

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 4, 2020

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

DNFSB Staff Activity: The Board's staff conducted no onsite activities during August.

COVID-19 Impact: During August, NNSS remained in Phase 2 of its return to work plan. In this phase, NNSS continued to execute approved mission-critical and high priority programmatic activities associated with the "Normal Operation with Maximum Telework" work status. The increase in COVID-19 cases in Nevada has not impacted the defense nuclear facilities at NNSS from maintaining minimum staffing requirements.

Joint Actinide Shock Physics Experimental Research (JASPER) Facility: During July, JASPER personnel were removing the 40 mm launch tube (part of the gas gun system) and replacing it with the 28 mm launch tube. For this activity, JASPER personnel used a shop crane rated for 2,000 lbs fully retracted and 1,000 lbs fully extended to lift the launch tubes, instead of using the building's overhead gantry crane (rated for 10,000 lbs). The JASPER facility recently acquired the shop crane and this was their first time using it for this specific activity. JASPER personnel removed the 40 mm launch tube with no issues. However, when lifting the 28 mm launch tube (which weighs approximately 1,925 lbs), the fully extended shop crane lost balance and the 28 mm launch tube was dropped to the floor. The drop did not result in any radioactive material being released (material was not present during this operation) or obvious damage to the launch tube. The procedure for this activity allows an alternative crane to be used; however, it states that the launch tube weight is within the requirements of an ordinary lift. The procedure does not take into account that the load rating for an alternative crane could result in a critical lift. DOE Standard 1090-2020, *Hoisting and Rigging*, states that a steel erection lift shall be designated as a critical lift if the lift exceeds 75 percent on the rated capacity of the crane.

As a result of this event, the JASPER facility manager issued timely orders that included a restriction on all rigging and crane operations and specified actions to be completed in order to lift this restriction. The actions included reviewing all JASPER work packages and procedures to identify any rigging and crane operations, identify procedural ambiguities that may lead to an undesired configuration, and evaluate the adequacy of the critical or non-critical lift determination in the procedures. During August, JASPER personnel completed this review. For the Mission Support and Test Services, LLC (MSTS), procedures, MSTS personnel identified that three of six procedures involving rigging and crane operations needed to upgrade lifts to critical lifts. The procedure for the activity described above was the only procedure found to contain an ambiguity that led to an undesired configuration. MSTS has revised the procedure to address this concern. For the Lawrence Livermore National Laboratory (LLNL) procedures, LLNL personnel identified two procedures that needed to upgrade lifts to critical lifts. Of note, one of these procedures has not been implemented in many years, while the other was written as a contingency and has never been implemented. Lastly, JASPER personnel developed a lift checklist that will be implemented for all JASPER rigging and crane operations. With the timely order actions completed, the JASPER facility resumed rigging and crane operations in August.