

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 6, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Miranda McCoy, Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending November 6, 2020

Electrostatic Dissipative (ESD) Flooring: Following last week's snowfall, production technicians and facility representatives noted water intrusion in one nuclear explosive bay and the ramp outside of the bay, potentially affecting the dissipative properties of the flooring in the facility. Facility representatives originally identified standing water in the ramp during walkdowns, and noted that the facility ESD footwear checker was not operable due to the standing water. Upon replacing the footwear checker, production technicians were able to enter the facility, and noted standing water within the facility as well. In addition to approximately half of the flooring, some tooling and containers staged in the facility had been exposed to water. The facility was in an operational mode, but since production technicians had not yet performed operations that day, a unit in the facility was already in a safe and stable configuration. Nuclear explosive safety personnel, in conjunction with several CNS groups, verified that the standing water did not affect the safe and stable determination. Late this week, CNS safety analysis engineering personnel declared a potential inadequacy of the safety analysis due to the potential for the standing water to affect the resistivity of the flooring in the facility, which is credited as part of the ESD environment to prevent electrostatic discharge hazards. CNS documented an operational restriction to pause operations on the unit until ESD controls and associated documentation are approved by NPO. If resistivity testing of the ESD floor is pursued, NNSA would need to conduct a nuclear explosive safety change evaluation.

Facility Structure: On 11/3/2020, a small piece of concrete fell from the ceiling in one nuclear explosive bay while production technicians were performing operations. The piece—approximately 3 inches by 2 inches by ½ inch—dislodged from the corner of the wall by the ceiling, and fell to the ground several feet from the wall. Upon further inspection, the wall had several small pockets where concrete had spalled from the wall. CNS facility engineers performed an additional walkdown of the bays with the same design and construction method, and noted initial concerns with three other facilities in the same north-west corner of each facility. The technical safety requirements specify that the safety class facility structure will not spall during event scenarios—such as high wind or earthquakes—but is silent on spalling during normal conditions. Critique participants conservatively determined that the event constituted a degradation of a safety class system, specific to the one facility.

On 11/4/2020, CNS management determined that a crack in a beam in a nuclear explosive cell constituted a degradation of the safety class facility structure, and would require further evaluation. After entering the facility for an unrelated review, a facility engineer noticed a crack in a structural beam. The engineer questioned the effect of the crack on the facility structure. CNS further determined that an engineering evaluation would be required to determine whether the beam's condition is acceptable. In-service inspection (ISI) reports dating back to 2013 noted the presence of the crack, but based on engineering judgment, the facility engineer performing the ISI determined the crack was not a structural issue. The facility was already in maintenance mode, and operations will not be performed in the facility until the evaluation is complete.