DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 4, 2018

TO: Steven A. Stokes, Technical Director
FROM: Austin R. Powers, Cognizant Engineer
SUBJECT: Nevada National Security Site (NNSS) Report for April 2018

DNFSB Staff Activity: D. Andersen, R. Jackson, Y. Li, and A. Powers were on site from April 17th to 19th to review the Device Assembly Facility (DAF) seismic hazard assessment.

DAF Fire Suppression System (FSS) Improvement Project: Mission Support and Test Services, LLC (MSTS), has continued to make improvements to the safety class FSS in DAF. MSTS has completed all construction activities for the 24th of these buildings (out of 25). MSTS plans to return the building to the facility and declare the building operable during the month of May. Due to ongoing programmatic work, MSTS plans to begin construction work during the summer for the two remaining buildings to have their FSS addressed (23rd and 25th). These buildings will continue to rely on administrative controls for fire protection (e.g., fire watch during operations and limited combustibles).

DAF Seismic Hazard Assessment: The previous management and operating (M&O) contractor, National Security Technologies, LLC (NSTec), hired Amec Foster Wheeler to re-assess the seismic hazard for the DAF. Based on the results of its assessment, Amec Foster Wheeler found that the approved 2007 Probabilistic Seismic Hazard Analysis (PSHA) enveloped the current assessment. Therefore, in October 2017, NSTec submitted a recommendation to the Nevada Field Office (NFO) that the 2007 PSHA did not need to be updated. When preparing for the Board's staff review, Amec Foster Wheeler identified an error with the kernel density (an input parameter for seismic area source calculation) in its assessment. Amec Foster Wheeler has since revised its assessment. The preliminary results indicate that the seismic hazard went up but the 2007 PSHA is still bounding. Amec Foster Wheeler plans to have the revised assessment peer reviewed prior to finalizing it. NFO does not plan to review the recommendation until after the peer review is complete.

DAF High Efficiency Particulate Air (HEPA) Filter Ventilation System (HFVS): As mentioned in the NNSS Monthly Report for March 2018, MSTS was developing a white paper that would provide a technical basis to support a potential deviation from American Society of Mechanical Engineers (ASME) guidance. During April, MSTS completed the white paper and recommended that the airflow should be at ± 10 percent of the operating airflow range during the HEPA filter leak test, rather than ± 10 percent of the operating airflow rate, and this test be performed every 18 months, rather than 12 months. MSTS believes that these changes are appropriate for the DAF HFVS given that the system was not originally built to ASME standards. Per ASME guidance, an ASME-compliant HFVS must be in its normal operation configuration when performing the HEPA filter leak test. However, the configuration of the DAF HFVS is continuously changing when performing its credited safety function by adjusting its airflow in order to maintain the proper pressure differential in the building. Therefore, MSTS believes that testing the HEPA filters at a range would be more appropriate than at a set point. Also, the previous M&O contractor has completed modifications to the HFVS (e.g., installation of injection and sampling manifolds) that improve the system's ability to be aerosol tested.