

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 31, 2018

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Leigh Lin (acting), Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending August 31, 2018

Building 9212 Liquid Found on the Floor: While preparing to transfer raffinate—solutions containing uranium at very low concentrations—between intermediate storage tanks, operators entered the D-1 storage area and noticed two areas with unknown liquid on the floor near two safe bottle storage areas. The operators established an administrative control boundary and notified the appropriate personnel. The responding personnel qualitatively estimated each spill was less than four liters. One spill resulted from a leaking sight glass flange on a storage tank. The second spill appeared to be from a safe bottle positioned to catch any liquid from a storage tank vent line. The safe bottle was completely full.

Operators had recently started performing monthly rinses of the overall system that include addition of a small quantity of 70% nitric acid. This change was implemented in response to the uranium accumulation issues between March and April earlier this year. Previously, this system had been rinsed one or two times per year. The working theory for the second spill is that a chemical reaction caused by the extra nitric acid additions had been generating gas, causing liquid to come out of the vent line, overflowing the contents of the safe bottle. Participants at the fact finding meeting questioned whether the change to the rinse periodicity had been thoroughly evaluated and whether Y-12 procedures are sufficient to evaluate process changes. They planned to suspend the monthly rinses, repair the leaking sight glass and flange, and add a check of the liquid level of safe bottles to the daily round sheet. Nuclear criticality safety personnel will decide when it is safe to resume solution transfers to the first two intermediate storage tanks.

Building 9212 Failed Gauge Calibration: On August 15, 2018, a differential pressure gauge on the stack associated with ventilation for the ultrasonic chip cleaning and the pickling processes was rejected after a failed calibration. A red sticker was placed on the gauge indicating it was rejected, but no notifications were made. Personnel performing rounds from August 16 to 22 did not notice or notify supervisors of the rejected gauge. On August 23, the calibration supervisor notified the shift manager of the failed calibration following a review of the work packages. No production operations associated with this stack occurred during this time period. Ultrasonic chip cleaning and pickling are on hold until the gauge is replaced and calibrated. Personnel performing rounds have been asked to check the calibration sticker when recording instrument readings.

Storage Drums Nonconformance: Savannah River Nuclear Solutions previously identified a potential concern with Skolnik Industries, Inc. (Skolnik) Type A and UN Drums, which are also used at Y-12 and ORNL facilities (see 8/3/18 report). The standing order at Y-12 that placed a hold on offsite transportation of Skolnik drums manufactured with the new welding machine has been lifted after determining the drums still meet the Type A and UN drum requirements. The non-conformance report issued at the Transuranic Waste Processing Center is still open pending resolution of the issue of Skolnik not notifying Transuranic Waste Processing Center personnel of manufacturing process changes per the contract.