

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 14, 2019

MEMORANDUM FOR: Christopher J. Roscetti, Technical Director
FROM: J.W. Plaue and D. Gutowski, Resident Inspectors
SUBJECT: Los Alamos Activity Report for Week Ending June 14, 2019

Confinement Vessel Disposition Project: Triad personnel recently completed repairs to the dry chemical fire suppression system at the workstation and started processing the ninth vessel, which is the last known to contain nuclear material. After removing the port cover, workers noticed a slit in the plastic they had wrapped it in. While taping up this slit, a continuous air monitor alarmed. The work crew placed the area in a safe configuration and exited the enclosure. There was no spread of contamination to the workers or outside of the enclosure.

Legacy Materials: Last Thursday, the NNSA Field Office approved a variance to the Triad's criticality safety program that allows use of a sum of ratios method to determine that a criticality is incredible for TA-59 Building 1. The criticality safety program currently applies the Pu-239 threshold significant quantity to mixtures of fissile isotopes. Triad made the request to support processing of legacy low-enriched uranium solutions from the Solution High-Energy Burst Assembly (SHEBA) into a more stable solid uranium oxide. The SHEBA solutions have been stored at the Chemistry and Metallurgy Research Building (CMR) since they were deinventoried in the mid-2000's from the TA-18 criticality experiments facility. Triad personnel plan to process them at TA-59-1 where small Pu-239 sources may also be stored. Solidification of the SHEBA solutions will eliminate a large volume of fissile solution currently stored in plastic bottles representing a substantial improvement to the criticality safety posture of CMR.

On Wednesday, CMR personnel discovered that shielded casks made from depleted uranium constituted a violation of the Technical Safety Requirements as the depleted uranium was of sufficient mass to require double containment. Given the low dispersibility and relative hazard of monolithic depleted uranium metal, safety basis personnel are evaluating whether to develop an exception to the double containment control for these casks. The casks have not been used for decades and are believed to be empty based on process and worker knowledge.

Radiological Laboratory Utility Office Building (RLUOB): On Saturday, while a work crew was performing planned breaker maintenance, the facility fire alarms sounded. Contrary to procedure, the work crew did not evacuate immediately, but briefly investigated the situation. The fire department responded and found no evidence of a fire. However, they found that one of the deluge systems that protect the ventilation system had actuated and flooded the associated filter plenum. A fire water pump ran for several hours; subsequent testing of the pump found no damage. The cause of this actuation is still under investigation. There was no spread of contamination during the event.

Facility personnel have confirmed that the corroded valves in the radioactive liquid waste system are carbon steel rather than the required stainless steel (see 5/3/2019 report). They are continuing to assess where the breakdown occurred that allowed the wrong type of valve to be installed.

Transuranic Waste Management: Triad Safety Basis personnel entered the New Information process for the Transuranic Waste Facility, CMR, and TA-55 to evaluate a Safety Alert issued by the DOE Office of Environmental Management related to the drum over-pressurization event at Idaho National Laboratory. The Safety Alert covers concerns related to pyrophoric materials, metal carbides, reactive materials, and requests information on the presence of flammable or near-flammable headspace gas concentrations in waste containers.