

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 31, 2006

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director  
**FROM:** C. H. Keilers, Jr.  
**SUBJECT:** Los Alamos Report for Week Ending March 31, 2006

**Integrated Work Management (IWM):** The LANL Director addressed the lab this week on safety-related lessons learned so far during his 10-month tenure. He emphasized that LANL continues to deliver top-level work in spite of distractions and transition-related stress; that procedures have to be followed, particularly for nuclear operations; that the integrated work documents, which capture activity-level hazards and controls, set the boundaries for bench science; that the new IWM process is necessary but not sufficient – it cannot be separated from the worker being involved in the process and thinking through the activity; and that it is constructive for people to report safety lapses and issues.

**Criticality Safety:** Last week, LANL organizations reported two separate criticality infractions: one involved an 11% mass and volume exceedance for an archival solution sample; the other involved an unevaluated geometry for a set of metal items that were within mass limits. Both reports resulted from heightened sensitivity of workers to criticality safety. As part of its criticality safety improvement plan, LANL plans to complete walk-downs of medium-priority processes, as well as drafts of new institutional criticality safety policies and procedures in May (site rep weekly 3/10/06).

**Waste Operations:** Efficient transuranic (TRU) waste operations and shipment are key to addressing LANL's highest consequence nuclear accident postulated in approved safety analyses. LANL has nearly completed characterizing the set of about 2,000 higher-activity drums in the Quick-to-WIPP program and has shipped about 860 of these drums to WIPP (i.e., 43 %); the extended-shift approach suggested by the workforce has been remarkably successful at acceleration. LANL is currently making up to 4 shipments per week, with a near-term potential to move to 7 shipments per week.

This progress is at risk due to DOE budget issues. During a Citizens Advisory Board meeting this week, NNSA and LANL stated that the FY-06 legacy waste disposition budget is being cut 28 % (i.e., from \$51M to \$37M) and that this will likely result in suspending prohibited item disposition in the WCRR Facility after the Quick-to-WIPP drums are completed in April and suspending other characterization operations in July. This is unfortunate: stopping and restarting operations is grossly inefficient compared to maintaining a steady pace; LANL has also found that a large fraction of legacy drums have items prohibited by WIPP, removing these items has tended to be rate-limiting, and safely resuming operations in aging, marginal facilities such as WCRR is difficult and time-consuming.

The basis for these funding decisions rests on the perception that shipping the 2,000 Quick-to-WIPP drums will significantly reduce the safety risks associated with LANL TRU waste operations; however, the risk reduction from Quick-to-WIPP may not be as great as NNSA once perceived (site rep weekly 1 /20/06). LANL now has roughly 25,000 drums containing more than 140 kCi above ground. By 2012, LANL expects to generate new waste and retrieve buried waste, resulting in about 50,000 drums in total that will need to be characterized and shipped. During much of this period, the total above-ground inventory is likely to remain comparable to the current level, and while the average radioactivity per drum is low, there will likely continue to be a set of drums that constitute a risk comparable to those in the Quick-to-WIPP set for some time. At the very least, a more detailed evaluation of the risks incurred from these decisions is needed; based on what is known now, the chosen course appears counter to both sound business practice and sound risk-based decision making.