

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 19, 2007

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director

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

SUBJECT: Los Alamos Report for Week Ending January 19, 2007

Deplitch and Goff were on site this week to observe a criticality assembly control system design review.

Operations: While core activities such as pit manufacturing are meeting targets, support operations and safety programs are increasingly strained to meet commitments within budget. For example: • extended-hour operations at the Plutonium Facility (TA-55) are now the rule rather than the exception but are not clearly supportable by institutional services, such as emergency response; • management has appropriately increased focus on reducing Area G transuranic waste inventory – e.g., extended-shift waste repackaging started this week in WCRR – but management has reduced focus on receiving TA-55 waste; as a result, TA-55 is accumulating waste and may need to slow down Pu-238 residue disposition, one of TA-55's most important risk reduction activities; • TA-55 is accumulating solutions that the Radioactive Liquid Waste Treatment Facility may need to process before upgrading its deteriorated systems; the alternative, retention in TA-55, also has issues; • unvented drums found in Area G in October still lack a path-forward; • several nuclear facilities have shortages in system engineers; • maintenance and worker qualification databases are marginally supported; • the institutional training program is underfunded and unlikely to make substantial progress this year on correcting longstanding training issues that were a contributing cause for the LANL 2004 stand-down.

Chemistry and Metallurgy Research Building (CMR): CMR is an example of conditions described above. To support pit manufacturing, CMR worked extended hours this week to recover from an analysis backlog caused by infrastructure issues that impacted programmatic equipment. The CMR operational staff has been cut by 16 % since October; losses include systems engineers (now at a quarter of estimated need), work planners, radcon technicians, waste services, and maintenance crafts. On the present course, CMR may need to begin to secure some operations in response to random equipment failures within weeks or months. This run-to-failure approach for CMR has been considered before and rejected; deliberate well-planned reduction of operational footprint is preferred. LANL has recently identified a need to extend CMR lifetime notionally to 2016; sharply reducing facility maintenance now is inconsistent with lifetime extension (site rep weekly 12/1/06).

Contaminated Wounds: Two events have occurred: • LANL has launched an investigation into the CMR puncture wound reported last week; it is to be completed by Feb 20th; NNSA is considering the need for a federal Type B investigation, per DOE Order 225.1A, *Accident Investigations*; CMR has taken actions to control the scene and to address already apparent problems. • On Wednesday (1/17), a TA-55 pit machinist was scratched and became contaminated while working in a glovebox; the wound count is positive; TA-55 has curtailed pit manufacturing work and is reviewing operations. CMR and TA-55 are also re-examining their glovebox glove integrity programs, which have weaknesses but are a key component in several facilities (e.g., WCRR) for worker radiological safety.

Criticality Safety: On Wednesday, a TA-55 worker reported a 20 % over-mass condition on a shelf of a cart. The room was secured; the condition was evaluated and corrected per LANL procedures. LANL's review of the event found problems with postings and with operator interpretation of which had over-riding precedent: the room posting or the cart posting. Underlying these problems are weaknesses in operator training and in implementing the Criticality Safety Officer program; these are focus areas for the criticality safety program improvement efforts (site rep weekly 12/22/06).