

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 6, 2004

TO: K. Fortenberry, Technical Director
FROM: D. Grover and M. Sautman, Hanford Site Representatives
SUBJ: Activity Report for the Week Ending August 6, 2004

Tank Farms: All medium and high risk work packages are on hold pending implementation of corrective actions that resulted from recent radiological events. As a result of a stop work that was issued concerning di-methyl mercury vapors, the mandatory use of supplied-air respirators (SAR) or self-contained breathing apparatus (SCBA) was expanded to include double-shell tank farms, which have functioning ventilation systems. A subsequent stop work was issued due to chemical vapor concerns which led to the requirement that any entry into any tank farm requires Level A personal protective equipment (i.e., totally encapsulating chemical-protective equipment plus SCBA or SAR). (IV)

Waste Treatment Plant (WTP): Staff review of the Analytical Laboratory Preliminary Safety Analysis Report (PSAR) identified several major concerns with the accident analysis and control selection methodology, which conformed to DOE-STD-3009 "in format, but not content." The staff is concerned with the heavy use of administrative controls (AC) in lieu of engineering controls. For example, ACs are used to track hundreds of samples, impose minimum flush volumes for disposed samples, and limit the solution volume in a collection tank to <12% of its total volume rather than just install a smaller tank or add a lower overflow. In addition, ACs are relied upon heavily to reduce the facility hazard category and cause certain scenarios to be classified as beyond extremely unlikely without first doing a true unmitigated analysis. The hot cell fire analysis also excluded fixed combustibles such as manipulator boots. Besides the PSAR, the staff is pursuing a number of potential process chemistry issues. For example, the staff is reviewing the calculation that determined the amount of nitrogen gas needed to dilute cesium ion exchange offgases since the amount of dilution is driven by the oxidizer concentration rather than diluting flammable gases below the lower flammability limit. Other potential issues include the sole use of nitric acid to clean ultrafilters, disposition of test exceptions, integration of waste blending requirements, and erosion allowances. (III)

The Site Rep observed the transport of the first of four feed receipt vessels from its fabrication location to the exterior of the Pretreatment Facility. This vessel has a diameter of 47', a height of 43', and a weight of 535,000 pounds. The vessel will be set inside its cell over the weekend. (III)

K Basins: Fluor Hanford recombined the Spent Nuclear Fuel Project, the Sludge Retrieval and Disposition Project and the K Basins deactivation project into one organization under a single senior manager. These were originally separated in response to the projects failure to manage the sludge retrieval portion adequately to achieve startup and was the primary corrective action for project management problems. While reuniting the projects will remedy interface problems complicating basin cleanup, e.g., debris interference with sludge retrieval, it is not clear what is being done to compensate for the removal of the project management corrective actions. (II)