

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 20, 2016

TO: S. A. Stokes, Technical Director
FROM: M. T. Sautman and Z. C. McCabe, Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending May 20, 2016

Emergency Preparedness (EP): The staff observed the annual site-wide EP evaluated exercise that focused on H-Tank Farms. The scenario involved an earthquake that triggered a high-level waste spill and two medical emergencies at Tank 51, a loss of purge ventilation at Tank 29, a caustic drum spill that burned an employee, and the failure of Steel Creek dam. This scenario required the fire department to split up their resources, the transportation of three victims (one of whom died en route) to three different hospitals, the use of an Aiken County ambulance, the activation of the Radiological Assistance Program team, and the deployment of the Aerial Measuring System Region 3 flight team. To avoid past problems with “injured workers” who provided mixed signals to responders (see 11/20/15 report), site employees who are actors (outside of work) realistically played the part of the injured/dying workers and greatly enhanced the tension at the incident scenes. Furthermore, Radiological Protection Department personnel showed up in force, took control of the incident scenes, and clearly identified the boundaries of contamination and clean zones through the use of barricades, announcements, and “guards.” While the staff observed some minor communication, drill control, coordination, and response issues, the overall response was good. The EP organization also tested the use of live streaming video of the incident scene and the use of a mobile command post.

Work Execution: SRS continues to experience events where work was executed improperly.

- A subcontractor electrician was shocked when he touched an energized 120V electrical circuit. Rather than de-energizing the electrical circuit up front, this worker (accompanied by an engineer, subcontractor technical representative, and a shift operations manager) was instead conducting voltage tests prior to de-terminating leads and issuing single point lockouts/tagouts when voltage greater than 50V was discovered, however, he forgot to perform the voltage tests prior to re-landing wires. This event involved an inadequate pre-job brief, misunderstood scope of work, poor documentation of what actions had been completed, noncompliance with site requirements, and not wearing the required low voltage gloves. This is just the latest in a series of electrical events involving SRNS and Parsons. SRNS is reviewing subcontractor and electrical jobs.
- During a helium leak check of chromate water supply header at H-Tank Farms, around 200 gallons of diluted chromate water was spilled because an isolation valve was not verified close although an operator initialed the step as complete. The worker relied on a co-worker’s assertion that the valve had been left closed when other work was performed several months ago.
- When SRNL personnel initiated a fire drill by pulling a fire alarm in a non-nuclear facility, they did not realize that pulling this alarm would cause an A-Area electric fire water pump to activate. This required entry into a limiting condition for operation for the nuclear portion of SRNL. Personnel took appropriate actions after the pump activated.
- SRNL personnel skipped a prerequisite step in a Research and Development function testing procedure that required second person verification that ten sensors were connected properly. They performed the test twice before realizing one of the sensors was not connected properly.

K-Area: Six panels of asbestos-cement material fell off the side of the Assembly Area structure leaving a large hole in the wall near the roof. The Assembly Area structure is currently credited as a Performance Category 2 structure and is the planned location for storing downblended plutonium. The site rep is investigating the potential impacts to current and upcoming safety basis requirements.