

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 26, 2017

**MEMORANDUM FOR:** S.A. Stokes, Technical Director  
**FROM:** R.K. Verhaagen and J.W. Plaue  
**SUBJECT:** Los Alamos Report for Week Ending May 26, 2017

**DNFSB Staff Activity:** D.K. Andersen, M.W. Dunlevy, R.L. Jackson, and P.J. Migliorini were at the laboratory this week to review the status of several efforts associated with the Plutonium Infrastructure Strategy. M.W. Dunlevy and P.J. Migliorini also observed treatment activities associated with the inappropriately remediated nitrate salt (RNS) wastes and walked down three radiological facilities.

**RNS–Treatment Activities:** Waste Characterization Reduction and Repackaging Facility (WCRRF) personnel successfully treated a second RNS container this week. However, they encountered several challenges and issues that prolonged the treatment of this drum, including:

- Substantial debris that was expected based on radiography of the container, but at times became challenging for operators to manage in the limited space of the glovebox
- Difficulty macerating cellulosic wipes in the blender because they were too dry, which is a pre-requisite to ensure effective mixing with zeolite as part of the treatment process—resolution of this issue necessitated a procedure change to pre-soak the wipes
- An unexpected large area cloth wipe that required the use of the manual cloth treatment section of the procedure
- Poor control of the pedigreed zeolite feed material that resulted in the need to retreat some material
- Several procedural issues, including instances where workers paused, as well as one instance when Department of Energy Headquarters oversight prompted the proper response

Following completion of the container on Friday, management conducted a lessons-learned discussion with the workers. Also this week, workers at WCRRF received two additional RNS containers and returned three daughter transuranic waste containers back to Area G.

**Plutonium Facility–Infrastructure:** On Monday, Plutonium Facility personnel held a fact-finding to discuss last week’s discovery of two degraded confinement penetrations (see 5/19/17 weekly). This was the second instance of degraded confinement penetrations discovered this month (see 5/5/17 weekly). The confinement structure is a safety class system that is relied upon to mitigate the release of radioactive material to the environment. The safety basis notes that the penetrations are to be air and watertight with an associated performance criterion to be sealed with a through-penetration assembly that is appropriately pedigreed with a 2-hour fire rating. Fact-finding participants viewed images and video of the degraded penetrations that revealed one conduit had about an inch of horizontal travel and both had about 60 degrees of spin. Workers noted that the condition was discovered when an NNSA Facility Representative incidentally handled the conduit on a walk-down focused on an unrelated matter. Of note, in all three instances, the penetrations would have likely passed the required visual in-service inspection. In response to this apparent weakness, facility management is evaluating whether a sampling of other penetrations is warranted.