

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 18, 2011

**TO:** T. J. Dwyer, Technical Director  
**FROM:** W. Linzau and R. Quirk, Hanford Site Representatives  
**SUBJECT:** Hanford Activity Report for the Week Ending March 18, 2011

Board staff members P. Meyer, A. Poloski, and S. Stokes were on-site to discuss the proposed implementation plan for Recommendation 2010-2 and the verification and validation of vessel mixing models at the Waste Treatment Plant. Outside expert D. Boyd was on-site for training and to observe field work in the Tank Farms.

Tank Farms: Last Friday afternoon, the contractor determined that a safety-significant valve was leaking waste to a valve pit, and the leak rate was greater than that allowed by the safety basis. An operator serendipitously detected the leak by viewing the pit interior with a camera that had been previously used to verify the position of isolation valves, and shortly afterwards the contractor stopped the waste transfer. Operator use of the camera for leak detection was not mentioned in the transfer procedure. The transfer was stopped shortly before the pit leak detector would have been actuated, and the leaked waste was returned to a double-shell tank. Last year, the contractor downgraded the leak detection system from safety-significant to non-safety when they upgraded waste transfer piping and valves to safety-significant. In the report attached to the Board's August 5, 2010, letter, the staff noted that the leak detection system is a significant contributor to defense-in-depth, and questioned if it should have been maintained as safety-significant.

Waste Treatment Plant: The Office of River Protection (ORP) conditionally approved a revision to the Pretreatment PDSA Addendum. The revision incorporated changes that have been discussed during the last year and includes updates to the severity level calculation that determines the consequences from various accident scenarios. ORP included two conditions of approval in the letter: the contractor will identify a list of structures, systems, and components (SSCs) that are significant contributors to DID and submit this list to ORP for concurrence by September 2011; and the contractor will incorporate the identified DID SSCs and the Addendum into the PDSA by January 2012.

Building 324 D&D: The contractor held a meeting to discuss sampling the highly contaminated soil under Building 324 (see Activity Report 11/19/10). They plan to take two samples, one as close to the foundation as possible and the other deeper in the soil directly below the first sample. One of their objectives is to get an indication of the presence of TRU waste in the soil to aid in the planning for future disposal. In addition, they hope to better understand how the concentration of contaminants changed as the waste traveled through the soil by taking two samples separated by a vertical distance. One of their reasons for only taking two samples is to reduce the radiological risk to workers. Additionally, for each sample location, they have to insert another steel casing under the building, which could impede and complicate future remediation efforts.