

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 26, 2011

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 26, 2011

Nuclear Safety: SRNS declared Potential Inadequacies in the Safety Analyses (PISA) for twelve facilities plus some transportation safety bases. The PISAs address whether the dose consequence calculations end up double counting the impact of surface roughness if it uses both SRS meteorological data and the surface roughness adjustment in MACCS2 (see August 12 and 19, 2011 reports). SRNS will reduce the material-at-risk at some facilities as a compensatory action. The largest impact of this issue is at the Solid Waste Management Facility (SWMF) because SRNS used a surface roughness of 30 and 100 cm in the dose calculations for collocated workers. A positive Unreviewed Safety Question was declared for SWMF. SRNS proposed no compensatory measures until the overall issue is resolved.

Transuranic (TRU) Waste: Due to imprecise communications between the person-in-charge of transuranic waste shipping at SWMF and a truck driver, a shipment of six boxes of TRU waste arrived at F-Canyon without being authorized and without any preparations for the receipt. As a result, vehicle traffic was not secured per the specific administrative control (SAC) nor was the truck escorted as required by the Technical Safety Requirements. The DOE standard for SACs discusses the use of redundancy, independent verifications, human factors, and training to increase the reliability of SACs. The SWMF transfer procedure did not highlight that the steps impacted F-Canyon's safety basis nor did the steps related to getting authorization and releasing the shipment require initialing or verification. Because a step stated to request vice obtain authorization, the PIC continued to perform steps after requesting, but not receiving authorization. The driver did not see the procedure nor did she have any knowledge of the SAC requirements for receipt of TRU waste at F-Canyon.

K-Area: After performing harmonics monitoring, mechanics closed a capacitor bank to return the electrical system to its original configuration. However, this caused high in-rush current and a voltage surge. When a relay failed to open and a ~60 year old transformer failed, three breakers opened and power was lost to all of K-Area for about 3 hours. Backup diesel generators started. The shift manager had to communicate protective actions (i.e., evacuate) through battery-powered telephones, since the loss of power caused the public address system, radios, and most phones to become inoperable. Operations staff removed a 3013 can from the californium shuffler and workers finished loading a truck with heavy water drums so it could be shipped. During the event, the safety-significant shuffler fire suppression water supply low pressure switch activated.

Defense Waste Processing Facility: For the second time in two months (see July 1, 2011 report), workers began work on a piece of equipment that was still energized. The energized wires were not identified during the drawing reviews, lockout approval, or the determination of safe energy state.

Tank Farms: After averaging 85,000 alarms a year, the number of alarms for H-Tank Farms and the Effluent Treatment Plant is already approaching 230,000 this year. However, about 55% of the year's total "alarms" actually reflect two events where a controller card with a bad connection caused tens of thousands of bad entries in the alarm history file within a matter of seconds. A month-long control room outage also resulted in many alarms in April. After a several month gap, SRR is once again having engineers work on reducing the number of nuisance alarms. (See October 16, 2009).

Saltstone: SRR resumed grouting operations after being shut down in early July due to a line plug.