

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 3, 2009

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending April 3, 2009

Plutonium Facility: The NNSA site office approved a new documented safety analysis (DSA) and technical safety requirements (TSR) document for the Plutonium Facility last December. Upon approval, facility management began using the new DSA as the safety basis of record, superseding the patchwork of several dozen documents that had been serving as the Plutonium Facility safety basis. Although the new DSA represents the most up-to-date and complete description of the NNSA-approved risk envelope for the facility, the TSR controls associated with the new DSA are not scheduled to be fully implemented and verified until the second quarter of FY10. Until the new TSRs are verified to be fully implemented, the facility continues to operate under a set of legacy interim TSRs whose development was, in part, a judgment-based consolidation of available controls versus a control set that cleanly and explicitly derived from the collection of previous safety basis documents.

Once it became the safety basis of record, facility personnel began performing unreviewed safety question (USQ) evaluations (both screens and full determinations) against the new DSA and did not consider the previous set of safety basis documents in these evaluations. This week, the NNSA site office challenged the approach of performing USQ evaluations against only the new DSA, rather than against both the new DSA and the previous set of safety basis documents, since the TSRs associated with the new DSA have not yet been fully implemented.

In response to site office concerns, LANL management placed the facility in stand-by mode until the roughly 125 USQ evaluations that have been performed since January can be re-evaluated against the set of previous safety basis documents. Once this evaluation is complete and operations resume, USQ evaluations will be performed against both the new DSA and the previous set of safety basis documents until the TSRs associated with the new DSA are verified to be fully implemented.

Authorization Basis: This week, LANL submitted for NNSA review and approval a revision to the lab's USQ procedure. This proposed revision addresses situations like the one described above by instructing that, "[t]he USQ process must be performed against the relevant safety basis documents, both the current 'implemented' safety basis, and the newly approved safety basis document as appropriate." The proposed revision also introduces a New Information Process for evaluating whether new information constitutes a potential inadequacy of the safety analysis (PISA).

Material Disposal Area (MDA)-B: The NNSA site office recently approved a LANL request to re-categorize MDA-B from hazard category (HC)-3 to less than HC-3 (i.e. radiological). MDA-B is a six acre legacy waste disposal site in Technical Area 21 that received radioactive and chemical wastes from 1944-1948. The boundary of MDA-B is only meters away from public areas. The justification for re-categorization assumes that the estimated 12.4 PE-Ci (200 g Pu-239 equivalent) total site inventory is homogeneously distributed throughout the buried waste disposal unit volume. A segmentation argument based on DOE-STD-1120 is then used to conclude that only less than HC-3 quantities of material can be exposed or disturbed at any time during controlled excavation activities. As a result of re-categorization, environmental restoration activities at MDA-B will be performed using a LANL-approved facility safety plan vice an NNSA-approved DSA and readiness will be confirmed through a lab management self assessment vice an NNSA operational readiness review.