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TO: Mr. Wesley M. Graff
Manager - Safety, Health, & Fire Prevention

FROM: Frederick W. Sands
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SUBJECT: Health Problems in the Asbeston Operations - Hogansville

The following report is a brief summary of the highlights of the employee health problem due to exposure to asbestos dust at the Hogansville Plant.

From the date of the first operations of the asbeston plant at Hogansville, in 1941, there was realization of a potential health problem due to asbestos dust inhalation--a disease referred to as asbestosis. This is a disease similar to silicosis, but it has been believed to be of somewhat slower development. With the available information on asbestosis in 1941 on hand, it was felt that we could operate the plant safely if we could maintain a limit of dustiness in the air below 5 million particles per cubic foot of air (the standard recommended by the U. S. Public Health Service), and provided we developed an adequate medical program.

From the beginning, plant management instituted a three-pronged attack on the problem:

- (1) evaluation of plant dustiness
- (2) engineering control
- (3) preventive medical program

1. EVALUATION OF PLANT DUSTINESS

Through numerous visits in the early days of this operation, our office assisted in setting up a standard dust-counting procedure and in training plant staff in sampling techniques. (Appendix A)

The original dust counts made in 1942 showed that the limit of 5 million particles per cubic foot of air was greatly exceeded. In the opening and picking operation, for example, the concentrations ranged from 22 to 75 million particles per cubic foot of air; while in the weaving operations in 1942, the dust concentrations varied from 4 to 12 million particles per cubic foot of air. Later on, in 1942, the operations were transferred to the new building, and additional dust control surveys were made with the result that several new fan installations with high capacity and local exhaust ventilation were installed. Further improvements in the engineering control of the dust were made through 1943 and 1944 with the result that the dust concentrations in the opening and picking operation were reduced to 7 to 16 million particles per cubic foot of air by 1947, and the counts in the weaving operation were almost down to the 5 million level. (Appendix B, C, F)

Continued engineering and technological improvements have been made with the result that for the past ten years the plant dust counts have been at or below the standard of 5 million particles per cubic foot of air.

2. ENGINEERING CONTROL

With the data acquired in the dust studies above, the plant engineering staff, with assistance from other groups, has been able to develop a number of changes in the process. Local exhaust ventilation on individual machines contributed substantially to dust reduction. A major change involved the use of vacuum cleaning equipment on the carding machines. Equipment was also installed for cleaning air used for recirculation. (Appendix F, G.) Additional measures are still being studied.

3. MEDICAL PROGRAM

A program of medical protection was installed early. This office assisted in arrangements for the transfer of complete x-ray equipment to the plant and a program of periodic x-ray of all asbestos employees was initiated. In the original program, the x-rays were taken by the plant nurse and were interpreted by the two local physicians. It soon developed that this was not too satisfactory an arrangement, and efforts were made to find a radiologist. Doctor Grady, a radiologist of LaGrange, Georgia, agreed to read all the plates taken at the plant. A difficulty developed, however with this procedure in that Doctor Grady was not able to visit the plant regularly to relate his x-ray interpretations with the employees' medical examination. It did develop, however, that Doctor Grady found several cases of early asbestosis as a result of his x-ray interpretations. We, in this office, arranged to have such suspicious x-ray plates sent to Dr. Eugene Pendergrass, an outstanding authority on the pneumoconioses in Philadelphia. His assistance in reading these x-ray plates was invaluable. However, there was also the problem of handling these cases at long distance. We later arranged to have Doctor Pendergrass visit the plant to discuss the whole problem with Doctor Grady and the local physicians and plant management. As a result of this meeting, it was felt that greater coordination was needed between the radiological work and the physical examination of the employees in order to evaluate accurately the employees' condition. This resulted two years ago in arrangements with Doctor Wells, of Macon, Georgia, who agreed not only to read the x-ray plates but also to do the physical examinations of the employees on a periodic basis. Doctor Wells is an outstanding radiologist who has had wide experience with the problems of lung disease.

In the course of the past two years Doctor Wells has done a very elaborate study of the asbestos situation. In summary, he has found 10 people with definite and unequivocal early to advanced pulmonary asbestosis. Furthermore, he questions the adequacy of the limit of 5 million particles per cubic foot of air as a standard. He is inclined to recommend instead a time-concentration limit as the only safe method of controlling the asbestos dust exposure. (Appendix M)

Over the period of the asbestos operation, this office has also played a part in arranging for consultations and surveys by the following groups:

1. The Georgia Department of Health. Dr. Lester Petrie took an active interest in the problem of asbestosis at the Hogansville Plant, as head of the Division of Industrial Health for the Georgia State Department of Health. He further assisted the plant in the training and checking of plant personnel in the dust-counting techniques. His office was available for consultation in engineering control of dust exposures. His department made annual visits to the plant. (Appendix M)
2. The Industrial Hygiene Foundation of America, Inc. This group was called in to make an engineering study of the dust control system in 1950. As a result of its recommendations, many changes were made. (Appendix I)
3. Central Engineering Department. We in this office worked closely with representatives of the ventilation-engineering group from the very beginning of the operation at Hogansville. (Appendix F)
4. New York University - Institute of Industrial Medicine. A group of three experts consisting of a physician, an engineer, and an Industrial Hygienist made a complete survey of the plant in 1953 together with this office in order to review the entire medical and engineering control program. It was as a result of this visit that the change was made from Doctor Grady to Doctor Wells, of Newnan. (Appendix J)
5. Dr. Eugene Pendergrass of Philadelphia. As referred to above, Doctor Pendergrass visited the plant personally to review the medical program and to consult with Doctor Wells, of Newnan, Georgia, on the modifications in the medical control program. (Appendix K)

SUMMARY

In summary, the Textile Division has from the very beginning taken action to reduce the exposure to asbestos dust in this operation. A complete medical program for evaluation of pulmonary disease was set up in the early stages of the operation. We have available statistics on the dust concentrations from 1942 and medical records of each employee from the date of his employment in asbeston operations. (Appendix L) Great improvement has been made in dust control as a result of the reductions in the dust concentrations over the years.

Today, now that we have the dust concentration reduced to well below the 5 million limit where it has been for nearly ten years, we are faced with the problem of early asbestosis in certain people who had previously been exposed to fairly high concentrations. Moreover, we also have the problem of the possible production of asbestosis under present conditions which were up until the present considered adequate.

The 19 definite cases of asbestosis pose certain problems of industrial relations—possible terminations, disability retirement, workmen's compensation, transfers, and limitation of employment in the asbeston operation. The potential cost of these cases is being determined.

We are attempting, in cooperation with the Textile Division, to obtain the experience of other large asbestos operators in this country and also to obtain the experience from British manufacturers in this

field in the hope that we might learn of additional measures which we are not now taking to prevent this disease. We have found that our experience is not unique, and that Johns Manville, in particular, is facing similar problems at their New Jersey location. Discussions held with their Medical Director indicate that asbestosis has developed at their plant also. Arrangements are being made for a visit to their New Jersey plant to study the problem with them.

All these factors are to be again reviewed with the Textile Division management in the hope that an adequate solution to this problem can be reached.

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