

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 19, 1999

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

**FROM:** R. Arcaro, & D. G. Ogg, Hanford Site Representatives

**SUBJ:** Activity Report for the Week Ending March 19, 1999

A. Plutonium Finishing Plant (PFP): Fluor Daniel Hanford has authorized Babcock and Wilcox Hanford Company (BWHC) to proceed with Phase 4 of thermal stabilization. This authorization allows BWHC to reduce their compensatory oversight and allows unrestricted thermal stabilization of plutonium oxide in the muffle furnaces. Approximately 13 kgs of material have been stabilized.

DOE's Implementation Plan for Recommendation 94-1 requires that DOE start the PFP prototype vertical calciner by May 1999 to begin stabilization of plutonium solutions. BWHC will likely delay start of the prototype calciner in order to implement design or administrative changes that reduce the consequences of a seismic event. The safety analysis that allowed past operation of the prototype calciner failed to consider the motive force of the feed pump and compressed air systems during a release caused by an earthquake. Options being considered to mitigate the seismic risk include reducing the allowable operating time, tying the feed pump and compressed air system into the facility seismic shutdown system, or installing passive engineering features such as bottled compressed air that limits the duration of the release.

B. Spent Nuclear Fuel Project (SNFP): The recently discovered flaw in the cask drop analysis for KW Basin threatens the project schedule. During the week, SNFP personnel conducted analyses of the postulated drop accident and held a critique to review the issue. A timeline should be available next week. To date, project personnel have not identified a definitive engineering solution or path forward. Possibilities still being considered include:

- ! Removal, redesign and reinstallation of Cask Load-out equipment that can withstand the postulated drop - with significant cost and schedule impacts
- ! Design and installation of an impact limiter - preliminary analysis indicates that space restrictions may preclude this option
- ! Acceptance of the risk, and continuing with the project

C. Double Shell Tank Space: When the new tank project was canceled in 1995, DOE made several assumptions that negated the need for additional waste storage space. Among these were assumptions that the gas generation in tank 101-SY could be actively mitigated until 2007 and that waste processing would begin to free up tank space in 2002. Now it is planned that 101-SY will be retrieved in 1999. Processing of tank wastes will not likely begin until 2006. The most recent waste volume projection (July 1998) concludes that new tank space may be needed as soon as 2001, but it does not take into account the early retrieval of 101-SY. In addition to waste minimization activities, possible mitigative actions include delaying the retrieval of solids from the single shell tanks and the building of additional tanks, either by the PHMC or by BNFL.

cc: Board members