

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 11, 2003

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending April 11, 2003

On Friday, the site rep attended a meeting in Albuquerque on lab support for Pantex operations.

Integrated Safety Management (ISM): Last Friday (4/4/03), an employee was burned in a non-nuclear facility when a thermoplastic and aluminum compound he was removing from a petri-dish flash-ignited within an open hood. LANL is investigating. There may be parallels between this event and the chlorine dioxide explosion last year (site rep weeklies 1/11/02, 10/25/02). If so, this could indicate continued weaknesses in work controls for programmatic activities – particularly, in the LANL system of safe work practices. Institutionally, safe work practices are one of the main mechanisms for LANL implementing ISM in both nuclear and non-nuclear facilities. LANL's investigation of last year's event was thorough but institutional followup is still incomplete.

Chemistry and Metallurgical Research Building (CMR): Last Thursday (4/3/03), CMR Wing 5 had a partial ventilation shutdown, possibly due to crafts personnel inadvertently bumping a switch. This was a skill-of-craft job. There may be parallels to the TA-55 loss-of-ventilation two weeks ago when a worker inadvertently secured cooling water to a compressor (site rep weekly 3/28/03). In both cases, safety systems were impacted. On the positive side, the CMR operations center saw the ventilation fluctuation and decided to evacuate the wing since the fluctuation was unexpected. LANL systematically investigated the problem on Friday and returned the wing to normal operations.

Radiochemistry Laboratory (TA-48): On March 26th, two people picked up contamination on their clothing while performing elution in the hot cells. It appears the contamination resulted when pump lines were removed. Since this is similar to an event earlier this year, TA-48 has stopped this activity until it can be investigated and proper controls can be implemented. This is positive.

On March 19th, TA-48 had a natural gas leak near the hot cells due to a valve left open, detected by smell; however, the facility did not enter its emergency procedures and did not evacuate (correction to site rep weekly 3/28/03). The facility believes that an unsafe condition was a potential but did not actually exist – because the leak was isolated within 30-35 minutes after detection and, if gas were uniformly distributed, it would have been more than 18 hours before the space reached the lower explosive limit. This logic appears incorrect because of gradients and potential ignition sources. The event raises questions in addition to those involving the adequacy of procedures and controls for the natural gas system, considered safety-significant under the TA-48 authorization basis. The contrast to CMR's conservative response to the less hazardous condition discussed above is noteworthy.

Nuclear Material Management: LANL has recently identified several unrelated cases of unknown or poorly characterized nuclear materials (site rep weekly 3/14/02). While acknowledging the positive that these items are being found, NNSA has questioned the process used to identify and track such legacy items. NNSA has asked LANL to report on how these issues are being addressed, whether they constitute an institutional issue, and whether enhanced standards or requirements are needed.

In the TA-48 case, one of the two questionable casks was in a posted radioactive material storage area that is located right next to a shed containing propane bottles, a forklift, and other combustibles. NNSA is pursuing this possible hazard with facility management. The questionable cask has been relocated.