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UC-3694

INDUSTRIAL HYGIENE SURVEY

AIR ANALYSES

BOUND BROOK PLANT

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SUPERVISOR: N. H. Ketcham (2)

DATE: March 23, 1972

PROJECT NO.: 910E10

FILE NO.: 16979

SUMMARY The Bound Brook Plant was visited February 14 and 15, 1972 to specifically sample for asbestos fibers in air near Unit B, Building 3. Samples were also taken at Unit 5, Pulverized Resins, Building 4 for nuisance dust and several production units were inspected for environmental health hazards.

Eight samples were taken in work areas around Unit B, Building 3. The results of the analyses ranged from 0.6 to 3.9 asbestos fibers > 5 microns per milliliter of air. These results indicate that the area is in compliance with the existing environmental workroom emergency standard.

Three samples taken at Unit 5, Building 4 for nuisance dust show a maximum of 4 milligrams per cubic meter of air at the face level of the operator. These samples meet the OSHA standard of 15 mg/M^3. This is in contrast to results previously obtained by New Jersey inspection officials which indicated concentrations as high as 50 mg/M^3.

The survey made of production units indicated that:

1. Some areas of Buildings 6 and 101 show signs of having higher nuisance dust concentrations than in previous inspections.

2. There was no ventilation on in the Instruments Shop, Building 11, which has resulted in high mercury vapor levels in the past.

3. The solvent vapor concentration around the No. 3 printing machine, Building 105, is more noticeable than previously.

4. There is the possibility that ozone concentrations may be above the TLV near the Oxy-Dry Starch Dusting Unit on the No. 1 printing machine in Building 105.

A proposal for obtaining samples in many areas of the Plant was sent to Dr. McKinley, March 13, 1972.

RESEARCH AND DEVELOPMENT DEPARTMENT
CHEMICALS AND PLASTICS
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INTRODUCTION This visit was made at the specific request of Mr. A. O. Malfatt, Jr. of Department 014 to determine asbestos concentrations in air around Unit B, Building 4. This unit was to be on molding material containing asbestos February 11 through 14. Dr. C. S. McKinley asked that I spend another day to take air samples in pulverized resins and make a brief survey of the Plant for obvious environmental health problems.

DISCUSSION There were eight samples taken at various sampling points near Unit B for asbestos fibers on February 14. The results of the analyses are shown in Table I. The results are within the present OSHA standard of 5 fibers greater than 5 microns in length. However, NIOSH is recommending that this be lowered to 2 fibers in about 2 years. This will create some problems in trying to lower the exposure in some locations. The highest concentrations are always found during the charging operation on the third floor. My observations indicate that the heaviest visible dust is caused by the handling of empty bags. NIOSH will require that asbestos waste and scrap shall be collected and disposed of in sealed bags or other containers. They will also require that cleanup of asbestos dust shall be performed by vacuum cleaners or wet cleaning methods. No dry sweeping shall be performed. The application of these measures would lower the dust on the third floor at both Units B and C.

The dust samples taken in Building 4, Unit 5, Pulverized Resins for nuisance dust were taken because the New Jersey Industrial Hygienist had obtained values that exceeded the TLV. His samples were taken at about waist level, so we felt they were not representative of the breathing level of the operator. I took three samples on two different shifts at the face level of the operator. The results are shown in Table II. One of the samples was taken to determine the general background contribution of the Unit 5 drumming station from the Unit 4 operation. The results show that one operator raised more dust in doing the job than the others. All of the results show that dust levels were within OSHA regulations at the breathing level of the operators.

A tour of most of the production areas revealed the following potential hazards which will be investigated in subsequent visits.

Building 6 - The dust level seemed high on the third floor where raw materials are being charged to Unit 6.

Building 11 - There was no ventilation on in the Instruments Shop. In the past, this has resulted in obtaining high mercury concentrations in the shop. There were no samples taken at this time.

There is still no ventilation on the arc welding station in the Maintenance Shop.

Building 101 - There are some areas on the second and third floors where dust concentrations appear to be very high. This is especially true near the east end of the third floor during some handling opeations of black polyethylene.

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Building 105 - Solvent odors around the No. 3 printing machine seem to be getting stronger.

I think that checking the solvent odor in the color mixing room in the east end of the building is in order.

I noticed a distinct odor of ozone in the vicinity of the Oxy-Dry Starch Dusting Unit on the No. 1 printing machine. Since the odor threshold is higher than the TLV for ozone, the concentration of ozone should be checked in this area when the unit is operating.

CONCLUSIONS AND RECOMMENDATIONS The results obtained for asbestos in air are in compliance with the existing environmental workroom emergency standard. Many of the areas sampled will not be in compliance if the new NIOSH proposals go into effect in two years. NIOSH is recommending that the standard be lowered to 2.0 asbestos fibers per milliliter of air determined as a time weighted average for an eight-hour work day, and no peak concentrations shall exceed 10.0 fibers per ml. as determined by a minimum sampling time of fifteen minutes. Other requirements such as sampling, analysis, medical surveillance, labeling, protective clothing, work practices, and record keeping are also defined in more detail.

As a result of these NIOSH recommendations, the Kanawha Valley industrial hygienists met recently to define a plan for obtaining measurements of exposure to asbestos for typical tasks involving insulation and other uses. This meeting resulted in specific recommendations for collecting and analyzing samples in order to comply with OSHA requirements. Minutes of the meeting were sent to appropriate people in most Group I locations. Adherence to these recommendations and the NIOSH requirements will assure that data is collected properly and that we will be in compliance with the future requirements.

Recommendations for sampling and analysis for hazards in other areas of the Plant were covered in my recent letter to Dr. McKinley, dated March 13, 1972.

Attachments: 2 Tables

R. W. Cope

Manuscript Date: March 14, 1972
Date Typed: March 22, 1972

psd

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TABLE I

BUILDING 3, DEPARTMENT 014, UNIT B

Date: February 14, 1972 Product: BMMC 2035 BK 25

All samples taken are area samples taken at face level in the areas indicated unless otherwise noted in the Table.

Time	Sample Description and Location	Asbestos Fibers >5 microns/ml
8:25 a.m.	Taken at the charge roll on the first floor. Operation normal.	3.6
8:45 a.m.	Taken at the operator's chair on the platform near the charge roll end of the Unit. Operation normal.	2.7
9:05 a.m.	Taken at the quench roll on the first floor. Operation normal.	1.6
9:25 a.m.	Taken at the finish roll on the first floor. Operation normal.	0.6
9:45 a.m.	Taken in the general area of Unit B from the charge roll to the shredder. Operation normal.	1.8
10:10 a.m.	Taken on the third floor at the charging hopper of Unit B. The Unit was last charged at 9:10 am There were some empty bags dragged away during the sampling period.	2.0
10:39 a.m.	Taken at the face of the operator on the third floor during charging of raw materials to the Unit.	3.9
11:45 a.m.	Same as previous sample	1.8

Raw Materials Charged by Hand	Weight in lbs
149D	125
16G	140
18Q	325
134L	240
98H	20
14PEG	100
H2035	300

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BUILDING 4, DEPARTMENT 014, UNIT 5

Date: February 14, 1972 Project: GB960 C142F

All samples taken at face level of the operator drumming the resin.

Time	Sample Description and Location	Nuisance Dust Milligrams/cubic meter
2:30 p.m.	Operator packed 15 drums of resin during the sampling period. Resin drumming also at Unit 3.	4
4:20 p.m.	Background dust count at Unit 5 when operator not drumming. Resin drumming was being done at Unit. 3	2
5:00 p.m.	Operator packed 16 drums of resin during sampling period. Resin drumming also at Unit 3.	2

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