

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 11, 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 June 11, 1999

Recommendation 94-1 - WSRC informed DOE-SR today that the startup of H-Canyon 2nd uranium and neptunium cycles will be delayed 7 months to April 2000. This will result in a corresponding 7 month slip in the DOE Recommendation 94-1 commitment to stabilize Mark 16/22 spent nuclear fuel by December 2001. This delay may be concurrent with other delays that are related to HEU disposition activities. WSRC attributes the startup delay to emergent issues and activities during the last 6 months that have received higher priority (e.g., 1st cycle criticality controls Justification for Continued Operations (JCO), plutonium polymer JCO, and HEU disposition activities). WSRC has reported that they have limited ability to handle both emergent work and planned activities within their current resource levels, especially technical staffing. (III.A.1).

Dry Sludge Unreviewed Safety Question - Tank farm safety analyses are based on wet sludge; however, 3 waste tanks now have dry or drying sludge. In 1996, WSRC began investigating the safety impacts of dry sludge, including accident release mechanisms. Based on tank sample results and conservative accident analyses, WSRC concluded this week that the potential offsite accident consequences are about 5 times higher than previously estimated following the postulated seismic event. These levels exceed the current authorization basis limits and will result in a positive Unreviewed Safety Question. WSRC intends to submit a Justification for Continued Operations (JCO) along with a path forward for resolving this issue early next week. WSRC has implemented several compensatory measures for this accident; however, these controls appear to have little impact on the consequence and frequency for this accident. WSRC is investigating additional controls as part of the JCO development. (III.A.2).

Safety-related Instrumentation and Control Systems - A site representative and the Board staff (W. White) spoke with DOE-SR and WSRC concerning American National Standards Institute/Instrument Society of America standard S84.01, *Application of Safety Instrumented Systems for the Process Industries*, which addresses the implementation of Instrumentation and Control systems in safety applications. This standard may be appropriate for some Defense Nuclear Facility (DNF) safety systems where there is currently little guidance with regard to design and implementation. WSRC is developing an engineering guide for implementation of this standard at the site. Use of this standard where appropriate will provide DOE an opportunity to benefit from commercial experience and provide a solid basis for safety instrumented system design and implementation. (I.A.1)