

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 9, 2010

TO: T. J. Dwyer, Technical Director
FROM: M. T. Sautman and D. L. Burnfield, Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending October 9, 2010

Building 235-F: Building 235-F is currently unoccupied and has been in a surveillance and maintenance mode since October 2006. It contains the Plutonium Fuel Form (PuFF) Facility, the Actinide Billet Line, and the Plutonium Experimental Facility. The PuFF Facility processed $^{238}\text{PuO}_2$ into heat source pellets, but the site has not performed any significant processing activities there since 1984. When these operations ceased, the site planned to restart PuFF. As a result, decontamination was limited to a wipedown with rags in areas that the manipulators could reach, and a significant quantity of $^{238}\text{PuO}_2$ powder remains within the process cells. The remaining material at risk is holdup within these three process areas; the majority of which is contained within the five hot cells and associated cabinets, which comprise the East Line of PuFF. The condition within the cells and cabinets continues to deteriorate with age (for example, the manipulators have corroded and are inoperable). Earlier this year DOE decided to reprogram American Recovery and Reinvestment Act (ARRA) funds from deactivation and decontamination (D&D) of the East Line to other areas on the site, which could be completed successfully within ARRA's duration. However, SRNS initiated planning for D&D of the East Line based on the expectation that other funding would be identified.

One of the main drivers for D&D of 235-F has been the risk it poses to collocated workers and the public, but a new draft Documented Safety Analysis (awaiting SRNS approval) indicates that the calculated offsite consequence to the maximally exposed offsite individual could be significantly reduced. As a result of this reduced consequence and tight budgets, DOE-SR has told the site reps that funding will likely not be available for D&D of PuFF in the near future. One of the site reps' concerns is that the projected unmitigated doses to the collocated worker from the postulated most severe accidents remain in the thousands of rad.

H-Canyon: DOE-SR approved a revised Authorization Agreement to allow the implementation of the upgraded DOE-STD-3009 Documented Safety Analysis. DOE-SR directed SRNS to maintain a high level of preparation for processing used nuclear fuel until DOE-HQ issues a Record of Decision. Because of upcoming outages at H-Canyon and L-Area, the windows for shipping and dissolving fuel bundles are relatively small and they are reviewing their options.

F-Canyon: Phase II transuranic (TRU) waste repackaging resumed this week. The number of facility specific administrative controls will increase from 29 to 53 to support Phase IIIA TRU waste repackaging, which will start this winter.

Rec. 2004-2: DOE is planning to add doors and pressure instrumentation to F/H Laboratory since the building layout does not provide confinement zone separation nor the ability to monitor differential pressure (D/P) between the building interior and outside environment. Engineers, however, expect the tertiary to secondary D/P to only improve from -0.008 to -0.010" water column (vice a DOE Handbook recommendation of -0.03 to -0.15" WC) because of the number of penetrations in the building. The tertiary to atmosphere D/P is currently within the recommended range, but will improve.

Operations: The site rep reviewed the new electronic material balance process at tank farms and the use of electronic rounds at the Defense Waste Processing Facility. The site rep examined how an unsatisfactory value would be highlighted as well as how easily an incorrectly entered number could be detected. While both processes have features to help address both situations, management review of the data is still vital.