

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 23, 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 January 23, 2009

Loss of Power: As part of the power company's efforts to troubleshoot a spurious, recurring bus voltage alarm, they replaced a failed DC power supply in a remote terminal unit cabinet. Shortly thereafter, H-Area experienced a total loss of normal 13.8 kV power when the 115/13.8 kV T1 and T2 secondary 13.8 kV breakers in the substation opened. Affected facilities included H-Canyon, HB-Line, all tritium facilities, H-Tank Farms, the Defense Waste Processing Facility, and the Solid Waste Management Facility. Safety-related diesel generators started up as designed. An ongoing transfer at H-Tank Farm and Second Uranium Cycle at H-Canyon were safely shut down. When the power was unexpectedly resumed a few minutes later, it caused the H-Canyon cooling tower basin to overflow since both diesel and electrical-driven pumps were then providing make-up feed to the tower. Although the power company is still investigating the cause of the power loss, all parties have agreed that future work will be done in local versus supervisory mode to prevent future breaker trips.

H-Canyon/Saltstone: Engineers realized this week that sample results for H-Canyon waste being transferred to Tank 50 for eventual processing at Saltstone did not meet the recently revised Saltstone Waste Acceptance Criteria's (WAC) much lower limit for tributyl phosphate. Operations at Saltstone were placed on hold. A Tank 50 sample is being analyzed to see if Tank 50 currently meets the WAC. An investigation is looking at why these revisions were not communicated to H-Canyon personnel. Last year, H-Canyon personnel reconfigured some of their piping routes to segregate waste streams and allow for some of them to be processed at Saltstone rather than disposed as high-level waste. This revised WAC could cause this waste minimization effort to be reversed.

Actinide Removal Process: The Site Rep observed the first transfer of salt batch 2 waste from Tank 49 to 96H. Resumption of salt processing will occur shortly.

Respirator Issuance: During an extent of condition review following the issuance and use of the wrong type of respirator cartridge (i.e., use of a particulate only cartridge for an organic/ radiological task), a few dozen other suspicious entries were identified in the respirator issuance database that could indicate additional instances across SRS where the incorrect cartridge may have been used.

K-Area: Radiological control personnel routinely inspect gloves for contamination on the K-Area Interim Surveillance glovebox prior to use. During an inspection this week, contamination was found on the external surface of a glove. A closer look revealed a small hole. Surveys of the room did not locate any further contamination. The glove will be sent to the Savannah River National Laboratory for analysis as it was not immediately clear what could have caused the breach.

Savannah River National Laboratory: The safety analysis evaluates accident scenarios involving liquids in thick-walled metal containers that could pressurize in a facility fire, subjecting the contents to a potential flashing spray release. The theoretical radiological consequences of a flashing spray are greater than 300 times higher than those for a normal boiling scenario. A Potential Inadequacy of the Safety Analysis was declared after a researcher performing an experiment-specific hazard analysis noted that the screw-top polymer vessels normally used to digest high-level waste may be subject to the same scenario.