

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 7, 1998

MEMORANDUM FOR: G. W. Cunningham, Technical Director
FROM: J. Kent Fortenberry / Joe Sanders
SUBJECT: SRS Report for Week Ending August 7, 1998

Spill of Contaminated Liquid at the Consolidated Incineration Facility (CIF): On August 7th, approximately 8000 gallons of slightly contaminated (hazardous and radioactive) liquid was spilled at CIF. The spill occurred while maintenance personnel were trying to repair a leaking check valve. One of the valves providing isolation apparently failed. No personnel were injured and the spilled material was fully contained. The site reps will follow up on this event.

Tritium Facility 233-H, Room 32 DOE ORR Status: Building 233-H, Room 32, of the Tritium Facility contains equipment recently installed as part of the Non-Nuclear Reconfiguration Project. This equipment includes three processes: (1) the Function Test Stations, used to function stockpile and development reservoirs; (2) Vacuum Bakeout, used to remove residual tritium from items for disposal; and (3) the Sample Assay System, used for exposure studies and prototype testing. The contractor ORR for startup of Room 32 was completed last month. The DOE ORR was scheduled to commence August 3rd, but has been postponed pending resolution of pressure protection issues. Discrepancies have been identified between ASME Code B31.3 pressure testing requirements and actual testing completed, and additional pressure relief requirements have been identified. DOE plans to reschedule its ORR based on the schedule the contractor is currently preparing for resolving these issues.

9975-Container Recertification for Shipping RFETS Sand, Slag and Crucible (SS&C): The SRS weekly report of 6/19/98 noted that both RFETS and SRS should be prepared to begin shipments of SS&C when the Record of Decision for the RFETS Plutonium Residue EIS is issued. However, an issue has emerged which will likely impact shipping. The 9975-shipping container was recently certified to a pressure limit of 100 psi. At that time, this value bounded the peak calculated pressure buildup from all contributors including the time-dependent radiolytic decomposition of adsorbed water over a maximum 2-year period. However, SRS is recalculating the pressure buildup using the very conservative Standard 3013-96 methodology which simply assumes all of the water radiolyzes, independent of time. The conservative assumption that all adsorbed water radiolyzes in 50 years is probably unnecessarily conservative for the 9975-container storage duration.

Since the 9975 container is very stout, WSRC intends to recertify the container to an internal pressure of ~900 psi, effectively eliminating water content as a quantity restriction. However, this will take 6-9 months because the 9975 will need to be reanalyzed and physically retested (10CFR71.73 drop, puncture, fire, and immersion tests) at the higher pressure. In the meantime, the following paths are being pursued:

- Low assay SS&C (20 Curie limit) could be shipped in 9965 containers and would not need to be transported in SSTs. There appears to be enough of this material (~300 cans) and enough 9965 shipping containers available (~100) to support 4 - 6 months of F-Canyon operation. Once received at SRS, the cans would be unpacked, assayed (2nd assay to support F-Canyon DCA) and stored in 6M containers in Building 235-F awaiting dissolution. The site reps are evaluating whether similar moisture limit restrictions will impact the use of these containers.
- The 10CFR71.73 accident testing for the original 9975 certification was performed with the container pressurized to 150 psi. As a result, over the next 1 - 2 months, WSRC intends to recertify the container to 150 psi. This will result in a maximum allowable water content of 15-20 grams. Since most of the SS&C has a water content near 1%, this will limit the 9975 quantity to ~1.5 kg of bulk SS&C or one can per 9975 versus two.