

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 17, 2012

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B.P. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending August 17, 2012

This week, Board members Peter Winokur, Jessie Roberson, Joseph Bader and John Mansfield were onsite along with staff members Timothy Dwyer, Daniel Ogg, Richard Schapira, Matthew Duncan, John Pasko and Richard Verhaagen to meet with NNSA site office and LANL personnel. The Board had detailed discussions with site personnel on the Plutonium Facility, the Chemistry and Metallurgy Research Building, Transuranic Waste Operations (including Area G closure activities), the Weapons Engineering Tritium Facility, LANL design and construction projects and emergency preparedness. The Board also toured the Radiological Laboratory, Utility and Office Building and the Plutonium Facility. Mr. Broderick was out of the office on Thursday and Friday.

Weapons Engineering Tritium Facility (WETF): This week, a WETF subject matter expert identified a non-conservative error in the software spreadsheet used to complete the monthly Technical Safety Requirement (TSR) surveillance for combustible loading in the facility. As a part of calculating the average combustible loading for a series of rooms, the spreadsheet does not include combustibles from one of the required rooms. The TSR surveillance limit is not exceeded if the combustibles for that room are correctly included in the combustible loading calculation. WETF management declared a significance category 2 management concern for this issue in part because a software quality issue was identified for this same spreadsheet in December 2011 and corrective actions did not identify the additional error (see site rep weekly 12/9/11).

Both software spreadsheet errors (i.e. the one identified this week and the one in December 2011) were caused by a change that occurred in November 2011. The combustible loading spreadsheet is graded as the second highest level of safety-related software; however, verification and validation (V&V) reviews failed to identify either error. In addition, extent of condition reviews performed in December 2011 that included additional V&V of the software spreadsheet did not identify the additional error introduced in November. WETF management identified corrective actions that include a line-by-line review of combustible loading spreadsheet calculations and an evaluation of the WETF software quality assurance program. As noted on July 13th, LANL is also reviewing recent software quality assurance issues related to TSR violations across the site and is scheduled to submit an improvement plan to the site office this month.

Plutonium Facility: This week, Plutonium Facility management declared a Potential Inadequacy of the Safety Analysis (PISA) based on structural/seismic issues with shelves and racks in two vault rooms. During performance of the In-Service Inspection (ISI) for design features in the vault, the system engineer identified a number of missing and loose bolts and screws. During evaluation of these issues, the system engineer identified that the SAFER seismic analysis of four vault rooms was not consistent with the actual field configuration. Subsequent seismic evaluations identified structural issues in two rooms that represent a PISA and need to be resolved. Three locations in these two rooms will require minor structural upgrades to resolve this issue. Plutonium Facility management is also reviewing the SAFER analyses to determine why these issues were not identified during the seismic review.