

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 5, 2009

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending June 5, 2009

Plutonium Finishing Plant (PFP): A continuous air monitor (CAM) alarmed during D&D work to remove HEPA filters attached to gloveboxes. Workers quickly evacuated the room and none were contaminated. Additionally, nasal swabs were negative because workers were wearing powered air purifying respirators. The apparent source of contamination was the exhaust HEPA filter, which they were removing when the CAM alarmed. It is believed that backflow from the exhaust HEPA housing traveled through the glovebox and out the large inlet filter housing. The inlet filter had been removed earlier in the shift and the housing was open to the room. Better work planning and procedures would have ensured no unfiltered path existed to the work environment. This event is another indication that improved attention to detail needs to be exercised during work planning, especially for the D&D work that is being accelerated by the American Recovery and Reinvestment Act (see Activity Report 5/1/09).

Waste Treatment Plant (WTP): The Office of River Protection (ORP) approved the contractor's request to initiate engineering activities to draft changes for the Pretreatment Facility design related to the reduced material at risk. The authorization is limited to advancing the development of piping and instrumentation diagrams and precludes issuing the drawings or releasing any related procurements until the Authorization Basis Amendment Request (ABAR) is approved by ORP. ORP is giving this advanced approval to minimize schedule impacts from the potential changes that affect ongoing design and upcoming procurement activities. The ABAR is scheduled for approval by the end of this month and ORP has limited this approval to two months.

The site reps, ORP, and the contractor discussed the parameters that will be used to calculate the dispersion coefficient (χ/Q) when accident analyses are revised to take into account the reduced material at risk. The contractor will use the MELCOR Accident Consequence Code System 2 (MACCS2), which is a DOE safety analysis toolbox code, as opposed to a non-toolbox code that was used for the original safety analysis. The contractor reported that they are complying with the associated DOE Guidance Report with a few exceptions, including: using a newer version of the MACCS2 code, using a different plume meander model, and rather than use the χ/Q calculated by MACCS2 for the collocated worker they are using the less conservative χ/Q value specified by DOE STD-1189.

Tank Farms: After discussions with ORP, the contractor agreed that the software that generates the unit liter dose and toxicological sum of fractions for use in safety analysis should be Level A software (see Activity Report 4/10/09). The contractor will develop new software to perform this function and will comply with the requirements in DOE G 414.1-4.

Electrical Safety: The Richland Operations Office (RL) issued two surveillance reports associated with electrical safety, one for CHPRC and one for FHI. Both included numerous findings and culminated in formal concerns for both. RL's elevation of these issues to a concern indicates a belief that there is a programmatic failure and the concerns will require the contractors to develop more comprehensive corrective action plans.