DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 23, 2009

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending January 23, 2009

Weapons Engineering Tritium Facility (WETF): Tritium stored outside of process equipment or gloveboxes is required to be contained within credited vessels whose maximum allowable working pressure (MAWP) is identified and protected. LANL has submitted and the NNSA site office is reviewing a justification for continued operations (JCO) to store, handle and ultimately process a population of primary containment vessels (PCV) that are known, or have the potential, to have internal pressures exceeding their MAWP. This population of PCVs was identified in the aftermath of a related potential inadequacy of the safety analysis and issues associated with the implementation of WETF's credited Pressure Safety Program. Processing these PCVs is required to eliminate the hazard they currently present. The JCO and its supporting hazard analysis rely primarily on existing controls to perform these processing activities (site rep weeklies 12/19/08, 11/28/08, 10/17/08).

The JCO covers continued storage and processing of 217 PCVs (32% of the total number stored at WETF). Of these, 146 PCVs are currently stored inside some other credited feature (e.g. a glovebox or secondary vessel) that would contain the released tritium should the PCV fail. The remaining 71 PCVs that contain roughly 9 grams of tritium are currently stored in open drums. Since these 71 PCVs exceed (or potentially exceed) their MAWP, the PCVs themselves cannot be relied upon to provide credited containment. Therefore, although the room housing these items is not routinely occupied and is equipped with tritium monitors, the 9 grams of tritium in these 71 PCVs is not protected by a credited containment barrier. Access to the room where these 71 PCVs are stored is not currently restricted and the primary control to ensure worker protection during continued storage of these items appears to be the tritium monitors that would detect, but not prevent a release.

Transuranic Waste Operations: This week, LANL environmental programs management met with the NNSA site office to discuss preliminary plans to augment Area G capabilities in order to substantially increase transuranic waste shipments beginning this fiscal year. LANL continues to be challenged to complete closure of Area G by 2015. To achieve a planned 114 shipments to WIPP this fiscal year (versus roughly 75 shipments last year), LANL plans to add a second shift at the WCRR repackaging facility and the Dome 231 Permacon, startup a debris waste processing line inside the Decontamination and Volume Reduction System facility and other near-term capability and process improvements. To support these activities and to allow additional repackaging activities to occur in Area G, LANL is considering a series of changes to the existing safety basis in parallel with the planned submittal of a new safety basis document. Longer-term plans include a standard waste box characterization line, size reduction capability and preparations for below ground waste retrieval.

Chemistry and Metallurgy Research Replacement (CMRR) Project: The current design response spectra contained in the LANL Engineering Standards Manual (ESM) is based on the May 2007 Updated Probabilistic Seismic Hazard Analysis (UPSHA) and provides bounding spectra applicable anywhere onsite at LANL. In December, LANL committed to updating the ESM to provide site-specific spectra for TA-55/CMRR that reduces some of the conservatism in the bounding site-wide spectra. At the request of the CMRR Project, LANL recently provided site-specific spectra for use during design in advance of the ESM update. Additional LANL activities to refine the UPSHA are on-going and will be reflected in the CMRR spectra when appropriate (site rep weekly 1/9/09).