

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 17, 2007

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director

**FROM:** B. Broderick and C. H. Keilers, Jr.

**SUBJECT:** Los Alamos Report for Week Ending August 17, 2007

**Plutonium Facility (TA-55):** TA-55 paused fissile material handling operations Thursday and resumed such operations Friday following NNSA approval of the provisional certification of TA-55's fissile material handlers. LANL has also recognized that TA-55 was non-compliant with its approved safety basis, which explicitly invokes the DOE Order 5480.20a certification requirements for fissile material handlers under an administrative control program. While TA-55 fissile material handlers undergo a qualification process with many of the elements appropriate for certification, that process lacked the full rigor of a formal certification process (site rep weekly 8/10/07).

**Criticality Safety:** While walking down TA-55 pit casting operations on Wednesday, an NNSA facility rep and a criticality safety subject matter expert discovered a discrepancy in criticality safety posting, which led to discovery of staged plutonium metal in excess of the workstation limit. Personnel evacuated the room; the LANL criticality safety group evaluated the situation; the over-mass condition was appropriately corrected; TA-55 pit operations are curtailed pending further review. This single failure appears to have had little effect on the margin of safety of this operation.

The over-mass condition arose as follows. For several years, the casting group has used a glovebox for staging that was divided into two workstations. In May, the casting group began to bring an inactive furnace in this glovebox on-line. Working with the criticality safety group, they reassigned it as a single workstation, consistent with other casting boxes, and assigned new limits. Operators were trained on the change; however, only one of the two glovebox postings was changed, and the MASS database was not updated. Recently, operators began casting in this glove-box. Per procedure, they checked MASS, the postings, the other indicators, all of which incorrectly reflected two workstations; they staged items in the glovebox consistent with those indicators and with the glovebox's prior use.

Updating workstation postings and MASS is expert-based; the site reps believe that informal change control and startup review, coupled with distraction due to production pressure, led to this workstation being incompletely updated. When checking extent of condition, TA-55 identified about two-dozen transfer (i.e., drop) boxes that are properly posted but may be susceptible to similar problems; these boxes as a class were reassigned last year as single locations but MASS still reflects two locations (site rep weekly 3/10/06). TA-55 is working toward correcting these conditions and establishing more formal protocols for declaring operability of gloveboxes and for updating criticality safety postings.

**Packaging and Transportation:** In two separate incidents this week, LANL discovered unexpected contamination associated with material shipments to Area G. On Tuesday, approximately 20 gallons of rainwater mixed with low activity borehole cuttings from TA-21 was released during transport. Onsite and offsite leakage areas were identified, and appropriate response action was taken to characterize the potential releases, which showed no detectable radioactivity. On Wednesday, external contamination, possibly the result of a degraded gasket, was discovered on a shipping cask containing waste from TA-48. Preparation and execution of these material moves were not conducted by the dedicated LANL packaging and transportation (P&T) group. It appears that moves not conducted or supervised by this group do not benefit from this group's level of rigor and formality in important areas, including inspection of equipment and verification of packaging certification and pedigree.