

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 22, 2024

TO: Timothy J. Dwyer, Technical Director
FROM: L. Lin and E.P. Richardson, Resident Inspectors
SUBJECT: Savannah River Site Activity Report for Week Ending November 22, 2024

Tank Farms: Tank Farms management declared a Technical Safety Requirement (TSR) violation due to adding water to Tank 26 when prohibited. The purge ventilation for Tank 26 was locked out for ductwork replacement and the facility was in a limiting condition for operation (LCO) prohibiting any transfers or additions except for those needed to put the tank in a safe condition. During that time, a field operator identified high liquid levels in the 16F evaporator underliner sump that needed to be pumped out. Although the first line manager (FLM) notified the shift operations manager (SOM) of the planned evolution to empty the sump, they did not discuss the liquid disposal path. The typical practice is to dispose of the contaminated liquid collected in poly bottles by pouring it into the waste tank house floor drain for the associated tank. The FLM failed to recall that additions were prohibited in Tank 26. Operators performed routine lower flammability limit sampling on Tank 26 before and after liquid addition and verified no elevated hydrogen levels. At the end of the shift, a control room operator (CRO) identified that 19 gallons of liquid had been added to Tank 26, and the next shift's SOM identified the TSR violation. Management is developing corrective actions, which includes evaluating procedure improvements and revising the turnover sheets to provide more information on prohibited activities. In the interim, the facility implemented a compensatory measure where all liquid movements must be approved by operations management.

A pressure control valve (PCV) on the 25H evaporator steam lance failed its structural integrity inspection. The safety significant PCV is required to limit steam pressure to less than 30 psig to prevent over pressurization in the evaporator that could result in a release of radiological material. However, recognition of the impact of the PCV failing the inspection did not occur until a month later, when engineering was informed of the result. The steam lance had been operated in the interim, though the investigation confirmed through non-credited indicators that the steam never exceeded 30 psig. The system also utilizes a safety-significant pressure relief valve (PRV) as a redundant control that was operable during this time. The inspection procedure did not indicate that the PCVs are safety-significant equipment and also lacked guidance on actions required if they cannot be adjusted to within the required pressure specification.

Savannah River Tritium Enterprise (SRTE): SRTE management instituted a requirement for senior supervisory observers to be present for all gas transfers in after multiple operational errors over the last few weeks. In one instance, CROs were completing separate procedures but utilizing a common evacuation header. Due to poor communication and procedure quality issues, a CRO opened an isolation valve that aligned waste gas to the loading line, which potentially impacted the loading evolution. In another situation, a CRO conducting gas movements blew a protective rupture disk when they operated valves outside of the approved procedure. In addition to these gas transfer issues, SRTE also held an issue investigation meeting regarding operators selecting the incorrect timing for a gas transfer system function test and are working through corrective actions related to a construction worker stepping on and breaking a process pipe during open glovebox maintenance.