

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 25, 2006

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: J. S. Contardi/M.T. Sautman, SRS Site Representatives
SUBJECT: SRS Report for Week Ending August 25, 2006

F Area: Analysis of a filter from a portable air monitor indicated increased airborne radioactivity (104 DAC-Hr). The air monitor was used during the transfer of potentially contaminated water from one tanker truck to another. The operation has been performed numerous times without any significant increase in airborne radioactivity. Analysis of the process water revealed very low levels of contamination which are inconsistent with the levels measured on the filter. A critique was held which revealed that the receiving tanker's radiological history was not known. Previously, the tanker had been used to transfer contaminated PUREX solvent. However, the contractor believes the tanker was not flushed prior the most recent usage. This event represents the second event this summer in which a tanker was used without being properly characterized.

Transuranic Waste Remediation: The Site Rep observed waste remediation activities at the Savannah River National Laboratory and the Modular Repackaging System as well as dry runs at F-Canyon. While workers demonstrated a higher sensitivity to puncture hazards and increased tool use (see August 11 and 18 Site Rep weekly reports), the Site Rep discussed potentially unsafe techniques and possible improvements with facility management. The Site Rep's observations related to the use of large screwdrivers to punch through cartons balanced precariously on a tray edge, pushing waste down into a basket by hand, pushing waste with a tool through a bagout port and against another worker's hand that was holding the sleeve open, and awkward cutting of tightly taped plastic with box cutters.

Nuclear Material Stabilization: The Department of Energy (DOE) has recently approved projects to address the continued utilization of H-Canyon and the stabilization of plutonium materials not suitable for mixed oxide fuel. With regard to plutonium stabilization, DOE has selected vitrification within an existing facility in K-Area. DOE has also decided to continue to operate H-Canyon in support of the highly enriched uranium blend down project as well as stabilization of other potentially problematic materials. Additional information on the projects will be discussed by DOE at the next Citizens Advisory Board meeting in September.

Salt Waste Processing Facility: A hazards analysis has identified operational upset scenarios (e.g., misdirected flow, overconcentration) that when combined with a loss of all normal and safety-related purge flows could lead to process vessel explosions that have significantly higher radiological dose consequences. Although tests are still ongoing to better characterize solvent properties, analyses using the limited existing data indicate that co-located worker doses could be as high as 68 or 141 rem (using current meteorology and surface roughness assumptions). The upsets result in increased concentrations that drive higher gas generation rates and source terms. Even with the higher dose consequences, the contractor believes the existing safety significant air dilution system provides adequate protection. These operational upset scenarios are not initiated by seismic events.