

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 3, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Austin R. Powers, Cognizant Engineer
SUBJECT: Nevada National Security Site (NNSS) Report for March 2020

DNFSB Staff Activity: The Board's staff conducted no onsite activities at NNSS during March.

COVID-19 Impact on NNSS: During March, the Nevada Field Office (NFO) and NNSS contractors' leadership have implemented minimum safe operations staffing in NNSS facilities that is consistent with facility-specific operational modes and surveillances as specified in the approved safety basis documents. Currently, all programmatic nuclear operations have ceased in NNSS defense nuclear facilities, except for maintenance activities. NFO staff is in the field to oversee activities based on the risk involved.

Joint Actinide Shock Physics Experimental Research (JASPER) Functional Exercise:

During February, Mission Support and Test Services, LLC (MSTS), conducted a functional exercise at JASPER. The exercise included personnel from MSTS, Lawrence Livermore National Laboratory (LLNL), and the on-site fire department. In the exercise scenario, an earthquake occurred when operators were working on an actinide target assembly. The earthquake caused the target assembly workbench (~3000 lbs.) to overturn and pin an operator under the table (simulated with a mannequin). The target assembly fell off the table, resulting in contamination on the operator trapped under the table and in the immediate area. In March, MSTS completed the after-action report for the exercise and found that all objectives were successfully met. MSTS identified no findings or deficiencies, but listed five improvement items. The improvement items include improving communication protocols and radiation instrumentation and its use for fire and rescue. The report also noted the exceptional performance of the radiological control technicians during the exercise.

Analysis of Alternatives for Device Container: A team of personnel from MSTS, LLNL, and Los Alamos National Laboratory performed an analysis of alternatives, as directed by NFO, for the device container used to stage and transport subcritical experiment packages at NNSS. The current device container used at NNSS has not been evaluated to demonstrate that it will provide adequate thermal and electrical protection. As discussed in the Board's December 19, 2018, letter to the Secretary of Energy, the U1a Complex safety basis relies on specific administrative controls to address these hazards (also applicable to onsite transportation and the Device Assembly Facility). In the analysis, the team defined the functional requirements and preferences for the device container, identified device container alternatives used across the complex, evaluated the alternatives by comparing their technical capabilities to the functional requirements and preferences, and provided several recommendations. The recommendations include modifying the current device container used at NNSS to incorporate proven hazard protection features from containers used at the Pantex Plant and procuring a new container that can be used for all experiment packages and meets the necessary functional requirements and preferences. MSTS has initiated preliminary planning discussions to identify a funding sponsor to implement these recommendations.