

**DEFENSE NUCLEAR FACILITIES SAFETY BOARD**

July 24, 1998

**MEMORANDUM FOR:** G. W. Cunningham, Technical Director  
**FROM:** J. Kent Fortenberry / Joe Sanders  
**SUBJECT:** SRS Report for Week Ending July 24, 1998

Chuck Keilers and Asa Hadjian were onsite this week reviewing APSF.

**Actinide Packaging and Storage Facility (APSF) Project Management** - A DOE Task Team Report on APSF Project Management was issued recently. The report noted that the APSF scope and total capital cost had doubled without a change in schedule. The report also pointed out that assessments of project status have generally been qualitative, contributing to the project team’s reluctance to acknowledge that the completion date may be in serious jeopardy. The report stated that based on the project team performance to date, open technical issues, and anticipated construction contract modifications, “completion of the APSF project on schedule and within current budget authorizations is unlikely.” The task team made five recommendations: (1) strengthen project management under a single project manager (see APSF related organizational changes in the 7/10/98 weekly report), (2) develop a thorough, detailed schedule that includes resolution of each technical issue, (3) include contingency in future project estimates to cover known risks and future scope change, (4) evaluate the relationship of procurement with technical uncertainties prior to awarding the Fixed Price Contract for construction, and (5) review the necessity of meeting the current project completion date to assess the cost and performance risk over a longer performance period (additional 6-12 months).

**Calculation Error for H-Canyon Accidents Involving Plutonium Nitrate Solution:** The MACCS code calculates dose at various distances from a release. The code’s default plutonium compound, plutonium oxide, was used for calculating the dose from all H-Canyon accidents, including three design basis accidents involving plutonium nitrate solutions. Plutonium nitrate results in a 50% higher committed dose than plutonium oxide because it reaches critical organs quicker and has a longer biological half-life. This error was not made for other separations facilities. Both F-Canyon and FB-Line used the AXAIR code. The error was discovered while upgrading the HB-Line Basis for Interim Operation (BIO). WSRC submitted a report to DOE-SR justifying why continued operations do not exceed the risks defined in the current H-Canyon BIO. The site reps have reviewed these justifications, which are summarized below.

Accident	Affected Receptor	Dose (BIO)	Resolution
Earthquake	offsite public	1.79 Rem	BIO assumes rupture of transfer lines for 8 unit operations. Frame Waste Recovery (FWR), 2nd Uranium Cycle, and 2nd Neptunium Cycle are not currently authorized to operate. Considering operating unit operations and the proper Dose Conversion Factor (DCF) results in 1.65 Rem.
Cooling coil leak	collocated worker	26.2 Rem	BIO assumes a coil leak from the FWR process containing Pu-238 solution. FWR is no longer operated and the tanks have been drained. Considering process tanks of Pu-239 and neptunium solutions and the proper DCF results in 12.4 Rem.
Transfer error to outside facilities	collocated worker	3.9 Rem	BIO assumes 150 day decay for irradiated fuel. Most fuel is over 10 years old exception for the K14-1 charge which received very limited irradiation. Using proper decay time and the proper DCF results in 2.34 Rem.