DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 28, 2001

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: R. T. Davis/ T. D. Burns
SUBJECT: SRS Report for Week Ending December 28, 2001

DWPF Operations: Final adjustment of the first of the sludge batch 2 material was completed over the weekend, and canister production resumed on Christmas day. After completing two canisters, pouring operations were suspended due to clogging of the pour spout. Cleaning of the spout requires repositioning of the pour turn-table. In attempting to reposition the turn-table, a broken driveshaft in the drive system was discovered. Preparations are underway to decontaminate the turn-table to support driveshaft repairs.

HLW Tank Sump Flammable Vapors: While preparing to replace a suspect conductivity probe in the Tank 40 secondary containment leak detection sump, a significant concentration of hydrogen was detected in the sump. Subsequent inspections of the secondary leak detection sumps for all tanks of similar design were initiated. Several were found to have elevated hydrogen concentrations ranging from 4% to 45% of the Lower Flammability Limit.

The secondary leak detection systems with elevated hydrogen concentrations have been vented, and periodic (twice per shift) sampling showed no appreciable in-growth of hydrogen in the vented systems. The periodic sampling, however, was terminated once WSMS calculations were completed indicating that a deflagration in these secondary leak detection systems would not degrade the structural integrity of the tanks or mobilize the waste stored therein.

This is the second time in the last two months that a significant hydrogen concentration has been found unexpectedly in underground process support equipment in the tank farms (site rep weekly 11/23/01). Of particular concern to the site reps is that the source of the hydrogen has not been determined in either case. Until a source is identified, it remains prudent to identify and monitor similar process support equipment in which a deflagration may lead to unacceptable safety consequences.

Canyon Ventilation Upgrades: The Canyon Exhaust Upgrade Project was intended to install new diesel generators and upgrade the F and H-Canyon ventilation systems. Over the last few years, cost increase and schedule delays have occurred. Recently, WSRC proposed a reduction in scope for this project (approximately $6M). An additional $10M and 20 months will be required to complete the other remaining scope (as compared to the 1998 cost and schedule baseline). The proposed scope reduction includes replacement of two exhaust fans in F-Area and one in H-Area. DOE-SR has requested WSRC to provide adequate justification that the proposed scope reductions will not impact safe and reliable operation of the canyon ventilation systems. DOE-SR also noted that schedule delays and project scope reductions appear to have been caused by project management problems. WSRC will perform a root cause evaluation of problems encountered in project planning and execution.