

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 16, 2024

**TO:** Timothy J. Dwyer, Technical Director  
**FROM:** E. Freeman and D. Gutowski, Resident Inspectors  
**SUBJECT:** Los Alamos Activity Report for the Week Ending August 16, 2024

**Staff Activity:** E. Freeman commenced his assignment as a resident inspector. M. Bradisse and A. Holloway, Pantex resident inspector, were onsite for resident inspector augmentation. The visiting staff members met with personnel from the weapons systems engineering division to discuss recent changes to the weapon response technical basis for a warhead program.

**Nuclear Criticality Safety:** Triad personnel briefed the NNSA Field Office Manager on nuclear criticality safety topics. They discussed the path forward and timeline for resolving items in the criticality safety evaluation backlog. These items are fissile material operation (FMO) locations currently governed by legacy criticality safety documents, for which modern criticality safety evaluations have been authored but not yet implemented. Since the last meeting on this topic, four items were resolved, bringing the total number down to 20 (see 4/5/2024 report). Of the 20 remaining items in the backlog, 11 are related to a 2014 Evaluation of the Safety of the Situation (ESS) pertaining to flooding hazards from firewater ingress into gloveboxes. The ESS implemented a set of adequate criticality safety controls, but the strategy used at the time does not align with modern expectations for criticality safety evaluations. Most of these FMOs have a clear path forward to implement the new documentation. Other topics at this meeting included ongoing implementation of new definitions of de minimis quantities of nuclear material (see 12/23/2022 report) and a shift in focus within the nuclear criticality safety division from hiring to retention.

**Chemistry and Metallurgy Research Building (CMR):** Last Wednesday, a CMR operator performing morning rounds observed water actively leaking out of a glovebox onto a laboratory room floor. A cooling water line had been inadvertently left on overnight and disconnected within the glovebox. The water was leaking out of a centrifuge well at the bottom of the glovebox. This was a known potential contamination source and had been previously covered with a plastic bag that was partially dislodged by the water. Radiological control personnel responded to this discovery and shut off the water before it migrated out of the laboratory room. The operations manager arrived and called a potential process deviation per the criticality safety program. Responding criticality safety personnel concluded the situation involving the partial loss of moderator control was safe and stable. A formal recovery plan for the glovebox is being developed, and the room is being decontaminated. One concern from this event is whether training on criticality safety at CMR is effective since the initial response to the event recognized the contamination spread potential, but not the criticality safety concern. The use of plastic bags that can trap liquids is also being evaluated.

**Utilities and Infrastructure-Work Control:** Last Monday, workers stiaied an excavation inside the CMR fence line without having radiological control support as required. A radiological control technician noticed this work and paused the activity. During the fact-finding meeting, participants identified gaps in the work planning and release processes that allowed this omission. One corrective action under consideration is to issue a lessons-learned to non-resident workers who perform work such as excavations within nuclear facility fence lines to ensure that they are aware of and compliant with all nuclear facility work requirements. Another is to hold a learning team to improve work planning and control coordination between utilities personnel and CMR.