

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 16, 2001

TO: K. Fortenberry, Technical Director

FROM: D. Grover and M. Sautman, Hanford Site Representatives

SUBJ: Activity Report for the Week Ending November 16, 2001

Plutonium Finishing Plant (PFP): In parallel with the contractor Operational Readiness Review (ORR) for Project W-460 Stabilization and Packaging Equipment, Department of Energy (DOE)-Richland line management performed a review of the contractor ORR and state of readiness. The line management verification was considerably more thorough than past DOE line management reviews and identified 41 additional findings. The DOE ORR commenced this week. Unfortunately, there are indications that show a disappointing amount of preparation for this review: the ORR Implementation Plan (IP) for this ORR is still in draft form, some team members did not see this draft IP until the first or second day of the ORR, and planning of ORR activities is below average. Despite the rough edges, the team is still identifying issues with procedures that were supposedly corrected after the contractor ORR and DOE line management review. Reminiscent of the contractor ORR, the dry run had to be temporarily suspended due to issues with procedures and equipment operation.

The Savannah River Technical Center has developed limits for the can chamfer and can-lid gap size that they believe will ensure the production of outer can welds with code-compliant porosity. (However, only about 50% of cans in stock may meet these limits). PFP hopes to resume outer can welding later this month. PFP plans to declare the existing welded cans to be acceptable based on upcoming burst tests and favorable modeling results of the impact of bounding pores on weld strength. PFP also began cooking off the oil on plutonium-aluminum alloy turnings as they previously had committed. PFP plans to then use the aluminum in these alloys as part of the reduction process for the conversion of the 5 kg of plutonium fluoride at PFP. (III-A)

Facility Representative: Mr. Grover observed the qualification board for the Building 324 facility representative (Fac Rep). The Deputy Manager for Site Transition was an observer as part of the training to chair future boards. The majority of questions dealt with how the Fac Rep performs his job rather than factual-based questions. The resulting answers varied from detailed answers to generalities such that the pass/fail criteria appeared to be entirely subjective. (I-B)

Tank Farms: Modeling of decanting-induced gas release events is predicting fairly benign hydrogen concentrations. However, the Site Rep believes it is worthwhile to take a harder look at the estimated fraction of gas released (currently predicted to have a mean of 13%) to make sure it is not being underestimated. In addition, water backfill is being dismissed as a potential control strategy since it has little reduction in peak hydrogen concentrations at the upper 95% confidence interval. However, the fact that it is predicted to prevent any release more than 60% of the time is being mostly ignored. In addition, scientists are trying to develop a better understanding of gas release events induced by mixer pump operations. However, attempts to model this or find correlations with past operating experience are running into difficulty. (III-A)

cc: Board Members