

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 5, 2010

**MEMORANDUM FOR:** T. J. Dwyer, Technical Director  
**FROM:** B.P. Broderick and R.T. Davis  
**SUBJECT:** Los Alamos Report for Week Ending November 5, 2010

**Plutonium Facility:** Last Thursday, Plutonium Facility personnel lost control of radiological contamination during an operation to bagout material from a glovebox. The event occurred when one operator dropped a container to another waiting operator down an interface tube leading to the bagout port. When the container reached the second operator, the force caused his hand to pull down on the bagout assembly enough for the bag to detach from the glovebox port and breach the confinement boundary. Operators successfully re-secured the bag to the glovebox port with tape, and exited the area after continuous air monitors (CAMs) began alarming in their room. CAMs later alarmed in two adjacent rooms. The two operators and their attending Radiological Control Technician had contamination on their personal protective equipment and one operator had roughly 1100 dpm of alpha contamination on his skin. Nasal smears taken after all affected personnel doffed their respirators showed no detectable activity. This week, facility personnel performed a controlled re-entry to secure the bagged containers and decontaminate affected areas.

The design of the glovebox bagout port appeared to play a role in this event. Unlike most bagout ports found in the facility, this port lacks an engineered feature, such as a lip or raised nub, to help secure the bagout assembly to the port and prevent slipping. Also, this port included a long interface tube that required one operator to drop the container about 18 inches before it could be received and controlled by the other operator. Facility management has suspended all bagouts from gloveboxes with similar features until corrective actions can be developed and implemented.

**Chemistry and Metallurgy Research (CMR) Building:** A spill of greater than 5 gallons of contaminated liquid occurred in Wing 7 of CMR last Friday. There was no personnel contamination either during the spill or in subsequent cleanup activities. An analytical chemistry worker was disposing of approximately 2 liters of 2% concentrated nitric acid through the facility acid waste drain system. After pouring the acid into a hood drain, the worker opened a valve to the de-ionized water system to provide a flush of the acid drain line and exited the area. After the operator left the lab room, the acid drain line trap that connects to the hood drain separated and liquid from the trap and additional liquid from the de-ionized water system began to spill to the lab floor. The worker identified the spill upon return and contacted the Operations Center. The facility spill team was dispatched to the area to assess the spill and begin corrective actions. The emergency response organization was also contacted and responded to the facility. The de-ionized water was subsequently isolated and the spill was contained. During the event, the spill migrated to the basement and an uncontrolled lab corridor. Decontamination activities continued into this week. CMR personnel are developing corrective actions to reduce the likelihood of a similar event.

**Plutonium Facility – Fire Suppression System:** Last week, LANL requested site office approval to exit the Justification for Continued Operation (JCO) associated with deficiencies identified in the fire suppression system. The JCO was required because the system did not meet required flow densities in the most hydraulically remote 1500 ft<sup>2</sup> area. The request noted numerous improvements that have been made to this system including installation of additional risers (such that all areas have dual water sources) and relocation/installation of sprinklers to resolve coverage issues. The submittal also requests site office approval to use a 300 gpm hose stream allowance (500 gpm used previously). LANL notes that 300 gpm exceeds the NFPA 13 requirement (250 gpm) and is consistent with expected fire department response.