

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 1, 2022

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

DNFSB Staff Activity: A. Powers, E. McCullough, and D. Montieth visited the site during the week of March 21 to perform walk downs at the various defense nuclear facilities. The Board's staff also virtually conducted a review on the Nevada Field Office's (NFO) process and procedure for reviewing and approving safety basis documents in March. The review included discussions with NFO personnel that focused on how their process and procedure compared to the requirements and guidance listed in Department of Energy Standard 1104-2016, *Review and Approval of Nuclear Facility Safety Basis and Safety Design Basis Documents*.

Device Assembly Facility (DAF) Downdraft Table Enclosure: During the contractor readiness assessment to restart operations in the downdraft table building at DAF, the assessment team identified a concern regarding the configuration of the continuous air monitors inside the enclosure for the downdraft table (i.e., the credited primary confinement). Specifically, the team found that the air sampled by the continuous air monitors would exit the credited enclosure without going through a credited filter. As a result, Mission Support and Test Services, LLC (MSTS), personnel installed new piping and filters for this airflow, and these new filters are now part of the safety significant boundary of the primary confinement. To install these new components, MSTS personnel welded metal struts over two separate glass windows inside of the enclosure. MSTS personnel attached the new piping and filters to the new metal struts.

In March 2022, MSTS personnel identified cracked glass on one of the windows where this new piping was installed. MSTS personnel are still investigating the cause, but they believe that the heat from welding the strut added tension to the glass and this potentially caused the glass to crack. MSTS personnel also believe it is possible that the new piping may have angled towards the glass and vibration may have caused one of the filters to contact the window. The combination of the vibration and added tension from the welds may have caused the glass to crack. MSTS personnel are still considering potential paths forward, such as moving the new piping so that it is not over the glass windows (including the line over the glass window that is not cracked). In addition, MSTS personnel plan to replace the cracked window and perform a leak test. Lawrence Livermore National Laboratory personnel have yet to use the downdraft table for radiological operations since completing the federal readiness assessment in July 2020. As a result, there was no release of radiological material because of this event.

Radioactive Waste Management Complex (RWMC) Radiography System: In March, MSTS personnel found that recent faults for the radiography system at the RWMC were due to a low voltage input into the system. Upon further investigation, MSTS personnel found that the recently replaced transformer on the power line pole outside of the building was providing lower voltage than needed for the radiography system. MSTS personnel plan to use an existing transformer that is already connected to the radiography system to increase the incoming voltage. Once addressed, MSTS personnel will resume radiography operations and verify that select low-level radioactive waste packages do not contain hazardous waste.