DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 18, 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 July 18, 2003

Tritium Facilities Fire: This week, while performing equipment tests in Building 233-H on a heat-traced and insulated gas transfer line, a small fire occurred. This gas transfer line will connect the zeolite beds installed in Room 44 as part of the Tritium Consolidation & Modernization project to the zeolite bed recovery system in Room 35. No radioactive material had been introduced into this line and it is currently physically isolated from the operating systems in Room 35.

Approximately six hours after energizing the heat tracing on the gas transfer line, the smoke alarms activated in Room 44. Operators responding to the alarm could see smoke emanating from the insulation sheathing joints along a 10 foot section of the line above the glovebox containing the zeolite beds. When fire department personnel cut away the insulation and sheathing, flames appeared. The fire was extinguished with a combination of carbon dioxide and dry chemicals.

The fiber glass insulation that caught fire contains a small amount of combustible binder material. The insulation vendor indicated that the some smoking could be expected during initial use due to combustion of some of the binder material. Subsequent investigation also revealed that the heat trace output along the section of transfer line that caught fire was double the expected wattage. WSRC continues to investigate this occurrence, focusing on the adequacy of the insulation material and the cause of the excessive heat trace output.

SWPF Project: The Phase IA conceptual design reports and CD-1 packages for the 15% scale Salt Waste Processing Facility (SWPF) have been submitted to DOE-SR by both the Parsons and Foster-Wheeler led design teams. Cost and schedule impact estimates for changing the nominal SWPF scale from 15% to either 5%, 10%, 20%, or 50% have also been provided. DOE is reviewing these packages to determine the appropriate facility scale, taking into consideration the recent federal court ruling invalidating the Department's current process for determining residual levels below which high-level waste may be dispositioned as low-level waste.

If DOE decides to pursue a 15% scale facility, then a down-select to a single contractor will be made and a contract will be awarded for Phase II final design and construction of the 15% SWPF facility based on the merits of the already submitted conceptual designs. Should a scale other than 15% be chosen, then the two contractors will begin Phase IB design efforts to complete conceptual designs and CD-1 packages for the alternate scale facility. Duration of a Phase IB design effort would be approximately 3 months. A DOE decision on the SWPF facility scale is expected by the mid-August.