

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 26, 2019

TO: Christopher J. Roscetti, Technical Director
FROM: M. T. Sautman and Z. C. McCabe, Resident Inspectors
SUBJECT: Savannah River Site Activity Report for Week Ending April 26, 2019

H-Canyon: The Section 16 warm sump liquid level reading, a credited criticality safety control, failed, which drove H-Canyon personnel to monitor the sump liquid level via an “alternate method” per the safety envelope tracking form. Typically, H-Canyon personnel use the New Warm Crane (NWC) to visually inspect the sump (via camera) or utilize measuring and testing equipment on the liquid level dip tube. However, neither the H-Canyon procedures nor the criticality safety documentation specify what is an acceptable alternate method, just that personnel perform the verification each shift (not to exceed 24 hours since the previous verification). H-Canyon personnel suspected dip tube plugging as the cause of the failure so H-Canyon personnel began visual inspections with the NWC and tagged out all fissile material transfer routes into Section 16. Shortly after an inspection, H-Canyon personnel moved the NWC away from Section 16 for preventative maintenance. Approximately two hours before the next sump level verification was due, H-Canyon personnel attempted to move the crane into place, but a mechanical failure prevented the movement. Representatives from several H-Canyon groups (including criticality safety personnel) were unable to determine a way to avoid missing the required verification and declared a criticality safety violation. The next day, H-Canyon personnel reviewed the double contingency analysis and identified that this scenario is not credible (i.e., no controls needed) if all of the fissile material transfer lines into Section 16 are administratively locked and took actions to lock these transfer lines. Once H-Canyon personnel completed repairs, they were able to confirm that the sump liquid level was within acceptable limits. During a fact finding meeting, SRNS personnel identified many corrective actions including training personnel on this event and lessons learned and explicitly stating the “alternative methods” for this and other credible scenarios.

Savannah River National Laboratory (SRNL): During the safety pause, a team of SRNL personnel developed and provided a training for all SRNL managers on the purpose and scope of task previews and pre-job briefs with the intent that the managers will also train their individual teams the same information. SRNL personnel identified less than adequate task previews and pre-job briefs as a cause of several of the events preceding the safety pause (see 4/19/19 and 4/12/19 reports).

235-F: SRNS is having an issue where one of the layers of a glovebox glove is tearing during installation. After the first failure, workers practiced glove installation techniques at a mock-up. During the investigation, SRNS also identified that the four tabs that are welded to the glove cartridge clamp assembly were not fabricated onsite per the drawing, that this issue was not initially identified during the quality assurance inspection of the clamping rings, and that the inspection paperwork was not completed properly. In addition, after the clamping rings were reworked, workers installed one ring prior to the nonconformance report being released. That being said, the glove tears do not appear to be due to this since the second two tears involved rings with the correctly sized tabs. Workers videotaped and periodically inspected the third glove during the installation and found that the glove layers separated while tightening the first retaining ring screw. The procedure is being revised to incorporate a slightly different technique used at SRNL.