

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 6, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: Z. C. McCabe Resident Inspector
SUBJECT: Savannah River Site Activity Report for Week Ending August 6, 2021

K-Area: Upon removing a plutonium oxide standard from the K-Area Interim Surveillance Vault following Prompt Gamma/Gamma Isotopic Counter qualification runs, K-Area personnel realized that they had failed to record the entry of the standard into the vault on the inventory tracking form the previous day. Facility personnel called an operational timeout and paused all nuclear material movements while compensatory measures were evaluated and actual material quantities were verified to be below limits. The inventory tracking form is used to implement two technical safety requirement surveillances to verify the vault plutonium oxide inventory and number of pressurizable containers are below the authorized limits prior to introducing new material and/or containers. The procedure used to complete the evolution includes two steps that direct the user to the inventory tracking form, which is required to be completed in its entirety. The operator using the procedure appropriately completed the section for tracking pressurizable containers but skipped the section for tracking plutonium oxide due to erroneously assessing that the standard was not plutonium oxide. The operator signed off the oxide tracking step as complete without completing the applicable portion of the form. This step was checked by a second operator but not identified to be in error. Prior to the previous day's work, the first line manager had informally checked to ensure that introducing the standard would not exceed the vault limit. K-Area personnel determined that the informal check was sufficient to satisfy the TSR surveillance requirement of verifying the KIS vault inventory would remain below the limit prior to introducing the standard.

Salt Waste Processing Facility (SWPF): Upon resuming normal operations after flushing the strip effluent coalescer, SWPF personnel quickly identified an unexpected level increase in the solvent drain tank. Inspection revealed that the six contactor drain valves opened during the flushing evolution were left open rather than closed per the procedures. For this evolution, a control room operator (CRO) was responsible for executing the Use Every Time procedure and relayed step-by-step instructions to the field operators via radio. An individual procedure is used for flushing each contactor, requiring the operator to open the drain valve and flush valve, closing both after the flush is complete. For each of these six procedures the step for closing the drain valve was marked complete and initialed by the CRO despite not having directed the operators to do so. Two field operators were involved in the flushing evolution and completed the flush for different contactors. Both were aware that the drain valves were left open, but both noted that they were not instructed to close the valves and did not question the CRO regarding the departure from the expected condition. The field operators did not have a copy of the procedure in hand during the evolution, though not explicitly required. Notably, the work was performed in a radiological buffer area as opposed to a contamination area or other constrained environment that would preclude operators from having the procedure on hand. As an interim measure, Parsons management personnel have introduced a requirement to the SWPF shift orders to require field operators to return to the control room and verify the procedure is complete after they finish the field work.