

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 2, 2005

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: J. S. Contardi/M.T. Sautman, SRS Site Representatives
SUBJECT: SRS Report for Week Ending September 2, 2005

Neptunium Processing: Last week, the contractor declared a positive unreviewed safety question for the storage of several drums containing neptunium oxide in K-Area (Site Rep. Weekly 08/05/05). The moisture content in the drums may result in unacceptable hydrogen accumulation within the shipping package. The drums will be sent to HB-Line for reprocessing or additional moisture analysis. Neptunium processing in HB-Line has been suspended since the facility shutdown in July. To alleviate future moisture uncertainties, the contractor will sample and analyze each product can produced upon resumption of operations.

Americium Stabilization: During the stabilization of a significant quantity of americium oxide, the job was suspended due to higher than expected dose rates (Site Rep. Weekly 8/12/05). This week, the contractor safely removed the stabilized material from the glovebox. In planning for the material removal evolution, a glovebox mockup was utilized as well as computer modeling of the dose rates. The computer modeled dose rates closely matched the measured values (34 R/hr versus 37 R/hr, on contact). Initial work planning for the stabilization of this material did not incorporate such modeling which led to grossly underestimated dose rates.

Personnel Contamination: During the drying of radioactive samples at the Savannah River National Laboratory, a laboratory technician picked up contamination on her shoe. The sample had a high specific activity, $\sim 10^8$ dpm/ml, and was being dried in a beaker on a hot plate within a hood. A subsequent survey of the laboratory found $\sim 60,000$ beta/gamma per 100cm^2 on a mat in front of the hood. Last November, a similar event in the same laboratory also resulted in a personnel contamination. A corrective action from the previous contamination resulted in the addition of a splash shield within the hood, which was in place for the most recent event. A thorough critique was held and several corrective actions were identified, including an evaluation of potential ventilation effects from the splash shield and use of an enclosed oven rather than a hot plate.

F Tank Farms: The 2-F evaporator system has been shutdown since July 13, 2005, when a planned outage began on the chromate cooling water system. During the outage, a leak was identified, but required significant effort to determine the site of the leak and repair it. Examination of the leak site revealed localized through wall corrosion. A previous project to upgrade the system was terminated based on the expected future need of the 2-F evaporator. However, more recent projections indicate the need to extend the utilization of the evaporator system and the contractor may need to reevaluate upgrading the cooling water system.

H-Canyon: While handling boxes previously removed from a black box (Site Rep. Weekly 8/19/05), liquid unexpectedly leaked out. Although the liquid was not contaminated and was suspected to be rainwater, the Site Rep encouraged the contractor to sample the liquid to ensure it had not contacted any chemical residues. The liquid was later found to be basic (pH 10-11).