DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 23, 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 August 23, 2013

Tank Farms. The site declared an Alert level emergency at C tank farm following the discovery of higher than expected beta radiation readings during nighttime monitoring of sluicing equipment for C-101. These readings may indicate a waste leak from the transfer system. Personnel evacuated C farm, personnel in adjacent areas sheltered in place, and site access was restricted. Follow-up chemical and radiological surveys found no additional chemical, elevated radiation, or contamination readings, and there were no visual indications of waste leakage. All waste transfers, including C farm retrieval operations, are on hold until a more thorough evaluation is completed. In general, the response to the event was effective. Implementation of most of the lessons learned from the spill of waste from SST S-102 (see Activity Report 7/27/2007), including calling 911, were effective, but others were not. For example, workers performed the radiological survey in accordance with a survey plan that is required by a corrective action for the prior tank waste spill. However, the survey plan may not have sufficient criteria to detect a small leak. Another corrective action from the S-102 event requires performance of lighting surveys and the addition of portable lighting as needed to ensure adequate visibility for safe nighttime operations. But workers reported poor visibility in some areas of C farm.

Plutonium Finishing Plant. The site rep met with Richland Operations Office (RL) personnel and the contractor to discuss the results of a recent study that identified means to accelerate project work. One proposed method was replacing legacy support systems with smaller systems that are sized for the current project mission. Another idea is filling gloveboxes with foam as a means to immobilize high levels of plutonium holdup. The contractor tested this concept (see Activity Report 7/19/2013) and planned to start using the process by September or October 2013. This week, the Federal Project Director reported that a hazards analysis is being performed for this technology, and the schedule shows the technology will not be deployed until next July. Another possible change is delaying the removal of process piping which has residual hazardous chemicals until after the facility is "cold and dark." This is contrary to previous recommendations for hazardous chemical lines (see Activity Report 10/5/2012).

River Corridor Closure. The contractor found low levels of loose contamination in an excavator bucket and ancillary parts after they were shipped without confinement from the 100N Area to the 300 Area. Workers reported that pre-shipment surveys detected fixed contamination but no loose contamination on the bucket. The contractor's supposition is that vibrations and movement of the parts in the bucket during transport loosened some of the previously fixed contamination. The contractor reported that they complied with the associated Department of Transportation shipping requirements, but will evaluate if additional controls should be used for future shipments.

242-A Evaporator. ORP approved a safety basis amendment that revises both the Tank Farms Documented Safety Analysis (DSA) and the Evaporator DSA to protect safety-significant systems in the Tank Farms from flow transients (see Activity Report 4/26/2013). The changes include the classification of a slurry line vacuum breaker in the Evaporator as safety-significant.