DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 9, 1998

MEMORANDUM FOR: G. W. Cunningham, Technical Director
FROM: J. Kent Fortenberry / Joe Sanders
SUBJECT: SRS Report for Week Ending January 9, 1998

Mr. Joseph J. DiNunno was onsite this week discussing Recommendation 95-2 and observing field implementation of Integrated Safety Management at the Tritium Facilities. Rich Tontodonato, Joe Roarty, Randy Robinson, and Dave Moyle were onsite this week reviewing H-Canyon Phase II process hazards and In-Tank Precipitation issues.

Americium-Curium Vitrification - WSRC has issued an abbreviated assessment of Am/Cm stabilization alternatives (see 11/28/97 weekly report). Although about 20 alternatives were identified, only three were ranked: vitrification through MPPF (the current alternative), processing to an oxide in MPPF, and disposal to the HLW Tank Farms. WSRC concluded that vitrification is still the preferred option. Meanwhile, three days after issuing this assessment, test melter 2B developed a small through-wall crack. The cause of this most recent failure appears to be identical to that of melter 2A (see 10/31/97 weekly report). The Am-Cm vitrification project is now facing a probable drastic change in melter design (going to a cylindrical, induction heated melter), significant operational problems associated with the current glass formulation, and equipment problems in the feeding, pouring and offgas systems.

Preparations for Processing of Tank 42 Sludge: The current batch of Tank 51 sludge feed to DWPF should be completed in May - June 1998. Tank 42 will be the next tank to provide sludge to DWPF. Tank 42 contains approximately 250 kgal of sludge and 220 kgal of supernate. Prior to transfer of Tank 42 contents to Tank 51 (DWPF sludge feed tank), the contents must be agitated and then sampled. Sample analysis is expected to take approximately 3 months. Following sampling (which should occur next week), the sludge will be allowed to settle for about 6 weeks so most of the supernate can be decanted off. However, the means to perform this decantation are not currently available. The transfer jet on Tank 42 is inoperable and the transfer pump has never been operated and is not fully installed. WSRC is developing a plan to make this transfer pump operational. However, significant delays could potentially result in the sludge feed to DWPF running out.

Inadvertent Actuation of Drop Tester during Startup Testing: The drop test machine being installed in Building 233-H (formerly RTF) to support tritium reservoir testing inadvertently actuated recently. During the incident, the room was not occupied and no reservoirs were installed. At the time, two separate tests were being performed: operation of the drop tester and initiation of room air purging. During the purge system test, de-energization of several solenoids induced enough voltage to actuate the drop tester. This inadvertent actuation was repeated during additional testing. As a result, the system was modified to reroute certain cables and varistors were installed on certain solenoids. These fixes seemed to solve the problem because the inadvertent actuation could no longer be repeated under similar conditions.