

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 16, 2010

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B.P. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending April 16, 2010

This week, staff members R. Arnold, F. Bamdad, C. Butch, D. Eyler, P. Fox and R. Oberreuter were onsite to review the Radioactive Liquid Waste Treatment Facility – Upgrade Project. In particular, the staff evaluated the resolution of issues identified in the Board’s March 2008 and February 2009 letters, with a specific focus on NNSA efforts to improve federal oversight, the integration of safety into the facility design and the adequacy of the project’s 60% design package.

Plutonium Facility: On Tuesday, a machine tool head associated with the robotic lathe for the ARIES process disengaged from the lathe and briefly pinned a worker’s hand. The worker was tightening a locking mechanism on the lathe and had his hand extended into the glovebox where the lathe is located. Personnel in the area responded to free the worker’s hand and contact radiological protection personnel. No glove breach occurred and worker was taken to occupational medicine with only minor injuries. LANL evaluation of the event concluded that the tool head moved beyond the end of the tool track while the worker was tightening the locking mechanism, which allowed the tool head to disengage from the lathe. No mechanical end stop was present to prevent disengagement. Corrective actions include installation of an end stop for this particular lathe and evaluation of other machining operations at the Plutonium Facility to ensure end stops are installed, where appropriate.

Radioactive Liquid Waste Treatment Facility (RLWTF): During low level waste operations at RLWTF, a worker identified a spill that appeared to have come from the raw daily feed sample line. The worker donned personal protective equipment (booties), entered the area and concluded that the spill did not appear to be growing. After exiting the area, the worker contacted the shift operations manager. The spill was evaluated by radiological protection personnel and samples indicated approximately 60 nCi/L contamination with a pH of 7.5. Facility personnel subsequently cleaned up and decontaminated the area. RLWTF personnel are developing a plan to identify and correct the source of the leak. Other corrective actions include creating a spill response team (similar to the team implemented at the Plutonium Facility) and issuing a lesson learned notice reminding workers of appropriate spill response protocols.

Transuranic Waste Facility Project: Transuranic Waste Facility Project personnel recently submitted a Conceptual Safety Design Report (CSDR) for NNSA review and approval. The current project scope includes six segregated storage buildings intended to accommodate a total of 1,240 drum equivalents and a concrete pad to house drum characterization trailers. Open drum remediation and size reduction activities are not part of the project’s scope. The CSDR postulates ten design basis accidents that can involve up to 27,300 Pu-equivalent Ci of material-at-risk. The CSDR identifies six safety class structures, systems or components to prevent or mitigate these accidents. Safety class controls include vehicle barriers to prevent a vehicle accident with resulting pool fire, controlled space with few or no combustibles around storage buildings to prevent thermal insults from wildfires or propagation of fire from one building to another, and a seismic switch to de-energize electrical equipment to prevent a seismically-induced fire. The storage building structures and fire suppression systems are designated safety significant and seismic design category 2.