DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 3, 2011

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending June 3, 2011

Tank Farms: Personnel from various organizations, including nuclear safety, engineering, and operations, met several times this week to discuss restoring the double-shell tank ventilation systems to safety-significant (SS) (see Activity Report 3/4/11). The changes, captured in preliminary draft revisions to the DSA and TSR, are quite extensive and reflect a major effort by various contractor organizations, especially nuclear safety and engineering. Unlike the old ventilation systems, which were grandfathered as SS, the new systems will have to meet current criteria for safety systems. Only some of these criteria will be met before the system is restored to SS, and others will be identified in the DSA as design and operational safety improvements. The post-upgrade planned improvements include: SS backup electrical power; SS variable frequency drives for the fans; SS instrumentation and control systems, including real-time monitoring of the ventilation flowrate from each tank; and evaluations of the integrity of the below-grade ductwork and two-over-one protection for all SS equipment. The contractor concluded that any interfacing systems that could shut down both ventilation trains, such as those required for air permitting , must also be SS so that the reliability of the system is adequate. Despite the major effort demonstrated by various contractor organizations, it is unlikely that ORP will meet its commitment to have the DSA revised by the end of this month.

A facility representative informed the site rep that on two consecutive days, valves in the flow path for a waste transfer were found out of position, yet the contractor failed to conduct a fact-finding or critique for either event. The first valve did not require independent verification because it was not used for double-valve isolation, yet the senior supervisory watch requested that the position be verified and the valve was found shut rather than open. The second valve was left off the initial lineup sheet and, therefore, was not properly positioned.

Waste Receiving and Packaging Facility: The project is still conducting clean-up efforts of the spill from a drum in April in one of their waste storage facilities (see Activity Report 4/29/11). While the project has cleared much of the facility, significant contamination still resides in the direct spill area. Although the root cause analysis is not complete, it is clear that changes will be required to procedures for repacking waste and emergency response to spills. The drum in question was packaged in February after the acids were believed to be neutralized but failed after three months when the remaining highly contaminated acids corroded through the steel. The continuing problems with handling highly contaminated acidic wastes across the site raises the question if RL should initiate the creation of guidance or protocols that provide a consistent approach to decontaminating, handling, neutralizing, and providing long-term storage of these waste types.

Waste Treatment Plant: Facility representatives, the ORP electrical safety system oversight engineer and site rep walked down the major installed components of the electrical distribution system. The non-safety related switchgear is installed in the two switchgear buildings; the motor control centers (MCCs) are installed but not wired in the Laboratory; and most of the MCCs are installed but not wired in the Low Activity Waste Facility. The contractor is preparing to turn over one of the switchgear systems to Operations next year.