

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 14, 2003

**TO:** K. Fortenberry, Technical Director  
**FROM:** D. Grover and M. Sautman, Hanford Site Representatives  
**SUBJ:** Activity Report for the Week Ending November 14, 2003

Tank Farms: Messrs. Troan, Zelinski, and Sautman reviewed authorization basis issues for the upcoming retrieval of the C-200 series tanks. Retrieval of S-112 resumed, but had to be stopped because the receiving tank SY-102 is nearly full and the cross-site transfer has been delayed.

The Site Rep observed the Enhanced Work Planning session and Joint Review Group's review of a work package for removing the mixing eductor from a tank C-106 riser so that a second sluicing nozzle can be installed to help remove some mounds of waste that remain in the tank. The Site Rep later watched operators perform this activity on graveyard shift. After the pump pit cover plates had been removed, the facility representative noticed that one of the authorized workers had not hung up his lock as required by the work instructions. The workers were eventually able to overcome a number of interferences between the eductor and the narrow riser, but eventually had to stop work when radiation levels on the eductor became too high. (III-A)

Plutonium Finishing Plant (PFP): Plutonium oxide processing in the Stabilization and Packaging Equipment (SPE) line was temporarily suspended when contamination was released from the system. An investigation into the leak could not identify the location of the leak but did identify contamination on outer surfaces of furnace one and surrounding floor. The investigation identified that the off gas line for that furnace was blocked likely resulting in a positive pressure in the furnace during operation from the oxidizing atmosphere introduced into the furnace. Furnace one has been isolated from energy and pressurized gas sources pending resolution of the issue (or completion of processing). PFP has modified operating procedures to require periodic inspections and maintenance of the off gas lines for the other three furnaces. In addition, the SPE room is required to be posted as an airborne radioactivity area during furnace operation with the furnaces surveyed for contamination after each operation. (III-A)

K Basins Deactivation: A demonstration of robotic hydrolasing equipment was performed this week in the uncontaminated water retention basins at the 100K area. The system is designed to scabble the K-East basin walls and floor to reduce the source term represented by radioactive contaminants that have migrated into the unlined concrete walls and floor. It is estimated that without the water shielding the dose rates would approach 50 R/hr at the top edge of the basin walls. The hydrolasing head will use high pressure water to scabble the concrete and has a suction line attached to the shroud around the head which will capture the resulting particulate in strainer and filter vessels. It is anticipated that these vessels will be disposed on-site as low level waste. This system also contains sampling capability for the particulate flow and radiation monitoring at the wall surface. Following testing in the retention basin the equipment will be installed in the K-East basin to evaluate the efficiency in removing the source term in the walls. This will be done on the walls separating the basin bays that do not provide confinement for the basin water. (III-A)