

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 12, 2001

TO: K. Fortenberry, Technical Director
FROM: M. Sautman, Hanford Site Representative
SUBJ: Activity Report for the Week Ending October 12, 2001

Tank Farms: Modeling of gas release events (GREs) induced during decant operations has predicted that hydrogen concentrations will not exceed 25% of the lower flammability limit for the upper 95% confidence interval. However, since this model is based on natural GRE experience and not actual decant operations, it will likely be prudent to still have some defense-in-depth controls. The predicted effectiveness of various control strategies was mixed. Backfilling with water while decanting was able to reduce or completely eliminate GREs in some cases. However, in others, the peak hydrogen gas concentration of the remaining GREs was actually higher because backfilling reduced the headspace volume and thus reduced the amount of dilution. In addition, this may also leave more gas in the waste which will have to be dealt with later. Stopping decant operations when hydrogen exceeded 6250 ppm did not usually reduce the number of GREs or the volumes of gas released, although it usually delayed subsequent GREs or reduced the time spent near peak concentrations. Flammable gas concentrations usually peaked an hour or two after decanting was stopped. Adjusting the decant rate had a relatively minor impact to peak gas concentrations. The staff is reviewing the technical basis for the model parameter distributions to make sure they are appropriate. (III-A)

CH2M Hill Hanford Group (CHG) has developed several corrective action plans that have significant overlap to address findings from internal and external reviews. A Site Rep review of the combined action item status found very few overdue items although it was not clear how many extensions may have been granted. CHG is also developing program plans on three focus improvement areas: corrective action management, procedure simplification, and employee accountability. Mr. Sautman will be meeting with CHG next week to get a better idea of CHG's progress in closing the 1500+ problem evaluation requests generated since late May. (I-C)

Plutonium Finishing Plant (PFP): PFP suspended outer can welder operations after analysis of the process verification test welds using stainless steel surrogates identified excessive porosity. Savannah River Technology Center personnel performed additional tests this week. (III-A)

Recommendation 2000-2: The staff had concerns with the possibility of Fluor Hanford (FH) using their existing backlog of non-Filter Test Facility tested high-efficiency particulate air filters for safety class/safety significant applications. The Department of Energy (DOE)-Richland directed FH to immediately implement the use of only tested filters for these applications. (I-C)

Spent Nuclear Fuel Project (SNFP): Mr. Sautman attended the second 90% design review for the Shielded Transfer Cask Transfer System (the first was rejected). The staff continues to have concerns with the conduct of design reviews, although in this case, the fact that this was the second 90% review may have contributed to the apparent weaknesses. The staff discussed these issues with FH and DOE management and will attend future reviews.

cc: Board Members