

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 13, 2012

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B.P. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending July 13, 2012

Software Quality Assurance: This week, LANL provided the site office with a plan to evaluate issues and develop an improvement plan for recent software quality assurance issues related to Technical Safety Requirement (TSR) violations. As noted in the June 22nd weekly report, there have been 7 TSR violations in the past year that involve issues with software databases used to implement TSR-level controls at LANL nuclear facilities. The LANL plan includes gathering and evaluating historical data by July 20th and developing an improvement plan by August 17th.

Weapons Engineering Tritium Facility (WETF): This week, WETF management declared a TSR violation related to the facility's credited Pressure Safety Program. WETF TSRs state that components of the safety significant tritium waste treatment system are required to comply with pressure safety provisions in the LANL Engineering Standards Manual. In a number of cases, formal variances to the manual's pressure safety requirements were issued to establish interim compliance while system modifications could be executed to achieve full compliance. Each pressure safety variance has an expiration date and the institutional engineering organization that administers the program issues tags to hang on systems that indicate when variances expire. However, when a single system has multiple pressure safety variances, the variance tag for that system is issued with an expiration date that corresponds to the last expiration date of any individual variance. At WETF, engineers relied on the expiration date on the tag to track compliance with variances. This week, personnel recognized that although they had not reached the expiration dates reflected on any variance tags, at least one individual variance had expired. As a result, the tritium waste treatment system did not comply with TSR-level pressure safety requirements. Facility personnel are conducting an extent of condition review and working to improve the variance tracking and tagging system.

Plutonium Facility: On Tuesday, a Plutonium Facility worker was discovered to have alpha contamination on his left wrist (2,000 dpm) and wrist watch (10,000 dpm) after performing maintenance activities in an Automated Recovery and Integrated Extraction System (ARIES) glovebox. After completion of maintenance activities for the day, the worker alarmed the hand and foot monitor when exiting the room. The responding radiological control technician identified the personnel contamination, contamination on the personal protective equipment of another worker and contamination in the room. Appropriate actions were taken to respond to the personnel contamination and to isolate the lab room.

Plutonium Facility procedures require workers to monitor their hands and arms for contamination after removal from glovebox gloves. The particular glovebox where the maintenance was being performed is equipped with two newer cordless contamination monitoring devices. During the critique for this event, it was identified that these cordless probes are powered by a capacitor that maintains power for a limited time after being removed from the charging cradle on the glovebox. Workers for this maintenance activity had removed the probe and placed it on a nearby table to perform hand monitoring after exiting from the glovebox and were not aware that the probe would become de-energized and inoperable if not returned to the cradle. LANL management is developing corrective actions and plans to communicate a complex-wide lessons learned to ensure other sites are aware of the limitations for this type of cordless contamination monitor.