

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 7, 2008

**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 November 7, 2008

**235-F:** As requested by DOE-SR, SRNS finished an engineering evaluation to assess options to reduce or eliminate the significant Pu-238 holdup in the facility. The potential consequences of an unmitigated fire are high to facility and co-located workers, and the credited controls are largely administrative, not engineered. Nondestructive analysis indicates that most of the Pu-238 holdup is located in a few cells of a certain processing area. Therefore, a targeted decontamination effort may be able to significantly reduce the interim risk posed by 235-F before funding is available for deactivation and decommissioning (D&D). SRNS's recommended work scope would reduce the source term by approximately 93% and cost on the order of \$15 million. Further reduction would cost significantly more. While this reduction in risk would be significant, there is a possibility that it may not be enough to reduce the calculated unmitigated consequence to the co-located worker lower than 100 rem TEDE. In addition, SRNS proposed that DOE-SR fund development of the D&D Basis for Interim Operation.

SRNS also finished an engineering evaluation of options to remove or reduce the height of the old ventilation stack to preclude the possibility of the stack falling and breaching 235-F from natural phenomena hazards. The report examined several alternatives including mechanical disassembly with jackhammers or a wire saw, use of a wrecking ball, use of heavy equipment to pull it over, and demolition with explosives. SRNS recommended using jackhammers and rebar cutting hand tools to break off pieces and let them to fall inside the stack. Once the stack height is reduced enough, workers would cap the stack with concrete. A similar method was used for the K-Area stack.

**H-Area New Manufacturing:** Two safety-significant glovebox oxygen monitors malfunctioned such that they were no longer protective of the safe limit on oxygen concentration. Testing using 4% oxygen gave erroneous readings of 1% in one and 2% in the other. In the first case, operations personnel were proactive and noticed the reading drifting downward unexpectedly and took it out of service. In the second, performance degradation was discovered during surveillance testing. Between November 2007 and March 2008 there were five reportable occurrences involving glovebox oxygen monitors. SRNS continues to take action to attempt to reduce the frequency of reoccurrence.

**Defense Waste Processing Facility:** A laboratory technician sustained a finger cut while decontaminating scissors that were used to cut a rigger out of a plastic suit. She was wearing three pairs of latex gloves and a glove liner. Because the rigger's work involved some crawling in the Contact Decontamination and Maintenance Cell, it was possible that the plastic suits, and therefore the scissors, were contaminated. Fortunately, the cut was not as deep as initially believed and there was no contamination of the wound. The scissors and blood were surveyed and they were also not contaminated. The response was good. Initially, the shift manager instituted a requirement that cut-resistant gloves be required when cleaning scissors. Later, WSRC suspended all cleaning of scissors pending further review. WSRC communicated this issue to SRNS and they took similar action for their facilities.