

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 26, 2016

TO: S. A. Stokes, Technical Director
FROM: P. Fox and D. Gutowski Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending February 26, 2016

DNFSB Staff Activity. Members of the staff held a teleconference to discuss contractor plans and controls for safe demolition of the Plutonium Finishing Plant.

Waste Treatment Plant. ORP approved a PDSA change package for the High Level Waste Facility's Radioactive Liquid Waste Disposal (RLD) system (see Activity Report 6/5/2015). Design changes were made to prevent introduction of non-Newtonian waste into the RLD system to prevent hydrogen explosions with potential public and co-located worker impacts. These changes introduce a new facility worker chemical hazard which is addressed by safety-significant secondary confinement. As part of the approval, ORP closed a historical condition of approval that required verification of non-Newtonian fluid mixing in vessel RLD-8.

ORP extended field work for their evaluation of the contractor's quality assurance program (see Activity Report 1/29/2016) until March 4, 2016.

Tank Farms. ORP approved a safety basis amendment with a revised control strategy for pneumatic testing of encasements. The package also contains several other updates notably TSR revisions that support AY-102 retrieval (see Activity Report 9/11/2015). The changes related to pneumatic testing address corrective actions from a leak testing evolution on a failed slurry line in AW farm (see Activity Report 7/4/2014).

The contractor presented ORP with two proposed operational strategies for use of the annulus exhauster during decant and sludge retrieval from AY-102. The annulus exhauster is a general service system that primarily provides heat removal. The contractor would prefer to implement a strategy that keeps the annulus ventilation off but operable during sludge retrieval activities in order to avoid several operational concerns including increased contamination migration from the primary tank to the annulus and the potential to wet or load the annulus exhaust filters. The filters have been in service for an extended period of time and would be difficult to change out.

The site rep observed field activities to obtain grab samples from tank SY-101. The work crew obtained all of the planned waste samples without incident.

Plutonium Finishing Plant. Management stopped work on the use of OptimAir[®] TL Powered Air Purifying Respirators (PAPR) after workers experienced unexplained unit shutdowns. Unit inspections revealed defects probably caused by the rough work environment and high usage of the units. Based on the inspections, unit age, and difficulty in detecting defects, management removed all PAPRs from the facility and replaced them with new units. This approach is similar to one successfully used two years ago to address high PAPR failure rates. Each new unit will undergo a thorough operational test before being placed in service. The stop work was lifted after removal of the old PAPRs and delivery of some of the new units to the field.