

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 30, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: B. Caleca, P. Fox, and P. Meyer, Hanford Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending July 30, 2021

242-A Evaporator: The tank farms operations contractor (TOC) has developed a revised strategy for addressing fire and seismic hazard safety issues identified by the Board in 2014 (see 1/31/20, 3/13/20, and 7/16/21 reports). The strategy is supported by a calculation that determines the heat exposure for safety significant valve control solenoids under various fire conditions and then develops fuel loading limits. The fuel loading limits will be used in a specific administrative control that defines the combustible material limit for locations in the evaporator condenser room. Revision 0 of the calculation was previously reviewed by a staff team and their observations were provided to TOC and DOE Hanford representatives. The TOC subsequently revised the calculation. As part of the revision, they intended to address the DNFSB staff team's comments. However, upon review of the revised calculation, the staff team determined that the revision does not fully address their concerns regarding the use of a nonconservative heat of combustion value for the for rubber floor matting that may be involved in the fire. Consequently, considering the information provided to the staff, the calculated size of the allowed fuel loading for the condenser room basement is 30% higher than appears appropriate. Additionally, the calculation continues to use fire modeling software which may not provide an adequate representation of the ventilation conditions in the condenser room. The resident inspectors provided this feedback to TOC nuclear safety and fire protection personnel.

222-S Laboratory: This week, the 222-S Laboratory operating contractor ran its first facility drill since accepting responsibility for laboratory operations. The scenario involved a tornado that damaged the 222-S facility and included a severely injured worker inside the building. The facility emergency response organization (FERO) performed well, although the approved scenario and format had significant limitations. In particular, the field participation was in a tabletop format and was limited to the core FERO members because of the limited availability of radiological control and industrial hygiene resources. Consequently, the drill did not exercise facility resources to establish boundaries or control the event scene. In addition, the area of the facility selected for the scenario and the circumstances of the injury provided relatively little challenge for participating FERO members since there was little likelihood of any radiological release and the injured individual was postulated to have been discovered and removed by the fire department. The resident inspector notes that HLMI was required to borrow drill controllers from the TOC emergency management program to provide adequate control and assessment of the drill. The resident inspector discussed plans for the facility's emergency management program with the facility emergency response manager. Those plans include aligning facility resources to support a full field drill.

Tank Farms: The TOC Joint Review Group (JRG) met to evaluate work instructions for the removal of a slurry distributor, pump, and jumper from the AP01A pit as part of retrieval work activities. Retrieval personnel are using new tools and methods to aid in performing the work safely, including means of supporting lifted equipment for installation of spray rings, and specialized shielding for areas known to have higher radiation fields. The field work supervisor and workers were knowledgeable and the JRG did not identify any major issues. The JRG voted to approve the package with comments.