

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 7, 2012

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 September 7, 2012

Savannah River National Laboratory (SRNL): SRNL personnel were preparing to transfer transuranic (TRU) waste drums from the laboratory to the Solid Waste Management Facility. In lieu of performing a transfer survey, radiological protection personnel performed a shipping survey. However, the requirements for a shipping survey precluded performing the survey in the high background area where the drums were stored. As a result, the waste operator moved the drums out of the storage room and into the corridor, but did not obtain the necessary approvals from safeguards and security to do so. This caused the safeguards and security personnel to direct the operator to move the drums back into the storage room. The operator moved the drums back into the room without obtaining a permit that included criticality safety requirements. The personnel involved could have called a time out and avoided making a mistake in at least three separate instances; but failed to do so.

H-Tank Farms: The floor of H-Tank Farm diversion box 2 (HDB-2) slopes and flows into a 4 inch trough in one corner. The dip tube (bubbler) measures the liquid level in HDB-2 from the bottom of this trough and alarms at a liquid level of 6 inches. A conductivity probe measures the liquid level in HDB-2 in an adjacent corner and is set at 5 inches from the floor or approximately 9 inches from the bottom of the trough. The Technical Safety Requirement (TSR) for HDB-2 is based upon maintaining adequate vapor space to preclude elevated hydrogen concentrations and is tied to the conductivity probe settings. H-Tank Farm personnel preparing for a transfer noticed that the bubbler level was above round sheet limits. Because they did not fully understand the design of the diversion box they reasoned that the level was actually above the TSR limit. Furthermore, they concluded that it had been greater than the TSR level for a period greater than the limiting condition of operations would allow without ensuring the hydrogen concentration was acceptable. Thus they declared a TSR violation and issued an occurrence report. In fact, the level was never above the TSR level; but was actually between the bubbler alarm level and the conductivity probe alarm level and need not have been reported. This incident, however; revealed several weaknesses in training, level of knowledge, procedure clarity, and adherence to site standards.

Defense Waste Processing Facility (DWPF): SRR completed an assessment of their implementation of TSRs at DWPF. The team identified that some of the implementing procedures had the wrong limits. For example, the allowable range of American Petroleum Institute gravity of diesel fuel oil was broader in the procedure than in the TSR. The team also identified that although a specific administrative control required a flammability calculation for three tanks, the actual calculation only addressed two of the tanks. SRR intends to conduct a similar review for tank farms shortly.

Saltstone: After some delays and an aborted run, SRR began processing Tank 50 solution this week. SRR operated Saltstone for 4 hours Thursday and was hoping to grout for 6 hours Friday.

H-Canyon: SRNS conducted a limited scope readiness assessment for the Sodium Reactor Experiment Phase II used fuel campaign. This phase included five SRE fuel bundles and some additional high aluminum/low uranium fuel bundles that are bounded by the current safety analysis. The team identified relatively minor issues. Dissolution may begin later this month. DOE is currently reevaluating the pace of fuel and plutonium dissolution in light of ongoing uncertainties with next fiscal year's budget.