DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 28, 2003

TO: J. K. Fortenberry, Technical Director
FROM: D. F. Owen, RFETS Site Representative
SUBJECT: RFETS Activity Report for the Week Ending March 28, 2003

Building 776 Decommissioning. On Wednesday, high airborne contamination levels occurred in a large area of Building 776 as a result of a "Zone 2" ventilation system flow reversal. Twenty-three individuals that were not (nor required to be) wearing respiratory protection were exposed. The flow reversal resulted from an air mover exhausting "Zone 1" air from the Advanced Size Reduction Facility (ASRF) directly into Zone 2 ventilation system exhaust ducting and forcing air (and contamination) out of several Zone 2 intakes. The ASRF is a large enclosure in Building 776 that had been deactivated and removed from normal Zone 1 ventilation and is in the final stages of decontamination and equipment removal.

Prior to this week, the filtered air mover had simply exhausted air from the ASRF to the surrounding room areas. Building 776 personnel had chosen to use a diesel-powered mobile lift vehicle to complete heavy equipment removal in the ASRF overhead. To avoid the hazards of the diesel fumes, a modification to route the air mover discharge directly to Zone 2 exhaust ducting was accomplished. Within about one minute of startup of the air mover, several radiological air monitors alarmed and personnel evacuated the affected areas.

Airborne contamination levels were estimated to be as high as 100 Derived Air Concentration. The exposed personnel are being monitored for radiological uptakes. Surface contamination levels up to 20,000 disintegrations per minute/100 cm^2 have been detected over large areas of floors and equipment including areas designated as radiological buffer areas. There were no indications of any spread of contamination outside the building.

Review of the flow calculations supporting the Zone 2 exhaust ducting modification and physical checks of the Zone 2 exhaust ducting and the filter plenum flow control damper were conducted by late Thursday. The flow control damper was found to be in a nearly closed position even though the mechanical position indicator was at the full open position. This is considered to be the cause of the flow reversal. Lessons learned from this event are being developed. (3-B)

Size Reduction Activities in Building 371. As reported on March 6th, the campaign to perform size reduction on composite items was nearing completion and was to be followed by an effort to size reduce 12 special items using hand tooling developed and demonstrated for these items at Lawrence Livermore National Laboratory. The composite campaign was completed last week. The site rep. observed some of the operations on the 12 special items that was started and completed this week with no anomalies. (3-A)

cc
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