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TO: O. T. GARZA/J. F. HUNT
FROM: *A.R. Behnke 25 June 81*
A. R. BEHNKE/D. G. DEEM

PROGRAMS TO REDUCE EMPLOYEE C-8 EXPOSURE

Below is an updated C-8 program list arranged by priority for reducing employee exposure.

Priority is based on the need to eliminate hot dust and process vapor sources first based on what has been learned from air samples taken after the major building dust cleanup and during the shutdown.

Area Air Sampling

Samples were taken during the cleanup just prior to beginning shutdown work on May 9 and in the clean room with Construction working on May 10 to insure that the people were not working in high C-8 levels.

Thirty-one of thirty-two air samples were below 0.1 mpb (minimum detectable level) during the shutdown. The lack of a background C-8 concentration shows that the old, residual dust in the area is not a significant contributor to the airborne C-8 problem. These tests support the lack of change seen between the "before" and "after" major building cleanup samples. They also indicate that the current program's concentration on eliminating hot process sources of C-8 is correct.

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This residual dust, however, is still considered a serious skin contact problem, and efforts to improve housekeeping will continue both by Production and through engineering controls by Technical.

Wet finishing operator results from January to May, 1981 averaged less than 0.51 mpb C-8 (18 personal samples). This value is conservative since the operator wears breathing air protection in the highest C-8 area (clean room). It is also a substantial improvement over earlier levels of 0.95 mpb (4/80) and 0.91 mpb (9/80) especially since wet finishing operation was marginal for C-8 control during March and April.

The airborne C-8 levels in the FEP area are definitely trending downward. Approximately one-half of the areas are now below the AEL. In reviewing 13-15 sample points, even those still above the AEL show significant reductions from 1980 C-8 levels. The current data base using a composite average sample level for 12-14 sample points (clean room excluded) illustrates the downward trend in Table 1.

Table 1

FEP Area - C-8 in Air Samples

	<u>1980</u>	<u>Feb., 1981</u>	<u>Mar., 1981</u>	<u>Apr., 1981</u>
Percent of Locations Above AEL	100	33	53	47
Composite Average* C-8 Level (mpb)	1.87	0.43	0.51	0.62

*Clean room excluded.

In March and April, the increase in levels for the clean room during operation and the first floor is believed to have resulted from equipment leakage in the clean room prior to shutdown changes and dewatering the blenders into the pit, respectively. Dewatering the blenders results in hot water and fluff being dropped into the blender pit. The fluff/water mixture should be pumped out as soon as dewatering begins. Air flow tests show that we have air movement up out of the pit to the first floor. We plan to cover the pit and thus increase the effectiveness of the pit exhaust system.

The project's removal of the screen from the suction of the blender pit pump has led to overflowing the trenches with fluff. Short term, the screen must be replaced. The discharge will be piped separately and directly to the sump at a later date.

AIP003640

Initial results from the clean room after the shutdown are encouraging; however, we have not run long enough to have a sound data base. These results do show that Taylor's new equipment combined with the enclosure of the decanter within the clean room have led to reduced C-8 levels both within the clean room and in the adjacent areas.

C-8 Balance

A C-8 balance was done at Management's request and issued on April 14. Cost sheet values were larger than recipe values, even after Loschiavo found an accounting error of about 9% in the balance in FEP's favor (leaving the balance off by approximately 9%). Part of this error resulted from Production failing to account for the amount of Initiator 1 solution dumped during the year and failure to keep records of Initiator 1 preparation of over one month's duration. This must be corrected to improve the accuracy of the balance.

Skin Contact/Wipe Sampling

Percival, ESD has stated that a person could increase his C-8 blood level by 5 ppm per year by absorbing 0.1 mg per eight hour day through skin contact or ingestion. Loschiavo has taken wipe samples at several locations and found about 22% of the 0.1 mg/day level on the lunch room walls. The walls have been washed and will continue to be cleaned on a regular basis. Wipe samples at various process locations will be taken in June.

Additional Air Sampling Data

To shorten this letter, detailed data on the C-8 sampling program are being furnished (under separate cover) to J. G. Loschiavo and D. G. Deem only. The data include the following items and are available to anyone requesting it:

Table ARB-I	Cleanup and Construction Clean Room Samples
Table ARB-II	Shutdown Area Samples
Table ARB-III	FEP Area Samples
Table ARB-IV	FEP Area Samples
Table ARB-V	Special Equipment C-8 Samples - Shutdown
Table ARB-VI	FEP Area - Composite Samples

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