

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 7, 2018

MEMORANDUM FOR: Christopher J. Roscetti, Technical Director
FROM: J.W. Plaue and D. Gutowski, Resident Inspectors
SUBJECT: Los Alamos Activity Report for Week Ending September 7, 2018

DNFSB Staff Activity: On Thursday, a Resident Inspector observed the DOE hearing in Albuquerque to allow members of the public to comment on the proposed changes to 10 CFR 830, *Nuclear Safety Management*. No members of the public attended either of the two sessions.

Plutonium Facility–Accident Investigation: Last Thursday, LANL management received bioassay results that indicated the worker involved in the breached glove event during glovebox door cable replacements (see 8/24/2018 report) had received an uptake of plutonium-238. Subsequent wound monitoring indicated the presence of a contaminated puncture wound. The worker received treatment and is undergoing additional bioassay monitoring. Last Friday, the LANL Director chartered a team to investigate the abnormal event. The seven-person team commenced activities on Wednesday. Their scope involves work planning and control, conduct of the job, and the response up to the point of the wound monitoring. Given the uncertainty associated with the initial dose estimate relative to the DOE criterion for a federal investigation, NNSA has assigned two personnel to monitor the investigation.

Plutonium Facility– Emergency Management: On Saturday, the operations center received indications that a thermal fire detector activated in a plutonium-238 glovebox. Los Alamos Fire Department (LAFD) personnel responded and found no indications of fire. During release contamination surveys, radiological control technicians detected contamination on the skin of a firefighter's hand, as well as his turnout trousers. Subsequent decontamination efforts were successful. At the fact-finding held on Friday, personnel noted excellent communications between the operations center and LAFD. Facility personnel noted the need to strengthen training and revisit response protocols to reinforce expectations that LAFD avoid touching potentially contaminated surfaces. They also noted the continued need to explore alternative thermal sensing technology for gloveboxes (see 8/10/2018 report)—in this case the firefighter used his hand to confirm the lack of heat in the glovebox. LAFD personnel also noted that the state of housekeeping made it difficult to visually confirm the lack of fire in some of the gloveboxes.

Plutonium Facility–Operations: On Tuesday, Plutonium Facility management issued a standing order to implement operational restrictions associated with the recent Potential Inadequacy of the Safety Analysis related to plutonium-238 biokinetic solubility (see 8/17/2018 weekly). The operational restrictions include using a multiplier of 2.875 when determining the material-at-risk equivalent value for certain heat-source plutonium compounds that have not been calcined above 800 °C, limiting heat-source aqueous batch processing, and restricting material not related to aqueous processing in the heat-source room to a new lower limit.

Abnormal Events: Three other significant abnormal events recently occurred that all involve aspects of safety management programs that are essential to the safe operations of the defense nuclear facilities. The events include: (1) a less than adequate emergency response to smoking magnets at the LANSCE accelerator facility; (2) a partial reaction of an explosive detonator during handling at a high explosives facility; and (3) a near-miss during a lift when rigging equipment snapped and released a 47 foot long, 7000 pound column at the TA-3 electrical substation replacement project. LANL management is investigating the first two and the US Army Corps of Engineers is investigating the third.