

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 21, 2008

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director  
**FROM:** M. P. Duncan and M. T. Sautman, SRS Site Representatives  
**SUBJECT:** SRS Report for Week Ending March 21, 2008

**F-Tank Farms:** The Site Rep observed the Phase II Full Scale Demonstration of the Tanks 18 and 19 Mechanical Cleaning System (aka Sand Mantis). Portions of the test will have to be reperformed in April because the eductor nozzles plugged three times, possibly due to leftover machining debris in the water supply system. The sand mantis was able to maneuver around the simulated tank. The ultra-high pressure sprays broke up the sludge simulant/zeolite and the eductor was usually able to transfer the simulant 60 feet vertically and 600 feet horizontally. The immersion mill was able to grind up the zeolite particles, but its dump valve became obstructed.

While workers were handling a HEPA vacuum in a clean area, the unit separated and spilled some of the previously vacuumed material. The responding radiological control personnel found up to 40,000 dpm  $\beta$ - $\gamma$  (direct probe) and secured the area with plastic. Although the material was highly dispersible and it was windy, no contamination was found on any personnel. A similar incident had occurred in the past with a HEPA vacuum model from the same manufacturer that had the same potential failure mechanism. WSRC had identified and installed an engineered fix to prevent recurrence and plans to determine why its previous corrective actions failed to identify that this particular model needed the same fix.

**H-Canyon:** Stabilization of plutonium (Pu) beryllium material is complete. Once the 6.1 Dissolver pot is replaced this Spring, it will be used for processing highly enriched uranium oxides from Los Alamos. Once that campaign is complete later in 2008, this dissolver may be dedicated solely to dissolving Pu metal in order to maximize the Pu content in upcoming Defense Waste Processing Facility sludge batches. Current sludge batches have not had too much Pu in them and DOE wants to avoid deferring too much Pu to sludge batches near the end.

While a crane operator attempted to reposition a pump suction line, its lifting bail became disengaged from the hook. As it fell, it caused the connected 300 lb pump skid to fall into the 16H cell. As it fell, the pump flipped, causing the several connected hoses to become entangled in nearby cables, jumpers, and bails. The Site Rep observed the crane operator laboriously untangle the hoses from the equipment this week.

**H-Tank Farms:** DOE approved the Critical Decision-1 package for Tank 48 Fluidized Bed Steam Reforming. Hot tie-ins are complete for the Modular Caustic Side Solvent Extraction Unit.

**Solid Waste Management Facility:** An investigation has determined that a drum of remote-handled transuranic (TRU) waste from Battelle-Columbus is actually high-level waste.