

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 1, 1999

MEMORANDUM FOR: G. W. Cunningham, Technical Director
J. Kent Fortenberry, Deputy Technical Director

FROM: C. H. Keilers / R. T. Davis

SUBJECT: SRS Report for Week Ending October 1, 1999

Staff members Massie, Ogg, and Zull were on site this week reviewing preparations for startup of the Replacement High Level Waste Evaporator (RHLWE). Startup is scheduled for December.

Follow-up on FB Line Contamination: DOE (Type B) and WSRC investigations continue into the September 1, 1999 occurrence that led to worker uptakes of plutonium (site rep report, 9/3/99). The source of contamination appears to be a hole in the closure weld of a bagless transfer can. The hole (about 1/8 inch diameter) is in a discolored area, less than 1 inch long, located roughly midway along the circumference of the weld. The investigations are covering all aspects of the event. Much attention is being paid to communications, radiological controls, dose assessments, and the closure weld process. Particularly, the button was packaged in July 1998. The can passed a leak test and a visual examination, and was moved to the vault without incident at that time. It remains to be seen how the defect developed and why it was not detected until now.

The defective container has been removed from the vault and placed in appropriate confinement. The button rattles in the can, indicating only partial oxidation. WSRC plans to reenter the vault early next week, inspect other containers made in the same lot, and begin restoration. WSRC also plans to circumferentially section the can in a manner that avoids stressing the weld, remove the button, and send the can pieces to SRTC for failure analysis. SRTC anticipates issuing their report in mid-December. Preliminary data is expected earlier.

Functional Classification: Late last year, a joint DOE-SR and WSRC Authorization Basis steering committee recommended revising the site-wide functional classification guidelines to exclude many systems that monitor initial conditions assumed in accident analysis. DOE-SR approved implementing the change in May 1999. WSRC incorporated the change into the Conduct of Engineering Manual in mid-September, 1999.

The site representatives believe that this change may be inconsistent with DOE orders and may reduce the safety margin for new facilities relative to that of old facilities. For example, WSRC applied the revised guidelines when developing controls for the RHLWE. As a result, the RHLWE has non-safety related equipment that could fail, leading to initial conditions outside the bounds assumed in the safety analysis. Failure of this equipment could preclude safety-class controls described in the safety analysis from preventing two different accident scenarios: hydrogen deflagration and steam over-pressure.