DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 28, 1997

MEMORANDUM FOR: G. W. Cunningham, Technical Director

FROM: J. Kent Fortenberry / Joe Sanders

SUBJECT: SRS Activity Report for Week Ending February 28, 1997

Tank 17 to Tank 6 Transfer Strategy - As noted in last week's report, the transfer from Tank 17 to Tank 6 of 279,000 gallons of tritiated water was delayed when sample results showed higher than expected concentrations of several radionuclides (Np-237, Pu-239, Pu-240, and Pu- 242) in the ~2,000 gallons of sludge that was to have remained in the tank. The decision has been made to slurry the sludge to remove as much of it as possible during the transfer using three temporary slurry pumps. These pumps are electric motor-driven open propeller pumps (similar to the props on an outboard motor). They were installed through available risers on the tank. The transfer began Friday afternoon but has been delayed by several equipment problems. As a result of the sludge slurrying, the dose emanating from the above-ground transfer hose is higher than originally intended but is expected to remain within limits. Radiological Control Technicians will monitor the entire transfer evolution.

Consolidated Incineration Facility (CIF) Readiness Assessment (RA) - The DOE RA for CIF is occurring this week, with the out-brief to DOE management scheduled for Monday, March 3rd. Startup authority for CIF has been delegated to the Manager of SRS. As you may recall, CIF is considered a ?Radiological Facility' (downgraded from a Hazard Category 3 Facility) and is excluded from the requirements of DOE Order 425.1. Joe King is the RA Team Leader. The final phase of the WSRC RA is also occurring this week; Tom Robinson (F-Canyon Facility Manager) is the Team Leader. The ?Trial Burn' will follow successful completion of the assessments, and is scheduled to begin next week. The trial burn, required by the SCDHEC permit, is intended to provide final verification of combustion efficiency. Upon successful completion of the trial burn, closure of all RA pre-start findings, and startup approval by the site manager, CIF will be allowed to begin Radioactive Operations.

The DOE RA team has identified a number of findings requiring correction either prior or subsequent to Radioactive Operations. Several of the more significant findings are briefly described below.

- The Control Room Operators (CRO) did not enter the appropriate PCO (similar in concept to a LCO but pertains to Process Requirements) when a stack radioactivity monitor was taken out of service for source checking; this was found to be the normal response for routine preventative maintenance.
- The criticality analysis for CIF is inadequate. The maximum safe mass of fissile material is twice the theoretical maximum safe mass, as identified in ANSI/ANS-8.1, based on unsubstantiated or potentially inappropriate assumptions.
- One shift does not have a qualified CRO and no other members of the shift are formally qualified to stand that watch. Another related finding allows operators that are not formally qualified to perform the CRO function.
- No program was found to be in place to track tritium buildup in facility systems to ensure threshold

values for radiation protection are appropriately implemented. Relatedly, Radiological Control Technicians have not been trained and qualified for tritium activities.

General Issues of Functional Classification of Equipment at SRS - DOE-SR has raised a number of issues with WSRC regarding functional classification of equipment. These issues are currently being pursued by DOE-SR and include questions related to:

- The application of current Evaluation Guidelines (EG); whether the EGs, such as the 25 rem offsite dose EG, should be viewed as the absolute criteria, or as minimum "goals" for which expected results would be "well below" or a "small fraction" of the EG.
- The relative cost versus value of upgrading equipment classification to safety significant(SS) or safety class (SC).
- The relationship between controls credited in the SAR/BIO and controls required to be specified in TSRs.
- The relationship between the additional levels of control required by WSRC classification procedures, "defense-in-depth controls," and controls required to be specified in TSRs.
- The current WSRC implementation of the USQ process in which changes are compared to ?bounding' accidents to determine if there will be increased consequences.

These issues are not unique to SRS, but are receiving increased attention here as a result of recent SAR reviews. Several current DNFSB staff reviews overlap with these issues, including the ITP safety basis upgrade, the new H-Canyon BIO and TSRs, and he Tank Farm SAR and TSR upgrade.

Board Members