

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 20, 2012

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B.P. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending July 20, 2012

Staff member R. Verhaagen was onsite this week.

Technical Area-35 (TA-35): This week, the site office approved a recovery plan to address the discovery of fuel rods at TA-35 Building 27 and the identification of fuel rods with active lengths that may exceed the length identified in the criticality safety evaluation. The LANL plan details a two phased approach to ensure adequate implementation of the criticality safety program at TA-35 Buildings 2 and 27 including improvements to the “nature of the process” arguments and controls consistent with recent direction from the site office. Phase 1 of the recovery plan includes 1) performing a wall-to-wall inventory of materials and sealed sources in Building 27; 2) ensuring fuel rods are included in accountability and tracking systems; and 3) verifying that the inventory meets criticality safety requirements. LANL is scheduled to have a corrective action plan for Phase 1 by August 13th.

The 2nd Phase of the recovery plan details LANL’s actions to ensure adequate and sustainable implementation of the nuclear criticality safety program at TA-35 Buildings 2 and 27. This effort includes updating the Facility Hazard Categorization and criticality safety evaluation documents, creating a systematic approach to operator training, and implementing improved inventory and access controls. LANL is scheduled to have a detailed implementation plan for Phase 2 by November 22nd. The site office approved the recovery plan subject to several comments, one of which states that programmatic operations involving fuel rods in racks and operations with sources underwater are precluded until completion of Phase 2 activities.

Transuranic Waste Operations: The safety basis for the RANT shipping facility credits a pre-action dry pipe fire suppression system (FSS) as a safety significant control. Preventive maintenance on this system has historically been performed using a generic maintenance work instruction that did not account for differences between RANT’s pre-action dry pipe FSS and more common wet pipe FSSs used elsewhere at LANL. In 2010, personnel using the generic work instruction inadvertently caused the RANT FSS to charge with water during a preventive maintenance evolution. In response, facility management defined a corrective action intended to prevent recurrence. When this corrective action was ultimately implemented in June 2012, facility personnel used an operator aid posting to capture several system manipulation steps necessary to ensure the RANT pre-action system is properly aligned to support maintenance. Personnel involved in developing and posting the operator aid were not aware that the Conduct of Operations Manual prohibits the use of operator aids to alter or contradict procedures. Additionally, one of the steps in the operator aid was incorrect and would actually cause a valve misalignment.

Last week, personnel performing preventive maintenance on the RANT FSS followed the steps on the operator aid and the resulting valve misalignment charged the system with water. In response to this event, facility management had the operator aid removed, directed that appropriate procedures and work instructions be revised to appropriately account for features specific to the RANT FSS, and chartered the development of continuing training to strengthen Conduct of Operations awareness and understanding for transuranic waste operations personnel and management.