

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 17, 2003

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director  
**FROM:** C. H. Keilers, Jr.  
**SUBJECT:** Los Alamos Report for Week Ending January 17, 2003

**Safety-Related Infrastructure:** On January 9<sup>th</sup>, DOE directed LANL to deobligate remaining Cerro Grande appropriation funds, currently estimated at \$75M. The impact is still being evaluated; however, it appears far-reaching and will likely result in cancellation of projects that address significant vulnerabilities identified during and after the Cerro Grande fire (May 2000) – such as partial site-wide fire alarm system replacement and radioactive liquid waste facility upgrades.

The site-wide fire alarm project was intended to address significant vulnerabilities with the current system, which is about 2 decades old and an order of magnitude more complex than originally intended. It did not evolve in a controlled manner. It is a shared system with other demands that often automatically have higher signal transmission priority. LANL has reported numerous problems with the system, including a 2001 event when it took about 15 minutes for a fire alarm signal to reach the central alarm station. While LANL has compensatory measures in place (e.g., operator training to both pull the alarm and call 911), the current system suffers from reliability issues that appear to adversely impact not only life-safety but also timely emergency response for nuclear facilities.

The radioactive liquid waste facility upgrades are part of waste management risk mitigation. This facility is nearly 4 decades old and had to be manned during the Cerro Grande fire to prevent environmental release of low-level radioactive and chemical liquid waste. The upgrade project would have added a new pumping station, new influent monitoring and control capability, and new influent storage capability – reducing the probability of a radioactive/chemical environmental release.

**Plutonium Facility (TA-55):** Last Wednesday, a worker was opening an inner container of Pu-238 in a glovebox using vise grips and “felt” the outer container grab the glovebox glove. The worker observed a spot on the glove, closed his fist, and alerted others. Radiological controls personnel responded. Non-involved personnel evacuated the room. Personnel remaining in the room donned respirators. The worker then withdrew his hand from the glovebox while Radcon personnel simultaneously rolled up his surgeon’s glove. During the event, there were no airborne monitor alarms and no measurable release of contamination. Nasal smears were negative. The site rep believes that the immediate actions and followup review by the facility were thorough and appropriate. This reflects well on the facility’s training and preparation. However, the consequences of this event could have been more significant if the worker had been less observant (i.e., Pu-238 contamination release into a room with personnel not in respirators). While operators appear to have followed procedures (e.g., can edges were taped), it may be appropriate to confirm that sufficient actions are being taken to prevent glove-tears, particularly for Pu-238 operations.

**Authorization Basis (AB):** LANL has submitted for NNSA approval the TA-54 (Area G) updated AB, the TA-55 updated technical safety requirements (TSRs), and the TA-55 revised process hazard analysis for the new Pu-238 scrap recovery line (site rep weeklies 12/20/02, 1/3/03). Also, NNSA has approved downgrading the Radioactive Materials, Research, Operations and Demonstration Facility (RAMROD) from Hazard Category 2 (HC-2) to a radiological facility, based on an estimated Pu holdup less than one-quarter the radiological facility limit. RAMROD has been in cold standby for 3 years and will be used for personnel training and process development for plutonium operations.