

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 12, 2018

TO: Christopher J. Roscetti, Technical Director
FROM: P. Foster and P. Fox, Hanford Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending October 12, 2018

DNFSB Staff Activity: B. Caleca was onsite for site access training.

105-KW Basin: While moving the Xago Tool from over one engineered container to another, the center spool shifted to one end of the support beam, causing the beam to tilt violently. The operators moving the tool were not injured during the event and contractor management quickly classified it as a near-miss. A critique was held the next day to capture the timeline of events and to discuss potential solutions to help prevent such a shift in the future. During discussions, it was determined that the temporary clamps used to hold the center spool in place during the movement did not have a known horizontal load limit and were not being used for their intended purpose. Contractor management discussed an extent-of-condition review to examine if other equipment is used atypically in the facility. A recovery plan was developed and the equipment was restored to operation over the correct engineered container. The engineering team is in the process of developing a long-term solution to secure the tool during any future movements.

Tank Farms: The contractor's Plant Review Committee (PRC) met to consider a change to the Tank Farm DSA that defines the concept of safety instrumented indication (SII). The modification defines an SII as an instrument where only the sensor and related indicator is classified as safety equipment, and a logic solver, safety alarm, or immediate operator response to the indication is not necessary to fully implement its safety function. The contractor intends to use SIIs to implement SACs for slow acting events, where a reading is necessary from the instrument to support operator action but substantial time is available to respond to the potential hazard. The contractor developed this concept and associated requirements after determining that existing standards for the design of safety instrumented systems that perform automated actions is not a good alternative for the design of this type of system. During the meeting, the supporting engineering staff noted that the ISA 84 code committee is developing a new standard (ISA 84.91.03) that will eventually capture independent protection layer requirements for these types of systems. This change will support the hazard control selection for the Tank Side Cesium Removal System safety basis. The PRC recommended approval of the change.

Building 324: A Resident Inspector observed the Full-up Drill for Annual Credit at Building 324. The drill scenario began with a tornado warning, followed by the development of a tornado west of the 300 Area. The tornado then continued toward building, striking the structure and toppling part of the stack. During the initial stages of the event, the Building Emergency Director (BED) was separated from the rest of the emergency response team as he proceeded to the incident command post (ICP) prior to the Take Cover Alarm. This separation continued until the tornado dissipated and winds dropped to a safe level for the team to travel to the ICP. In the interim, the BED was able to classify the event based on preliminary reports of the tornado striking the facility. The drill scenario highlighted difficulties in communications and command-and-control that arose from the split emergency response team and the delay in getting the necessary response personnel out of Building 324.