

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 29, 2010

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B.P. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending October 29, 2010

The staff held a teleconference with NNSA and LANL personnel to discuss the design of safety class seismically-actuated electrical shutoff devices planned for use in the Plutonium Facility. Pasko was also onsite to observe a joint NNSA/LANL workshop to discuss the strategy and actions needed to effectively control postulated seismic events at the Plutonium Facility.

Transuranic Waste Operations – Readiness: This week, the NNSA site office issued a memorandum approving LANL's most recent Startup Notification Report. In the approval memo, the NNSA site office manager directs a change to the level of readiness review required to authorize transuranic drum venting operations at Area G from a contractor readiness assessment to a federal readiness assessment. Transuranic waste drum venting operations have not been conducted at Area G since a hydrogen deflagration occurred during a venting evolution in late 2008. The new drum venting operation will be performed by a subcontractor using a new engineered venting system that will be operated under new TSR-level controls.

Material Disposal Area (MDA)-B: On Wednesday, during excavation activities inside Enclosure 12, MDA-B personnel identified two buried drums that were significantly degraded. While trying to extract the drums in accordance with procedures, one drum released approximately 5 gallons of a clear liquid. The enclosure has the capability to monitor for volatile organic compounds (VOCs) and these instruments indicated a significant increase in VOC levels inside the enclosure. Industrial hygiene monitoring external to the enclosure did not indicate a significant release of VOCs. However, construction workers in a nearby area external to the enclosure later complained of symptoms (all were evaluated and ultimately released with no medical restrictions). Enclosure 12 operations were suspended. LANL continues to evaluate this event to determine appropriate corrective actions.

Weapons Engineering Tritium Facility (WETF): Earlier this month, WETF personnel noted an increase in the oxygen concentration in a portion of the Tritium Waste Treatment System (TWTS). Subsequent investigation identified that a leak in the Hot Inlet System (HIS), which is part of the Tritium Gas Handling System (TGHS), was introducing oxygen into the TWTS. The HIS is used to analyze the composition of gas mixtures for tritium samples (less than 2g) and effluent from this system is normally sent to the TWTS. The TWTS was declared inoperable (which precludes tritium processing activities) while this issue was investigated. In addition, the HIS was declared inoperable and effluent was directed to the stack to prevent additional oxygen introduction to the TWTS.

Late last week, LANL declared a Potential Inadequacy of the Safety Analysis and subsequently declared a positive Unreviewed Safety Question based on the potential for oxygen in-leakage into the TGHS/TWTS that could potentially lead to a deflagration. On Thursday, LANL submitted to the site office an Evaluation of the Safety of the Situation and Justification for Continued Operation (JCO) to support resumption of tritium processing operations. Compensatory measures proposed by LANL in the JCO include the following: 1) monthly surveillance of two influent isolation valves when the HIS effluent is directed to the stack, and 2) the HIS shall be directed to the stack unless an operator is stationed to continuously monitor the TWTS oxygen concentration during the evolution. The site office is reviewing the JCO submittal.