

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 3, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: A. Z. Kline, L. Lin, Z. C. McCabe, E. P. Richardson Resident Inspectors
SUBJECT: Savannah River Site Activity Report for Week Ending June 3, 2022

Savannah River National Laboratory (SRNL): A Continuous Air Monitor (CAM) alarm sounded in a laboratory area posted as a Contamination Area on 5/18/2022 when a specialist was conducting radiological surveys for an upcoming evolution. An issue investigation was held on 6/2/2022, 14 days after the event occurred. The investigation determined the likely source of the activity was an in-process TRU Waste drum located in the laboratory that had the drum lid placed on it, but no closure mechanism applied. The laboratory specialist bumped the TRU Waste drum which likely dislodged the drum lid. Radiological survey results confirmed contamination on the CAM filter paper and area around and inside the TRU Waste drum. The specialist was wearing a lab coat, gloves, and shoe covers at the time of the incident and was immediately directed to internal dosimetry for a whole-body count. The suspect TRU Waste drum was initially loaded in 2016 and has been in service since. SRNL personnel believe the likely failure that resulted in the release is a failed TRU waste bag in the drum that has been in the unsealed drum for several years. They are performing further investigation to definitively determine the source. Although SRNL personnel discussed the long duration of the in-service drum, the resident inspectors identified it as a latent organizational weakness that could be used to prevent reoccurrence. TRU drums such as this are used throughout SRNL to hold waste and have no limit as to how long they can be unsealed with waste present.

Savannah River Tritium Enterprise (SRTE): While an operator was replacing a glovebox glove in the Z-Bed Recovery Glovebox the glove installation device (popper) became dislodged partway through the evolution and left the old glove partially inserted into the glovebox and the new glove still in the popper. The operator quickly tried to recover by adjusting the old glove to align it back through the popper. While doing so, it became dislodged from the gloveport and the operator's hand and part of their arm entered the glovebox unprotected. The individual was not contaminated, and the bioassay did not reveal any reportable uptake. The immediate response following the individual inadvertently putting their arm into the glovebox was appropriate. During the issue investigation meeting, SRTE personnel discussed how the operator reacted according to their training and several individuals stated that they would not change anything about the response. The personnel at the meeting failed to discuss many of the shortcomings associated with this event which could (if resolved) prevent reoccurrence. For instance, the response to the partially replaced glove was not appropriate given the unnecessary risk of inadvertently putting your hand/arm into the glovebox. Further, the urgency and recovery associated with the partially inserted glove is not covered in the technical reference procedure used, yet there was no mention of calling a timeout when this occurred. Additionally, SRTE personnel discussed the concern of oxygen entering the glovebox and the subsequent risk of creating a flammable atmosphere; however, they failed to articulate the other controls that would have to fail to create a flammable atmosphere, such as limiting condition for operation required actions or the primary confinement containing hydrogen. The resident inspectors provided this and other feedback regarding the inadequacy of the issue investigation to SRTE, who began their corrective action development the following day, which considered the event-specific concerns.