

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 3, 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 March 3, 2017

**Hydrogen Generation:** SRR declared Potential Inadequacies of the Safety Analysis (PISA) for the Defense Waste Processing Facility, Tank Farms, and Saltstone. The hydrogen generation rate calculations may not fully account for reaction of radiolytically generated hydrogen atoms with organics to form hydrogen gas or the thermal decomposition of organics to form hydrogen gas. SRR has put in place compensatory actions to prohibit certain activities or to require an engineering evaluation to determine the activity is safe before allowing it.

**L-Area:** SRNS personnel declared a PISA due to the discovery of a criticality accident scenario that was not previously considered in the L-Area safety basis. The possible accident scenario resulted from an evolution that involved de-bundling and re-bundling fuel stored in short inner storage containers (SISCs). Per the procedure, operations personnel removed three SISCs, each containing two fuel pin bundles, from a larger bundle and placed them on a tray in the basin. Operations personnel then began to inspect each SISC to record the identification number when one of the SISC lids came off. The SISCs, as well as other fuel bundles used in the basin, are a safety significant design feature credited to maintain a safe configuration and reduce the frequency of a criticality event during all normal operating and accident conditions. The previously considered criticality accident scenarios in the safety basis assumed that the fuel pin bundles would remain inside the SISC (i.e. the lid would not come off). L-Area personnel previously determined that six fuel pin bundles (two from each of the three SISCs) have the potential to be in a critical configuration. However, the safety basis did not have any credited controls in place to prevent an inadvertent criticality if the SISCs did not contain the fuel pin bundles. When the lid came off the SISC, L-Area operations personnel stopped work and informed the shift operations manager (SOM). The SOM stopped all work in the basin and then entered the Limiting Condition for Operation (LCO) associated with fuel not being stored and handled per an approved nuclear safety data sheet (NSDS). L-area personnel are revising the NSDS to state that one open SISC and two closed SISCs is a safe configuration. The revised NSDS would allow the facility to exit the LCO, isolate the open SISC, and bundle the other two SISCs. The PISA compensatory measures include stopping all work associated with de-bundling SISCs until the activity can be fully evaluated and new controls are implemented if required.

**Solid Waste Management Facility (SWMF):** A resident inspector observed SWMF and Mobile Loading Unit personnel demonstrate the loading of a TRUPACT II with waste drums and boxes. Both DOE and SRNS readiness assessment teams observed this evolution although they had different scopes.

**Salt Waste Processing Facility:** A resident inspector reviewed the Task-to-Training Matrix (TTM) and interim qualification cards for operations and maintenance staff. The resident inspector transmitted several observations regarding the flow down of training courses from the TTM to the qualification cards, the tasks requiring training, and apparent inconsistencies.

**F/H Laboratory:** In light of last week's PISA regarding combustible material in the attic, SRNS intends to inspect seven additional attic hatches to look for combustibles (see 2/24/17 report).