

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 6, 2017

TO: S. A. Stokes, Technical Director
FROM: P. Fox and D. Gutowski Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending January 6, 2017

Waste Treatment Plant. The contractor delivered a change package for the Low Activity Waste Facility Preliminary Documented Safety Analysis to ORP in early December that supports the direct feed approach that will be used to commission the facility. The subsequent Safety Basis Review Team (SBRT) review of the package identified a significant number of substantial deficiencies. Although the review is not complete, ORP determined that early action is necessary to address the issues. This week, contractor nuclear safety engineering representatives met with ORP representatives to gain an understanding of the scope and nature of the problems. During the meeting, representatives from the SBRT provided examples of deficiencies and clearly highlighted the scope and significance of the problems. The contractor is reviewing this information and will develop a plan to resolve the deficiencies.

ORP transmitted their intended approach for resolving Technical Issue 3 (Hydrogen in Pipes and Ancillary Vessels) to DOE EM-1 (see Activity Report 12/16/2016). In the letter, ORP describes an approach based on three elements including: (1) a deterministically developed bounding accident consequence estimate to support functional classification of hazard controls; (2) a quantitative risk analysis model along with structural analysis to show that process piping under four inches in diameter that is designed consistent with ASME/ANSI B31.3, *Process Piping*, will survive high energy explosive events; and (3) the application of active engineered controls to limit the accumulation of hydrogen in ASME/ANSI B31.3 design process piping that is greater than four inches in diameter. The Board's staff is evaluating the approach.

Plutonium Finishing Plant. Contractor management has modified the Plutonium Reclamation Facility (PRF) demolition work package to allow accumulation of low risk demolition rubble at ground level. Previously, with certain exceptions, the work package required removal of all ground level rubble before the end of each workday to limit the potential for contamination spreads. Under the revised practice, rubble accumulation is allowed during demolition of areas where contamination levels are known to be low and actual measured contamination levels in the rubble are also shown to be low. The new practice also requires concurrence from the radiological control organization. Contractor management expects that this approach will allow for more efficient use of available machinery and should reduce the total amount of time that the partially demolished facility is exposed to the environment.

Waste Encapsulation and Storage Facility (WESF). Workers entered the WESF canyon again to further characterize radiation fields to support recovery from the unexpected increase in radiation levels that occurred while grouting "C" hot cell (see Activity Report 12/23/2016). This information is being used to develop a work package for recovery from the event.

Building 324. A contractor team started a hazard assessment to identify safety controls necessary to allow excavation of the high dose rate soil from beneath the B-cell floor. Once controls are identified, the contractor will develop and issue an amendment to the facility Basis for Interim Operation to support the work.