Study to Wrap Then Ret. with Attached to his File

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Division of Field Studies and
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Department of Health, Education, and Welfare
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Dear Dr. Johnson:

This letter will confirm discussions between you and Mr. Horace Adrian, Chief of our Industrial Hygiene Program, regarding the asbestos problem at Tyler, Texas. Included are observations and supportive data obtained by Mr. Adrian during his visit on August 17, 1971, with Dr. Lee Grant, Medical Director for the Pittsburgh Plate Glass Company, and with Mr. Charles E. Van Horn, Plant Manager at the Pittsburgh Corning plant.

Preliminary discussions were held in the offices of Dr. J. R. Bailes, Director of Region VII, Texas State Department of Health. Dr. Grant outlined the Pittsburgh Corning medical program and the in-plant steps taken to protect the health of their workers against the hazards from asbestos exposure. The following information was developed from the discussions at this meeting.

The molded thermal insulation blocks are formulated from 45% amosite asbestos, 21 to 27% sodium silicate as dry solids, and 7 to 8% diatomaceous earth. The asbestos is imported from South Africa in plastic-lined, burlap sacks and contains no chrysolite or crocidilite fibers. The attached schematic flow diagram shows the process steps within the plant. The sacks are opened and the other additives are supplied at the material feeders from where they are conveyed to the attrition mill. The blend is fed to the builder feeder in a wet form. The mix builds up on rotating mandrels, which then pass over the finishing rolls. A clay coat is applied to the exterior of the cylindrical form, the mandrel is extracted, and the wet product passes through a long drying oven. Upon drying, the band saws cut the baked product to the desired length and another saw makes a longitudinal cut which halves the product for

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easy installation. The process is completed with the banding and packaging of the end product. Scrap pieces from the sawing steps and rejected products are returned to the scrap crusher for reprocessing.

There are three critical areas in the plant processing in which asbestos exposure exceeds safe levels. These are: (1) the material feeders where the bags of asbestos are opened and discharged into the hopper (2) the sawing or cut-off operations which create dusty particulate suspensions, and (3) the scrap crushing operation which creates an excessive exposure of the asbestos fibers and particulate matter.

Dr. Grant related that they realized they had a problem following a 1965 survey in this plant in which Mr. Jim Stefano, an Industrial Hygienist, did an in-plant study for dust and asbestos. The Public Health Service study in 1967 was an evaluation of the asbestos fiber counts, but did not include a medical review. Following the 1967 evaluation, Dr. Martin Cohen, Professor of Environmental Health and Industrial Hygiene at the University of Pittsburgh, was called upon to work out the control ventilation requirements for the Tyler plant. The control system recommended by Dr. Cohen was installed.

Following the decision of the American Conference of Governmental Industrial Hygienists to further lower the threshold limit values for asbestos to 5 fibers per milliliter, or 0.5 mppcf, Pittsburgh Corning Corporation decided to discontinue its use of asbestos as a raw material for insulation, and if possible, to develop a substitute material for the asbestos additive. Approximately $200,000 reportedly was spent in research and development.

Under contract agreement, the University of California at Berkely made a study of the relative dustiness of insulation products under controlled conditions. Results showed that none of the five supplier products under study could comply to the new standards during times of installation, repair, or dismantling of insulation by an experienced journeyman. At a great expense, Pittsburgh Corning, at their Port Allegheny, Pennsylvania plant, had adequately controlled one production line within the new limits. Control equipment for all plants would be excessively expensive, especially when valid tests showed that installation exposure would remain in excess of accepted levels.

Following the research and study on substitutes for asbestos as an insulating material, it was determined that man-made fibers, such as mineral wool, could replace asbestos. Experimental tests and plant installations have shown that the new product has comparable insulating characteristics without the attendant health problems shown with asbestos usage. Controlled tests on installation exposure have shown no health hazards other than those experienced from nuisance dusts. Since the new formulation is heavier than asbestos, any resultant dust settles more rapidly. This was substantiated in recent tests by Dr. Clark Cooper at the University of California at Berkeley. Dust count results on this new material showed a significant reduction in values over the earlier study.

At the present time, the Port Allegheny plant has one line of machinery in full production on a 24-hour basis. The problems of production have been perfected to a satisfactory level. Management plans to have the Port Allegheny and the Tyler plants fully converted and in-production on the new line of mineral wool insulation by July 1, 1972.

During the interim period, while these two plants are converted, Pittsburgh Corning has requested a variance from compliance with the standards as related to asbestos that are currently in effect. A copy of their request, which was submitted to the Assistant Secretary for Occupational Safety and Health, U. S. Department of Labor, is attached for information and reference.

In order to insure healthful working conditions for their employees, a notice and instructions given on August 2, 1971, made mandatory the wearing of approved respirators by all personnel while present within the general plant area. This notice was related to supervisory and operating personnel, maintenance workers, and all visiting individuals. The operating personnel whose work stations were in the three critical areas described in preceding paragraphs, were supplied with and instructed to wear at all times, respirators equipped with Comfo Mask Filters (BM 21B-90), which is an ultra filter designed for this type of service.

As further protection to the employees, the variance request sets forth the following requirements upon themselves:

1. Approved respirators will be supplied and their usage will be required.

2. Existing dust collection equipment and ventilation system will be maintained at optimum condition.

3. Continuing health education program on asbestos exposure will be provided.

4. Medical examination will be expanded to include pulmonary function tests, other medical tests, biennially for those employees with as much as five years exposure. Examinations will continue for a ten-year period for employees with five-year exposure, even though asbestos will be banned by July 1972.

5. New and improved respirators have been purchased and their effectiveness will be fully validated.

6. Improved housekeeping procedures will be maintained, including frequent use of industrial vacuum cleaners.

A copy of the medical history questionnaire is enclosed for your files. At the time of discussions with Dr. Grant on August 17, 1971, one-half of their employees had completed the extensive medical examination at the East Texas Chest Hospital at Tyler, under the supervision of Dr. Hurst, Hospital Administrator for this Texas State Department of Health facility. The remainder of

the employees were to be examined on August 23. When the results of these examinations are made available to us within a few days, we shall forward a copy to you. Those employees who have been exposed to asbestos in the Tyler plant consist of 25 employees with five or more years of exposure, and 36 employees with less than five years. The coverage of this expanded examination does not include salaried clerks and other non-exposed employees.

The policy in the past has been to perform pre-employment medical examinations on all employees. Those examinations included chest and back X-rays and were repeated on a biennial basis. The work was performed at the Medical and Surgical Clinic which is located at 1100 Beckham Street, Tyler, Texas. The X-ray examinations were conducted and reviewed by personnel approved by the Board of Certified Roentgenologists. Doctors in this clinic have given all previous pre-medical examinations.

When the medical examination results performed recently at the East Texas Chest Hospital are reviewed by management, employees will be advised of any abnormal findings. Their medical staff will provide direction from that point forward.

Mr. Adrian made a walk-through survey of the Tyler plant operations at the time of his discussions with Dr. Bailes, Dr. Grant and Mr. Charles Van Horn, Plant Manager for Pittsburgh Corning Corporation. His findings included the observation that every plant employee observed was wearing a fitted respirator. Each bulletin board exhibited the notice which made mandatory the wearing of respirators. Notice of application for variance, as described before, was posted on the board. Management advised that prior to the posting of the mandatory respirator directive or the variance application, the substance and reasoning for each action was explained to representatives of the union council.

Dr. Grant invited Mr. Adrian and Mr. Richard Leard, Public Health Engineer for Region VII, Texas State Department of Health, to sit in on a briefing of the employees on the hazards of asbestos and the reasons for all of the actions taken. The two sessions attended by Mr. Adrian and Mr. Leard were clear, concise and descriptive of the health hazards involved where asbestosis is in use. The right of each employee to protest the method of control or the granting of a variance was explained in detail. The efforts of management toward the protection of the health of the workers seemed the central theme of expression by those who responded.

In conclusion, the plant conditions differ but little from those noted by the Public Health Service Specialists in January 1970. Additional protection is provided by the mandatory wearing of respirators by all exposed personnel. Improved filters should provide additional protection against the inhalation of asbestos fibers during the interim period.

We recommend that an evaluation of asbestos fiber content be made in the breathing zone of the three critical plant areas experienced previously. Within the limits of feasibility, the efficiency of the improved filters should be determined under existing plant exposures. Should the National Institute for Occupational Safety and Health have Field Study Group personnel available at this time for evaluation of these parameters, we would be pleased to discuss arrangements for such a study with the plant management. Due to limited staffing at the State level, there may be a delay of time before we could perform this service; however, every effort will be made to expedite our action.

We have enjoyed working with you on this problem of mutual concern. We await your comments or any requests for additional information.

Yours very truly,

Martin C. Wukasch, P.E., Director
Division of Occupational Health
and Radiation Control

bcc: Lee Grant, M.D., PPG Industries, Pittsburgh

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MEDICAL DIRECTOR