

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 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 November 18, 2011

Board staff members P. Meyer, A. Poloski, and S. Stokes were on-site to discuss the use of mixing tests in Newtonian vessels to evaluate mixing in non-Newtonian vessels.

W. Linzau was off-site this week

Tank Farms: Last week, the Office of River Protection (ORP) approved a change to the safety basis that will allow retrieving waste into double-shell tank (DST) AN-101 from single-shell tank C-112. DST AN-101 is one of the tanks with significant quantities of large and dense particles of plutonium and plutonium oxide (see Activity Report 10/7/11). The change package included a criticality safety evaluation report (CSER), which concluded the retrieval could be conducted without risking a nuclear criticality accident. This week, the site rep identified more than a dozen errors and weaknesses in the CSER, including a significant number of controls in the form of operational restrictions and crediting passive design features of the non-safety transfer pump in DST AN-101. However, the CSER concluded that no new controls were required. ORP and the contractor are reviewing these issues.

Last week, ORP approved a Justification for Continued Operation (JCO) that allows waste transfers during cold weather conditions (see Activity Report 11/4/11). This week, ORP rescinded their approval of the JCO because both they and the contractor identified a series of conceptual errors and incorrect assumptions in the analysis that formed the basis of compensatory actions in the JCO. The site rep expressed his concern to senior ORP and contractor managers that the review and subsequent approval of both the CSER and JCO were inadequate, and questioned if the pressure to continue the waste retrieval mission was impacting what should be a conservative engineering and nuclear safety decision-making process.

The contractor used an independent team to review the effectiveness of changes made to address problems that ORP identified with the radiological control and corrective action management programs (see Activity Report 6/11/10). In their outbrief, the review team concluded that corrective actions were effectively implemented but identified a significant number of opportunities for improvement, including several issues with emergency preparedness.

Plutonium Finishing Plant (PFP): The contractor conservatively continues to require formal critiques for upset conditions, even though most do not rise to the level that would require a critique. The most significant of the five critiques performed this week involved the spread of contamination in a room when workers were moving a glovebox that was being prepared for disposal. Shrink-wrap around the box, used to confine contamination, tore when workers tried to maneuver it through a restricted area. The workers were not wearing respiratory protection even though they knew the area had little clearance between the glovebox and several interferences. The resulting spread of contamination resulted in a positive nasal smear for one worker.

209E D&D: The contractor re-established the DSA and removed the waste boxes that led to a confirmed Unreviewed Safety Question (see Activity Report 10/21/11).