

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 12, 2010

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B.P. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending November 12, 2010

Chemistry and Metallurgy Research Building (CMR): LANL management has submitted for NNSA site office review and concurrence a Safety Basis Strategy document that formalizes a new approach to controlling material-at-risk (MAR) at CMR. The new strategy would control MAR at a level that ensures offsite dose consequences for bounding postulated accident scenarios would not exceed the DOE Evaluation Guideline. To remain below the Evaluation Guideline, the total quantity of MAR allowed in CMR will be administratively controlled to a level 35% below the previously approved limit until the next annual safety basis update when the formal Technical Safety Requirement (TSR) MAR limit will be revised to capture the new approach. NNSA review of the Safety Basis Strategy is on-going.

CMR's two primary enduring missions involve performing programmatic analytical chemistry operations and recovering and dispositioning special nuclear material from a number of legacy confinement vessels. The most heavily loaded confinement vessels contain quantities of MAR that would consume a significant fraction of the total MAR allowed in the facility. Therefore, CMR will have to remove unneeded MAR, streamline transuranic waste disposition processes, and relocate to other facilities certain MAR-intensive operations in order to support processing these bounding confinement vessels without curtailing on-going analytical chemistry operations.

Weapons Engineering Tritium Facility (WETF): This week, WETF management declared a TSR violation associated with the Pressure Safety Program and a Potential Inadequacy of the Safety Analysis (PISA) related to internal fire barriers credited as part of the safety class facility structure Design Feature.

Management declared the TSR violation based on an issue identified by NNSA safety system oversight engineers. The TSR-level Pressure Safety Program requires post modification testing that involves leak testing at pressure conditions up to maximum operating pressure whenever a certain class of pressure-rated components are added to existing pressure systems. Roughly six assemblies containing this class of pressure-rated components were installed during the WETF restart effort, but were leak tested under vacuum conditions rather than the pressurized conditions required by the TSRs. In response to the TSR violation, WETF personnel will either perform required leak tests of the affected components, or produce documentation that these portions of the system had not leaked during use under pressure conditions equivalent to those required by the TSR-mandated tests.

The PISA was declared when two fire doors associated with fire barriers credited with a one hour fire rating were found to lack hardware required to ensure proper latching upon closure. Without latching hardware, the doors did not meet applicable National Fire Protection Association (NFPA) code requirements and represented noncompliant discontinuities in fire barriers credited to prevent fire propagation from one tritium storage or processing area to another. The discrepant condition was found during an in-service inspection (ISI) of the fire barriers by a fire protection engineer. The same ISI had been performed in the past but failed to identify the fire door deficiency, apparently because the inspection for this Design Feature assumed an adequate initial condition and only called for identification of degradation, wear, or unauthorized modifications. In response to the PISA, WETF management has instituted a fire watch for the affected areas when the facility is occupied and the application of door stops to maintain closure of the fire doors when the facility is unoccupied.