

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 30, 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 September 30, 2022

H-Canyon: On 9/23/2022, a Radiological Protection Department (RPD) inspector entered the Hot Crane Maintenance Area (HCMA), which was posted as High Radiation Area (HRA) while signed into the incorrect task of the Radiological Work Permit (RWP). This resulted in their electronic personnel dosimeter (EPD) setpoints being set at 100 mrem/hr vice the required 600 mrem/hr for the HRA task. After observing dose rates of 35 mrem/hr at the step off pad, they entered the HCMA without reading the HRA posting and quickly received a dose rate alarm on their EPD. They moved to a low dose area and notified management. The pre-job brief was inadequate and did not discuss expected dose rates, RWP compliance, or lessons learned such as a nearly identical incident that occurred on with the same shift on 7/27/22. The team also failed to follow the procedure that requires verifying RWP compliance prior to entering and HRA. No radiation control levels were exceeded, and no contamination was detected during either event. All work in the HMCA was suspended pending an issue investigation.

Defense Waste Processing Facility (DWPF): A DWPF lab technician decontaminating radiological samples received a personnel contamination monitor alarm when exiting the controlled area. RPD responded and found elevated levels of contamination on the lab technician above the eyebrow area. The lab technician was successfully decontaminated by RPD and follow-up bioassays are being performed. At the event investigation, it was discovered that the requirements for the RWP were not being followed to use plastic sleeves while performing decontamination activities. The source of the contamination was not identified, and the cause of the event is postulated to be from inadequate radiological practices.

Savannah River National Laboratory (SRNL): Multiple operator aid locations listed in the control room file and the Site Operations Standardized Tools (SOST) database do not match the actual locations of operator aids. Several operator aids in the field and control room file are not the most recent revision. Further, SRNL has multiple unauthorized operator aids that should either be appropriately documented and tracked or removed. DOE-SR has also identified issues between the listed locations in the SOST database and the actual locations in a recent assessment.

SRNL conducted an evaluated emergency preparedness exercise that involved a simulated explosion, multi-lab fire, a contaminated individual with an injury, as well as upset conditions for several systems. During the initiating phase of the exercise, BSRA personnel were able to utilize the fire alarm and Distributed Control System functionality which provided additional realism. The controller organization identified several issues regarding exercise performance. Specifically, they mentioned poor command and control by multiple individuals, untimely RPD response, and poor communications. The poor communications also necessitated multiple controller injects to prevent the exercise from deviating too far from the intended scenario. Although the evaluation is not complete, the SRNL senior observer stated that the exercise will need to be reperfomed due to the lackluster performance.