

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 24, 2010

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B.P. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending December 24, 2010

Transuranic Waste Operations: Thirty-one legacy confinement vessels that contain residual quantities of radiological material are staged on an outdoor asphalt pad at Area G. Late last week during a walkdown of the area, an NNSA Facility Representative noticed a number of vessel showed signs of possible degradation. Radiological surveys performed this week found external contamination on six of the thirty-one vessels (maximum of 17,000 dpm alpha) and on the ground beneath one of the vessels (900 dpm alpha). No routine contamination monitoring had been performed on these vessels, but they were subject to a quarterly TSR-level in-service inspection to identify leaks, corrosion, or damage. The latest quarterly inspection was completed and noted as satisfactory on the same day the Facility Representative raised concerns about vessel integrity.

In response to this discovery, facility personnel decontaminated the six affected vessels and applied tape to seal flanged ports that offer a potential leak pathway on all thirty-one vessels. Facility management also intends to add the vessels to a routine contamination survey program, review the adequacy of the applicable in-service inspection, and to move the vessels from the outdoor pad into a nearby waste storage dome.

Longer-term, LANL personnel need to take existing conceptual ideas on how to ultimately dispose of these items and mature them into well defined and executable dispositions plans. None of the Area G vessels are part of the baseline scope of the Confinement Vessel Disposition (aka Bolas Grande) Project that will be executed in CMR.

Plutonium Facility: This week, LANL management submitted for NNSA review and approval a Safety Basis Strategy (SBS) document that addresses the upcoming May 2011 Plutonium Facility DSA update that will include a major revision to analysis of the seismically-induced fire scenario. Whereas existing analysis assumes a seismic event could result in an intensely hot fire that engulfs an entire floor of the facility, the SBS proposes a new analytical approach intended to justify reducing the number and size of seismically-induced fires assumed in the scenario. This new approach would use published statistical data to determine the conditional probability of a given number of post-seismic fires occurring and updated facility combustible loading information to determine the maximum credible size and temperature characteristics of fires. The SBS then proposes using this refined seismically-induced fire scenario to re-evaluate leak path factors, airborne release fractions, and respirable fractions that are used in the accident analysis to calculate offsite dose consequences.

Federal Oversight: This week, the NNSA site office issued a letter that identified deficiencies with the laboratory's abnormal event investigation process and directed the contractor to develop corrective actions. In the letter, the site office asserts that: • some responsible managers are reluctant to hold formal critiques following an abnormal event; • some facilities have resumed operations prior to holding a critique to ensure all causes have been identified and all appropriate actions have been taken to prevent recurrence; and • some facilities have improperly categorized events. The letter requests that the contractor provide a report by January 15, 2011, that contains corrective actions to improve the laboratory's abnormal event investigation process, metrics for tracking these improvements, and a scheduled date for an effectiveness review.