

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 9, 2017

TO: S. A. Stokes, Technical Director
FROM: M. T. Sautman and Z. C. McCabe, Resident Inspectors
SUBJECT: Savannah River Site Resident Inspector Report for Week Ending June 9, 2017

Defense Waste Processing Facility (DWPF): Personnel from the SRNS environmental sampling group were sampling radioactively contaminated oil from the DWPF canyon when two individuals were contaminated. Because of an issue with the peristaltic pump and running out of the composite liquid waste sampler (COLIWASA) tubes, the group chose to detach the tube from the pump and use it as a COLIWASA tube to obtain the sample. A member of the sampling group inserted the tube into the barrel while standing on a step ladder. A second individual was standing next to the barrel and wiping off any excess oil as the tube was pulled out of the bung hole. Because this person's hand was just above the bung hole, they failed to notice that they had reached the end of the tube, which slipped out of their hand and flung contaminated oil. The individual on the step ladder had their protective clothing and modesty clothing contaminated (2,000 dpm β/γ) as well as their lanyard (6,000 dpm β/γ). Another worker in the nearby radiological buffer area contaminated the bottom of their shoe (500,000 dpm β/γ). During a fact finding meeting, DWPF personnel and the SRNS environmental sampling group identified multiple issues associated with the planning and execution of this activity. The work instructions were not reviewed by Radiological Protection (RP) personnel, which led to this activity being incorrectly performed with a standing radiological work permit intended for routine work inside a CA. The RP personnel assigned to this activity did not survey the tube as it was exiting the barrel to ensure the activity was within the suspension guides of the RWP. Additionally, the sampling group, who rarely sample radiological material, admitted that similar issues have happened in the past, however they failed to discuss this possibility during the pre-job brief or take any additional precautions when performing this work. DWPF personnel plan to hold an apparent causal analysis to determine the corrective actions.

Facility Safety Software: Solid Waste Management Facility (SWMF) personnel were informed of an error with the newest version of the Waste Inventory Tracking System (WITS) safety software that was released on May 25. While troubleshooting a section of the code, the developer changed a conditional statement and saved it locally on their workstation. Later the developer was tasked with making a permanent change to WITS in a different section of the code. The developer then failed to maintain proper configuration management by beginning the modifications on their locally saved version rather than starting with the appropriate version from the authoritative source. SWMF personnel did check the section of the code that had the intended change for unintended consequences, but did not check other sections of the code. In addition to fixing the newest version of WITS, SWMF personnel are determining the path forward for developing additional guidance to improve configuration management.

Since November 2016, SRNS personnel have identified four issues with waste tracking safety software (see above, 4/14/17 and 11/4/16 reports). In a letter to DOE-SR, SRNS determined that the common theme and breadth of these recent issues is unacceptable. SRNS has subsequently initiated a Facility Safety Software Improvement Plan to address this trend.