

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 6, 2004

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending February 6, 2004

Plutonium Facility (TA-55): Last week, the NNSA Site Office endorsed a LANL recommendation to install a new diesel generator and upgrade TA-55 electrical switchgear so that power is automatically restored to key electrical loads, like confinement ventilation. LANL estimates that this will reduce risk by 18% and 6.5% to the public and workers, respectively. A funding source is to be determined.

LANL's electrical evaluation is based on the proposed new TA-55 safety basis, submitted nearly two years ago and still not acted upon by NNSA. At this point, the proposed safety basis itself needs updating (Site Rep weekly 10/24/03). Safety basis updates are expected to be proposed and approved once per year, but this has rarely occurred for LANL nuclear facilities. The current TA-55 safety analysis report and technical safety requirements (TSRs) were approved in 1996 and 1999. The need for this particular electrical power evaluation arose from a DOE commitment to the Board made in March 1996 and then revised in May 2001, when it was linked to the long-delayed new safety basis.

Recommendations 94-1/00-1: Progress has stalled on installing large vessel clean-out equipment in the Chemistry and Metallurgical Research Building (CMR) Wing 9 (site rep weekly 6/20/03). The delay is due in large part to unclear expectations between LANL and NNSA on whether this constitutes a major facility modification and on the maturity and pedigree required of the safety analysis before LANL takes receipt of major components. Ventilation components are already in place. Delivery of the confinement enclosure has been on hold since about January 5th. LANL submitted a process hazard analysis for approval on January 16th. NNSA action is pending.

This and other LANL projects have been adversely impacted by lack of clear, specific criteria on what constitutes a major facility modification requiring a preliminary documented safety basis (PDSA), as well as lack of explicit management commitment early in each project's lifetime on how safety basis development and NNSA safety basis approvals will be sequenced into the acquisition process. LANL construction management requirements do include checklists for assigning responsibilities during the conceptual phase for preparing a safety strategy and for identifying safety systems.

Radioactive Liquid Waste Treatment Facility (RLWTF): This week, NNSA approved the PDSA submitted in October for the new TA-50 pump house & influent storage facility, with 0.3M gal capacity. This is a new Hazard Category 2 nuclear facility addressing lessons from the Cerro Grande fire (site rep weeklies 8/30/02, 1/17/03). The project is nearly a year behind, in large part due to 3 iterations on the PDSA. The new tanks will normally receive low-level wastes (500 nCi/L, ~1 Ci max total). TA-55 transuranic liquids go elsewhere in RLWTF. The bounding accident assumes major combined upsets that dump the entire RLWTF inventory and a TA-55 discharge into the new tanks – 182 Ci Am-241 equivalent. This postulated accident has off-site consequences of about 5 Rem. Designated safety-significant systems include: tank vents; fire suppression; building design (PC-2); lightning protection; vehicle barriers; liquid system confinement; underground piping; and safety shower/eyewash units.

Authorization Basis (AB): Because of their importance, safety basis documents need to be quality documents – clear, complete, correct, concise. The recent NNSA approval record on WETF lightning protection lacks clarity, is incomplete, and may not be correct – it's unclear (site rep weekly 1/23/04). It is not a quality document. The NNSA letter also attempts to address broad issues and then imposes safety basis changes, bypassing the normal process of NNSA holding LANL responsible for formally recommending and justifying such changes. In essence, the "checker" became the "doer." NNSA has frequently commented on quality in LANL AB correspondence and could set a better example.