

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 5, 2007

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director  
**FROM:** M.T. Sautman, SRS Site Representative  
**SUBJECT:** SRS Report for Week Ending October 5, 2007

**Transuranic (TRU) Waste:** The Drum Venting System (DVS) is used for venting TRU drums and measuring the hydrogen concentration in the headspace with a gas chromatograph (GC). The DVS design allowed the recent failure of the GC sample pump to be a single point failure. The system was incapable of drawing a representative gas sample for the GC, yet the calibration gas pressure allowed the system to continue to pass periodic calibration checks. The DVS indicated that a drum headspace was initially 0.5% H<sub>2</sub>, yet the WIPP Flammable Gas Analysis conducted 4+ weeks after venting still measured 5.4% H<sub>2</sub>. Since the last calibration with certified gas samples, ~300 TRU drums were determined to be nonflammable, of which ~200 are stored outside of concrete culverts. These are now considered to have potentially indeterminate headspace gas analysis. A violation was declared based on the failure to properly handle and store drums using unvented drum controls in the Justification for Continued Operations. A response plan has been developed.

**H-Canyon:** Two 5-gallon bottles were used to collect liquids during the repair of a pump used for 450 g/l natural uranium solutions and were then stored in a Radiological Control office for about four months. During housekeeping, these two bottles, labeled as "H20" and "Polybottle," were poured into a basin and rinsed. When a yellow stain was noticed afterwards, radiological surveys found 18,000 dpm/100 cm<sup>2</sup> α (smear) and 120,000 dpm/100 cm<sup>2</sup> β-γ (direct) in the basin.

**Tritium:** The wrong gas mixture was used to leak test reservoirs (although subsequent tests indicated it likely did not impact the results). The receipt inspection did not require verification that the gas composition on the certificate of analysis (0.05% H<sub>2</sub>) matched the specification (0.5% H<sub>2</sub>). Although the use-every-time leak test procedure required the gas composition to be verified each time, some reservoirs were tested with the wrong gas before an operator noticed the mistake.

**HB-Line:** Configuration control was lost on a Neptunium Hold Tank. In August, a mechanic reinstalled an orifice on an overflow line (that appears to have been unknowingly disconnected for months/years) rather than on the desired recycle line. Neither line was labeled and visibility was poor. Rather than consult the referenced drawing, the mechanic just installed it on the open line as was the common practice without anyone realizing that there was a second open line nearby. Other maintenance activities this week resulted in the accidental discharge of three Halon cylinders into a glovebox and switching a Process Air Compressor from the load to the unloaded position (which triggered low process air pressure and low purge airflow alarms).

**Senior Supervisory Watches (SSWs):** Around-the-clock SSWs resumed at H-Canyon and HB-Line as part of an effectiveness review. Several shifts failed and management is determining how these will be addressed. Based on generally positive observations, continuous SSWs have been discontinued for all but one crew in the tank farms. An action plan was developed to address observed weaknesses with technical work document adequacy, management leadership, and control room professionalism. In addition, all Persons-In-Charge will be requalified.