**DEFENSE NUCLEAR FACILITIES SAFETY BOARD**

July 18, 2014

**TO**: S. A. Stokes, Technical Director
**FROM:** D. Gutowski and R. Quirk, Hanford Site Representatives
**SUBJECT:** Hanford Activity Report for the Week Ending July 18, 2014

D. Gutowski was offsite. Board staff members B. Boser, R. Kazban, and A. Tramblian were onsite to discuss various Waste Treatment Plant technical issues.

**242-A Evaporator.** The contractor completed their Readiness Assessment (RA) of the facility (see Activity Report 7/11/2014). At the outbrief, the RA team lead said the facility will be ready for startup after the resolution of four prestart findings. The team also identified one post-start finding and nine observations. The contractor expects to close all the pre-start items and send a readiness-to-proceed letter to ORP next week. Based on comments from the team lead regarding the scope of the RA, ORP personnel noted they would review the Plan of Action for their RA to ensure it is not too restrictive. ORP expects to start their RA on July 28.

**Tank Farms.** The contractor declared a violation of a TSR Specific Administrative Control for ignition controls of waste-intruding equipment. They determined that at least one pressure transmitter in AP farm was not qualified for use in hydrogen-rich environments. The instrument is in a pipe segment that can accumulate flammable gases during post-transfer line flushes. The contractor locked open a valve to ensure this line cannot be isolated from the headspace of the double-shell tank. They are conducting an extent of condition review.

**Plutonium Finishing Plant (PFP).** Workers completed down-blending of radioactive sources and standards to a form suitable for disposal as TRU waste. The few remaining sources and standards still used for equipment calibration and tests are already in a disposal-compliant form. These sources are related to Board Recommendation 2005-1.

A worker found a metal disk in a road that appeared to be a thorium test source. These sources had been used to verify the operation of alpha radiation monitoring instruments. Lessons learned from an event last year (see Activity Report 10/18/2013) were effective in preventing unnecessary exposure to the workers.

**Waste Treatment Plant.** ORP is evaluating a contractor request to proceed with the design, procurement, and installation of a system that will deenergize the safety-related control system in the Low Activity Waste (LAW) Facility upon detection of smoke in the room that houses the equipment. The control system, also known as the Programmable Protection System (PPJ), is safety-significant. The PPJ halts feed to the melter and places the melter offgas system in a safe configuration during upset conditions. The vendor for the PPJ concluded that the outputs from the system are indeterminate when exposed to smoke. The contractor has proposed adding a safety-significant smoke detector system in the room that will isolate all power to the PPJ, thereby placing the offgas system in a configuration which they expect to be safe. However, they noted that simultaneously changing all the PPJ output signals may create additional problems. The contractor claims the schedule for completing LAW construction would be substantially impacted if they have to delay the procurement of the smoke detection system until they complete the associated hazards analysis, control selections, and safety basis updates.