DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 3, 2003

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
J. J. McConnell, Deputy Technical Director
FROM: R. T. Davis/ T. D. Burns
SUBJECT: SRS Report for Week Ending January 3, 2003

Recommendation 94-1/2000-1: During 2002, WSRC made significant progress on programs and projects to achieve stabilization of nuclear materials at the Savannah River Site. Paradigm shifts (e.g., disposition of americium/curium and plutonium solutions to high level waste) have allowed acceleration of some Recommendation 94-1/2000-1 initiatives. DOE risk reduction initiatives are helping to drive stabilization and disposition of materials; however, challenges remain to complete this program. The following is a summary of remaining Recommendation 94-1/2000-1 programs:

- Americium/Curium (Am/Cm) Solutions: This week, WSRC completed neutralization of the Am/Cm solution. The diluted solution is now in F-Canyon tanks 13.1 and 13.3. WSRC continues to complete High Level Waste (HLW) activities to support transfer of the material. The transfer to the DWPF sludge feed tank is currently scheduled to occur during the week of January 20, 2003. The milestone for this activity is to complete the transfer by March 2003.

- Mark 16/22 Spent Nuclear Fuel: WSRC has completed dissolution of approximately 1200 of 1900 assemblies at H-Canyon. In October, WSRC completed a five week processing outage that included upgrade of the Distributed Control System to improve the Low Activity Waste system efficiency. Completion of Mark 16/22 processing is currently on schedule for March 2004.

- Highly Enriched Uranium (HEU) Solutions: The HEU blend down program is currently on schedule to begin shipping low enriched uranium in March 2003. The 2nd of 3 Readiness Assessments (RAs) was completed last month and blend grade HEU has been transferred to HA-Line tank E4-2. The final contractor RA that covers the blending and loading of solution is scheduled for mid-January with a DOE RA in February.

- Plutonium Solutions: In July 2002, WSRC transferred plutonium solutions from H-Canyon to High Level Waste (HLW) for disposition via DWPF. This completed the Recommendation 94-1/2000-1 milestone for stabilization of preexisting plutonium solutions. This solution was originally scheduled for conversion to an oxide in HB-Line Phase II.

- Plutonium Residues: Plutonium residues continue to be characterized in FB-Line to determine the appropriate stabilization path. Materials are either transferred to HB-Line Phase I for dissolution, dispositioned as waste or stored to await thermal stabilization and 3013 packaging. WSRC now expects to complete dissolution of all residues in HB-Line by October 2003. In addition, the resulting solutions will be converted to an oxide or transferred to HLW by October 2003. The FB-Line packaging and stabilization project is currently on schedule to achieve 3013 packaging of all plutonium metal and oxide by December 2005. As noted last week, WSRC has developed a preliminary schedule to accelerate completion of this activity to December 2004.

- Neptunium Solutions: The baseline plan is to convert the neptunium solutions in H-Canyon to an oxide by December 2006. However, with the acceleration of plutonium processing in HB-Line, WSRC expects to compete this activity ahead of schedule. In addition, WSRC is also pursuing an option to send some or all of the solution to HLW. This option would require DOE to conclude that there is no mission need for the material (e.g., for production of plutonium-238).

DWPF Outage: On Friday, the replacement melter (Melter #2) was successfully transferred from the Railroad Well into the Melt Cell.