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Main Line

October 29, 1952

To: Dr. Elkins
From: Mr. Barley and Mr. Comproni
Subject: R and Y Specialties Company, West Groton, Mass.
Persons Interviewed: Mr. F. C. Harmon, Employment Manager
Mr. A. O'Malley, Foreman
Date of visit: October 27, 1952

Accompanied by Inspector Edward J. Meehan, of the Division of Industrial Safety, a visit was made to this plant to evaluate the dust hazard developed during the picking and carding of a cotton and asbestos mixture.

This operation has been at this plant since June 1952. The end product is to be used in the manufacture of cigarette filters.

Cotton in lapped form is received in 36 pound rolls and are placed near the apron of the picker-blending machine. A 20 pound bag of processed asbestos is placed on the cover of the apron. The bag is slit and the asbestos is fed by hand on to the cotton lap being fed into the picker-blender. The mixture consists of 30% asbestos and 70% cotton. After passing through the blender, the discharge is into a box truck. The same material is fed through the machine again but is allowed to discharge directly onto the floor. This material is swept into a storage bin or in some cases some of the material is fed into a box truck as needed.

The blended material is taken by hoist to the second floor and fed through a cotton carding machine. At the take-off end the carded material [illegible] into the paper [illegible] of the [illegible] is rolled on rolls, pulled, and shipped.

The dustiest operation involves the feeding and discharge of the picker-blending machine. One man usually operates this machine but is occasionally helped by one other employee. There are a total of 9 men during three shifts, for the complete operation. The employee at the feed end at the discharge end of the picker-blender are provided with and were wearing unapproved Martindale type gauze masks.

The picker-blender is located within a physically separated room which is 35 ft. long, 12 ft. wide, and 8 ft. 3 in. high. There are two 6 ft. by 7 ft. entrances which are not provided with doors. There is one window 5 ft. by 2 ft. 8 in. The cylinder of the blender is exhaust ventilated. The bag collectors are located within the room and are not enclosed. The air is recirculated. The operation of the picker-blender generates considerable dust in the working atmosphere of this room. However, the majority of the particles are large fibers and are not

believed to be pathologically significant. If the respiratory protection is not worn the dust causes irritation of the nose and throat.

There are 2 carding machines located on the second floor, only one of which is being used for the asbestos cotton mixture. The various worker rolls, etc., are covered. Exhaust ventilated slot type hoods are located at those points where the greatest amount of dust is generated. The collector for this system consists of 2 cotton bags within the room area. The exhausted air from this operation is recirculated.

An evaluation was made of the dust concentration in the working atmosphere at the picker-blending and carding machines. The MSA Midget Impinger Flasks were used, and results are tabulated below.

Air Analysis Table

Sample No.	Time	Location	Results - DUST (ASBESTOS & COTTON) Millions of particles/cubic ft. of air
1	10 min. 52 sec.	Operator's exposure feeding picker-blender second run material	8.3
2	10 min. 30 sec.	Operator's exposure, discharge end of machine, second run material	8.3
3	10 min. 50 sec.	Operator's exposure feeding blender, first run material	9.3
4	10 min. 37 sec.	Operator's exposure discharge end of machine, first run material	11.0
5	10 min. 49 sec.	General air side and front of Breaker card #1	6.3
6	16 min. 30 sec.	General air take-off end and side of Finisher card #1	3.5 6.7 16.9 8
		Maximum Allowable Concentration	15

dust in air is given as 5 million particles per cubic foot of air. However, since there is only 30% asbestos in the mixture, using the same reasoning as we do in the evaluation of the maximum allowable concentration for free silica, we arrive at a figure of 15 million particles per cubic foot of air. Therefore, the above results indicate that if our assumption is valid the concentration of the dust is not excessive. As indicated above, the majority of the suspended dust is made up of large fiber particles and would not be picked up by the Midget Impinger Flasks.

The method of discharge of the materials from the picker-blender and the rehandling of the blended material, is not entirely satisfactory and results in considerable dispersion of the dust.

In view of the above conditions, the following recommendations are being submitted:

1. Employees engaged in the operation of the picker-blending machine should be provided with and required to wear approved Type A respirators.

2. The dust collectors should be enclosed and the discharge air should be to the outside of the plant.

3. Consideration should be given to a change in operation involving the pneumatically conveying of the material from the picking-blending operation to second floor storage bins.

4. Provision should be made to permit the entrance of "make-up air" into the Carding Room.

5. A fan capable of exhausting 8000 cfm (24 in. propellor fan operating at 1750 rpm) should be placed in the window in the Picker Room. A suitable collector should be provided for this unit.

6. An industrial vacuum cleaner should be used to remove the settled dust on the floors, machines, overhead beams, and trusses. There should be a regular clean-up at frequent intervals.

7. A medical control program should be instituted. Each employee in this operation should be given a physical examination including an X-ray of the chest. The examination and X-ray should be repeated at least annually.

MB/cm

It is requested that Inspector Meehan notify this office when the above recommendations have been completed.