

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 18, 2012

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending May 18, 2012

Plutonium Finishing Plant (PFP): Last week, the electric motor on one of the four operable confinement ventilation exhaust fans failed due to a ground fault. The facility entered the associated Limiting Condition for Operation (LCO) action statement, which required the termination of D&D activities. The contractor replaced the fan motor and related electrical equipment, and returned it to operation within a week, and exited the LCO action statement. This coordinated effort demonstrates an improved readiness posture for safety systems at PFP. The contractor held a detailed post-job review and identified a number of lessons learned from the effort to replace the motor. The site rep believes that this is a good indication that the contractor realizes that there are lessons to be learned even if no significant problems were noted.

Sludge Treatment Project: The project requested permission to reduce dryness parameters for processing knock-out-pot (KOP) sludge. Richland Operations Office (RL) agreed with revising a Technical Safety Requirements control for the pressure increase rate during a dryness test. RL will likely disapprove a reduction in drying time because the longer drying time helps ensure sufficient moisture has been removed from the KOP sludge.

The site rep observed a dry-run of operations for processing the KOP sludge and noted problems with equipment and procedures. Based on similar observations from workers and supervisors, the contractor delayed the readiness review that was scheduled to start next Monday.

Waste Treatment Plant (WTP): The Office of River Protection (ORP) completed a surveillance of the radioactive liquid waste disposal system (RLD) in the High Level Waste (HLW) facility. The surveillance report notes concerns, including several that are focused on the accumulation of solids in the vessel, RLD-8, which is used during the transfer of waste back to the Pretreatment facility. The team is concerned that RLD-8 will not be able to mix non-Newtonian waste and the system design cannot prevent plugging; both conditions could lead to unacceptable hydrogen accumulation. The report also lists several other concerns about the RLD system, such as erosion, corrosion, and the inability to inspect the system in the HLW black cell during the 40-year design life.

River Corridor Closure Contract: Workers may have received radiological airborne exposure during clean-up activities of biological waste (bird droppings) at N Reactor. A work crew was assigned to clean-up a corridor in the 105N building that had been left open to the environment for several years and collected significant biological waste. A radiological controls technician was assigned to assist and initial surveys indicated only fixed radioactive contamination. As the work proceeded, loose contamination was discovered and the area was posted as a contamination area, but the work was not stopped and re-planned to account for the change in condition. Rather, project management determined that respiratory protection for biological hazards was sufficient without confirming the airborne contamination was acceptable. The next day when results from the airborne sample was reported, it was discovered that the corridor should have been posted as an Airborne Radiological Area and that for short periods of time workers may have been exposed without respiratory protection.