

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 4, 2005

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director  
**FROM:** C. H. Keilers, Jr.  
**SUBJECT:** Los Alamos Report for Week Ending November 4, 2005

Anderson, Burnfield, Jordan, and Von Holle were on site this week reviewing the status of LANL initiatives on integrated work management and conduct of engineering.

**Waste Operations:** LANL transuranic waste shipments to WIPP are the principal means for LANL to reduce risks associated with the lab's highest consequence nuclear accident postulated in approved safety analyses (site rep weekly 9/23/05). Rate of shipment dropped from 9 truckloads per month in September to 1 per month in October due to the priority DOE has assigned to shipments from Idaho (~80/month). NNSA expects LANL shipments to resume at a rate of 1 per week later this month.

**Integrated Work Management (IWM):** The staff team observes that, within the Operational Efficiency (OE) project, the safety element, which builds on the IWM initiative, still has the greatest potential to directly improve worker safety, as discussed in a Board Itr to the NNSA Administrator (7/21/05); this is also the only effort at LANL that can eventually address work planning and control commitments made by the Secretary in DOE's implementation plan for Board Recommendation 04-1.

While significant progress has been made, implementation remains incomplete and is hampered by lack of consistent and continuously visible support by both NNSA and LANL senior managers as a high priority, lack of consistent understanding of the process at all levels, and insufficient availability of qualified mentors and subject matter experts (e.g., RCTs, IH). Although not always apparent, LANL has worked hard on this initiative; there have been at least four major revisions of the IWM procedure in the last two years; these were necessary, but the turnover frustrated the workforce. The lack of common understanding of the process is closely linked to broad issues at LANL in developing effective institutional training, which LANL is separately working. The limited availability of subject matter experts may be exacerbated if process changes are made that require more documentation but thereby reduce on-floor time and reinforce the opinion of many that this is primarily a paper process.

A common factor in each of the major accidents and near-misses at LANL during the last two years has been the human performance element, and LANL now has at least four loosely-coupled pilots underway to test implementation of best practices (e.g., INPO). This "test before implementation" approach is prudent, but integration will be needed. This effort is encouraging and appears key to LANL evolving into a high-reliability organization as described in DNFSB TECH-35, Dec 2004.

**Conduct of Engineering:** This OE element has shown the greatest improvement during the last two years of any of the eight OE sub-projects: two years ago, LANL had some groups with self-developed partially structured approaches to engineering tasks, but no institutional program (Board Itr 1 /27/04); now, there is an institutional program focused on high hazard and nuclear facilities with a good start at developing and implementing standardized approaches and with a small cadre of formally trained and qualified system engineers. There is also growing recognition among those directly involved with engineering that if these new approaches had been taken by some past LANL projects, then startup and life-cycle costs would have been substantially reduced. That said, senior management attention is warranted to ensure sustainability and further progress; challenges include: sustaining procedure and training development; establishing clear and formal linkage to other lab-wide processes (e.g., QA, IWM, USQ); moving out smartly on a multi-year technical baseline reconstitution (only about 3 % funded in FY-06); and logically evolving applicability into lower hazard and radiological facilities.