

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 24, 2016

TO: S. A. Stokes, Technical Director
FROM: M. T. Sautman and Z. C. McCabe, Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending June 24, 2016

Mr. Davis and Mr. Shuffler met with DOE and contractor management to discuss recent events.

Savannah River National Laboratory: On Tuesday, divers used an ultrasonic testing (UT) device to measure the baseplate thickness of the leaking safety significant fire water tank that is 30 years past its design life. UT measurements indicate heavy corrosion near the leak and around the outer three to four inch perimeter of the entire tank. Less than 50% of the original 0.25" thick carbon steel plate remains; the rest was scaling. SRNS is currently planning to repair the leak by attaching a plate over the hole that would extend beyond the thinned perimeter to where the baseplate is typically within 60 mils of the original nominal thickness. The issue that engineers are still evaluating is whether they should remove the bitumastic coating so that the epoxy can bind to bare metal as the manufacturer recommends. The concern is that removing the coating (which appears to be well bonded to the baseplate) by grinding or other means could cause additional penetrations in the baseplate. On the other hand, the effectiveness of applying the epoxy directly on the bitumastic coating is hard to predict even if the lab performs a bond strength test because of the age of the coating. SRNS is also considering the feasibility of grouting the voids under the tank caused by leaking water to impede further corrosion, but grouting could make it harder to find leaks in the future. Over the weekend, the leak worsened from a steady drip to a constant stream of water. However, while taking the UT measurements, the divers bumped the weighted plate with their probe and this apparently caused the gasket to form a tighter seal and the leak rate returned to a drip every couple seconds. Meanwhile, DOE and SRNS are trying to identify ways to speed up the installation of a new tank.

Tritium Facilities (TF): Site procedures allow alternative approaches to control hazardous energy during work activities that preclude using a lockout with approval from the facility manager and safety engineer. The form documenting the exemption to the lockout is required to be included in the technical work document or procedure history file. During a recent crane work activity, the work package specified key control during the inspection, a common practice for controlling hazardous energy with crane work activities throughout the site. NNSA personnel requested to see the exemption form allowing the key control in lieu of a lockout and found that no form existed for this procedure. Further investigation revealed that all crane work activities at TF that use key control instead of a lockout did not have the exemption documented. The Assisted Hazards Analysis (AHA) at TF did not make it clear that this form was required when determining the hazards associated with crane work activities. It is noteworthy that the work activities that utilized the key control did meet the requirements for the exemption and no unsafe work practices were noted during a recent issue review. This is the second issue in two months where TF did not implement site procedure requirements for hazardous energy control (see ORPS NA--SRNS-SRNS-TRIT-2016-0007).

Structural Integrity Programs (SIP): As a result of the recent issue with the Assembly Area wall (see 5/27/2016 weekly) SRNS personnel performed an extent of condition review of the SIP at K-Area and L-Area. The review identified a safety class component in K-Area that had been inspected in the past, but was omitted from the most recent inspection and a safety significant component that was not included in the SIP in L-Area.