

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 4, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: L. Lin, Z. C. McCabe, E. P. Richardson Resident Inspectors
SUBJECT: Savannah River Site Activity Report for Week Ending February 4, 2022

K-Area: During a self-assessment, K-Area Design Engineering personnel identified a design change to the architectural drawing of the walls of the Receiving Bay in the Assembly Area. The design change document, drafted in 2007, included a note that restricted any additional load on the walls. At the time, K-Area personnel removed cement asbestos panels from the walls and discovered that the structural supports were spaced further apart than previously believed. A calculation analyzed the walls to be under Performance Category 2 loading and determined that the as-built condition (with minor modifications) was sufficient. However, the calculation cautioned that no further loading should be applied to the wall. Since that time, K-Area personnel have added several loads to these walls and documented them in design change forms and packages but had not updated the architectural drawing or analyzed the impacts of the additional load. Site engineering practices typically include reviewing all design changes to an existing drawing as design changes do not necessarily prompt drawing updates unless certain thresholds are met. The implemented safety basis does not credit these walls to perform any safety function or to prevent 2/1 issues. As such, the additional and unanalyzed dead load on the walls does not present any safety basis impacts. Based on discussions during the issue review, it is unclear if these walls were ever actually credited in the safety basis. SRNS personnel are developing corrective actions, including several lessons learned documents for the various work groups involved.

H-Area New Manufacturing (HANM): While exiting Open Glovebox Maintenance, a tank containing high oxygen (potential flammable mixture) needed to be dispositioned. The abnormal operating procedure (AOP) allowed different methods of dispositioning the gas, but it does not include additional guidance on which method to use. After discussion, personnel chose to disposition the gas through a residual gas dryer (RGD) and the purge stripper system out the stack. This method involves developing a procedure to establish the desired component configuration. While lining up the purge stripper and RGD, but before the tank with the gas was valved in, the stack alarm and tritium alarms in the facility went off. Personnel took response actions and tritium activity levels dropped below alarm levels within a few minutes. It was determined that tritium gas was released, and personnel believe some of the tritium was then sucked into the facility through the supply intake. Bioassay samples were taken from all personnel in the building and there were no abnormal sample results. During the issue investigation, an engineering manager noted that they would expect higher levels of tritium tying into the RGD and purge stripper. While they were consulted beforehand, they believed the facility was going to disposition the gas using a standard operating procedure through the tritium process stripper, which was also allowed by the AOP. SRNS personnel are planning to develop corrective actions at a later time.

Surplus Plutonium Disposition (SPD): The resident inspector observed interviews conducted by the Technical Independent Project Review team on the SPD project.