

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 4, 2009

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending September 4, 2009

Board staff members D. Campbell, F. Dozier, A. Poloski, and S. Stokes were on-site to discuss changes to the nuclear safety strategy and vessel mixing for the Waste Treatment Plant (WTP).

Tank Farms: The contractor declared a potential inadequacy in the safety analysis because they could not verify the positions of some safety-significant valves used to prevent misrouting of waste. The site rep, accompanied by a senior contractor operations manager, subsequently performed a walkdown of the AP tank farm to understand how the interim corrective actions would be implemented for a waste transfer that was scheduled to start later that day. The site rep noted inconsistencies in the procedure for indicating which valves could be used for double-valve isolation. The system engineer explained how he determines which valves can be used for this TSR control and who verifies that the selected valves are adequate isolation devices.

During the waste transfer the contractor noted that a valve in the AP farm was leaking into the valve pit. This is one of the valves that was identified as having leaked in the past but was tested and did not leak (see Activity Reports 7/17/09 and 7/24/09). The ball valve was tested in the closed position, but leaked around the packing when open during this transfer. After moving the valve position slightly and removing the long T-handle operator, the leakage stopped.

The Office of River Protection directed the contractor to use a different software code to analyze the consequences to the public, which will result in lower estimated doses in the safety analysis. The goal is to be consistent with the software proposed for use at WTP. The staff has questioned the deposition velocity selected from the DOE software guidance for use at WTP.

Waste Stabilization and Disposition Project: The contractor briefed the site reps on plans for the Next Generation TRU Retrieval (NGR) process and a waste retrieval system for remote-handled waste from caissons in the 4B burial ground (see Activity Reports 3/20/09 and 7/24/09). The NGR process is being designed to allow the contractor to conduct the preparations for shipment of waste containers (drums and boxes) near the retrieval trench to eliminate multiple on-site shipments between the various facilities. The contractor envisions these activities will be conducted in multiple mobile structures, similar to Conex boxes. The contractor has proposed that the readiness review for the initial phase would be a management assessment because these types of activities are ongoing at other facilities, but DOE has not yet concurred. The contractor estimates that this activity could start in April 2010.

The caisson retrieval system is being designed to allow retrieval of remote-handled waste from buried concrete enclosures. The work would entail excavating adjacent to the caisson, cutting into it, and removing the waste using a remotely operated manipulator. The excavation and the adjacent area over the caisson would be in an enclosure with fire suppression, and the caisson would be connected to a HEPA filtration system. In addition, a mobile unit is being designed to open, sort, characterize, and repackage the remote-handled waste. The contractor is following a tailored DOE Order 413.3 process but stated the contractor, not DOE, will be the approval authority for the critical decisions. The Project Execution Plan is nearing completion.