

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 28, 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 October 28, 2016

Savannah River National Laboratory: SRNS and their subcontractor divers recently repaired the safety significant 782-A fire water storage tank, which began to leak in June. The repair involved an epoxy plate repair technique. The epoxy was tested by SRNL and was approved by the Nuclear Regulatory Commission to repair a reactor pipe. (See 6/10 – 6/24, 7/29 and 8/16/16 weekly reports).

H-Tank Farms: SRR transferred more than 186,000 gallons of salt solution from Tank 13 to Tank 15 in order to support bulk waste removal. As the waste level increased in Tank 15, several leak sites reactivated in Tank 15. This was anticipated and SRR had installed four cameras in the annulus to monitor 16 of the 24 known leak sites. These leaks ranged from simply looking damp to causing previous salt deposits to detach from the annulus wall to waste slowly running down the annulus wall. The level in the annulus increased by a couple of inches. While each inch in the annulus corresponds to 428 gallons, the exact volume of waste that leaked is uncertain due to rain/groundwater intrusion and the presence of a 12” ventilation duct. As a precaution, SRR deployed the Contingency Transfer System, which can pump waste from the annulus back into the primary tank, but these pumps could not be started until at least 10” of liquid had accumulated in the annulus. Ventilation in the annulus is causing some of the leaked waste to evaporate and salt up. SRR began operating the four submersible mixer pumps. They will run for 10 days to suspend and mix waste. (See 9/16/16 weekly report).

Building 235-F: Workers called a time out when they were not able to replace a glove in shielded cell 6 per procedure. They encountered resistance (possibly due to heavy corrosion) when they were trying to push the old sphincter assembly into the cell with the new assembly, yet the glove/glove cartridge was being pulled into the cell due to the vacuum. They ended up replacing just the glove/glove cartridge. Engineers will be developing a white paper to evaluate the adequacy of the current configuration. Meanwhile, they will install a plastic hut for future work with the gloveport rather than use a glovebag again.

H-Canyon: H-Canyon personnel were using the New Hot Crane (NHC) to move a failed vessel from storage to the cell covers. With the vessel suspended roughly 6 inches above the cell covers, the NHC lost power. After the power failure, the halon fire suppression system discharged and the control room received a halon discharge alarm. The fire department responded and investigated the situation but did not find evidence of a fire. At this time it is unclear if the halon system discharged due to an actual condition (e.g. smoke or excessive heat) or because of a malfunction. H-Canyon personnel have developed a troubleshooting work package to remove the suspended load and move the New Hot Crane to the Crane Maintenance Area before investigating further. Before the power failure, the NHC cameras were being used to provide a visual independent verification that a sump liquid level was below the specified criticality safety limit. The NHC issues have prohibited H-Canyon personnel from performing this periodic visual inspection. Therefore H-Canyon personnel have established an alternative method of independently determining the sump liquid level by periodically measuring the electrical current through the sump liquid level distributed control system electrical loop. H-Canyon personnel are planning to hold an issue review next week.