

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 17, 2008

**MEMORANDUM FOR:** T. J. Dwyer, Technical Director  
**FROM:** B. Broderick and R.T. Davis  
**SUBJECT:** Los Alamos Report for Week Ending October 17, 2008

**Contractor Assurance:** Last week, the Institutional Management Review Board approved the laboratory's baseline integrated assessment schedule (IAS) for FY09. The approved IAS shows roughly 350 assessments planned for FY09, down from about 500 in FY08. LANL management noted that the decrease reflects a more mature institutional process for identifying and eliminating duplicative reviews across the lab. The FY09 IAS includes three Director's Institutional Assessments focused on functional areas including subcontractor safety, waste management and the maintenance program. However, the IAS does not include any 'facility-centered' Director's Assessments that would provide independent, broad-based review of compliance with DOE requirements for LANL's nuclear facilities. These types of facility-centered reviews have not been performed at the lab since FY07 (site rep weekly 5/23/08).

**Weapons Engineering Tritium Facility (WETF):** The TSR-level Pressure Safety Program at WETF requires the maximum allowable working pressure for tritium-bearing systems to be identified and protected. Based on concerns raised by the Board's staff, WETF personnel concluded this week that a portion of the safety-significant Tritium Gas Handling System was not adequately protected from potential overpressurization. This issue led to broader questions about the implementation of Pressure Safety Program requirements across WETF. As a result, facility management declared a TSR violation based on a breakdown of the Pressure Safety Program and suspended operations. LANL management is chartering an independent review of the implementation of all TSR-level controls at WETF to identify any other latent deficiencies that may exist.

**Chemistry and Metallurgy Research Building Replacement (CMRR):** The CMRR Nuclear Facility will be connected to the Plutonium Facility by an underground tunnel to support safe and secure nuclear material transfers. The original intent was to tap into an existing section of tunnel that currently houses interim radiography operations, based on the assumption that by the time CMRR Nuclear Facility construction began, radiography operations would have moved into a new Long Term Radiography facility. However, Long Term Radiography project activities have been suspended and the existing tunnel will be occupied by interim radiography operations longer than originally assumed. This will likely require the CMRR project to design a new tunnel to connect the two facilities. This could present a number of new design and construction challenges including locating a suitable site to create a large new penetration in the Plutonium Facility structure. The design and equipment sizing for key safety systems including fire suppression and confinement ventilation could also be affected.

**Plutonium Facility:** In Board correspondence dated May 30, 2008, the staff noted that hazards associated with hydrogen generation for weapons-grade plutonium aqueous processing operations may have been inappropriately screened during development of the new Documented Safety Analysis. The current facility safety analysis also does not identify this potential hazard. In response to this concern, facility personnel recently completed preliminary calculations for hydrogen concentrations in the aqueous process vessels. On Friday, LANL declared a potential inadequacy of the safety analysis based on these calculations. Currently, only one process vessel contains significant plutonium solution. Facility management identified an initial compensatory measure to provide a vacuum purge for this vessel. In addition, plutonium dissolutions are on hold pending resolution of

this issue.