

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 27, 2007

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: B. Broderick and C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending July 27, 2007

Davis was on site this week observing the WCRR ORR; Plaue, Roscetti, and Shackelford were here reviewing safety systems; Broderick was off-site two days reviewing Pantex lightning protection.

Engineered Controls: LANL nuclear facilities have 46 active and 47 passive safety systems. A January 27th, 2004 Board letter identified weaknesses in LANL engineering practices for determining that such systems will adequately perform their intended safety functions; a contributing factor is that the safety functions are often not clearly defined in the safety bases, which generally have not been updated. More recently, a November 2005 DOE-OA assessment reported similar issues and concerns.

Based on the staff's detailed review of 6 active systems, these issues persist: LANL still does not have the configuration management, maintenance, and engineering elements in place to demonstrably assure these systems will adequately perform their credited safety functions. For several years, LANL has been developing a conduct of engineering program to address such issues, but this effort is insufficiently supported, it's understaffed, it's under-assessed, and it has yet to increase confidence in these systems.

Transuranic Waste Operations: The two-week NNSA operational readiness review (ORR) started Monday for the WCRR facility high-activity drum campaign. Last Friday, NNSA approved the safety basis change reflecting a new fire barrier and drainage between the building and a nearby transformer.

On Tuesday, radiography determined that a low-activity drum (less than 0.5 Ci) contained a 2L bottle, half-full of liquid believed to be propane; the drum is two-decades old. LANL has isolated the drum, and pending safety review, intends to move the drum to an Area G permacon and to remove the bottle, possibly next week. LANL recently completed a management self-assessment of this permacon for dewatering and repackaging low-activity solidified drums, which started this week.

Plutonium Facility (TA-55): On Monday, TA-55 workers found a component cleaning glovebox had spent cleaning solution in excess of posted criticality safety limits (i.e., moderator/reflector); the safety margin was not impacted. Workers had intended to sample and remove the spent solution last week, which requires suspending room operations, but did not do so because of production schedule pressure.

Chemistry and Metallurgy Research Building Replacement Project (CMRR): NNSA and LANL have determined that CMRR's preliminary design and preliminary documented safety analysis (PDSA) have diverged from the 2006 nuclear safety strategy; furthermore, the current draft PDSA is based on an earlier version of the design, and its justification for proposed controls is incomplete. LANL subcontractors have begun to revise the design and PDSA to be consistent with the safety strategy, but achievement of this objective is not assured (site rep weeklies 4/27/07, 4/28/06, 3/17/06).

Management: LANL senior management is increasingly focused on the future and sustainability of the laboratory, which affects their level of attention to nuclear operations. At the next tier, management responsible for nuclear and high hazard operations has focused on the WCRR upgrades to meet current standards; this has been essential to driving progress. The operations management tier is largely consumed with solving daily problems, such as those reported last week for TA-55, and frequently struggles with issues involving the authorization bases, material condition, and institutional support.