

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 22, 2003

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
J. J. McConnell, Deputy Technical Director
FROM: R. T. Davis/ T. D. Burns
SUBJECT: SRS Report for Week Ending August 22, 2003

HLW Inadvertent Transfers: During the last two weeks, two inadvertent transfer events occurred in the high-level waste tank farms. The first incident occurred during a transfer of Defense Waste Processing Facility recycle material from Tank 22 to the 2H Evaporator feed tank (Tank 43). Leakage across a failed valve resulted in approximately 940 gallons of waste being sent to H-Pump Tank 10 (HPT-10). The second incident occurred during a transfer between the drop (Tank 37) and feed (Tank 32) tanks for the 3H Evaporator. A valve that was improperly left open resulted in approximately 1,400 gallons of waste being sent to Tank 30.

Subsequent investigation of these two inadvertent transfer events revealed problematic non-compliance with the transfer control procedures. In the first incident, level readings in HPT-10 were not being taken as required to detect potential leakage from the intended transfer path. In the second incident, the isolation valve that was errantly left open was not verified to be closed as required by procedure prior to initiating the transfer. Given the important safety function that the transfer control program plays in protecting a fundamental safety basis assumption (i.e., no more than 15,000 gallons of misdirected waste), it is imperative that this program be executed in strict accordance with applicable procedures. The site reps will continue to follow DOE-SR and WSRC efforts to ensure similar break-downs in disciplined conduct of operations and procedural compliance are not repeated.

Low-Curie Salt: Although the July 2, 2003, Idaho federal district court ruling has hampered DOE's accelerated clean-up plans in the near-term (site rep weekly 7/11/03), DOE continues to pursue alternative options to allow for tailored treatment (i.e., something other than deep geologic disposal) of waste streams containing relatively low levels of radioactivity. These options include both potential judicial appeals and legislative changes to the Nuclear Waste Policy Act to explicitly clarify DOE's authority to make waste treatment and disposition determinations based on the hazard posed by specific waste streams.

Sampling and characterization of salt waste continues in the tank farms to establish the technical viability of dispositioning some of this waste in on-site grout vaults via the Salt Waste Processing and Salt Waste Disposal facilities. Specifically, DOE wants to confirm expectations that salt-cake wastes contain only low levels of radioactivity from cesium and actinide contamination.

Recent results from samples of dissolved salt-cake in Tank 41 indicate that the cesium and actinide contamination levels are higher than expected, but still low enough to make on-site disposition in grout technically feasible (site rep weekly 7/4/03). In response to the Tank 41 results, WSRC is exploring improvements in the salt dissolution process to minimize salt-cake contamination and evaluating the efficacy of several salt-blending options to ensure technically acceptable contamination concentrations are not exceeded in localized batches of dissolved salt-cake. Additionally, WSRC is reassessing earlier estimates of how much salt-cake may need to be processed through an Actinide Removal Facility (Building 512-S) to be technically acceptable for on-site disposition.