

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 11, 2008

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: M. P. Duncan and M. T. Sautman, SRS Site Representatives
SUBJECT: SRS Report for Week Ending January 11, 2008

Interim Salt Disposition Project: The contractor Operational Readiness Review commenced this week with extensive oversight by a Department of Energy line management validation team. Field activities will continue through next week. Messrs. D. Gutowski and C. Roscetti participated in overseeing this review with the Site Reps.

H-Canyon: Last weekend, a cooling coil for the Low Activity Waste evaporator vessel began to leak, which set off a low coil pressure alarm. Engineering decided to repressurize the coil with waste solution still in the vessel because the calculated pressure in the coil was higher than the head pressure in the tank. (In hindsight, the 0.6 psi difference was not very significant, especially when uncertainty was considered.) Shortly afterwards, high alpha and beta activity was detected in the Segregated Cooling Water (SCW) system because waste was leaking into the cooling coil. At that time, the SCW basin was already being diverted to the Effluent Treatment Facility. All H-Canyon processes were shut down and vessels were isolated from the SCW return system. Unfortunately, the procedure used for isolating vessel coils also directed the isolation of the Cash air regulator, which is normally used to maintain ~12-psig air pressure on the coils in the event of a loss cooling water pressure. Afterwards, the cooling water systems were repressurized (except for this evaporator) and equipment decontaminated. Later in the week, there were indications that one of the two dissolvers may have a leaking coil also. This time, the Cash air regulator was not isolated and the coil did not depressurize significantly.

Radiological Control: There were a number of radiological control issues:

- Following a transuranic drum bag cut at F-Canyon, contamination was found on a worker's gloves and outer protective clothing. A highly contaminated (500,000 dpm α) was found on the floor nearby. The large shears, used for performing the cuts, used to be wetted for contamination control and it appears that some drops of contaminated liquid fell to the floor after the cut.
- Two respirators that were cleaned by an off-site vendor were found to be contaminated (up to ~100,000 dpm β - γ).
- At the Defense Waste Processing Facility, when a contaminated, 6-ton yoke was put on the ground (a Radiological Control Area), the plastic bag around it ripped. This allowed contamination that had been painted over to be released and contaminate the asphalt.

An expert in human performance improvement facilitated a common cause evaluation for six recent events involving personnel radiological contamination that required bioassay samples. The team concluded that the technique and work practices of both workers and radiological control inspectors were occasionally sloppy and did not appear to reflect an appreciation of the hazards, especially when dealing with Pu-238. Knowledge of system requirements were stovepiped by functional area. Corrective actions will be identified.