

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 1, 1998

TO: G. W. Cunningham, Technical Director

FROM: R. F. Warther, M.T. Sautman

SUBJ: RFETS Activity Report for Week Ending May 1, 1998

PuSPS Test Results. The results from the six can demo test completed last week were issued. BNFL packaged two cans of oxide and four cans of metal in eight hours. The system did not complete these operations in the *automatic* mode as designed, but rather had to be shifted to *manual* or *maintenance* modes to complete the test. RFFO's position is that BNFL did not successfully complete the six can test. Some important failures and problems include:

- Some safety features were bypassed to conduct the test and some safety issues remain open.
- The door for Furnace A could not be closed. Repair would require glovebox entry.
- The furnace insulation refractory material is degrading and falling into the oxide tray.
- Oxide spilled into the oxide powder dispense tray fill area has spread to the packaging system.
- The mass spec for inner can failed, and the mass spec for outer can stayed in alarm.

Other problems were noted. RFFO plans to rerun the six can test once the system is ready and issue a final report, probably in June.

B371 Fogging. The fogging activity (fogging is a contamination fixative) in B371 was postponed because the facility failed to achieve a zero differential pressure between the room and hall, even after the room door was shut and ventilation isolated. No personnel contamination incidents occurred. K-H intends to evaluate the room ventilation flow paths in more detail prior to continuing with this activity.

HEPA Filters. RFFO issued a letter to K-H regarding the positive USQ for Buildings 371, 559, and 707 due to degradation of HEPA filters in the first stage exhaust plenum. RFFO directed that K-H extend the deluge system surveillance interval to every three years and conduct cost/benefit studies. The studies would evaluate the costs and benefits of (1) not wetting the filter system during deluge system testing and (2) replacing filters. Other actions were included in the letter. A copy has been forwarded to the Staff.

Recommendation 94-3. K-H and its subcontractors completed retorquing all anchors in the B371 attic piping. They also completed and tested the deluge system. The electrical tie-ins for the deluge systems should be completed by mid-May.

Building 123 Demolition. K-H initiated demolition of this c. 1953 facility this week. After two days of work, the building is about 1/3 demolished. Based on discussions with the foreman, they hope to have this job complete in about two weeks. RFFO must approve continued work on the West wing where some issues regarding characterization remain.

Annual Emergency Preparedness Exercise. The site conducted its annual exercise on Thursday April 30. Dudley Thompson and OE Bob Lewis were on site to review this activity. Overall response to the exercise was good. One of the largest deficiencies related to the response was the long period of time required to obtain downwind sample results from the Field Sampling Team. In

addition, the Exercise Controllers in the field continue to exert weak direction and control of the participants. This does not directly affect the response, although it does make response to the postulated casualty more difficult.

Personnel in the Hazards Assessment Center (HAC) quickly assessed the situation and made appropriate recommendations. The Site Reps identified differences in the building source terms determined by the HAC using previously analyzed scenarios and those in the exercise design manual (EDM). The HAC used what appears to be appropriate scenarios. Although both the HAC and the EDM used the same building inventories, the results differed because different assumptions were used (e.g., damage ratios and respirable release fractions). The building source term determined by the HAC for Building 906 was 300 times less conservative than that in the EDM, but was 20 times more conservative for the 904 Pad. These differences partially canceled each other out so that the total source term used by the HAC was about 8 times larger than that in the EDM. Differences of one to two orders of magnitude in the building source term can significantly change the recommended protective actions for on and off-site personnel. These differences will be evaluated as part of an ongoing series of staff reviews to determine how best to calculate consequences at RFETS. A complete trip report for this exercise will be prepared and delivered to the Board.

cc: Board Members