

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 25, 2004

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending June 25, 2004

Burns, Fortenberry, and Merritt were here this week for an overview of LANL operations.

Critical Experiments Facility (TA-18): NNSA and LANL will brief the Board on July 8th regarding the issues in the Board's May 21st letter. LANL has curtailed activity on the safety-class temperature-based scram systems because of the limited remaining life for TA-18 Security Category I/II activities (i.e., to 10/05). This increases reliance on administrative controls to prevent uncontrolled reactivity excursions. TA-18 has bounded the significance of this by restricting critical operations with more than 10 gm Pu to just 3 experiments (site rep weekly 6/11/04). LANL has committed to requesting NNSA approval in a new safety basis to continue two of the experiments and to conduct the third. However, LANL is continuing now with the two experiments in advance of requesting NNSA approval. While the experiments may be straight-forward, it seems that LANL should expeditiously identify to NNSA the administrative controls that are being depended on to fulfill the safety-class functions and the actions being taken to verify those controls are implemented and maintained.

Price Anderson Enforcement Letter: NNSA has sent LANL a preliminary notice of violation for the TA-55 Pu-238 uptake event (8/5/03), the TA-55 toxic vapor exposure event (9/27/03), and LANL radiological protection issues (site rep weekly 3/26/04). For the Pu-238 event, NNSA identified: two workers receiving exposures above the federal limit (5 Rem TEDE); inadequate work controls and failure to comply with those work controls that were in place; quality issues, particularly for the residue containers; safety basis violations, particularly for the seismic racks used to store containers; and radiological control deficiencies. The TA-55 toxic vapor exposure event resulted, in part, from some of the same work control issues. Due to the long-standing nature of some of the underlying problems, NNSA chose to escalate the severity level assigned to some of these violations (site rep weekly 7/11/03). NNSA expressed concerns with the history of known problems with the Pu-238 residue containers and with LANL assessment processes failing to identify these problems. NNSA observed that, while LANL has taken actions to improve work control and nuclear safety, there is still a long ways to go. NNSA expressed concerns on whether the compensatory measures put in place are sufficient to prevent significant safety events like the Pu-238 uptakes and encouraged LANL to take a fresh look at what needs to be done in the short-term to assure safe operations. From discussion with LANL management, they agree with the strong needs to continue to improve in these areas.

Radiography Facility (TA-8-23): On May 4th, TA-8-23 management found a screwdriver being used as a shim to maintain contact between a roll-up door and a micro-switch for a safety interlock. The need to shim the door may have been exacerbated by recent modifications to the underlying concrete pad. LANL critiqued the event and concluded that a breach in conduct of operations had occurred but not a safety basis violation. The event came to the attention of NNSA Site Office management last week as part of the review of a new safety basis to replace the current 2-year-old justification for continued operation (JCO). The JCO generically identifies X-ray machine safety interlocks as engineered safety features. NNSA concluded that the screwdriver constituted an unauthorized modification to a engineered safety system, resulting in a safety basis violation.

It's positive that TA-8-23 management responded to the jury-rigged interlock and initiated action; however, NNSA and LANL review of both the event and the subsequent response has raised questions at both the facility and institutional levels such as: the adequacy of training, the level of operators understanding of the safety basis, the formality of both nuclear safety systems management and the USQD process, and the adequacy of support by LANL institutional organizations.