

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 28, 2023

TO: Timothy J. Dwyer, Acting 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 28, 2023

Defense Waste Processing Facility (DWPF): During the review of an instrument uncertainty calculation, DWPF engineering discovered the acceptance criteria for three separate Technical Safety Requirement (TSR) surveillances for conducting loop checks on safety related temperature sensors were not properly implemented into operational rounds. The loop check ensures the operability of the temperature sensors by comparing the readings of the two sensors and ensuring the delta between the readings are within the acceptance criteria. The acceptance criteria for conducting the TSR surveillances in operational rounds was non-conservative based on the equipment uncertainty. DWPF operations conducted an extent of condition from when the TSR surveillances were non-conservatively implemented and found one instance where the facility should have entered a limiting condition of operation but did not.

DWPF personnel held an issue investigation for the personnel contamination issue that occurred two weeks ago (see 7/14/23 report). The operator had been working in a high contamination/high radiation/airborne radioactivity area, cutting plastic and putting new plastic around a Sealand container with contaminated equipment. When the job was complete, the operators doffed their personal protective equipment and one of the operators alarmed the ARGOS personnel contamination monitor when exiting the area. A radiological protection inspector (RPI) surveyed and found contamination on the operator's shin, under the kneecap, and escorted the operator to the decontamination room where they were successfully decontaminated. During the issue investigation, personnel concluded that the contamination likely came from contamination getting on the ladder from climbing it, the operator pressing their shin up against the rungs of the ladder, and contamination migration due to sweat-through of two pairs of protective clothing. However, the operator and RPIs did not note any visual indication of or feeling of sweat, and no contamination was found when surveying the inner pair of the protective clothing. DWPF personnel are developing corrective actions.

H-Canyon: While performing cable inspections on the new Hot Canyon Crane, the crane operator failed to follow a lockout exemption requiring them to de-energize the crane and remove the key prior to inspectors ascending or descending the crane. Even after assessors questioned the presence of the key in the console, the crane operator did not call a timeout or take any action. In addition to the operator not performing as trained, the issue investigation meeting identified problems with the work planning documents and an inadequate pre-job brief as causes for the event. The RIs present questioned the communication techniques used between the inspectors and operators, along with the depth of the issue investigation.

Salt Waste Processing Facility (SWPF): SWPF declared a Potential Inadequacy of the Safety Analysis because calculations for minimum required air purge flowrate in some cases did not account for thermolytic hydrogen generation. The facility's Technical Safety Requirements establishes a minimum flow rate for process vessels to ensure flammable gas concentrations do not reach 25% of the combined lower flammability limit.