DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 14, 2018

TO: Christopher J. Roscetti, Technical Director
FROM: Z. C. McCabe, Resident Inspector
SUBJECT: Savannah River Site Activity Report for Week Ending September 14, 2018

Severe Weather: Site personnel have been making preparations for the upcoming severe weather associated with Hurricane Florence. At this time, the site atmospheric technologies group are expecting 1 to 3 inches of rainfall and gusts up to 40 mph at SRS, but are not anticipating significant impacts to site infrastructure.

Tritium Extraction Facility (TEF): While setting up alternate oxygen monitoring for a TEF glovebox, operations personnel created a tool out of a wire clothes hanger to use to poke through a valve on a modified gloveport to in order to remove a cap from the sample inlet line. The control room operator (CRO) was not originally able to remove the caps from inside the glovebox by hand, and returned to the control room to inform the TEF shift manager (SM). The SM then went to the glovebox to troubleshoot the issue and was also unable to remove the caps. The CRO returned to the field and successfully removed a cap with a wrench, an approved tool. Without consulting the procedure, the shift operations manager, or other supervision, the SM and CRO determined that they required a long and skinny tool to "poke" the cap off of the end of the line. The CRO then found a wire hanger and cut a long straight piece from it to use. The CRO demonstrated the effectiveness of the tool on a mock-up modified gloveport in the control room before returning to the field. Undoing several procedure steps, the CRO then uninstalled the polyflow tubing and opened the valve on the modified gloveport. Acting quickly, the CRO easily tapped the cap off of the line (which created an open pathway between the glovebox atmosphere and the room atmosphere) and then reached into the glovebox to yank the clothes hanger through the line before closing the valve on the modified glove port. After successfully removing the cap, the CRO restored the configuration and then continued with the procedure. Later in the shift, the CRO created another similar tool from a wire hanger to be used at a later date. However, this tool had a taped handle at one end, so it was unclear how this was intended to be used (i.e., it would not fit through the valve). Weeks later, the same SM retrieved the tool during a pre-job brief for a similar tasking. The facility manager happened to be in the control room at this time and noticed the issue before calling a time out.

In addition to taking the gloveport out of service due to concern that the misuse could have damaged the safety significant equipment, Tritium personnel self-identified numerous issues related to this event and discussed them at length during an issue review. Since the use of a wire hanger in this manner overlooks an obvious puncture hazard, management noted that the lessons learned from the 2015 puncture wound at Tritium (see 1/30/2015 report) had not been sustained and was inadequately communicated to trainees. Additionally, the conduct of operations issues (procedure non-compliance, the SM doing hands-on work, failing to document the issue in the SM or CRO logbook, etc.) were discussed at length. Also, Tritium management found that several individuals were not aware that there was an approved tool list available for reference. However, the TEF facility manager conducted several interviews with operations personnel and has concluded that the thought that it is acceptable to create and use your own tool in a nuclear facility is not widespread.