

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 9, 2009

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending January 9, 2009

Plutonium Facility: This week, a glovebox glove breach occurred while an operator was performing housekeeping activities in a heat source plutonium (i.e. Pu-238) glovebox. To prepare a glass condenser tube to be removed as waste, an operator applied tape to the outside of the tube, broke the glass with a blunt tool, then folded the broken tube over to reduce its size. Post-evolution monitoring found contamination in excess of two million disintegrations per minute on the palm of the operator's inner glove. The inner glove was intact and nasal smears showed no indication of an uptake.

An integrated work document (IWD) provided activity-level work control for the glass breaking and handling portion of this operation. Although one section of the IWD calls for protective leather or Kevlar gloves to be used over the glovebox gloves 'as necessary,' the section identifying required personnel protective equipment (PPE) and the IWD's procedural steps clearly require the use of protective over-gloves and puncture resistant inner gloves. The operator was not wearing either of these two required pieces of PPE during the glass breaking and handling operation, nor was the evolution performed in accordance with the procedural steps in the IWD.

The breached glovebox glove is being removed for examination in an attempt to determine the direct cause of the event. Even if the broken glass is determined not to have breached the glovebox glove, this event still highlights a case where an operation involving latent sharps in a high hazard environment was performed without appropriate controls in spite of the significant attention that has been focused recently on safe handling of sharps inside gloveboxes. In response, facility management has suspended all glass breaking and handling operations by the affected group and has committed to developing a single procedure for use in all glass breaking and handling operations in the facility. This new procedure will be incorporated into the glovebox worker training process.

Transuranic Waste Operations: Area G is operating under a justification for continued operations (JCO) that addresses positive unreviewed safety questions related to deficiencies found in the credited vehicle barriers and dome door restraints. The JCO includes several commitments to improve analyses and implement improvements to the vehicle barriers and dome door restraints by December 31, 2008. When this date passed without all commitments being satisfied and without formal relief from the NNSA site office on the deliverable dates, there was significant confusion as to whether the safety basis had been violated and whether Area G operations continued to be authorized. On Thursday, the site office issued a letter granting relief on the original deliverable dates. This experience has prompted LANL to begin screening all other existing JCOs, to identify other instances where there may be ambiguity in whether a commitment constitutes a formal control or requirement.

Site-Wide Seismic Hazards: Recently, LANL provided the site office with an update on the plans to re-evaluate the Updated Probabilistic Seismic Hazard Analysis (UPSHA). The approach includes near-term actions to complete recommendations in the UPSHA (e.g., use of next generation attenuation ground motion relationships and trenching studies) and a series of longer-term actions. The near-term actions and analyses are expected to result in a 9 to 12 month delay in facility-specific evaluations (i.e., the SAFER project). LANL plans to submit a revised JCO to accommodate this delay. The existing JCO expires in June 2009 (site rep weeklies 9/12/08, 6/27/08).