

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 5, 2011

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B.P. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending August 5, 2011

Verhaagen was onsite this week to observe an ongoing LANL work control assessment.

Material Disposal Area (MDA)-B: LANL personnel are approximately 98% complete excavating the buried contents of MDA-B, which was used from 1944-1948 as a landfill for waste contaminated with radioactive material. Excavation activities performed within HEPA-filtered enclosures were originally authorized as less than hazard category 3 operations (per DOE-STD-1027) that were not subject to the safety basis requirements of Title 10 Code of Federal Regulations, Part 830 (10 CFR 830), *Nuclear Safety Management*, Subpart B. In two separate instances in late 2010, MDA-B operations excavated waste material whose total activity exceeded the hazard category 3 threshold of 0.52 ²³⁹Pu-equivlent curies (PE-Ci). Based on these events, future excavation of hazard category 3 quantities of waste material became anticipated. At the hazard category 3 level, MDA-B operations would be subject to the requirements of 10 CFR 830 Subpart B, including the requirement to perform work under a Documented Safety Analysis.

In response, the Los Alamos Site Office (LASO) requested, and NNSA Headquarters (NA-10) approved, an exemption from the requirements of 10 CFR 830 Subpart B for MDA-B. In approving the exemption, NNSA imposed a number of terms and conditions, including provisions requiring MDA-B operations to be conducted in accordance with a Facility Safety Plan (FSP) and requiring LASO to concur in any changes to the FSP or implementing procedures that affect the safety envelop at MDA-B. To comply with these conditions, MDA-B management implemented an Unreviewed Safety Question (USQ)-like process to determine which changes could affect the safety envelop. MDA-B operations resumed under the 10 CFR 830 exemption in October 2010.

After waste is excavated and loaded into bins inside MDA-B enclosures, the waste bins must be weighed to establish an accurate value of material-at-risk (MAR) for facility inventory purposes. Scales used to weigh waste bins were located approximately 90 feet outside the LANL-designated boundary of MDA-B. On a number of occasions since October 2010, waste bins containing greater than 0.52 PE-Ci, were transferred from MDA-B to these scales to be weighed. The LASO-concurred FSP mentions the scales but does not discuss their location or weighing operations.

On July 25th, a LASO facility representative recognized that greater than hazard category 3-quantities of material were being transferred outside of the MDA-B boundary to be weighed and questioned the safety basis coverage for these activities. The NNSA-approval of the 10 CFR 830 exemption is specific to MDA-B, but the boundary of MDA-B is configuration controlled by LANL. On July 28th, facility management used the LASO-concurred USQ-like process to evaluate a boundary change that expanded the MDA-B footprint to include the scales. The USQ-like evaluation concluded that the boundary change did not affect the safety envelop and therefore did not require LASO concurrence. The new MDA-B boundary that includes the scales went into effect on Monday. At LASO management's request, LANL is documenting a position on the safety basis coverage and 10 CFR 830-compliance of scale operations that had been conducted prior to the MDA-B boundary change. This position will be submitted for NNSA review.