

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 11, 2000

**TO:** G. W. Cunningham, Technical Director

**FROM:** M. Sautman, Hanford Site Representative  
S. Stokes, Hanford Site Representative

**SUBJ:** Activity Report for the Week Ending February 11, 2000

A. Integrated Water Treatment System (IWTS). Start-up testing continued to suffer problems this week due to persistent leakage within the system. It appears that leaky Teflon seals are the cause of the problem. Due to the apparent common failure mode, the large number of this valve type in the IWTS, and the extremely dose intensive nature of repair activities following hot operations, the contractor will conduct an engineering evaluation to determine if all the valves should have new seals of the same or a different material with a higher reliability factor. This evaluation is ongoing. During the test the contractor used a test pressure below that of the booster pump's shutoff head. In a surveillance conducted by a Department of Energy (DOE) facility representative (FR) and transmitted to the contractor on 1/26/00, this observation was brought to their attention along with other related findings. A written response, describing the resolution of each finding/observation, was requested but had not been received by DOE prior to the contractor completing the test on 2/10/00. The Site Reps pointed this out to DOE FR manager. They are currently looking into this issue. Further leak testing of the IWTS may be needed if the contractor elects to replace the failing Teflon seals. (1-C)

B. Plutonium Finishing Plant (PFP): The recently submitted revision to the Recommendation 94-1 Implementation Plan includes a milestone for DOE to decide on a path forward for polycubes by January 2000. DOE-RL approved the switch to direct oxidation this week. The justification for this decision is a white paper with little supporting documentation. Although the results of preliminary safety analyses and experiments have been referenced in various white papers and were used in a decision analysis, many of these have not been issued or otherwise formally documented and are unavailable for review. The unacceptability of this was discussed with both DOE-RL and Westinghouse Safety Management Solutions (WSMS) managers. WSMS is now putting together a technical basis to be issued by the end of February. Data from past and upcoming experiments at both the Pacific Northwest National and Plutonium Process Support laboratories are to be published and integrated in a series of reports. The technical staff reviewed a bounding safety analysis for various processing accident scenarios that was finally issued this week. Staff calculations have raised questions about the concentration of flammable gases in the furnace during routine operations and the credibility of a new accident scenario. (3-A)

cc: Board members