

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 6, 2005

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director  
**FROM:** J. S. Contardi/M.T. Sautman, SRS Site Representatives  
**SUBJECT:** SRS Report for Week Ending May 6, 2005

**Hydrogen:** Messrs. Stokes, Plaue, and Sautman reviewed potential confined hydrogen hazards at the Defense Waste Processing Facility (DWPF), Salt Waste Processing Facility, H-Canyon, and tank farms. A positive Unreviewed Safety Question was declared this week at DWPF due to the potential increase in the frequency of malfunction of equipment important to safety (ITS) and the possibility of creating a malfunction of ITS equipment of a different type than previously analyzed. The Department was requested to accept the potential risk associated with explosions of trapped hydrogen without compensatory measures because it is believed that such explosions will not impact ITS equipment based on equipment design, the expected volumes of hydrogen, and the lack of ignition sources. Department review is ongoing, but approval is expected soon.

**Skin Contamination:** During an exit survey, a construction worker was found to have 8,000 dpm  $\alpha$  on his ring finger. The worker had been installing supports for electrical conduits within Section 4/5 of H-Canyon. The maximum contamination levels in the work area were 600,000 dpm  $\alpha$  and 4 millirad/hr  $\beta$ - $\gamma$ . Decontamination efforts at the facility were marginally successful and the employee was transferred to an on site medical facility for a potential puncture wound. Nasal and saliva smears were less than 20 dpm  $\alpha$  and 200 dpm  $\beta$ - $\gamma$ , and a 24-hour bioassay sample will be collected. Radiological personnel performed followup surveys of the worker's gloves and other personnel protective equipment which were negative. Since the source of the contamination is unknown, site personnel are preparing a recent work history for the employee to determine if the contamination could have occurred elsewhere on site.

**F-Canyon Pipe Jacket Failure:** Site personnel transfer liquid waste from F-Canyon to F-Tank Farm using a jacketed waste header. Three headers exist but one is out of service due to a leak in the header jacket. The other two headers share a leak detection box near the canyon. A recent pressure test of the in-service header jacket indicated a leak. Subsequent troubleshooting revealed a leak near the leak detection box used for conductivity probes and other equipment. The contractor applied an epoxy at the leak site but the jacket would still not hold the required test pressure. Helium additions to the jacket pipe did not reveal additional leaks. Site personnel have prepared a non-conformance report and a Unreviewed Safety Question Evaluation, which was negative. The contractor anticipates placing the header, with the jacket leak, back in service this week. The Documented Safety Analysis identifies the jacket pipe as safety significant for the collection and detection of waste potentially leaked from the safety class core pipe.

**Transuranic Waste Processing:** Solid Waste Management Facility personnel have completed the Contractor Readiness Determination (CRD) for transuranic (TRU) drum remediation in the TRU Visual Exam Facility (TVEF). Four pre-start and twenty post-start findings were identified. Following appropriate closure of the CRD findings, the contractor began operations. Thus far two drums have been remediated. A subsequent CRD will be performed for culvert retrieval.