

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 20, 2012

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending July 20, 2012

Waste Treatment Plant: In a letter sent to the contractor, the Office of River Protection (ORP) expressed serious concerns with the contractor's technical oversight of procured systems, structures, and components (SSCs) and, as a result, issued another Level 1 finding (see Activity Report 3/30/12). The letter was written after an ORP team reviewed the contractor's process for requesting and reviewing vendor submittals, and how the technical requirements provided to the vendors were implemented in the design products provided by the vendors.

The contractor held meetings with ORP this week and last week to discuss the example calculation for the Quantitative Risk Analysis (QRA) for events associated with hydrogen in pipes and auxiliary vessels (HPAV). The example calculation uses a model to predict hydrogen events and evaluate the impact of an event on the selected piping segment. In May, the Board's staff provided ORP a description of the errors the staff found during their review of the example calculation. During these recent meetings, the contractor demonstrated to ORP the application of their revised procedure. The contractor corrected the input files and will send them to a subcontractor who runs the model. ORP plans to review the corrected example calculation and then provide it to the Board's staff for review in about a month.

The site rep attended a workshop this week in which separate organizations and working groups met to work on the revision to the Implementation Plan (IP) for Recommendation 2010-2. One of the purposes of this workshop was to start developing a new integrated schedule of activities to support the IP. This schedule will include the testing campaigns and actions required to close the many technical issues. Unfortunately, the logic-ties between activities in the schedules that were being prepared by the smaller groups were still not ready for integration into an overall schedule. This is similar to a workshop in early June that was cancelled because they were not ready. The site rep has not been able to observe evidence of progress in revising the IP, but the project believes that detailed discussions with the staff can start at the end of August.

Tank Farms: A contractor team recommended that ORP approve a waiver from a requirement for redundant safety-significant (SS) control valves in the flowpath from the 242-A Evaporator to the tank farms. The contractor is upgrading the DSA for 242-A to comply with DOE-STD-3009 and selected a safety control that drains the waste in the evaporator vessel back to a waste tank if the normal controls for flammable gas accumulation fail. The proposed control is a new SS safety instrumented system (SIS) with a safety integrity level of two (SIL-2). The selected standard for this SIL-2 designation requires that the final element, i.e., the control valve, be able to operate after any single hardware failure, but the proposed design does not meet this criterion.

Plutonium Finishing Plant (PFP): The contractor concluded that a postulated failure of a small HEPA filter during a fire is not an unreviewed safety question (see Activity Report 6/8/12). They will resolve the associated Potential Inadequacy in the Safety Analysis by specifically addressing this scenario in the safety analysis. The contractor is also evaluating when they should update their fire hazard analysis to reflect the large decrease in material at risk associated with the cleanout and removal of most of the gloveboxes during the last few years.