DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 30, 2014

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 May 30, 2014

Training: In response to site rep observations (see 5/9/14 report), SRNS revised their oral examination instructions. In the future, candidates will be required to discuss what they know from memory before requesting permission from the board to use previously approved reference materials. Furthermore, candidates will only be allowed to use reference materials for select questions and will not be allowed to conduct searches to find the answer to a question.

F/H Laboratory: In 2010, the site rep questioned the technical basis for a credited 0.2 leak path factor (see 10/29/10 and 11/26/10). After reviewing several options, SRNS will require the use of a robust safe for the storage of americium and plutonium oxides that are the major dose contributors in fires and seismic events. The site rep examined a safe that SRNS is considering. It is an UL-listed, 3-hour fire rated safe. SRNS structural engineers have identified a location on the service floor where the potential damage from falling debris would be minimized.

HB-Line Plutonium: SRNS believes they can increase the mass of plutonium oxide that can be stored in a 9975 shipping container from 1.5 kg to 5 kg by using a new packaging configuration and switching from a hydrogen getter to a recombiner. Furthermore, SRNS believes that the public dose due to a fire involving a 9975 would be reduced by a factor of 30 because their control of humidity and use of less plastic would prevent the rupture of the 9975's primary containment vessel. The site rep will meet with SRNS next week to review this.

Emergency Preparedness: SRNS controllers and DOE local and headquarters evaluators discussed observations from the annual site exercise (see 5/16/14 report). One of the biggest concerns is whether the location of the incident command post was appropriate in light of the estimated dose consequences using the default source term, the available field radiological data, and the light and variable winds. Security personnel also remained at a barricade that was downwind of the release for some time and a field monitoring team drove through the plume. Several errors were noted in the listing of significant events, the assignment of tasks, and the closure of tasks in the Emergency Operations Center. Personnel in the Technical Support Room developed a plan to refine the source term, but did not communicate the actions needed to confirm their assumptions to field personnel.

Tank Farms: SRR personnel have been unable to transfer waste between the F- and H-Tank Farms for more than a year because of problems associated with the replacement of the transfer pump. With the evaporator in F-Tank Farm remaining out of service, no way to increase tank space in F-Tank Farm is available, and the intrusion of contaminated water from the catch tank into the waste tanks has reduced the available tank space to a minimum. To compound the problem, SRR has determined that the pipe jacket on a line between the transfer pump pit and the nearby diversion box is leaking. SRR estimates that it will take an additional 3 months to fix this line before they can make the next waste transfer to H-Tank Farm.

Savannah River National Laboratory: A technician became contaminated while preparing a radioactive sample from H-Canyon for analysis in a hood. When she opened the outer container, she noticed that the cap of the inner container had a bulged sphincter. The sphincter is a flexible membrane in the cap that allows H-Canyon to inject the sample into the container. At this time, SRNS does not know whether the bulge contributed to the contamination or not. SRNL will notify the other users of this type of container.