

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 16, 1999

**MEMORANDUM FOR:** G. W. Cunningham, Technical Director  
J. Kent Fortenberry, Deputy Technical Director

**FROM:** C. H. Keilers / R. T. Davis  
**SUBJECT:** SRS Report for Week Ending April 16, 1999

Randy Robinson and Jessica West were on site this week to review the americium/curium stabilization program and the status of salt disposition alternatives.

**Plutonium Oxide Stabilization** - WSRC recently completed a systems engineering study of stabilization and packaging alternatives for SRS plutonium oxide. The purpose of this study was to document the functions and requirements for a plutonium and neptunium stabilization and packaging system, identify alternatives that satisfy these functions and requirements, and recommend an alternative for further development. Information and results from this study will be used by the department in responding to the Board's reporting requirement concerning how Recommendation 94-1 stabilization activities will be achieved given the delays in constructing the Actinide Packaging and Storage Facility.

Based on this study, WSRC recommends additional development of two alternatives. First, WSRC proposes that a project at SRS be considered to provide stabilization and packaging capability in accordance with DOE Standard 3013; however, a definitive recommendation for providing this capability will not be completed until July 1, 1999 when an integrated evaluation of other SRS priorities is completed. Second, because near term funding is limited, WSRC recommends that existing facilities be utilized to process oxides into a more stable form. This strategy, which was identified as the preferred alternative in the systems engineering study, includes dissolving impure oxides, converting the impure oxide to metal or pure oxide (depending on the facility used), firing pure oxide to approximately 600°C, and packaging the resulting low fired oxide in bagless transfer containers. As noted in the WSRC report, the study conclusions depend on a subjective weighting criteria. The final selection of the preferred alternative was based on the following three criteria and associated weighting factors: Cost (0.60), Schedule (0.25), and Material Stability (0.15).

**Waste Tank Corrosion** - As noted in the site representative's report for the week of April 2, 1999, WSRC has identified what appears to be significant corrosion of the tank 11 annulus pan. A path forward for resolving this issue has been developed and includes the following:

- ! By April 30, WSRC will inspect the annulus pan and primary tank around and below the annulus ventilation duct
- ! By May 21, a tool will be developed to clean part of the annulus pan and additional inspections will be completed
- ! By June 30, other type I and II tanks in H-Area will be inspected for annulus pan corrosion
- ! By July 9, WSRC will collect and evaluate samples from the tank 11 annulus pan
- ! Additional nondestructive evaluations will be performed, as appropriate