

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 4, 2001

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director  
**FROM:** C. H. Keilers / R. T. Davis  
**SUBJECT:** SRS Report for Week Ending May 4, 2001

**Transuranic Waste:** New Mexico has approved the DOE-Carlsbad audit report on the SRS TRU waste certification program. The first SRS shipment to WIPP should be next Tuesday (May 8<sup>th</sup>).

**Recommendation 2001-1:** This week, DOE directed WSRC to lower the waste level in Tank 6 to below the lowest known active leak site within the next two weeks. This action is consistent with the Board's Recommendation. DOE notes that this action is not expected to have significant adverse impact on the HLW system mission and identified an option that will adequately store Extended Sludge Processing (ESP) facility high silicate decants and DWPF recycle through the current sludge batch (Fall 2001). WSRC is evaluating system impacts to determine the best way to implement this action, given other on-going HLW activities. Relatedly, WSRC began transferring higher silicate material from ESP Tank 40 to F-Area Tank 5 on Friday.

**2H Evaporator:** WSRC continue to pursue evaporator pot cleaning activities (site rep weekly 4/27/01). This week, WSRC discovered leaks in the caustic system associated with the neutralization tank. Subsequent investigation identified that required post-maintenance testing (PMT) for these temporary modifications was not documented as complete. WSRC is evaluating whether startup testing would have adequately tested this system. Regardless, DOE and WSRC are reviewing the construction quality assurance and turnover process to determine if programmatic deficiencies exist. DOE is also reviewing the DOE and contractor Readiness Assessments (RAs) to determine if this deficiency should have been identified as part of the RA process. WSRC is retesting this system and expects to begin chemical cleaning solution addition next week.

**Recommendation 94-1/2000-1:** On Tuesday, WSRC recommended to DOE that the F-Canyon tank 17.1 americium-curium (AmCm) solution be sent to the high level waste tank farms for eventual vitrification in DWPF (site rep weekly 3/23/01). The proposal involves batch neutralization and dilution with water and depleted uranium in tank 15.4, storage in tanks 13.1 and 13.3, and then a single transfer through the inter-area transfer line to H-Area tank 51, the wash tank for sludge batch 3. The estimated cost range is \$24 - 54M. Many of the details are pre-conceptual and in development, particularly confirming the AmCm insolubility (i.e., the degree to which the actinides will attach to the sludge phase). WSRC proposes sampling tank 17.1 this year to address that question.

While the WSRC submittal addresses hazards (e.g., hydrogen generation), it doesn't compare the relative safety risks of this approach to vitrification in F-Canyon (MPPF) nor does it discuss potential future need for the AmCm material, other than to reference DOE action last year declaring the material as excess. This HLW option has been studied before. Probably the major difference here is the use of a single transfer that needs to be well controlled. The single transfer approach becomes feasible after PUREX is shutdown (March 2002) and tanks 13.1 and 13.3 become available (i.e., two of the largest hot side tanks). The canyon and tank farm modifications required are extensive but well within the site's experience: jumper and agitator replacement, vapor space purge upgrades, cooling system modifications, etc. WSRC requested a decision by May 15<sup>th</sup> because of the limited window of opportunity to get this material into sludge batch 3 and the need for near-term procurement actions, exceeding \$1M, for the MPPF vitrification project.