

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 17, 1998

MEMORANDUM FOR: G. W. Cunningham, Technical Director

FROM: J. Kent Fortenberry / Joe Sanders

SUBJECT: SRS Report for Week Ending July 17, 1998

Re-wetting Tank 8 Dry Sludge - WSRC is preparing to add 42 kgal of inhibited water solution to Tank 8 to re-wet about 130 kgal of dry sludge in preparation for sludge removal (scheduled to begin in 2/99) for DWPF processing. Tanks 5, 8, 12 and 15 were allowed to dry out in the early 1980's to prevent leaks into the annulus. These tanks were not stress-relieved and are susceptible to nitrate-induced stress-corrosion cracking at the welds. Tanks 12 and 15 have several known leak sites. Tank 8 is a Type 1 tank and sits in a 5 foot tall steel pan (with a 23 kgal capacity). The solution will be added in stages while monitoring for leakage. WSRC is hoping to add the solution next week, although the procedure and the Unreviewed Safety Evaluation are still being prepared.

- If a significant leak develops in the tank (to the annulus) after adding solution, an installed steam jet transfer system will be used to remove waste from the tank. This transfer system and transfer path have not been operated since 1981. Also, the location of the transfer jet is reportedly based on a photograph taken over a decade ago. A new transfer pump is to be installed in Tank 8 and the transfer path tested later this year to support waste removal. Solution is to be added now rather than waiting until the new transfer system is installed in order to (1) allow waste sampling without having to be concerned with shock-sensitive compounds in the dry sludge, (2) minimize airborne contamination from dry sludge during the addition of new equipment, and (3) provide more time for the solution to dissolve the dried sludge. It would be prudent to either demonstrate the operability of the transfer jet system or wait until the new transfer system is installed before adding water to Tank 8.
- The transfer jet from the annulus back into the tank has also not been operated for many years. The use of a submersible pump with flex hose is proposed as a backup - a potentially difficult operation. Again, it would be prudent to verify operability of the installed transfer jet.
- Annulus conductivity probes will be used for leak detection. It would be prudent, especially in light of current probe position problems, to verify these probe positions.

These concerns have been communicated to DOE-SR and WSRC. DOE-SR has not yet reviewed this activity.

Radiography of Packaged Plutonium - An 8/12/96 Board letter transmitted a staff trip report describing plans to characterize miscellaneous plutonium packages at SRS starting in the summer of 1998. These miscellaneous packages are generally material shipped from laboratories as Central Scrap Management Office (CSMO) materials. Part of the characterization plans involves digital radiography. Digital radiography was conducted at the 235F vault last year. Digital radiography began at the FB-Line facility the end of April, 1998, and 66 packages have been radiographed to date. About ten items have been identified that should be repackaged, including material in direct contact with plastic, packages that appear to include cardboard 'ice cream' outer containers, packages with deformed inner cans, packages in which inner plastic bags appear to be leaking, and sludge material in plastic without steel containers. Also included in these ten items are two metal buttons showing loose oxide (current limit for repackaging is a 4 gram weight-gain). The identification of these items that need to be repackaged was reported this week as a management concern. Procedures and schedules for repackaging these items are being developed.