DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 11, 2015

TO: S. A. Stokes, Technical Director
FROM: M. T. Sautman and D. L. Burnfield, Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending September 11, 2015

HB-Line: In order to facilitate future SRNL research, SRNS issued a temporary immediate procedure change (IPC) to the material bagout procedure to allow workers to segregate pieces of plutonium (Pu) metal (samples) that met certain size criteria. Discrepancies exist in the history record for when and how the procedure was validated and to what extent the validation provided the necessary proof that the procedure was acceptable for use as defined in SRS site procedure 2S 1.1. When workers performed this procedure for the first time, they deliberately ignored steps that required the use of primary containment vessel (PCV) carts and instead placed each of the three Pu samples into a pail. The PCV carts have fixed positions to ensure a 2' minimum spacing is maintained and to prevent interactions during transit. By using the pails, the workers violated the criticality safety control prohibiting having more than one item in transit in certain locations (items in a PCV cart do not count) and the control to have 2' spacing in the vault. The crew decided to run two copies of the procedure in parallel and did not take any timeouts or make notifications about the decision to use pails. During the investigation, the workers stated that "common sense" justified their decision to ignore several procedure steps. It is especially worrisome that this crew behaved very differently on this occasion than they did when observers were present during previous work. Another worker reviewing records identified the inappropriate containers on the next regular work day. Both DOE and SRNS are treating the poor conduct of operations and troubling worker attitudes seriously and SRNS implemented a safety pause for all non-essential and discretionary EM operations. Furthermore, SRNS is preparing a Recovery Plan for DOE concurrence that will include the processes that will be used to assure workers adhere to management expectations for safe work performance, to reinforce accountability, and to resume work that is on hold in a controlled, phased manner.

Tritium: Site Services (SS) needed to switch feeder lines so they could perform maintenance on the tritium power distribution system. Normally, the process described in a draft Memorandum of Understanding would assign the facility shift operations manager to be the lead for work that could affect nuclear operations. However, SS planned this work to stay outside the tritium fence line so that the MOU would allow them to be the work lead. This approach required them to use a line that ran through an office building (former medical building) outside the fence. However, this line was only rated for 100-amp service. Thus when SS threw the switch, they overloaded the line and caused a loss of power to all tritium facilities except the Tritium Extraction Facility. This power loss shut down chill water to some ventilation system which then activated tritium and smoke detector alarms. Tritium personnel reacted appropriately and they have nearly restored all of the system. Failures like this can be expected unless SRNS clearly defines the functional boundaries between SS and nuclear facilities in these MOUs between site services.

Defense Waste Processing Facility: During the implementation of a Justification for Continued Operations, an operator used the wrong bottle and splashed antifoam in her face and mouth; some dripped from her goggles into an eye. Later, ~1/2 gallon of antifoam and water was spilled on the floor. A transcription error in a system alignment check was repeatedly missed and led to an operator opening the slurry mix evaporator's antifoam outlet drain rather than a throttle valve.