

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 10, 2004

**TO:** K. Fortenberry, Technical Director  
**FROM:** D. Grover and M. Sautman, Hanford Site Representatives  
**SUBJ:** Activity Report for the Week Ending December 10, 2004

Tank Farms: The 242-A Evaporator safety analysis credits a 0.1 leak path factor (LPF) for mitigating the co-located worker dose consequence from an evaporator room fire. The staff intends to review the basis for this LPF, since it was derived from a LPF analysis for a Los Alamos facility. (The latter facility has never operated as a nuclear facility and is now an office building). The evaporator's active ventilation system was not credited. Instead the evaporator structure was declared a safety-significant design feature to justify the use of the LPF and passive confinement.

Waste Treatment Plant: Following a series of events involving dropped items, Bechtel had its closest call this week when a 59-lb, 13' long piece of rebar fell 15' and landed vertically within 1' of a worker. Despite the presence of a spotter, the rebar tie wires were cut although two workers were cleaning below in the narrow space between two concrete wall forms.

Preliminary calculations indicate that much of the black and hot cell piping can accumulate hydrogen volumes that are tens to hundreds of times greater than what has been considered to be a *de minimus* level. There will be significant challenges to implementing the preventive controls under consideration. The possible need to seismically qualify jumpers, water sources, and supporting equipment makes any reliance on water flushing or compressed air to remove stagnant waste in the piping complicated. Other options such as draining the hot cell pipes into the Pretreatment pit vessels or onto the floor could require a large number of new drain valves. There are also a large number of high points in the black cell piping that might require vents.

Corrective Action Management: Fluor Hanford (FH) conducted a value engineering session to improve their CAM process, which has been ineffective in improving performance at the site. The results of session were focused on real time documentation and completion of corrective actions as well as real time documentation of causal analysis meetings. FH hopes that efficiencies by doing these improvements will allow more time for the CAM personnel to conduct independent oversight of the real time corrective actions as well as the collective significance of these and more in-depth analysis of significant issues.

Solid Waste Operations Complex (SWOC): FH has determined that the buoyant plume safety issue represents a positive unreviewed safety question. SWOC has issued a management directive to limit the source term in outside waste storage areas potentially effected to 5 dose equivalent curies (DE-Ci) per facility zone, from 600 DE-Ci, with the exception of 2 areas at T Plant which already exceed that value. These will be limited to the current inventory, 7.3 DE-Ci and 584 DE-Ci (the 584 limit is the combined limit for 5 facility zones). In addition a fire surveillance is being required anytime containers are being relocated at the central waste complex and waste receiving and packaging facility.