

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 23, 2010

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending July 23, 2010

Plutonium Finishing Plant (PFP): The contractor declared an unreviewed safety question (USQ) due to a lack of sufficient clarity and definition in the safety basis to ensure protection of the credited leak path factor (LPF) used in the analysis. A Richland Operation Office surveillance report completed earlier this month found that the descriptions of the passive confinement barriers in the DSA did not have enough detail to identify specific structures, systems, and components (SSCs) required to maintain the 0.1 LPF. The report stressed the importance of having clearly identified and appropriately classified passive confinement barriers so they can be protected as D&D activities progress. As a compensatory measure, the contractor is creating a standing operating instruction that requires additional review of activities that may affect a confinement barrier. In addition, the contractor envisions that part of the long-term solution will include creating controlled design drawings that clearly highlight SSCs that provide the passive confinement barriers credited in the DSA.

T Plant: The lid of a 55-gallon drum energetically lifted when the locking ring was removed during a repackaging operation in a containment structure (i.e. Perma-Con[®]) in the canyon. The drum was not bulged and gave no indication of pressurization, but it contained enough internal pressure to violently lift the lid, which hit the cowling of a vent hood that was about 3 inches above the side of the drum. Workers reported that it sounded like a shotgun being fired. The worker was not injured and no release of hazardous materials was recorded on the various monitoring devices. The drum had a vent clip installed on its lip, but it did not prevent the build-up of pressure inside the drum. The lid of the rigid plastic liner was also expelled with the steel drum lid. At the fact-finding, project personnel theorized that the pressure may have been contained inside the liner without a vent path to the vent clip. The drum contained poly bottles from PFP operations conducted more than 20 years ago and, based on the existing records, could have contained nitric acid, carbon tetrachloride, or organic liquids. Workers declared a stop work until their concerns about opening drums with undetected pressurization are addressed. The project is investigating to determine the cause of the event and will then evaluate the appropriate corrective actions.