DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 13, 2009

TO: T. J. Dwyer, Technical Director
FROM: M. P. Duncan and M. T. Sautman, Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending February 13, 2009

DOE Staffing: In response to the Board's June 25, 2008 reporting requirement, DOE made presentations to the Board in August and November 2008 on their plans to fill critical technical positions and indicated the number of authorized positions. Despite that, the Deputy Managers have decided not to fill 7 critical Safety System Oversight/Facility Engineer and 2 critical Facility Representative positions. (1/16/09 and 4/25/08 reports)

F-Tank Farms: After removing ~70% of the waste from Tank 18, the sand mantis tilt wheel became detached from the tilt arm. Unlike the Tank 19 unit where the tilt arm itself became detached (12/12/08 report), the tilt arm is still attached to the Tank 18 unit. This allows the sand mantis to be maneuvered although there is more of a gap between the front blades/educator and the tank bottom. Unfortunately, the three forward/downward spray nozzles also appear to be plugged. Repairing the Tank 18 unit would require the installation of a new tank riser in order to remove the failed unit. The Site Rep also observed workers mock-up how they plan to raise and repair the failed Tank 19 sand mantis. Repeated practices have reduced the estimated repair time to 4½ minutes. This is important because the extremity dose rate near the failed unit is expected to be ~200 mrem/minute.

WSRC recently completed chemically cleaning Tank 6 with oxalic acid. Last week, a Tank 6 to 7 transfer was shut down because purge ventilation system parameters were approaching their limits. An inspection of the flexible duct found ~1 liter of powder at a bend below the stack extension. Engineers believe that this powder formed during chemical cleaning, but the exact reaction is still being investigated. Several gallons of liquid were also found in a low point in the flexible duct.

Interim Salt Disposition Project: Modular caustic side solvent extraction unit operations were shut down after samples of the Strip Effluent Hold Tank (SEHT) were found to be as much as 150 times the Defense Waste Processing Facility limit. This was unexpected because the solvent concentrations were nearly two orders of magnitude higher than that found upstream of the coalescer and decanter. The Solvent Hold Tank, SEHT, and the Contactor Drain Tank share a common header and sampler. Operators completed an isolation valve integrity test that showed organic leakage past isolation valves for other tanks in the system. This leakage cross-contaminated the SEHT samples. Initial modifications have not fixed the problem so far. Repairing or replacing these very inaccessible valves would be a major undertaking requiring plasma arc welding and removal of the roof. At 512-S, engineers are trying to raise the filtrate temperature and pH because the flow rate through the secondary filter is 70-75% below the desired rate.

H-Canyon: Due to truncated communications and operator inattention, ~300 lbs of manganous nitrate (a neutron poison) were inadvertently transferred to the wrong tank. The operator was using the right procedure, but performed the wrong section which caused the valves to be lined up to the wrong tank. The transfer did not cause any processing upsets. In addition, transfers to Tank 50 were suspended again (1/23/09 report) after sample results indicated that solvent concentrations exceeded those in the recently approved Waste Acceptance Criteria deviation.