

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 18, 1997

MEMORANDUM FOR: G. W. Cunningham, Technical Director
FROM: J. Kent Fortenberry / Joe Sanders
SUBJECT: SRS Report for Week Ending July 18, 1997

Jan Preston, Dan Burnfield, and outside expert Ralph West were onsite this week observing the DOE review of the Integrated Safety Management System (ISMS) Description and its implementation at SRS. In addition, Chuck Keilers was onsite observing the Stone & Webster design review for the Actinide Packaging and Storage Facility (APSF).

H-Canyon Restart - Three bundles of Mk-22 fuel assemblies were successfully charged to the H-Canyon dissolver Friday. Steam heating of the nitric acid in the dissolver will probably begin Monday morning (7/21/97), with mercuric nitrate catalyst addition starting later in the day.

Loss of Control For the Dedicated Portable Tank Ventilator - A shift supervisor authorized use of the H-Tank Farm backup ventilator without the shift manager's knowledge. About five days later the system was found missing from its storage location. An unusual occurrence was declared. The ventilator provides a backup to the installed system for purging waste tanks to maintain vapor space hydrogen concentrations below required levels. A similar loss of control occurred at the F-Tank Farm about two months ago. Additional access controls have been established and the installation procedure is being revised. The site reps walked down ventilator storage locations and reviewed the additional controls, which should be sufficient to prevent similar occurrences in the future. Having to learn the lesson twice, once for each tank farm, is a concern. DOE-SR and WSRC are working toward more integrated operation of both tank farms.

Safety Analyses for the Tritium Facilities Non-Nuclear Reconfiguration (NNR) Project - Start-up of the NNR Environmental Conditioning (EC) chambers (drop tester, shake table and centrifuge) is scheduled for mid-1998. Reservoir failure during testing is an anticipated event based on 30 years of testing at Mound where more than one dummy test unit came loose. At SRS the following safety-significant worker protection controls were established to prevent deflagrations that might result from a reservoir failure: (1) nitrogen inerting of the shake table and centrifuge chambers with oxygen monitoring for verification, (2) automatic electrical isolation of all equipment within the drop test room, and (3) tritium monitoring in all three rooms. The SAR addendum for this operation (see 5/2/97 Weekly Report) was rejected this week by the DOE-SR manager due to the large additional overall risk from NNR (i.e., two orders of magnitude greater than the current risk presented in the tritium SAR). The large increase in calculated risk is due to a simplistic and conservative deterministic bounding analysis for the SAR addendum, compared to estimates using a probabilistic risk-based approach in the current SAR. The expectation is that WSRC will use the previous strategy for functional classification, but will utilize more representative source terms and credit non-safety items for defense-in-depth to re-calculate potential offsite and onsite doses.