

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 3, 2000

MEMORANDUM FOR: G. W. Cunningham, Technical Director
J. Kent Fortenberry, Deputy Technical Director
FROM: C. H. Keilers / R. T. Davis
SUBJECT: SRS Report for Week Ending March 3, 2000

H-Canyon Phase III Startup: Staff members M. Merritt, R. Tontodontato, and R. West (outside expert) were on-site this week reviewing the authorization basis and startup preparations for H-Canyon 2nd Uranium cycle. Integrated cold runs are expected later this month. The DOE readiness assessment is scheduled for April. Hot operations should start in May. This schedule also supports restarting dissolvers and 1st cycle in April and May, respectively. Dissolving and processing Mark 16/22 spent fuel was suspended last September because of delays in the 2nd cycle startup. (3.a)

H-Canyon Plutonium Solutions: Last week, WSRC reported that the mass of solids in Tank 16.3 exceeded an operating limit that is conservatively set to protect a Criticality Safety Limit (CSL). The CSL is 250 grams (g) solids. The operating limit is 80 g, based on averaging 4 samples, and accounts for analysis uncertainty. The average from 4 samples reported last week was about 100 g.

On Friday, WSRC reported the results from 10 additional samples. The average was 99 g. The increased number of samples allowed WSRC to reduce the uncertainty and essentially increase the operating limit to 124 g. WSRC concluded that the CSL is protected.

WSRC continues to investigate why the solids increased. Tank 16.3 contains solutions from HB-Line and is periodically sampled. The only recent activity was a dilute acid addition to reduce the bulk plutonium concentration; however, this was not expected to increase solids. Also, during a review of criticality controls, the site representatives observed that the two contingencies identified do not appear to be independent. DOE-SR and WSRC are pursuing this question. (3.a)

Recommendation 94-1: This week, WSRC submitted a resource loaded plan for Recommendation 94-1 activities within a flat out-year budget. The baseline strategy relies on FB-Line and F-Canyon through FY-11 to convert SRS plutonium to metal (site rep weekly 2/4/00). WSRC also estimated the incremental costs above budget to complete the HEU program, accelerate AmCm vitrification, continue HBL Phase 1 operations, and pursue a capital project for plutonium stabilization and packaging (e.g., build APSF or modify 235-F). The near-term critical path for this strategy appears to be startup preparations for the FB-Line dissolver and HB-Line Phase 2. Both startups would be in FY-02. The HB-Line Phase 2 startup was impacted by a funding shortfall last year.

Besides extending 94-1 implementation, the “all-to-metal” strategy has other implications that have not yet been considered, such as complex-wide integration. Specifically, this strategy ties up canyon assets that might be needed to process other sites’ materials that have no other disposition path. Safe storage will also need to be assured longer at other sites (e.g., Hanford). Furthermore, this strategy postpones establishing new capabilities at SRS that may eventually be needed to safely and efficiently manage nuclear materials, consistent with the site’s enduring mission. (3.a)

K-Area Material Storage (KAMS): Last month, DOE-SR authorized KAMS to begin to receive and store Rocky Flats plutonium (site rep weekly, 2/11/00). This week, SRS learned that shipments will not start until at least September. WSRC is considering options to maintain readiness. (3.a)