

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 8, 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 April 8, 2022

Savannah River National Laboratory (SRNL): On March 27, SRNL received an alarm on the safety-significant fire water valve tamper switch. The tamper switch provides the fire water valve alignment status and sends a signal if either the fire water valve is closed or if there is an open circuit. The facility entered the appropriate limiting condition for operation and Site Services inspected the tamper switch and found corrosion on it that was causing the trouble signal. Personnel noted that the tamper switch module is designed to withstand water and the cover has a gasket, but that there must have been a fair amount of water to cause the amount of corrosion they saw. In addition, there was a box over it to prevent water ingress, but it was unclear how long the tamper switch was exposed to the elements before the box was installed. The tamper switch operation is tested every 6 months, but it is not periodically inspected in the field. Personnel noted that opening the module for visual inspections may work against them and cause it to fail more quickly. A new tamper switch module will be installed, and Site Services will perform an engineering evaluation to determine what improvements can be made.

Salt Waste Processing Facility (SWPF): The RI observed the removal and replacement of scrub contactors in the caustic side solvent extraction system. The scrub contactors are supposed to separate the aqueous nitric acid and organic solvent, but the nitric acid had been coming out with the organic stream. SWPF plans on sending the two removed contactors to the 299-H Maintenance Facility where they will take a sample of the material causing the blockage for analysis. The first scrub contactor replacement took place with no issues. As they were preparing to install the second contactor, they discovered it did not have one of the required O-rings. The mechanics stopped work. The RI and DOE Facility Representative noted that an O-ring was listed under tools and special equipment that the mechanics are required to ensure is available prior to starting the work. This was completed by checking for parts availability and not for O-ring installation. That procedure section is also unclear on which O-ring to check.

L-Area: Processing of foreign research reactor fuel continued with additional management oversight. The team began processing two-ton casks containing non-irradiated fuel. Unlike most other spent fuel processed under water; the assemblies are loaded into the bundles by hand outside the basin. Since the operating shift had not performed this evolution before, and it was not evaluated during the Facility Self-Assessment (FSA), a table-top review was conducted which identified some required procedure changes. The resident inspector observed strong conduct of operations during fuel processing. The procedure lacked details (e.g., lock removal, outer lid placement once removed, gasket handling, bolt re-installation, etc.) which required interpretation from facility management. Additional important information was recorded on a post-it note to turn over to the next shift since it was not captured in the procedure. The team successfully worked through all these concerns and completed processing the fuel with no further problems noted. With these procedural issues, along with the recent performance issues (see 3/17/22 and 3/25/22 reports), the facility has acknowledged the FSA for this campaign was less than adequate and opportunities for improvement have been captured for future campaigns.