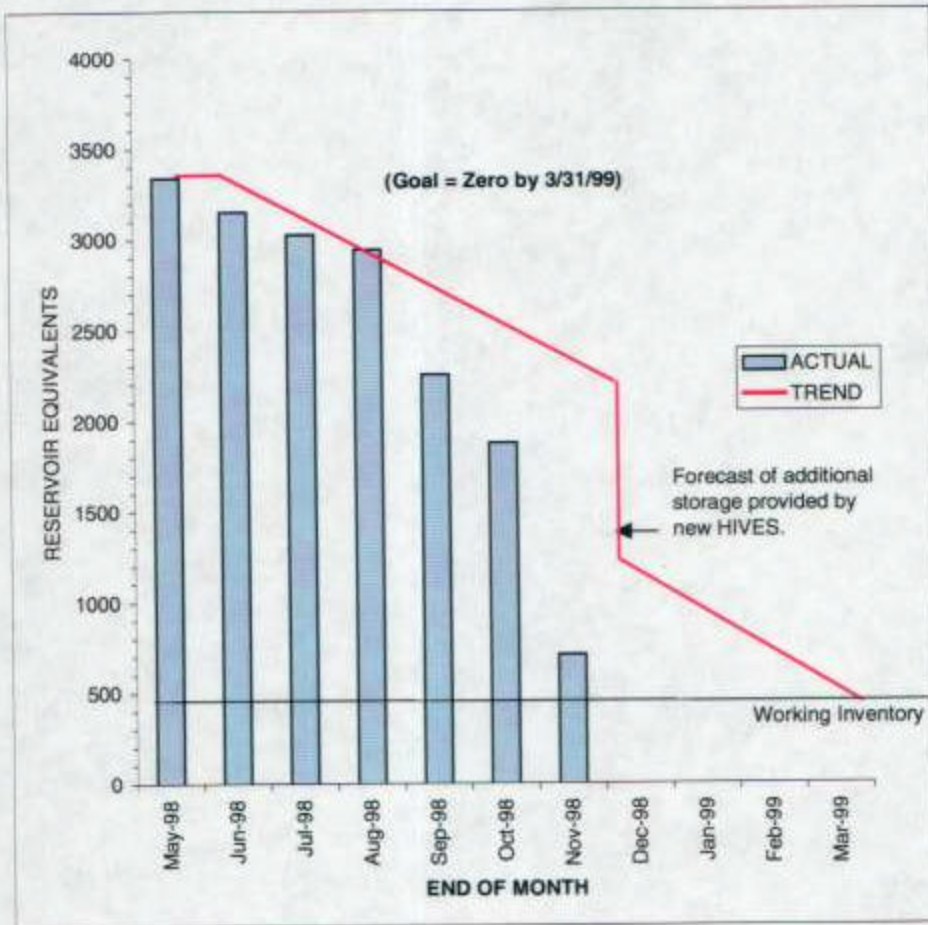
**Tritium Reservoir Storage** - In a July 10, 1998 letter to the Board, DOE-SR committed to a plan and schedule for relocating all tritium reservoirs in long term storage to Highly Invulnerable Encased Safes (HIVES). As reported previously, WSRC has already procured and installed the additional HIVES. Aggressive actions to relocate reservoirs to the HIVES, and good progress in tritium reservoir unloading, will allow meeting this commitment significantly ahead of schedule. The performance indicator developed to track progress toward this commitment is attached.

**High-Level Waste Salt Disposition Alternatives** - The DOE Independent Project Evaluation (IPE) Team provided a final outbrief this week. The team concluded that the WSRC process for selecting an alternative to replace In-Tank Precipitation (ITP) was exemplary. Also, the IPE team agreed with WSRC that two of the final four alternatives should be dropped from consideration (Direct Grout because of regulatory and institutional uncertainties and Caustic Side Solvent Extraction because of technical immaturity). However, the IPE team did not agree with WSRC that there was enough information at this time to discriminate between the two remaining alternatives (Small Tank ITP and CST Ion Exchange). The IPE team compared these two remaining alternatives in four categories:

- (1) Cost: Contrary to the WSRC conclusion that there was not a significant cost difference, the IPE team concluded that CST Ion Exchange represented potentially significant life cycle and HLW system interface cost advantages.
- (2) Technical Maturity: Contrary to the WSRC conclusion that CST Ion Exchange lacked the technical maturity of Small Tank ITP, the IPE team concluded that both alternatives have equally significant technical uncertainties.
- (3) 'Benzene': The IPE team pointed out an inherent objection to a process that generated an unwanted material. The team also discussed the ISO 14000 philosophy of looking for alternatives to processes that generate an environmentally hazardous material.
- (4) Other (schedule, flexibility, and affect on SRS mission): The IPE team did not provide any discrimination in this category.

In conclusion, the IPE team recommended that WSRC complete the necessary R&D activities to allow a final selection between CST Ion Exchange and Small Tank ITP within the next 9 to 12 months; that WSRC identify measurable criteria for making this final selection; and that WSRC initiate conceptual design, focusing on aspects common to both alternatives. The team also recommended implementing an aggressive tank waste management initiative to explore ways to relieve the time restraint. The IPE team report should be available next week. A report of the DOE-SR review (see 11/20/98 weekly report) should also be issued next week. A final DOE-SR recommendation to EM-1 for HLW salt disposition will occur later this month.

# TRITIUM-FILLED RESERVOIRS IN VAULT STORAGE OUTSIDE OF HIVES



**GOAL:** Eliminate storage of reservoirs outside of HIVES by 3/31/99.

**BASIS:** Data represents all reservoirs stored in Vidmar Cabinets and on carts. An estimated working inventory of 500 reservoirs is needed to support operations and is not included in the target.

**STATUS:** We continue to work unloading efforts as a high priority. Installation of HIVES units was completed in October. Reservoir placement into the new HIVES was completed in November. Anticipate meeting goal ahead of schedule.