

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 19, 2007

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director  
**FROM:** B. Broderick and C. H. Keilers, Jr.  
**SUBJECT:** Los Alamos Report for Week Ending October 19, 2007

NNSA and the staff held a video-teleconference this week on projects for new TRU waste facilities.

**Criticality Safety:** For TA-55 vault rooms, LANL is preparing new, compliant evaluations to address deficiencies. For all the other TA-55 fissile material operations, the screening process developed two weeks ago has proven difficult to implement in a timely and effective manner and is being re-evaluated. Once operations start to resume on a larger scale, operators may become confused on which specific work stations are still paused; TA-55 has a solution for this, but it is not yet implemented.

**Transuranic (TRU) Waste Operations:** On Tuesday, the WCRR repackaging facility resumed work, focused on drums with low hydrogen retention potential; WCRR has remediated 24 high-activity drums since that campaign began in September. Most Area G characterization activities remain suspended; the investigation of the Oct 8<sup>th</sup> foot injury continues. The RANT facility is making thrice-weekly shipments to WIPP from the certified backlog; high-activity drums are now being shipped, increasing the total curie-contents for some payloads by a factor of four compared to prior shipments.

**Radioactive Liquid Waste Treatment Facility (RLWTF) Replacement Project:** The 44-year-old RLWTF is in degraded material condition and is a potential single-point-failure for nearly all LANL nuclear operations. In the last year, due to budgetary issues, the replacement project has slipped expected operational startup from mid-FY-10 to early FY-12 (site rep weeklies 2/9/07, 9/8/06).

While the replacement facility is designated Hazard Category 2 (HC-2), chemicals are the dominant hazard. A radioactive inventory about 40 % above the HC-2 threshold is postulated following a TA-55 upset; more could be done to retain that inventory in TA-55, the more robust facility. Given this inventory and the postulated accidents, LANL believes that the new facility warrants PC-2 for the seismic and wind hazards, and requires a few safety-significant systems, including the structure, fire suppression, vehicle barriers, chemical spill containment, TRU and bulk chemical tanks and piping, and TRU drums; neither active nor passive building confinement is proposed as safety-significant.

**Weapons Engineering Tritium Facility:** On Monday, during multiple concurrent operations to prepare a vessel to ship tritium offsite, an operator inadvertently transferred gas to the vessel before it had been fully prepared to receive the material. Portions of the vessel preparation activity are robustly proceduralized, but ancillary gas transfers rely heavily on operator experience and training. The mis-transferred material was fully contained by the vessel, and the pressure was well below the rated capacity; however, the conditions did exceed the vessel's normal service specifications. In response, the facility has taken action to increase the rigor of gas transfers by requiring an independent review of the proposed flow path and valve lineup by a second qualified operator prior to executing a transfer.

**Los Alamos Neutron Science Center (LANSCE):** LANSCE is nearing completion of the readiness process for dynamic experiments with plutonium, which may begin next week (site rep weekly 6/22/07).

**Sigma Complex (TA-3-66):** On Tuesday, a researcher in Sigma, a radiological facility, received a small burn when a chemical powder he was working with ignited. A second researcher put out the fire with an extinguisher. The fire department responded an hour later, due to communication delays mainly at the facility, and confirmed that the fire was extinguished.