

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 10, 2010

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B. P. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending December 10, 2010

Safety Basis: Engineered controls credited in nuclear facility safety bases are implemented via Technical Safety Requirements (TSRs) as either Limiting Conditions for Operation or Design Features. In general, Limiting Conditions for Operation are used to implement active engineered controls and Design Features are used to implement passive engineered controls, regardless of functional classification. DOE Directives provide detailed requirements for Limiting Conditions for Operation, but provide few specific requirements for Design Features. In one example of this disparate treatment, DOE Directives provide guidance on what constitutes a TSR violation for Limiting Conditions for Operation but not for Design Features. This lack of specificity in requirements for Design Features appears to have contributed to variability in the treatment of Design Features across LANL's nuclear facilities.

The NNSA site office has taken action to drive a standard site-wide approach to Design Features as nuclear facility safety bases are updated. In the interim, the site office has issued supplementary direction describing when issues related to Design Features must be reported as TSR violations.

Transuranic Waste Operations – Area G: Last week, Area G personnel performed an in-service inspection for a TSR-level Design Feature on the last day of the required inspection period. Personnel completed the field portion of the inspection, which was found to be satisfactory, but could not formally complete the in-service inspection because a cognizant system engineer was not available to provide a required signature. As a result, the in-service inspection was not completed within the required time limit. The approved Area G TSRs provide criteria for declaring TSR violations associated with Limiting Conditions for Operation and Administrative Controls, but no criteria or requirements for declaring TSR violations for Design Features. However, based on the site office supplemental direction discussed above, facility management reported this failure to perform an in-service inspection within the required time limit as a TSR violation.

Transuranic Waste Operations – WCRR Repackaging Facility: This week, WCRR repackaging facility personnel were in the process of removing a 55 gallon drum from an 85 gallon overpack, when an operator noticed what appeared to be bulging of the vented 55 gallon drum. Operators immediately restored the lid to the 85 gallon overpack and all personnel evacuated the facility. Facility management called in a hazardous materials team from the LANL Emergency Response organization. The responders deployed a robot to enter the facility, remove the lid of the 85 gallon drum, and unscrew the vent on the 55 gallon drum to relieve any built-up pressure. Microphones mounted on the robot did not detect any acoustic evidence of overpressure relief and no CAM alarms activated after the vent was removed. Personnel ultimately made a controlled re-entry to the facility to survey for contamination and found none on the external surface of the affected drum or the surrounding area.

Today, the facility returned to normal operations and processed the affected 55 gallon drum. Inside, operators found a legacy 30 gallon drum that had been mostly reduced to powdery corrosion residue. This suggests that a highly reactive environment once existed inside the 55 gallon drum that may have caused the bulging noticed by WCRR operators.