

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 19, 2014

**TO:** S. A. Stokes, Technical Director  
**FROM:** M. T. Sautman and D. L. Burnfield, Site Representatives  
**SUBJECT:** Savannah River Site Weekly Report for Week Ending December 19, 2014

Board staff members Zachery Beauvais, Christopher Berg, and Michael Dunlevy performed a review of the Documented Safety Analysis for the Tritium Extraction Facility this week.

**Defense Waste Processing Facility (DWPF):** Prompted by questions from the Board's Staff, SRR declared a Potential Inadequacy in the Safety Analysis (PISA) because the safety basis does not specifically address the issue of flammable gas retention in DWPF vessels. SRR later upgraded the PISA to a positive Unreviewed Safety Question. As a compensatory action, SRR prohibited starting a stopped agitator in eight vessels without performing an engineering evaluation to determine that the release of retained gas will not exceed 95% of the composite lower flammability limit. SRR is currently performing evaluations for three applicable vessels.

**Drills:** During an emergency in the L-Area Facility (LAF), a K-Area Complex (KAC) shift operations manager, first line manager (FLM), or control room operator (CRO) assumes the role of the Area Emergency Coordinator (AEC). When LAF is not manned (e.g., nights and weekends), this AEC is responsible for the emergency response until LAF personnel return to SRS. The site rep observed the KAC control room for a drill that simulated an activation of the LAF Area Radiation Monitor followed by an inability of KAC to use the LAF public address system. The KAC FLM (who was requalifying as an AEC) needed a controller to tell him where the LAF rally point was located. Controllers also had to show a KAC CRO which phone and phone number to use to contact the SRS Operations Center (SRSOC). While AECs in other SRS locations (e.g., H-Area) rely on Facility Emergency Coordinators to handle facility-specific emergency response actions, the KAC AEC is solely responsible for emergency response actions at LAF while it is unmanned. The site rep also questioned whether KAC AEC-qualified personnel had received any training on LAF beyond a one-time LAF walkthrough. While KAC AECs need to participate in one drill or real event a year to maintain qualifications, it is not clear whether they would be required to periodically participate in any LAF drills. Furthermore, the site rep questioned the benefit of having all communications between LAF and SRSOC pass through the KAC AEC during normal working hours rather than have LAF personnel handle those communications directly. The site rep also observed a fire drill in H-Canyon and a cooling water leak drill in HB-Line. The site rep talked with emergency preparedness staff after the H-Canyon drill because the end-of-year timing of the drill allowed facility personnel to know what the drill scenario was ahead of time. These and other observations were discussed with SRNS management.

**H-Canyon:** SRNS completed their reanalysis of the structural robustness of the canyon exhaust tunnel (see 1/6/12 weekly report) based on last summer's remote inspection. The as-designed tunnel sections meet non-seismic and seismic load combinations, but some of the degraded tunnel sections did not meet all of the static load combinations of ACI 349, *Code Requirements for Nuclear Safety Related Concrete Structures and Commentary* (e.g., 1.2 dead load or 1.6 lateral soil pressure). However, SRNS personnel believe that lower load factors are justified in light of the lower uncertainty associated with soil density and dynamic earth pressures. Engineers also recommended that the concrete coupon in the tunnel be inspected annually and the tunnel be inspected with a remote crawler every two years to help quantify the degradation rate. During the last year, pits formed on a 1950's vintage concrete coupon that SRNS inserted into the tunnel in 2012.