

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 2, 2016

**TO:** S. A. Stokes, Technical Director  
**FROM:** P. Fox and D. Gutowski Hanford Site Representatives  
**SUBJECT:** Hanford Activity Report for the Week Ending December 2, 2016

**Tank Farms.** The contractor's Plant Review Committee approved a safety basis amendment for submittal to ORP (see Activity Report 10/14/2016). The amendment revises the flammable gas strategy for Double-Contained Receiver Tanks and adds a safety instrumented alarm system to detect high levels in the annulus. These changes address issues from Recommendation 2012-2. The amendment also includes a process improvement to automate freeze protection monitoring of selected safety-significant piping using a safety instrumented system.

The contractor removed the AP-02A mixer pump from AP-102 in October 2015 (see Activity Report 10/23/2015) but was unable to dispose of the pump because high radiation levels prevented draining hydraulic oil from the pump. They developed a method to safely drain the pump (see Activity Report 9/16/2016) and developed a work package to accomplish this task. This week, the contractor attempted to move the pump to a shielded box outside the farm, but stopped the job when contamination was discovered on a worker's anti-contamination bootie.

**PUREX Plant.** RL approved the annual update for the PUREX DSA. In the approval of last year's annual update, RL included three expectations for improvement: 1) explain potential control selection for Risk Class I or II events and justify why they are not feasible to justify and implement, 2) protect all damage ratios in the consequence analyses by TSR control or remove them, and 3) provide a separate aircraft crash event. The contractor completed all these actions to the satisfaction of RL. No new controls were identified that would not require significant upgrades to the facility. All damage ratios have been set to one in the accident analysis. And, an aircraft crash scenario has been added with the soil over the storage tunnels now identified as a design feature to mitigate the consequences of this event.

**242-A Evaporator.** The contractor entered the evaporator and pump rooms to perform ultrasonic and visual inspections of the evaporator vessel, reboiler, and recirculation piping. The contractor awarded a subcontract to design, fabricate, test, assemble, and deliver a spare reboiler.

**Low Activity Waste Pretreatment System (LAWPS).** A site rep observed a LAWPS safety design integration team meeting (SDIT). The team discussed proposed approaches for defining the safety classification of instruments used to determine the operability of safety instrumented systems and for identifying necessary two over one protection for certain systems, structures, and components. The presenters were well prepared and the SDIT discussion was dynamic, respectful of opposing opinions, and properly focused. The SDIT determined that additional information was required before making a final decision regarding either topic.

**Plutonium Finishing Plant.** The demolition team continued work on the fourth floor of the Plutonium Reclamation Facility. Monitoring performed by the contractor indicate no increase in contamination and airborne radiation levels in the demolition zone. Next week, the contractor will modify the debris loadout and container staging areas to allow more efficient removal of demolition debris.