

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 15, 2015

TO: S. A. Stokes, Technical Director
FROM: P. Fox and D. Gutowski Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending May 15, 2015

242-A Evaporator. The contractor shut down the evaporator on Monday evening. During this campaign, operators have had to frequently flush the dip tubes and purge airlines in the evaporator vessel due to plugging. On Monday evening several process parameters could not be measured due to the plugging. Therefore, the operators stopped feed and attempted to place the evaporator in recirculation mode under vacuum to perform flushing under more stable conditions. However, the safety-significant feed valve failed to shut and the vessel started draining leading the operators to shut down the evaporator. During the shutdown process, while the evaporator vessel was being dumped back to Tank AW-102, a safety-significant interlock actuated. This interlock requires that the vessel be dumped upon loss of air purge or vacuum. The vacuum was lost while emptying the vessel and the air lines were too plugged to provide adequate purge flow in lieu of vacuum. The contractor is planning cell entries to perform feed valve system repairs. They are also evaluating the causes of the increased plugging and the actuation of the interlock. During recovery actions, it was noted that another valve that could block the safety-significant seismic dump path is not controlled in the TSRs. The feed valve remains stuck in its open (safe) position. The evaporator has been flushed with water is currently in shutdown mode.

Tank Farms. The contractor briefed ORP personnel on their engineering assessment of potential leak points following the failure of one of the C-102 sluicers (see Activity Report 4/24/2015). They concluded that one of two swivel joints in the sluicer box is the most likely spot for a failure. The contractor does not believe that there is a benefit to performing high risk radiological work to do additional hands-on evaluation of the system to conclusively determine the failure mode. Instead, they proposed additional inspections and testing of sluicer arms that will soon be installed in C-111.

Waste Treatment Plant. The contractor briefed representatives from the DOE-EM Office of Safety, Security, and Quality Programs regarding their program for assuring the readiness of the Low Activity Waste Facility, Laboratory Facility and related support facilities for operation. Significant topics covered by the contractor during the day-long brief included overall readiness strategy, key attributes of the readiness assurance program, the tools that the contractor will use to support the process, establishment of required safety programs, requirements management, program governance, and management of interfaces with external organizations and facilities. The briefing was comprehensive and well organized.

Solid Waste Operations Complex. The site representative attended a critique that was held to determine facts related to a recent TSR violation at the Central Waste Complex. The violation resulted when management determined that friction mats used during shipment were not analyzed in the facility fire hazard analysis. This finding had a cascade effect on the PFP (see Activity Report 5/8/2015). Although the critique was thorough, additional research is required to fully understand the history of actions that resulted in the problem since the condition has existed for many years. The contractor has established appropriate compensatory measures and will perform a causal analysis to determine necessary additional actions.