

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 3, 2017

**TO:** Steven A. Stokes, Technical Director  
**FROM:** Austin R. Powers, Cognizant Engineer  
**SUBJECT:** Nevada National Security Site (NNSS) Report for October 2017

**DNFSB Staff Activity:** A. Powers was on site from October 17<sup>th</sup> to 19<sup>th</sup> to observe Vega subcritical experiment operations at the Device Assembly Facility (DAF). In addition to the subcritical experiment operations, the staff member also performed a walk down at DAF to observe and receive information on the recent upgrades made to the fire suppression system (FSS) and high efficiency particulate air (HEPA) filter ventilation system (HFVS).

**DAF FSS Improvement Project:** During the month of October, National Security Technologies, LLC (NSTec), continued to make improvements to the FSS in DAF. For the 16<sup>th</sup> building out of the 25 buildings in which NSTec plans to make FSS improvements, NSTec resolved and closed a nonconformance report (NCR) associated with an uncharacteristically stiff batch of controlled low strength material (CLSM) being used during the backfilling of the lead-in line. NSTec decided to keep the CLSM in place given that the field engineer visually observed the CLSM flow under and around the pipe. NSTec also needs to remove a temporary modification from the riser for the 16<sup>th</sup> building. Once this is complete, NSTec plans to turn over the building back to the facility by the end of this year. NSTec will address the FSS deficiencies on the first floor of this building at a later date.

Also, as mentioned in the NNSS Monthly Ending September 2017, NSTec could not tie in the new piping into the inside fire loop for the 20<sup>th</sup> building out of 25 buildings to be addressed due to an issue with an isolation valve outside of DAF. During the month of October, NSTec began the process of developing a work package and path forward to resolve this issue. NSTec anticipates they will have this issue resolved and the building operable by the end of this year. Lastly, during the month of October, NSTec has begun construction activity for the 21<sup>st</sup> building out of 25 buildings to be addressed. For the 21<sup>st</sup> building, NSTec will abandon the lead-in line and will tie the FSS in the building into the inside fire water loop. NSTec has already begun to make penetrations into the building.

**DAF HFVS:** In January 2017, a potential inadequacy in the safety analysis (PISA) was declared after the Nevada Field Office determined that the airflow during the HFVS annual leak test in-service inspection for several buildings in DAF was tested over a range rather than a specified value per American Society of Mechanical Engineers (ASME) requirements. NUCON International, Inc. (NUCON), also conducted these tests due to a justification for continued operation (JCO) that was issued in 2011. Specifically, the JCO was issued for several buildings after an engineering review of the ventilation system found that the HEPA filters failed tests due to instability in flow, ASME requirements were not being met, and certain equipment was not evaluated for required seismic performance. As a result of the PISA, affected buildings were placed back under the JCO. During the month of October, NUCON began to perform tests on the HFVS for buildings currently falling under the JCO. NUCON will continue to perform these tests through the month of November. NSTec plans to take the buildings that pass the test out of the JCO.