

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 19, 1997

TO: G. W. Cunningham, Technical Director
FROM: R.F. Warther, M.T. Sautman
SUBJECT: RFETS Activity Report for Week Ending February 19, 1997

Recommendation 94-1: A major milestone was completed this week. The last Category B tank in B371 was drained Tuesday, six days before it was due. Only seven plutonium solution tanks, two in B371 and five in B771, still need to be drained. However, this will not complete the draining of all liquids at RFETS. The official estimate is that tank draining completes less than 25% of all liquids to be drained (30,000 liters estimated total liquid at RFETS). Holdup accounts for the other 75%. On a more positive note, data derived from the most recent tank draining activities indicate that liquid holdup may be less than originally estimated.

Over the last two months, B771 personnel have nearly recovered their hydroxide precipitation schedule. At the beginning of the year, the volume of solution processed was 75 percent behind schedule. Since then, the processing rate has exceeded their goals in their recovery plan, and the volume of solution processed is now only 10 percent behind their original schedule. The recent successes for hydroxide precipitation and CWTS are due in large part to the high building availabilities that have been achieved over the last couple of months.

Bottle Box cementation operations in B774 have been shutdown temporarily after potentially significant analytical problems led to a criticality infraction. A four-liter bottle of solution was shipped from B559 to B774. The actinide mass was listed as 2.9 g when it actually contained 55 g - this exceeded B559's 6 g/l criticality limit. The mass discrepancy was due to the wrong analytical method being used. Since concentration and mass limits are used extensively in criticality limits, SSOC is investigating the cause of the problem.

Residues. RFFO has tasked LANL perform a risk analysis of the hazards of storing residues in their current condition. The Site Reps attended a status report of this effort. Probabilities are assigned to the dozen or so events that must occur for containment to fail and contaminate a worker. The evaluation is looking at two types of failures, exothermic failures (e.g., drum overpressurization, shock-sensitive chemical reaction) and chronic failures (e.g., drum corrosion). Most of the current hazards are expected to be chronic since drum venting, leaded glove washing, and cementing ion exchange resins have addressed many of the exothermic hazards. One concern that the Site Reps have is that the conclusions are entirely dependent on the probabilities assigned to each contributing event. Since there is little data available, this model is very dependent on expert judgement. The Site Reps have been led to believe that this effort will be combined with others to justify changing the Recommendation 94-1 IP and rationalizing delays from residue rebaselining.

Recommendation 93-3: The Site Reps were provided data on the status of RFFO qualifications under Recommendation 93-3. With the exception of qualifying Facility Reps, little progress has been made from last fall. During a discussion with some training individuals at RFFO, the program appears fragmented with little technical direction. The site reps intend on discussing this with senior RFFO management to determine how this program will be managed in the future. According to the Recommendation 93-3 IP, personnel hired after May 1995 have two years to qualify. Therefore, some personnel at RFETS must be fully qualified beginning in May 1997.

Recommendation 95-2: During the Board's visit to RFETS, the issue of Price-Anderson enforcement came up while discussing the adequacy of the B371 BIO controls and TSRs. The Board's staff have stated that they believe the TSRs contained in the draft BIO are inadequate. RFFO agrees with this position, and the TSRs are being redrafted for submittal on March 10. Conversely, an initial review of the 371 BIO hazards analysis indicates that most credible accident scenarios are addressed and the consequences are reasonably calculated. What is not clear is how such a weak set of controls can be derived from a reasonably sound hazards analysis.

In discussions with several individuals on the site ranging from very junior operators to fairly senior managers, personnel indicated that they did not desire a set of clear, specific controls. Two reasons were cited. First, under the Price-Anderson QA Rule, there is a fear that DOE-HQ will impose fines if the operators are "caught" outside the bounds of the Authorization Basis. Second, either in conjunction with Price-Anderson enforcement or under contractual enforcement provisions, building personnel fear that operation outside of the Authorization Basis will result in a shutdown of unaffected operations. For example, if a TSR associated with the criticality detection system in one portion of the building is violated, building personnel fear that operations throughout the building will be suspended, not just activities in the affected room or area. Based on previous RFFO contractual enforcement actions, this belief has some merit. However, RFFO appears to have tempered its contractual enforcement practices following multiple actions in early 1996 and installation of new management. They have successfully communicated to the contractor that they will enforce the AB, and appear to now be in a position to grade their contractual enforcement actions. However, DOE-HQ's enforcement practices under Price Anderson appear to remain a variable to site personnel.

This topic was discussed in some detail with executive management at K-H and RFFO. RFFO executive management sees the validity in some of these arguments. K-H executive management reaction was initially reticent, but upon further reflection they conceded that this is a possibility. The site reps and staff will continue to pulse this issue with individuals responsible for development and implementation of the AB documents.

cc: Board Members