

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 13, 2011

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending May 13, 2011

Board staff member M. Helfrich was on-site to observe a workshop where the contractor discussed options for treating and immobilizing the sludge that remains in the K West Basin.

Tank Farms: The contractor failed to adequately address the radiological hazards when they developed a work package for removing a 38-foot-long transfer pump from double-shell tank (DST) AN-106. Engineers had calculated there could be as much as 48 gallons of waste retained in this unique pump assembly. Both the work planning team and the reviewing management board failed to recognize that half of the waste could be contained in a barrel around the bottom of the pump assembly until the pump was rotated to a horizontal position. As such, the approved work instructions did not have all the appropriate controls, such as removing the waste from the barrel before workers fully extracted the pump from the DST. Last week, workers removed the pump but were surprised when 10 gallons of liquid accumulated in the thin plastic confinement sleeving when they rotated the pump to a horizontal position. No waste spilled out of the plastic sleeving, which at that time was the only confinement barrier. Workers responded properly to the unexpected conditions and later placed the sleeved pump assembly in a plastic container. The contractor is revising the work package to add more absorbent material to the sleeving so all the free liquids will be captured. Contractor management has resisted suggestions from the facility representatives that this event requires the submission of a near-miss Occurrence Report.

Plutonium Solids in the Tank Farms: The team reviewing the plutonium oxide particles in the tank farm waste provided an update of their progress (see Activity Report 4/22/11). They are arranging for existing tank samples to be reanalyzed to verify the oxide characteristics.

Sludge Treatment Project: Last week, the contractor completed the readiness assessment for the pre-treatment of the sludge stream known as knockout pot (KOP) sludge. The contractor has successfully processed the material from three of the 19 canisters of KOP sludge.

River Corridor Closure Project: The project conducted a workshop to discuss the plans for the remediation of the caissons at the 618-11 Burial Grounds. There are five caissons in the burial ground that contain high-activity wastes produced in the 300 Area facilities during the 1960s. The plan to remediate the waste includes the use of an excavator with a clamshell manipulator on the end of an extended vertical boom. Waste containers would be brought up from the buried caisson piece-by-piece, sorted, and repackaged. The work would be conducted in a confinement structure with HEPA filtration. The project's schedule has a readiness assessment for burial ground remediation in early 2013 and the start of caisson remediation near the end of that year.

Waste Treatment Plant: A project team conducted a control selection meeting for design changes to the cesium ion exchange system. The changes to the system are designed to prevent the precipitation of solids. The team used appropriate drawings to confirm flowpaths and suspended evaluation until their chemical expert could address questions on the precipitation temperatures for various chemical compounds.