

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 16, 2015

TO: S. A. Stokes, Technical Director
FROM: P. Fox and D. Gutowski Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending October 16, 2015

Plutonium Finishing Plant (PFP). The contractor continues their follow-up and recovery related to the discovery that waste from pan J of the Plutonium Recovery Facility (PRF) canyon floor reacts with a glycerin-based fixative that workers use to control suspension of contamination during cleanup activities (see Activity Report 10/9/2015). Based on their recovery plan, the contractor will sample and characterize the waste that reacted with the fixative. Additionally, they will open all previously packaged drums that contain waste from the PRF canyon floor. Any waste that appears to be reacting will be returned to the PRF canyon to await characterization so that appropriate actions can be taken to stabilize the waste prior to repackaging. Lastly, as an action separate from the recovery plan, the contractor is discontinuing the use of glycerin-based fixatives in the PRF canyon and is reviewing other open PFP work packages to determine whether use of glycerin-based fixatives is allowed in those packages. If allowed, an evaluation will be performed to determine if its use should be suspended. The contractor is in the process of opening previously packaged drums that contain pan J waste and has found several packages where the plastic inner packaging material is discolored or eroded, or where other packing materials are damaged indicating that a reaction has taken place after the material was packaged. So far, there have been no cases found where the outer packaging layer was breached. Based on this event, and the discovery of reacted waste in the drums, it is apparent that, in this case, three process controls that the contractor established to prevent packaging of TRU waste without appropriate stabilization were ineffective.

The contractor has started disassembling the top level of glovebox HA-9A. HA-9A is the last glovebox that will be downsized prior to removal from the facility.

Tank Farms. The contractor halted retrieval of C-111. Retrieval activities have been hampered by equipment malfunctions involving the hydraulic power units (HPU) for the AN-101 supernate pump and the C-111 slurry pump. Late in the week, retrieval personnel noted a hydraulic leak in the slurry pump HPU and performed a pumpdown of the tank prior to suspending retrieval activities. The contractor is evaluating a path forward, which will likely require a pump replacement. During retrieval operations, the AN-101 HPU exhibited elevated temperatures due to problems with its heat exchanger cooling fans. At one point, the HPU shut down due a high temperature interlock trip. The site reps note that a functional temperature interlock is an assumption in the recent negative USQD (see Activity Report 10/2/2015). The supporting thermal calculations show that the temperature limits for safety-significant components will not be exceeded as long as either the temperature interlock functions or the heat exchanger functions.

The site reps observed field work associated with removal of a mixer pump from AP-102 to support future installation of a transfer pump for AY-102 retrieval. This removal is unique since it is such a heavy pump (almost 12,000 pounds) that it is being disassembled during the lift process. There is also substantial supernate holdup in the pump and high expected radiation fields.