DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 23, 2016

TO: S. A. Stokes, Technical Director
FROM: P. Fox and D. Gutowski Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending November 25, 2016

Radiochemical Processing Laboratory (RPL). The contractor completed the Evaluation of the Safety Situation (ESS) for the positive Unreviewed Safety Question involving inadequacy in the analysis of the criticality alarm system (CAS) detector head coverage (see Activity Report 9/30/2016). Once the ESS is approved by PNSO, its controls will replace the compensatory measures currently in place. The controls in the ESS are 1) upon loss of any one CAS detector head function, the system will be declared non-operable and the appropriate LCO entered and 2) prior to establishing any new Criticality Safety Controlled Areas, a documented evaluation showing adequacy of two detector coverage must be completed. Given the extended time needed to develop and validate a new analysis of the CAS system, the contractor is proposing to incorporate these ESS controls into the 2017 annual update of the RPL DSA. PNSO is evaluating the ESS.

Plutonium Finishing Plant. The contractor resumed demolition of the Plutonium Reclamation Facility after they completed a mockup of the packaging process (see Activity Report 11/18/2016) that they intend to use for TRU waste items that will be removed during the demolition of the lower four floors of the facility. The demolition team will use this process to double bag waste in specially designed super bags before it is placed into a waste shipping container. The waste will eventually be shipped to Perma-Fix Northwest where workers will further size reduce the waste before they repackage the material for eventual disposal at the Waste Isolation Pilot Plant. The demolition team effectively used the mockup and associated post job review to identify a number of questions and procedural weaknesses that will be resolved before the process is used to perform actual packaging activities.

Low Activity Waste Pretreatment System. The contractor's Safety in Design Integration Team (SDIT) discussed protection of Safety Instrumented Systems (SIS) from fire conditions. An evaluation has determined that several SIS components would likely not be able to perform their safety function or fail safe due to fire. The contractor has identified several potential design changes and controls to address this vulnerability and will evaluate these options further. The SDIT also discussed tailoring design standards for safety-significant backup power systems.

Tank Farms. The contractor briefed the Chemical Vapors Solutions Team to solicit worker feedback on the proposed control strategy for resumption of AY-102 retrieval. The proposal includes supplied air usage in AY and AP farms, retrieval on backshift and weekends, and access restrictions to limit personnel in areas adjacent to these farms during waste retrieval.

Building 324. The contractor secured an exhaust fan due to high noise. This is the same exhaust fan that the contractor rebuilt and installed last month after a previous failure. The building was placed into reduced ventilation mode and the contractor is evaluating the cause of this noise. The reduced ventilation status does not affect current facility activities.