DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 4, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: Austin R. Powers, Cognizant Engineer
SUBJECT: Nevada National Security Site (NNSS) Report for February 2022

DNFSB Staff Activity: The staff conducted no onsite activities at NNSS during February.

Alpha Spectrometer Issue: In January, a radiological control technician was performing weekly surveys in a building at the National Criticality Experiments Research Center (NCERC). The initial counts on two swipes measured higher total alpha counts than expected. For swipes with a high total alpha count, the radiological work permit requires the swipes to be analyzed using alpha spectroscopy to confirm that the activity is uranium and not plutonium. The radiological control technician sent the swipes to the rarely used alpha spectrometer at the Radioactive Waste Management Complex (RWMC), given that the alpha spectrometer located in the Device Assembly Facility (DAF) was inoperable at the time. The results from the RWMC alpha spectrometer indicated that plutonium was detected on the swipes. This caused DAF management to place the affected building on administrative hold and the DAF radiological control technicians to collect additional samples from the building. However, the radiological control technician supervisor at DAF noted that plutonium is not expected to be present on a swipe from that NCERC building.

Due to concerns with the initial results, the individual who used the RWMC alpha spectrometer investigated the calibration files for the machine and identified an issue that skewed the results. As a result, Mission Support and Test Services, LLC (MSTS), tagged out the alpha spectrometer. In addition, MSTS had all the samples analyzed at a different alpha spectrometer located in Mercury and found that they did not contain plutonium contamination. During the critique for this event, MSTS noted that the alpha spectrometer at DAF is operational again and that they plan to procure a second one for DAF. MSTS also found that the issue in the calibration files for the RWMC alpha spectrometer was due to degraded calibration sources and, as a result, has ordered replacements.

U1a Hoist at the U1a Complex: In February, MSTS identified that a guide wheel was missing on the U1a hoist skip. After making the appropriate notifications, MSTS placed an emergency stop on the shaft, replaced the missing wheel, and inspected the remaining wheels. On the following day, the facility manager performed a review of the work and found inconsistencies with the conduct of the repairs. As a result, MSTS performed a critique and found that a maintenance work package was already approved for use in the facility for minor maintenance on the hoist. However, MSTS did not review the work package prior to replacing the guide wheel and failed to recognize that the alternate hazardous energy control procedure was needed in support of the repairs. MSTS determined that the proper lockout/tagout process was not followed for the lockout of the emergency stop.

Start-up Notification Report: As discussed in the NNSS Monthly Report for January 2022, MSTS submitted the quarterly start-up notification report to the Nevada Field Office (NFO). In February, NFO acknowledged the updated schedules and approved the submitted report.