

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 18, 2025

**TO:** Technical Director  
**FROM:** Savannah River Site Resident Inspectors  
**SUBJECT:** Savannah River Site Activity Report for Week Ending April 18, 2025

**K-Area:** Under the current DOE agreement with the state of South Carolina to dispose of 9.5MT of surplus plutonium, K-Area operations personnel downblend plutonium oxide and package the resultant material mixture into criticality control containers (CCCs), which are then placed inside a criticality control overpack (CCO) for shipment. Over the past few years, K-Area personnel shipped more than 400 CCOs to the Waste Isolation Pilot Plant (WIPP) with expired CCC ring gaskets, violating their certificate of compliance. While these ring gaskets are not credited in the K-Area documented safety analysis, any changes to the CCO payload would need to be evaluated against the safety analysis report for the TRUPACT-II package used to transport transuranic waste to WIPP. K-Area personnel realized that the CCC ring gasket has a five-year shelf life when they recently changed the receipt process. SRNS packaging and transportation had not been tracking or managing the gasket shelf life because they assume that materials would be consumed at a rate that would prevent shelf-life issues. Some gaskets had been received as far back as 2014. K-Area personnel informed WIPP management and the operating contractor that CCOs had been shipped with expired ring gaskets. SRNS personnel have placed all expired CCC ring gaskets in storage on hold and K-Area engineering personnel will initiate non-conformance reports (NCRs) for loaded CCOs in K-Area that contained expired gaskets. K-Area personnel noted that there have been no signs of degradation when they perform their closure inspections of loaded CCOs. Site personnel are requesting that WIPP update the Handling and Operating Manual to include the CCC ring gasket shelf life.

**Surplus Plutonium Disposition (SPD):** NNSA identified a quality control issue in which safety-class mortar received on-site for the SPD project had been accepted and released for use without proper documentation. This mortar will be used in the credited facility structure and consequently carries rigorous quality requirements. The contractor material receipt inspector had properly noted two discrepant conditions: the mortar was not properly labeled, and it did not meet shelf-life requirements. The discrepant condition coordinator subsequently dispositioned these by referring to an existing NCR, but that NCR did not appropriately address these specific issues. Later, a quality engineer also reviewed the documentation and closed the purchase order without recognizing the deficiencies. Neither the inspector nor the quality engineer realized that the vendor had supplied the wrong paperwork and that most of the documentation was a duplicate of a previous shipment of grout received months earlier. SPD project management is reviewing all higher-procurement-level (e.g., safety-class and safety-significant) material for SPD and performing an extent-of-condition review on SPD procurements from the past couple of months. They are also evaluating improvements to procedures to clarify receipt inspection expectations and improvements to their process to ensure material will have the proper paperwork before the material is received. Due to the numerous previous quality assurance issues with the project, the contractor is planning to perform an apparent causal analysis to identify any similarities between the issues and to develop corrective actions.