

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 7, 2007

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director  
**FROM:** B. Broderick and C. H. Keilers, Jr.  
**SUBJECT:** Los Alamos Report for Week Ending December 7, 2007

The Board and a staff team were here this week reviewing LANL activities. On Wednesday evening, the Board conducted a public hearing and meeting to assess LANL's safety posture, including the response to suggested actions in a Board letter to the NNSA Administrator, dated Feb 1<sup>st</sup>, 2007.

**Contaminated Puncture Wound Followup:** LANL has completed the final dose assessment for the individual who sustained the contaminated puncture wound in January in the Chemistry and Metallurgy Research Building (site rep weekly 1/12/07). The whole-body committed effective dose has a central tendency of about 7.4 rem, which exceeds the federal annual limit for occupational exposure (5 rem, 10 CFR 835). The bone-surface committed effective dose is about 128 rem, which also exceeds the applicable federal annual limit (50 rem, 10 CFR 835). The final dose assessment was delayed because the individual elected to receive periodic chelation therapy for an extended period; the site reps understand that periodic chelation was very effective in reducing retention of plutonium and dose.

LANL's corrective actions from this event and the similar event at TA-55 have been reported (site rep weeklies 9/7/07, 8/31/07, 6/1/07). Contaminated puncture wounds are fortunately rare in the DOE complex. Further systematic review may be valuable to capture lessons learned and to guide the early decision-making process when responding to any future such events at DOE sites.

**Nuclear Material Packaging:** The Plutonium Facility (TA-55) reported this week that about a quarter of a 5-year-old lot of empty Hagan containers in storage had deteriorated filter gaskets. The Hagan – also referred to as the TA-55 standard container – is a robust screw-top design that is widely used for storing plutonium outside glove-box lines; it is the container-of-choice for current repackaging efforts. The gaskets in question provide the seal between the lids and the lid-filters and were expected to have a 10 to 20 year shelf-life. The deterioration seems localized to the outer edge and to not affect the sealing surfaces, indicating, so far, no loss of sealing function.

TA-54 (Area G) transuranic waste drums use the same gasket and filter design in their lids, and they have been alerted. TA-55 is evaluating quality assurance and safety basis implications using the nonconformance reporting (NCR) system and the unreviewed safety question (USQ) process.

**Transuranic Waste Operations:** NNSA has approved changes to the WCRR facility safety basis to allow remediation of unvented waste containers up to 30 gallons (site rep weekly 11/30/07).

**Infrastructure:** Last Friday, high wind and rain caused power loss and water in-leakage in several nuclear facilities, including TA-55, which appears to have significant roof bubbling and degradation.

**Federal Oversight:** A team from the DOE Office of Independent Oversight (HS-64) was here this week to discuss with NNSA and LANL their draft report from their biennial review. The DOE Inspector General (DOE-IG) also had a team here this week conducting a review of the DOE Material Recycle and Recovery Program, which at LANL is closely linked to nuclear material stabilization and packaging (site rep weeklies 11/9/07, 10/12/07, 4/27/07, 10/29/06).