DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 26, 2013

TO: S. A. Stokes, Acting Technical Director
FROM: D. L. Burnfield, Site Representative
SUBJECT: Savannah River Site Weekly Report for Week Ending April 26, 2013

Sanjoy Sircar was on site this week assisting with site rep duties.

H-Canyon: When a solution of fissile material is stored in a process vessel for an extended time, SRNS places the vessel in interim storage mode and implements controls to ensure the solution does not evaporate to the point of criticality. The controls consist of setting a low-level alarm, and monitoring the tank level and solution concentration. On April 20, eight days after H-Canyon personnel had placed Tank 12.2 in storage mode, SRNS realized that the low-level alarm set point had not yet been updated to the newly calculated value. The existing setpoint was too low (non-conservative). The concentration and actual level were, however, in the acceptable range. This week, SRNS adjusted the set point and tested the alarm. They plan to train personnel and change the process for scheduling this work, to avoid recurrence.

SRNS uses decanters as a safety significant control to prevent red oil explosions in evaporators. SRNS recently detected a leak in one of the decanters, between the aqueous and organic sections. This leak may degrade the separation efficiency. In the short term, SRNS will not send any material from this decanter to an evaporator, unless it first goes through a properly functioning decanter. SRNS plans to revise the safety basis such that this decanter no longer has this safety function, allowing continued use despite the leak. They think this may be possible because there are additional controls for the red oil hazard. Of four decanters of this type in operation, two are known to leak.

K-Area Material Storage (KAMS): One of the forms of respiratory protection used at SRS is an air purifying respirator incorporated into a hood. The hood has two distinct audible alarms that notify wearers of low battery and low airflow. The sound from the alarms travels through the breathing tube directly to the user's ear. While performing a surveillance in KAMS, an employee detected an unusual electrical odor. The hood then failed to provide positive airflow and fogged over. In lieu of removing the hood immediately as trained, the user went to the exit where radiological protection personnel removed the hood. The worker never heard the low flow alarm. The site rep questioned the continued use of the EVA hoods on site until the vendor diagnoses the problem. It was later determined that SRNS is taking adequate controls to prevent recurrence.

A fire occurred in an air conditioning/heating unit inside the assembly area of KAMS. This is the second time in two months that the same unit has experienced similar failures. Following the fact-finding meeting, the site rep questioned the representation from the fire department and the WSI security force. In each case, senior personnel from the units represented personnel who were at the scene during the event. Including the personnel who are at the scene as well as obtaining their personal statements are vital to the successful issue review. In addition, the fact-finding team leader could have benefited from following the checklist contained in the site's conduct of operations manual.

Tank Farms: SRR recently performed two readiness assessments (RAs) of Tank Closure activities. The SRR activities to be performed include salt dissolution of Tank 10 and Bulk Oxalic Acid Cleaning of Tank 12. In both cases, SRR had declared the operations ready to proceed based on Facility Self Assessments, prior to the RAs. During an RA, it is normal for the contractor to identify a few findings that require prestart actions and several opportunities for improvement. However, in the case of the Tank 10 RA, the team found ten findings that require prestart actions and during the Tank 12 RA, the RA team as well as the DOE team covering the RA independently found findings that require prestart actions. The site rep questioned how SRR could improve the process of determining the readiness of their operations.