

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 10, 2006

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: J. S. Contardi/M.T. Sautman, SRS Site Representatives
SUBJECT: SRS Report for Week Ending February 10, 2006

DNFSB Activity: This week, the DNFSB Technical Director, Kent Fortenberry, participated in a working group meeting regarding salt processing activities. In addition, Messrs. Elliot and Massie conducted a review of the site nuclear criticality safety program. Mr. Zavadoski attended the Salt Waste Processing Facility (SWPF) design status review and testing conference. The recent SWPF reconfiguration changed the layout of the process cells, pump and valve gallery, control room, and piping; modified the central processing area structure; and added new features.

Waste Tank Ventilation: This week the contractor identified a vulnerability with a specific high-level waste tank design. While investigating increased airborne radioactivity from the stack of a tank in F-Tank Farm, the contractor determined that a loop seal between the high efficiency particulate air (HEPA) filters and the fan was deficient—the water in the loop seal had evaporated. Since the loop seal is downstream of the HEPA filters, the potential existed for an unfiltered release. An extent of condition review determined only Type III tank ventilation systems are configured with the loop seal after the filters. Inspections of all Type III tanks revealed four additional tanks with a similar condition. Since the filters are credited as a safety significant control the contractor reported the event as a degradation of a safety-related system.

Tritium Extraction Facility (TEF): The Site Reps met with TEF personnel to discuss the status of startup/testing and authorization basis implementation. The Documented Safety Analysis (DSA) will be revised to address National Nuclear Security Administration (NNSA) comments and incorporate the modification of the Target Rod Preparation module. Currently, the draft DSA does not designate any specific administrative controls (SAC). Because the initial DSA draft was developed prior to the issuance of the DOE SAC standard, the plan was to implement SACs as part of the first annual DSA update (i.e., post-startup). Given the additional DSA changes already under consideration, there may be an opportunity to incorporate SACs prior to radiological operations. NNSA is reevaluating the potential for including SACs.

Safety Basis Issues: A positive Unreviewed Safety Question was declared because flammable atmospheres could be generated within a safety significant glovebox at the Savannah River National Laboratory due to evaporation of flammable liquids (Site Rep 1/13/06 report). A Potential Inadequacy in the Safety Analysis (PISA) for the Solid Waste Management Facility was declared since a review of 389 suspect transuranic drums (reduced from 600+ drums) determined that several have the potential to exceed the bounding configuration analyzed (Site Rep 2/6/05 report). A PISA was declared for HB-Line/H-Canyon and F Canyon because 117 mph winds (i.e., < PC-3) might cause their exhaust stacks to fail and fall on nearby exhaust fans.

Systems Engineering: The Site Rep met with the F and H tank farm ventilation system engineers to discuss their implementation of performance monitoring and trending.