

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 29, 2009

TO: T. J. Dwyer, Technical Director
FROM: M. P. Duncan and M. T. Sautman, Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending May 29, 2009

Messrs. Eyler, Horton, Verhaagen, and Butch reviewed instrumentation and control system design, software quality assurance, and configuration management for the Salt Waste Processing Facility.

H-Canyon: A steam lance rig is used to decontaminate equipment in the Swimming Pool Decontamination Facility. Unlike most gang valves, the steam is supplied via a dual purpose gang valve that can also provide steam to the Railroad Tunnel sump transfer jet. Last week, a Crane Process Operator (CPO) completed his preparations for decontaminating dissolver charging bundles. Per the procedure, the Building Operator (BO) is responsible for positioning the gang valves. Because the BO was occupied with another task, the CPO decided to perform this role himself. Although he is qualified as a BO, he was not identified as a BO on the watchbill nor did he seek authorization by the Shift Operations Manager to perform this activity. Although this procedure is a Use Every Time procedure due to the dual purpose gang valve, the procedure was not in hand during the valve positioning. The CPO inadvertently reversed the valve positions – i.e., he closed the 150# steam to Swimming Pool isolation valve and opened the 150# steam to Railroad Tunnel isolation valve. When the CPO tried to start decontamination, the Railroad Tunnel sump transfer jet began to transfer the sump contents. An installed dummy Hanford connector should have prevented the transfer, but a defective gasket allowed hundreds of pounds of non-process solutions (mostly contaminated rainwater and condensate) to be transferred to a Warm Canyon sump, causing a high level alarm. The CPO realized his mistake when a Control Room Operator called him as required by the Abnormal Operating Procedure. Because this was a deliberate act and not an error, SRNS management is treating this as a serious conduct of operations event and taking disciplinary action. Dummy connector gaskets are being inspected and replaced and the controls for operating multi-purpose gang valves are being reviewed. Management is performing interviews to gage the safety culture, conducting all-hands meetings to convey their expectations, and performing Senior Supervisory Watches.

Tritium: A rupture disc was blown while an operator was trying to prepare a hydride transport vessel for disposal by backfilling it with argon. Despite repeated stroking of valves to let gas in or bleed it off, the operator was unable to get the gas pressure within the relatively tight pressure range specified in the procedure. In an attempt to “step” the gas in, the operator decided to close a valve in the path although this was not allowed by the procedure. Unfortunately, this reduced volume caused a pressure spike when more gas was valved in. The rupture disc blew and dumped the argon into a relief tank, as it was designed to do. While the safety significance was minor, management is concerned by the decision to operate outside the procedure. (4/10/09 and 5/15/09 reports)

F-Area: For the fourth time in 2009, a safety-related diesel generator in F-Area was declared inoperable. Operators investigating a F-Canyon exhaust tunnel vacuum low-low alarm found that only two of the four canyon exhaust fans were operating. Although the undervoltage relay target indicator had not actuated, the utility power feed breaker had tripped open and diesel generator B had started (generator A was waiting for post maintenance testing). However, the emergency power breaker did not close so there was no power being supplied to the B-train. The emergency power breaker was later manually closed to supply power to the two fans. Engineers are still testing equipment in order to identify a cause of this event. (5/1/09 and 5/22/09 reports)