

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 3, 2019

TO: Christopher J. Roscetti, Technical Director
FROM: Austin R. Powers, Cognizant Engineer
SUBJECT: Nevada National Security Site (NNSS) Report for April 2019

DNFSB Staff Activity: A. Powers, N. George, M. Dunlevy, P. Migliorini, and R. Oberreuter were on site during the week of April 22 to discuss the Device Assembly Facility (DAF) documented safety analysis (DSA) re-write project, observe an operation at the National Criticality Experiments Research Center, and conduct routine oversight of NNSS as part of the quarterly cognizant engineer site visit. During the visit, the staff team conducted walk downs at the various NNSS defense nuclear facilities and discussed revisions to safety basis documents.

DAF Bridge Crane Removal: During April, Mission Support and Test Services, LLC (MSTS), removed the bridge crane from a building that is used to stage special nuclear material. The crane and hoist in this building were placed out of service last year given that the building mission did not utilize the equipment. In addition, MSTS has been planning to remove the crane in preparation for a new project being introduced to the building. Prior to removing the crane, MSTS moved all of the staged material to a different DAF building and placed the building with the crane out of service. By removing the crane, MSTS also eliminated an overhead hazard associated with the potential for the crane to fall on material staged below in the event of a seismic event. However, the Nevada Field Office (NFO) raised concerns that the safety basis was not updated prior to executing this activity. Therefore, the description for this building's configuration in the DAF DSA is no longer accurate given that a design feature has been removed. MSTS has declared a potential inadequacy of the safety analysis and is currently developing an evaluation of the safety of the situation (ESS). NFO anticipates receiving the ESS in May.

U1a Complex Contamination Event: As discussed in the NNSS Monthly Report for March 2019, MSTS completed its performance review of the confinement vessel and entombed the vessel. MSTS is currently looking at different corrective actions that will help the radiological control technicians better understand Zero Room conditions before re-entering after an experiment. In addition, MSTS is considering additional corrective actions that will limit the spread of contamination in the Zero Room in the event of confinement vessel leakage during a future experiment. Lastly, Los Alamos National Laboratory (LANL) is performing a causal analysis for the confinement vessel leakage. Depending on the results of the analysis, LANL will identify any lessons learned or improvements to be made to the confinement vessel.

Joint Actinide Shock Physics Experimental Research (JASPER) Facility Safety Basis: During March, MSTS submitted the 90 percent complete annual update for the JASPER DSA to NFO for review. Changes that will be made in the next annual update include increasing the material-at-risk limit for targets and updating the control set. MSTS plans to only credit controls that are derived from the hazard analysis. During March and April, NFO reviewed the 90 percent complete document. MSTS plans to address NFO's comments on the 90 percent document and submit the 100 percent complete document in June.