

# DEFENSE NUCLEAR FACILITIES SAFETY BOARD

**MEMORANDUM FOR:** G. W. Cunningham, Technical Director

**FROM:** J. Kent Fortenberry / Joe Sanders

**SUBJECT:** SRS Activity Report for Week Ending June 20, 1997

Todd Davis and outside expert Ralph West were onsite this week observing the DOE Operational Readiness Review of the H-Canyon restart for processing the Mark-16 and 22 fuel.

**Non-Proliferation Study** - In the record of decision for the Foreign Research Reactor (FRR) EIS DOE committed to conduct an independent study of the nonproliferation and other (cost and schedule) implications of chemical separations. This nonproliferation study is expected to be released for public comment this August. The study will evaluate the nonproliferation implications of all alternatives being considered for disposing of the fuel rather than just the chemical separation alternative. Also, the domestic research reactor fuel is being included in the study. The technical criteria to be compared include access, form, and resistance to theft/diversion of weapons-usable material. Policy criteria include U.S. initiatives and activities (production cutoff), foreign fuel cycle activities and choices, and IAEA safeguards and transparency. It is likely that chemical separation, because of the proposed blending of HEU, will score high technical marks but will fair poorly against policy criteria. As described in the FRR EIS, this nonproliferation study will support any decision to process the fuel in SRS canyons should any of the alternate technologies not be ready for implementation by the year 2000.

**Restart of the North Tritium Extraction Furnace** - In order to process remaining tritium targets, a Readiness Assessment was conducted in April 1994 to restart both of the tritium extraction furnaces in Building 232-H. However, only the south furnace was restarted. As a result of extensive flushing prior to opening the furnace (see 5/9/97 Weekly Report), it will take until 2005 to process the remaining ~70 tritium targets at SRS. WSRC wants to operate both furnaces and complete the extractions by 2001. The north furnace does not have a sliding door which closes during spent crucible removal and insertion of the next crucible, a time when residual tritium can be released to the atmosphere. Therefore, somewhat larger releases would be expected from the north furnace. Four of the remaining tritium targets are from P-Basin and have experienced some corrosion resulting in higher than normal releases (see 5/9/97 Weekly Report). The remainder are from K-Reactor with an order of magnitude lower burnup and should have a lower potential for releases. WSRC does not plan to extract P-Basin targets in the north furnace. WSRC plans to restart the north furnace next month. The staff observed crucible removal from the south furnace this week. The operation went smoothly, and the stack release of tritium was ~165 curies, within normal range.