

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 22, 2010

TO: T. J. Dwyer, Technical Director
FROM: D. L. Burnfield and M. T. Sautman, Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending January 22, 2010

F/H Laboratory: While installing sprinkler hangers above the old control room, a construction worker became contaminated with plutonium-239 on his hands, shoes, and clothing. The area was posted as a Radiological Buffer Area and had no prior history of being contaminated. Furthermore, repeated surveys of the work area beforehand as well as extensive surveys after the event failed to identify the likely source of contamination. Lab personnel are reevaluating how they conduct work above ceiling tiles and the practice of having regular workers take contamination smears for Radiation Protection Division inspectors in difficult locations.

Tritium Extraction Facility (TEF): Last week, approximately 400,000 gallons of water leaked from the fire loop supplying TEF and another building before the break was isolated. This leak significantly eroded the area outside the TEF truck bay and road repairs are in progress.

Tank Farms: The Site Rep attended a contractor Nuclear Safety Council meeting examining the risks of a variable speed drive pump having an overspeed failure and possible controls. SRR engineers calculated the bounding pressure (e.g., highest pump head, maximum motor torque, stall speed, bounding specific gravity, highest temperature, etc.) and then compared it to their weakest pipes, valves, flanges, tees, reducers, and Hanford connectors. SRR reported that in all cases the design pressures exceeded the worst case calculated pressures (e.g., 732 psig in piping). The Site Rep requested a copy of the calculation.

Salt Processing: The Site Reps attended the SRR/Parsons Technical Exchange. SRR discussed recent pump problems at their Modular Caustic Side Solvent Extraction (CSSX) Unit and their plans to replace two pumps with a new design during the February outage. The SRNL ~ 1/10 scale model of salt disposition integration Tank 50 blending is operational and testing with dye has begun. Following the Technical Exchange, the Site Rep walked down the Test Facility that Parsons will use for the CSSX/Cross Flow Filter long-term test. The test rig is nearing final checkout with a complete list of startup and checkout items due by the end of January. Simulant testing is scheduled to begin by the end of February.

SRR High Radiation Laydown Area: The Site Rep walked down the high radiation laydown area that has been established in N area. SRR has placed material that has primarily been removed from F-Tank Farm and is considering placing items from H-Tank Farm here. SRR has adequately controlled the area, but minor upkeep issues with the fence and postings were noted. SRR will need to be vigilant to ensure that more significant degradation does not occur in this remote location.

DOE-SR Nuclear Safety Council: The Site Rep attended the DOE-SR Nuclear Safety Council. SRNS presented the status of the contractor's efforts to revise the facility safety document manual 11Q. This manual contains requirements and guidelines that apply to nuclear safety documentation. The site is undertaking a complete rewrite of the manual. SRNS's presentation did not adequately describe how the lessons that have been learned from past events would continue to be documented.