DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 26, 2009

TO: T. J. Dwyer, Technical Director
FROM: M. T. Sautman, Site Representative
SUBJECT: Savannah River Site Weekly Report for Week Ending June 26, 2009

Plutonium Processing: The Independent Review Team (IRT) reviewed the Pit Disassembly and Conversion Capability Alternative Analysis, which had identified the K-Area Complex (KAC) Combo as the preferred alternative. While the IRT felt both options were viable, the IRT concluded that the Alternatives Analysis did not satisfy several of its criteria. For many criteria, the documentation did not provide a compelling justification for the KAC Combo, especially considering its uncertainties and immaturity. Recommendations included having a single DOE office manage the project, including the 5 MT Plutonium study and early pit storage in the scope, performing fire tests on 3013 containers, and resolving maturation issues with the hydride/dehydride and mechanical debonding technologies. A potential third option, a hybrid of the other two, was also suggested.

F-Area: For the fifth time in 2009, a safety-related diesel generator in F-Area was declared inoperable. The 235-F generator failed its monthly load test exactly like it did in April (see 5/1/09 report). A 1995 SRS Quality Alert identified that these breakers had a defect that could cause spurious trips, but the trip devices for three breakers at 235-F had not been replaced with a redesigned trip device. While this issue was known at the SRS Breaker Shop, there was no procedure requirement to check serial numbers when they tested it in April. The affected trip device was replaced with a new one and the generator subsequently passed a second load test.

Operations/Radiological Protection: A number of events occurred this week:

- While performing daily habitability surveys of H-Area Old Manufacturing, an inspector detected significant contamination outside a contamination area. Contamination up to 1.1E+7 dpm/100 cm^2 tritium was detected in the Radiological Buffer Area portions of the Inert Metallography Laboratory (IML) and up to 1.1E+6 dpm/100 cm^2 tritium outside the door to IML. Contamination was also detected in the Radiological Control Organization's (RCO) and another office, in nearby corridors, and on both of the inspector's shoes. All potentially affected workers are providing bioassay samples.
- During installation of a lock-out/tag-out (LO/TO), the H-Canyon recycle vessel vent system was inadvertently isolated. During investigation of this event, SRNS also recognized that another hazardous energy source was missed during development of the LO/TO.
- After a glove failed on a "cold glovebag," a SRNS employee identified a discrepancy between the SRS and manufacturer's shelf lives of safety-significant glovebox gloves. An investigation identified that 200+ gloves were in storage that exceeded the manufacturer's shelf life and that five gloveboxes at the Savannah River National Laboratory had gloves installed that were beyond the recommended shelf life.

H-Tank Farms: The contractor is performing tests to see if the salt processing throughput can be increased by reducing the time waste is agitated after monosodium titanate (MST) is added (from 24 to 12 hours) and increasing the feed rate to the Modular Caustic Side Solvent Extraction Unit from 4 to 6 gpm. Preliminary sample results look promising although the differential pressure for the Decontaminated Salt Solution coalescer may have an upward trend. The Board staff also observed the transfer of half the waste from Strike Tank 1. This tank inadvertently received a double batch of MST last week.

Contract Transition: Savannah River Remediation conducted their Transition Readiness Review for DOE. The Site Rep requested copies of the significant pre-existing conditions that were identified during their due diligence review.