

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 2, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: Austin R. Powers, Cognizant Engineer
SUBJECT: Nevada National Security Site (NNSS) Report for March 2021

DNFSB Staff Activity: During March, the Board's staff conducted a teleconference with personnel from Mission Support and Test Services, LLC (MSTS) and the Nevada Field Office (NFO) to discuss the Board's staff team's observations from their review of the Radioactive Waste Facilities (RWF) safety basis. During the interaction, MSTS indicated that several of the staff team's observations will be addressed in the next annual update for the safety basis. MSTS submitted a draft of this annual update to NFO in March.

COVID-19 Impact: During March, NNSS remained in Phase 2 of its return to work plan. In this phase, NNSS continued to be in the "Normal Operation with Maximum Telework" work status. MSTS continues to maintain the required staffing at the NNSS defense nuclear facilities.

RWF Explosion-Proof Spheres: MSTS currently stages two explosion-proof spheres, used in past experiments, in the Transuranic Waste Pad Cover Building. MSTS plans to ship the spheres to Idaho National Laboratory (INL) for processing. Prior to shipment to INL, MSTS needs to address concerns related to potential hydrogen generation within the spheres. During March, MSTS began to perform nonintrusive characterization (e.g., radiography, tomography, and gamma spectroscopy) of the spheres to determine if there is a vent path. In order to perform characterization in the Real-Time Radiography (RTR) building and load the spheres into Type B shipping containers for offsite shipment, MSTS developed a change notice to the approved and implemented RWF safety basis, which NFO approved in February. In the change notice, MSTS increased the material-at-risk limit for the RTR building so that one sphere can be brought in. MSTS also revised two specific administrative controls to be applicable to the handling and lifting of the explosion-proof spheres. Lastly, MSTS revised an in-service inspection for the spheres to include a visual inspection of the spheres when outside of their containers. NFO did not identify any conditions of approval or issues for the next annual update. With NFO's approval, MSTS completed the implementation verification review in February. From the review, MSTS verified that the controls in the change notice were satisfactorily implemented.

U1a.03 Test Bed Project: NFO completed its review of the safety design strategy for the U1a.03 Test Bed project. This project is a major modification to the existing U1a Complex that includes the modification of existing drifts to construct a new Zero Room that will have the capability to use a neutron source during the execution of subcritical experiments. MSTS will follow the requirements in Department of Energy Standard 3009-2014, *Preparation of Nonreactor Nuclear Facility Documented Safety Analysis*, when developing the safety basis for this project. In general, MSTS expects the control strategy to be similar to what is used and implemented for the existing Zero Room at the U1a Complex. MSTS also plans to identify an appropriate fire extinguishing system for the new Zero Room and use the atmospheric dispersion protocol, as discussed in NNSS Monthly Report for January 2021, for the accident analysis. MSTS anticipates completing the draft preliminary documented safety analysis, which will be reflective of the preliminary design for the project, later this year.