

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 6, 2013

**TO:** S. A. Stokes, Acting Technical Director  
**FROM:** D. Gutowski and R. Quirk, Hanford Site Representatives  
**SUBJECT:** Hanford Activity Report for the Week Ending September 6, 2013

**Tank Farms.** The contractor declared a violation of the Technical Safety Requirements (TSR) when they failed to meet a surveillance requirement for the Double-Shell Tank (DST) Annulus Flammable Gas Control. The annual calibration and functional test of the level sensors in DST AP-101 had not been completed due to water in the annulus. Without calibrated instruments, the contractor could not complete the surveillance requirement to verify the annulus level was  $\leq 15$  inches every 48 hours.

The contractor does not have an approved procedure for calibration and functional testing of the level instrument when water collects in the annulus, nor do they have an approved means to sample the annulus for flammable gas. Supervisors did not recognize that the instruments were past due for calibration for more than a week because the system for verifying all instruments are calibrated is somewhat informal. There is no TSR surveillance requirement for these non-safety annulus level instruments. Instead, the contractor relies on the routine maintenance program to ensure they are calibrated and functionally tested every year for both TSR and environmental permitting purposes. There are no calibration stickers on the instruments so workers performing rounds did not recognize the instruments they were using for both TSR compliance and environmental requirements were more than a week past due for calibration. These level instruments are associated with a commitment to the Board to upgrade them to safety-significant (SS). The contractor nuclear safety manager said that once they are upgraded to SS, a requirement for annual calibration of the level instruments will be added to the TSRs.

The contractor lifted the restriction on transfers using Hose in Hose Transfer Lines and resumed retrieval activities in single-shell tank C-101.

**Plutonium Finishing Plant (PFP).** Recently, there have been a number of weaknesses related to the implementation of radiological control practices at PFP. This week, workers disconnecting instrument airlines going into a glovebox inadvertently spread material from a high contamination area to a contamination area. Workers did not comply with the radiological work permit (RWP) or practices for handling contaminated waste. When they identified that contamination had spread, some workers failed to comply with changes that were implemented from a previous spread of contamination (see Activity Report 1/4/2013). For example, some support workers did not have the required respirators available for donning in the event of an upset. This failure resulted in four workers receiving nasal smears. However, one change made as a result of the prior event, using point source ventilation, minimized the contamination spread.

In another incident this week, workers failed to act conservatively when they initially encountered high contamination levels. Workers wearing one set of PPE and no respirators were performing a pre-work radiological survey. They noticed fixed and loose alpha contamination levels increasing as they moved further under gloveboxes in the room. Workers eventually stopped when contamination levels unexpectedly reached 2.2 million dpm alpha direct and another worker cross contaminated their probe to a level that would have voided the RWP if it was quantifiably measured per swipe area.