

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 15, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: A. Z. Kline, L. Lin, Z. C. McCabe, and E. P. Richardson, Resident Inspectors
SUBJECT: Savannah River Site Activity Report for Week Ending July 15, 2022

Staff Activity: Hanford resident inspector (RI) B. K. Caleca was on site for RI augmentation and support of the Defense Waste Processing Facility (DWPF) readiness assessment. F. D. Sutherland was on site and attended DOE-STD-5506-2021 training along with two SRS RIs.

H-Outside Facilities: On 7/4/22, an operator performing rounds observed approximately 25 gallons of liquid on the road and reported it to the control room. The liquid was leaking from a dike system around two tanks that were used as part of a temporary pump system to transfer contaminated liquid from the H-Canyon exhaust tunnel prior to upcoming crawler inspections. The Shift Operations Manager dispatched Radiological Protection Department personnel to survey and secure the area. The highest contamination level recorded was 2.4 million disintegrations per minute (dpm) beta-gamma. Contamination was also later found on the top (200,000 dpm beta-gamma) and side (50,000 dpm beta-gamma) of one of the tanks. The SRNS team allocated significant resources to remediate the spill site, but approximately five gallons of liquid made it to an on-site outfall. No personnel were contaminated, and no radioactivity left the site boundary throughout this event. This temporary setup had been used to move liquid to a tanker truck at least ten times prior to this event. The tanks were installed at approximately a 10-degree angle, which reduced the capability of the dike to contain liquid leaking from them. Operators had difficulty pumping the liquid from the tunnel prior to the event due to equipment failures and inadequate design considerations, which caused them to develop several workarounds. These included adding additional pumps, portable generators, and installing an improvised priming apparatus for the pumps after a priming evolution on 7/2/22, when an operator removed casing bolts and caused radioactive liquid to spray out into a containment. For a few weeks the team had been slightly opening the pump casing to prime the pump by pouring water into the gap created and then closing the casing. The initial fact finding held on 7/6/22 was narrowly focused on the spill and did not adequately address the numerous issues leading up to the event. Additionally, contractor personnel were unable to determine the mechanism for the liquid leaking from the tank or establish an accurate timeline due to not adjudicating conflicting versions of events prior to the meeting. The follow-on investigation is still in progress.

SRNS: This event (above) along with the recent recycle sump spill (see 6/24/22 report) and numerous other conduct of operations (CONOPS) issues prompted DOE-SR to issue a letter of concern dated 7/14/2022 that directs SRNS to propose corrective actions and strengthen their CONOPS Improvement and Sustainability Plan.

Savannah River National Laboratory (SRNL): SRNL management will reconvene a fact-finding meeting to discuss the response to loss of instrument air (see 7/8/22 report).

Defense Waste Processing Facility (DWPF): The Contractor Readiness Assessment (CRA) for the introduction of glycolic acid continued this week. The visiting resident inspector observed interviews, additional walkdowns, and a drill simulating a chemical spill during a transfer.