DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 27, 2010

TO: T. J. Dwyer, Technical Director
FROM: M. T. Sautman and D. L. Burnfield, Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending August 27, 2010

Tritium: Several members of the DNFSB staff reviewed the safety basis for tritium this week. While conducting this review, the staff observed a worker using the wrong version of the procedure to perform a functional check of an oxygen analyzer. The problem stemmed from a document control system that allowed the informally trained worker to retrieve all versions of the procedure rather than just the most current. This problem was not restricted to tritium. SRNS is taking steps to train the workforce and is trying to make the database less prone to human error while maintaining its flexibility.

H-Canyon: SRNS significantly expanded their lines of inquiry for the spent fuel/3009 upgrade Documented Safety Analysis (DSA) readiness review in order to increase the focus on worker performance during evolutions and drills, knowledge and implementation of new safety controls, and procedure adequacy.

Criticality Safety: DOE-SR comments on the proposed Criticality Safety Program Description Document are responsive to Board staff feedback (see 7/9 and 8/13 reports). Mitigated high consequence, anticipated or unlikely scenarios that only have administrative controls (AC) and no specific administrative controls (SAC) will require a documented review of scenario frequency and all available engineered controls along with DOE concurrence. DOE-SR has asked that SRNS revise their functional classification criteria for criticality controls. Furthermore, instrumentation that supports a safety-significant AC or SAC will be classified as safety significant.

Emergency Planning: The site rep met with SRNS and DOE-SR to discuss their preparations for major accidents (see 5/14, 6/11, 6/18, and 7/2 reports). With the exception of seismically-induced tank explosions, SRS has conducted drills within the last 2 years for the five events with the highest dose consequences. SRR has begun training drills for deploying emergency portable ventilation system equipment in preparation for larger-scale seismic drills. Furthermore, SRR is evaluating process controls that might significantly reduce the public dose consequence from a waste tank explosion. Drills will resume at 235-F in September with a tornado drill and other contractors are being invited to participate. SRNS continues to work on a seismic drill that will impact multiple facilities. The site rep is also reviewing SRS recovery procedures.

Saltstone: Last Sunday, an overshoot of dry feeds caused an automatic initiation of setback. Although this should have stopped dry feeds to the mixer, data indicates that grout continued to be made during and after the 90-second salt solution flush. During the automatic shutdown sequence, the grout pump failed due to a variable frequency drive amperage overload and pump lubricant spilled onto the floor. Operators repeatedly tried to restart the grout pump without success, but their grout line flushes and "pig" launches kept the grout line clean. Subsequent inspections found unwetted dry material from the hopper to the grout pump. Engineers are still investigating why dry materials continued to be fed from the hopper. Cleaning and/or rebuilding the hopper and grout pump may take until mid- to late September.

HB-Line: SRNS introduced the Low Assay Plutonium (LAP) capsule that they previously removed from the container into the northline glove box. (See 8/20/10 report). They successfully opened the capsule and inner container. They then sampled LAP material from the working can and shipped the LAP sample to F-Area. The dissolver was charged with material from the capsule and processing of the material has begun.

Solid Waste Management Facility (SWMF): The site rep observed workers remove the first low risk drum from Pad 16 since the breached drum event. Contamination levels were very low.