DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 22, 2008

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 August 22, 2008

F-Tank Farms: The Tank 18/19 Mechanical Waste Removal contractor Readiness Assessment resulted in 19 findings, several related to conduct of operations. For example, while a RA team member observed a subcontractor operator perform rounds, the operator was not able to locate a gage and was observed reporting a fictitious reading. (That operator was later fired). After the Site Rep discussed observations of independent verifications, the facility decided to provide training to operations staff to reinforce expectations for the independence of these verifications. (See 8/15/08 report). The two sand mantises had not been inserted inside the tanks to reduce the exposure time of the equipment to the waste. These insertions will be delayed because it was discovered that the tether cables were ~20-25' too short.

In light of recent transfer difficulties, the Site Rep met with engineers to discuss the technical basis of the minimum flow rates for transfers. Transfers out of tank 25 are complicated by the desire to balance the dissolution rate (i.e., maximize salt concentration) with the transfer rate and volume. Unlike dissolution, the available literature for transferring these saturated salt solutions long distances mostly consists of a 40-year old report and a to-be-reviewed Hanford report. The transfer will not be resumed until November to allow the replacement of a valve whose design and/or performance may be contributing to the reduced flow and to further evaluate the flowsheet and a possible transfer pump replacement.

Modular Caustic-Side Solvent Extraction Unit: Since operators replaced the Decontaminated Salt Solution coalescer media, the problematic pressure drops have been much lower. Preliminary analysis of the second media still showed fouling by bayerite, but much less steel debris and no free solids.

H-Tank Farms: Operators suspended a procedure for sampling the 2H Evaporator overheads (OH) collection tank while they pursued a deviation for the Waste Acceptance Criteria (WAC). This left a 3-way switch in the OH Pump #1 position. Meanwhile, they started performing steps to support adding caustic to the Evaporator pot using a different procedure. They did not redo the pre-start verifications for this operation since they had been previously been performed. They overlooked the fact that these steps would have switched the 3-way switch to the chemical cleaning system position. When the operator later pushed the start button it inadvertently transferred the contents of the OH collection tank to the Effluent Treatment Project (ETP). While this violated the WAC (deviation was still under review), it did not violate the ETP authorization basis inventory limits.

F-Area: On the second day of loading drums of depleted uranium oxide into railroad cars (see 8/1/08 report), a pallet of four drums slid off the slings, tipping the drums and pallet on their side. No material was released and no one was injured. When the supervisor arrived at the scene, he had to stop the workers because they were preparing to flip the drums back up without stopping to conduct radiological surveys or discuss recovery actions with personnel in charge of this activity. Furthermore, hoisting and rigging personnel had observed that the previous nine lifts had all leaned about 4" to one side, but did not stop to adjust their rigging. The Site Rep observed drum loading later in the week. The new platform provided a sturdier base and the switch from a frame to a 4-way sling eliminated the tilting previously reported.

Tritium Extraction Facility: The Breaching Tool Robot failed after cutting about halfway through a Tritium Producing Burnable Absorber Rod. It took several days until the stuck rod could be removed.