

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 19, 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 November 19, 2010

**Saltstone:** SRR grouted salt waste for the first time since August (see 8/27/10 report). The first run processed existing material in the salt feed tank and two additional runs processed material transferred from Tank 50. The processing only encountered minor difficulties.

**Closure Project:** Earlier this month, workers attempted to remove the Traveling Wire Flux Monitor cable from the Heavy Water Components Test Reactor vessel. The contractor had previously reviewed the available documentation regarding reactor operation, which indicated that the cable had never been irradiated and had planned for this scenario; although DOE had previously warned SRNS that if the cable had been actually irradiated, it might pose a high radiation hazard. Work was stopped when electronic personal dosimeters alarmed and radiological protection inspectors measured dose rates up to 8 rad/hr at 5 cm. DOE-SR recently sent SRNS a letter stating this activity was conducted without understanding the potential risks and rewards and that the work package instructions were remarkably broad and lacked specific guidance. DOE has requested an assessment of the underlying causes.

The site rep observed a mock-up and the partial grouting of the P-Reactor vessel. Workers mixed up 2000-lb bags of grout. The grout had a near neutral pH to reduce hydrogen gas generation from the reaction of grout with aluminum components left in the vessel.

**Ventilation Systems:** Two of the four safety-class H-Canyon exhaust fans are inoperable because of bearing issues (i.e., inadequate lubrication and high temperatures). SRNS is reevaluating their lubrication program and mounting techniques because they had just replaced the bearings of one fan earlier this year and it failed before the first preventive maintenance interval. HB-Line Technical Safety Requirements do not allow any dissolution while the canyon has fewer than three exhaust fans operating. Meanwhile, one of the two required exhaust fans at 235-F has been inoperable since last week because of excessive vibration and high bearing temperatures also.

**F-Canyon:** After puncturing one of the inner containers in a transuranic waste drum, a remediation technician observed a small amount of smoke coming from the hole. All workers except a fire watch evacuated the room and operations staff notified the shift operations manager and fire department. The smoke continued to wisp out of the hole for approximately one hour. An infrared camera did not detect any temperature increase nor was there any indication of corrosive fumes. Based on all the evidence, engineers strongly suspect the cause of the smoke to be titanium tetrachloride (see 4/23 and 4/30/10 reports), but this suspicion cannot be confirmed since there are no residues or fumes to sample. Engineers are currently reviewing the data from this event and the previous event to determine the necessary controls for opening this container and stabilizing any reactive material present.

**Specific Administrative Controls (SACs):** An EM-20 review concluded that SACs are adequately implemented at SRS in accordance with DOE-STD-1186. The team identified 10 findings. The team's main finding was that many SACs that attempt to implement programmatic elements do not provide or reference specific criterion or calculation methodologies that are documented in the DSA. This finding applies to 11 SACs at tank farms (e.g., hydrogen generation rate control) and the Defense Waste Processing Facility (e.g., waste acceptance criteria).