

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 3, 2018

TO: Christopher J. Roscetti, Technical Director
FROM: Austin R. Powers, Cognizant Engineer
SUBJECT: Nevada National Security Site (NNSS) Report for July 2018

DNFSB Staff Activity: Acting Chairman B. Hamilton, K. Herrera, and A. Powers were on site July 18. During their visit, they walked down the Device Assembly Facility/National Criticality Experiments Research Center; U1a Complex; Radiological Waste Management Complex (RWMC); and Joint Actinide Shock Physics Experimental Research (JASPER) Facility. In addition, they discussed the status of ongoing and planned missions/operations, as well as upgrades/improvements to credited safety systems and controls at the defense nuclear facilities.

Radiological Waste Management Complex (RWMC) Evaluation of the Safety of the Situation (ESS): In a memorandum from the Department of Energy (DOE) to Los Alamos National Laboratory dated April 26, 2018, DOE referenced an evaluation that calculated the bounding hydrogen generation rates in 9979 containers and found that the lower flammability level of hydrogen gas can be reached in less than one year depending on the volume of the headspace in the container. As a result, Mission Support and Test Services, LLC (MSTS), declared a Potential Inadequacy of the Safety Analysis (PISA) for the RWMC safety basis in May, given that there are 9979 containers waiting to be disposed of and additional containers in the stack working face that have not yet been buried. MSTS developed an ESS recommending that uncovered 9979 containers within the stack working face be covered with soil and that the staged 9979 containers be added to the stack working face and covered. For future receipts of 9979 containers, MSTS recommends that the containers should be staged, stacked, and covered within six months from the time the generator sealed the container. If it is projected that the six months will be exceeded, MSTS proposes that the containers be stacked under a layer of non-9979 containers to prevent potential lid ejection, rather than venting the containers.

At the end of June, the Nevada Field Office (NFO) approved the ESS with two conditions of approval. First, MSTS shall meet the low-level waste acceptance and packaging requirements of DOE Manual 435.1-1, Change Notice 2, *Radioactive Waste Management Manual*, for the future receipt of 9979 packages, including the expectation that vents or other measures be provided if the potential exists for generating flammable concentrations of gases in the container. Second, MSTS shall be prohibited from performing waste retrieval operations that may involve covered 9979 containers until the activities are analyzed and approved in a future safety basis change. Following NFO's approval of the ESS, MSTS covered the 9979 containers in the stack working face with soil and moved the staged 9979 containers into the stack working face during July.

JASPER Facility Safety Basis: As mentioned in the NNSS Monthly Report for May 2018, NFO approved the annual update for the JASPER Facility safety basis. During July, MSTS completed the implementation verification review of the new approved safety basis. MSTS will be able to declare the new controls implemented and effective once Lawrence Livermore National Laboratory completes the critical lift plans and submits them to MSTS.