

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 26, 2015

TO: S. A. Stokes, Technical Director
FROM: P. Fox and D. Gutowski Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending June 26, 2015

Plutonium Finishing Plant (PFP). There was a potential uptake and a skin contamination at PFP. It occurred when an airborne radiological release that exceeded the RWP void limit occurred when workers disturbed dust on the floor of the 242-Z tank room while applying fixative. Contamination of 1 dpm was measured on one nasal smear and the reading from the lapel air sampler filter of the same individual showed greater than 1 DAC-hr after correcting for the respirator protection factor. Bioassay evaluation was ordered for all three workers. The event uncovered deficiencies in the process for evaluating lapel air samples. The contractor continues to investigate the event and is reviewing previous lapel air sampler results. The skin contamination event occurred during work to size reduce glovebox HC-9B. A contamination level of 3500 dpm/100 cm² was found on the elbow of one worker. The contamination occurred even though level B suits are used to perform the work. During doffing of the suit, a split was noted in the suit fabric near the individual's foot. The individual was subsequently decontaminated to less than release limits. The contractor paused work on HC-9B. Work will resume after the evaluation is complete and compensatory actions are in place.

618-10 Burial Grounds. The site reps met with the 618-10 Facility manager to discuss recent contamination spreads. Following the start of concreted drum processing, facility personnel discovered small particles of high-strontium contamination migrating within the excavation trench and periodically moving out of the facility due to wind. The cause of the contamination spreads is distinct from the windborne plastic contamination earlier this year. The facility has been performing minimal operations while the contractor attempts to address the situation.

Tank Farms. The contractor declared a Potential Inadequacy in the Safety Analysis for the high temperature scenario postulated for hoses associated with three pumps (see Activity Report 6/19/2015). Thermal calculations to determine if the hoses can exceed temperature limits are continuing. The compensatory measure remains the restriction on use of the affected pumps.

222-S Laboratory. Last week, the contractor discovered several broken glass sample bottles containing waste from Tank AY-101 when unloading the bottles from their shielded pigs to a hot cell. There has historically been little breakage of these bottles. The contractor is evaluating the possible causes including sample off-gassing, bottle quality, rough treatment, and thermal stresses. Laboratory management restricted receipt of samples from the tank farms and implemented a standing order for additional monitoring during the sample receipt and unloading process. They agreed to receive samples from Tank AP-103 at the end of this week on the condition the tank farms use a different type of bottle than the broken ones.

242-A Evaporator. Last week, the contractor completed the evaporator campaign that was paused last month (see Activity Report 5/15/2015). The campaign processed approximately 900,000 gallons of waste removing about 400,000 gallons of water.

Low Activity Waste Pretreatment System (LAWPS). The contractor performed process hazards analysis meetings to support preliminary design of LAWPS.