

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 13, 2015

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 March 13, 2015

Work Control: SRNS is in the process of changing some of the roles and responsibilities for controlling work performed within a nuclear facility's boundary. Under the new rules, an outside work group (e.g., Site Services) could control work that is performed inside a nuclear facility's fence line if 1) it is not physically performed within the facility's walls and 2) it has been predetermined to not affect the nuclear facility's operations or safety. Control of work that is performed within the facility's walls or which may affect the facility would be little changed (e.g., released by facility shift operations manager). This arrangement requires strict compliance with memorandums of understanding that SRNS has developed between the facilities and the work groups. The site rep reviewed the site procedure and discussed potential weaknesses with SRNS.

Training: The instructor at a negative pressure respirator class attended by the site rep incorrectly described how to perform and evaluate the positive pressure test a respirator wearer performs to ensure they have a good seal. This step is a critical action in the job performance measure (JPM) and if the student performed the test the way the instructor taught, the student should have failed the JPM. After the site rep informed the respirator subject matter expert and training management, they took action to ensure all instructors and affected students understood the proper technique and acceptance criteria.

Maintenance: A site rep review of maintenance data indicates that many SRNS and SRR facilities have reversed the negative maintenance trends discussed in the past (see 3/15/13, 6/7/13, and 6/13/14 weekly reports). Between March 2014 and February 2015, several facilities experienced reductions of 30 to 70% in their corrective maintenance (CM) backlogs, the man-weeks to work off open CM orders, and the hours of open CM work greater than 90 days old. SRNS also reduced the number of preventive maintenance deferrals involving safety significant or safety class equipment by 50%. Some of these reductions reflect the fact that some facility CM backlogs spiked last winter due to freeze damage (see 1/17/14 report) and contractors scrubbed their backlogs to eliminate duplicative or moot work orders, but much of the reduction reflects a concerted effort to work off the backlogs and hire additional workers (e.g., SRNS hired 69 maintenance workers). That being said, there were still a dozen occurrence reports involving degraded safety equipment in the last four months and equipment failures have repeatedly impacted operations recently.

Tank Farms: SRR placed Modular Caustic Side Solvent Extraction Unit (MCU) operations on hold until anomalous sample results from F/H Laboratory are resolved. SRNS recently revised the process used to mix the samples. At some point following the change in process, laboratory personnel noticed that the samples began to separate into three distinct phases rather than the two phases previously seen. Since the top layer of the sample is extracted for analysis, laboratory and tank farms personnel questioned whether the presence of a third phase would affect the determination of Isopar® content. The concentration of Isopar® is limited in the strip effluent that SRR transfers from MCU to the Defense Waste Processing Facility (DWPF) to prevent explosions at DWPF. Both F/H Laboratory and Savannah River National Laboratory are working with tank farms management to resolve this problem.

The coupling between the manipulator and the valve stem on an isolation valve failed. As a result, the operator believed the valve to be closed (as shown by the position indicator) even though the ball valve was still partially open. When SRR began a liquid waste transfer between two tanks, this failure caused an inadvertent transfer to a third tank. Facility management had previously known that this valve type had a design weakness in the coupling between the valve manipulator and the valve stem and had already replaced approximately 40% of the couplings. They are now reviewing the status of the remaining couplings to determine if their replacement was being given the appropriate priority.