

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 4, 2013

TO: S. A. Stokes, Technical Director
FROM: M. T. Sautman and D. L. Burnfield, Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending October 4, 2013

Government Shutdown: On Thursday, SRR furloughed ~1400 employees and began actions to place their nuclear facilities in a safe, non-operating mode by the close of business Sunday. Most of the remaining ~360 employees are shift workers needed to satisfy Technical Safety Requirement and Emergency Response Organization minimum staffing requirements, to protect major facility assets (e.g., DWPF melter), and to prevent degradation of facility systems that could lead to larger events. In the event available funds are exhausted, SRR has also identified a lower staffing level that would only support performing those activities, which if not performed, can be expected to result in an immediate unsafe condition or an immediate loss of or damage to property. Meanwhile, SRNS began curtailing nuclear operations as a precautionary measure. DOE-SR, NNSA, and SRNS have sufficient funds to avoid a furlough in the near term.

Power Transients: A power transient early Monday affected H- and S-Areas and the initial attempt to restore power caused a second power transient. The power transients caused equipment shutdowns (H-Canyon evaporator, HB-Line air handling units and cold feed preparation exhaust fan, and two DWPF melter dome heaters), false alarms in HB-Line, and power outages (H-Canyon A-Line, 512-S, Glass Waste Storage Building #2, H-Tank Farms east hill). Facility operations staff responded appropriately and entered the required Limiting Conditions for Operations. The site rep observed the H-Canyon shift operations manager (SOM) coordinate the switch to a new power feeder with the affected facilities. Troubleshooting and repair of the original fault is ongoing.

H-Canyon: An engineer used incorrect values when calculating the weight percent of uranium-235 in the fuel meat for the first two Sodium Reactor Experiment charge plans and this error was not caught by the reviewer. As a result, the total U-235 in the second batch was compared to a 5 kg criticality safety limit (CSL) vice the correct 4 kg limit. (Actual U-235 was less than 1 kg). In addition, SRNS declared a potential inadequacy in the safety analysis (PISA) after identifying that the dimensions of the 10-well insert used in both dissolvers was inconsistent with that used in the criticality modeling, resulting in a less conservative CSL.

Nuclear Safety: SRNS declared a positive Unreviewed Safety Question for the F- and H Canyon ventilation systems. SRNS recognized that there was no analysis of the condition where the fans were running with the sand filter access hatches open. This condition could allow the fans to draw excess air, which would require increased current to the motor and potentially result in the motor overloads tripping. Any accident that occurred during this condition could result in more material being released than is analyzed.

Tritium: SRNS personnel completed a pre-job brief and a task walkdown for a functional test of the oxygen monitors in H-Area New Manufacturing. Later that shift, the SOM authorized this task and the same personnel were sent back into the room to perform the test. However, they performed the test on the wrong monitors and set off oxygen monitor alarms in the control room. Control room staff took the necessary actions to bring the situation under control. During the issue review, the team performing the test stated that while each of them had correctly identified the system to be tested, they each failed to recognize that they were working on monitors that were approximately seven feet from the intended monitors.