

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 22, 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 May 22, 2015

Messrs. Caleca, McCabe, and Ms. Gibson were at SRS to review the H-Canyon structure.

Defense Waste Processing Facility (DWPF): SRR declared a Potential Inadequacy in the Safety Analysis and later a positive Unreviewed Safety Question related to the degradation of antifoam in two processing vessels (see 5/14/15 report). The immediate compensatory action to address the flammable gas hazard is to prohibit the addition of antifoam to any DWPF vessel. However, antifoam has always been used to prevent sludge carryover events in these two vessels, and initial simulant testing indicated a greater than 500% volume increase due to foaming when antifoam was not used. While there are other operating parameters that could be adjusted (i.e., steam rate, acid addition rate), their impact is limited. SRR is working on a path forward.

Tritium: SRNS is in the process of removing sampling points for the tritium detection and alarm systems (Kanne Monitors) in rooms and facilities where they are no longer required. When the systems are disconnected from the distributed control systems (DCS), a change in the programming of the related programmable logic controllers (PLC) is also required. In this instance, SRNS made the programming changes to accommodate the removal of a Kanne monitor; however, the programmer inadvertently deleted the programming associated with the alarms and lights for a safety-significant Kanne monitor that was still in operation. The person who reviewed this change also failed to detect the error. Furthermore, the software that was used to aid in the comparison of the programming changes was not user-friendly and required a look-up table to determine if inappropriate changes were made. SRNS is looking into this problem to determine the extent of condition as well as any changes that should be made to the process for changing PLC programming. The failure in programming was first detected by an alert operator when he noticed that the alarm panels did not match his DCS display.

Tank Farms: During a recent outage of the Modular Caustic Side Solvent Extraction Unit (MCU) 47 of the 66 valve handle extensions (VHEs) were removed and reinstalled as part of the fieldwork. The VHEs extend through the cell covers and operate the process valves and serve several safety functions including maintaining the doses to the workers as low as reasonably achievable. When MCU personnel returned the systems to service, they failed to properly seat one VHE on the valve stem of the ball valve that it operates. Thus, when the operators later performed the necessary system alignment checks, they failed to close the open valve. This led to MCU inadvertently transferring salt waste from the Salt Solution Feed tank to the Salt Solution Receipt Tank #2 within MCU. SRR is reviewing the extent of condition to determine what changes are required to ensure similar problems are not encountered in the future.

Criticality Safety: Prior to resuming fissile operations in HB-Line, DOE has requested that SRNS conduct a contractor readiness assessment (RA). The RA's scope would be the implementation of corrective actions that are addressing the failure to implement criticality safety controls (see 2/20/15 report).