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THE PHILIP CAREY MANUFACTURING COMPANY

OCCUPATIONAL HEALTH PROGRAM

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OCCUPATIONAL HEALTH PROGRAM

FOLLOWING ARE THE OBSERVATIONS OF THE COMPANY'S MEDICAL CONSULTANT, THOMAS F. MARCUSO, M.D., M.P.H., TO PREFACE A CONFERENCE WITH MANAGEMENT SCHEDULED FOR SEPTEMBER 23, 1963. IT IS UNDERSTOOD THAT THE CONTENTS OF THIS REPORT ARE STRICTLY CONFIDENTIAL AND ARE NOT TO BE USED FOR ANY PURPOSE OTHER THAN CONSIDERATION BY THE OFFICIALS OF THE COMPANY. THIS INFORMATION SHOULD REMAIN WITHIN THE KNOWLEDGE OF THE PERSONS PARTICIPATING IN THE CONFERENCE AND SHOULD NOT OTHERWISE BE DISSEMINATED.

WHAT ARE THE IMMEDIATE AND LONG-RANGE GOALS?

WHAT ARE THE RECOMMENDATIONS TO ACCOMPLISH THEM?

WHAT SHOULD THE COMPANY DO?

These are the questions posed at the latest conference with Mr. Louis Knippa, Lockland Plant Manager, Mr. L. A. Pechstein, Assistant Secretary, Mr. Karl F. Krieg, Employee Relations Manager, Mr. R. J. Preston, Safety Supervisor, and Mr. John T. Cantlon, Consulting Actuary, which may serve as a basis for points of reference and clarification.

It would be preferable to review this report in its entirety prior to discussing any of the specific areas referred to in order to evaluate the inter-relationship of the various factors mentioned.

Question A. What are the immediate and long-range goals?

1. Identify and evaluate the chemicals and materials in the working environment which are hazardous to health of the employee, which may cause an occupational disease or injury, in the Lockland plant, and subsequently, in each of the other plants and operations, including the Canadian mining and processing of asbestos. This should be conceived and carried out as a matter of company policy, recognizing that there should be no neglect of other company operations and that an over-all view of the situation must be obtained.
2. Development of priorities of risk of health hazard and liability for each of the company plants and within these plants, according to departments, manufacturing process and specific operations.
3. Determine the control measures required, engineering and medical, according to the priority of risk to the employee and the company, for each of these operations and manufacturing processes; determine and design the ventilation requirements for the specific operational hazards.
4. Determine the nature and extent of the air pollution problems derived from company operations, at all locations, beginning at the Lockland plant, and the control measures specifically required and designed for these situations.
5. Determine the nature and extent of the occupational disease problems immediately and projected on a company-wide basis, beginning with the Lockland plant and extending to all other operations.
6. Evaluate the nature, adequacy, range and scope of The Philip Carey Manufacturing Company's responsibilities for its employees' health, physical examinations, disabilities, first-aid and medical care, the cost associated with present operations in terms of employee protection, compensation liability, and effect on production. This includes evaluation of policies and procedures pertaining to sickness, return to work, specific tests, use of sickness insurance, medical and production problems relating to alcoholism, mental illness, heart disease and other impairments and handicaps; patterns of referrals for treatment, and types of medical examinations required for all and specific occupational groups.
7. Develop a system of medical records and surveillance on a company-wide basis, including all plants and company operations relative to the health status and disabilities of all employees for the detection of diseases and injuries, patterns of sickness in different departments and operations, and for the identification and early recognition of problems, the type of problem and the location.

8. Develop a medical program and prepare a manual of company policies and procedures pertaining to (5), (6) and (7) on a company-wide basis and as related to specific problems and occupational groups, in cooperation with personnel and production objectives.

9. Evaluate and determine toxicological or harmful effects of company products or components under various conditions of use, and as used in specific installations and occupations, buildings, industries, etc. by consumers.

10. Develop safe practice ventilation guides with illustrative drawings, as well as medical guide lines, for distribution with sales, for consumer protection and relations, to avoid added compensation liability by consumers.

11. Evaluate occupational disease and injury claims and identify non-legitimate claims and prepare scientific data as may be required in the proper adjudication of claims.

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Question B. What are the recommendations to accomplish these objectives?

1. Employ immediately an experienced, qualified industrial hygiene engineer, competent in the areas of the working environment and air pollution, to conduct the necessary studies and to carry out the responsibilities on a company-wide basis for (1), (2), (3), (4), (9), and (11) referred to previously. Initially, the work is to be directed at the Lockland plant, with air sampling and ventilation control design for operations within the plant and for air pollution studies, and for control measures.

Regardless of obvious dust exposure, air sampling of the various dusts and chemicals must be carried out and measurements made of the concentration and analyses of the composition of the various dusts and fumes as basic reference data in determining the extent and priority of the need, as well as for the evaluation of effectiveness of control measures before and after studies. (Contractual arrangements pertaining to ventilation systems can be made contingent upon verification of effectiveness by the industrial hygiene engineer). In addition, such data is essential to the interpretation of compensation claims. Without such data, the company cannot deny or affirm whether exposure to silica, talc, or asbestos, or other dusts, fumes or gases, had occurred, and at what concentrations, etc., all of which have a bearing in determining whether a process or occupational exposure can be classified as harmful. Undoubtedly, many claims will occur in the future, in which such basic technical data is needed.

Past experience in other industries has shown losses of hundreds of thousands of dollars, where decisions on ventilation control measures were not made by qualified industrial hygiene engineers, but rather by others, including engineers of the company selling and installing the ventilation equipment.

In the area of air pollution, there seems to be a lack of awareness by the company of the financial liability that is at stake in the operations of The Philip Carey Manufacturing Company plants, as evidenced by the lack of control effort.

Although only the Lockland plant has been observed, it is evident that:

Air pollution does occur and has occurred over the years.

Emissions from asphalt and tar operations are liberated into the surrounding community.

Such fumes are known to be carcinogenic (produces cancer) in animals and humans.

If an individual in the neighboring community developed lung cancer, who was a resident for a number of years in that area, the company would have no scientific or legal basis to deny the possibility that such lung cancer could have occurred or be due to the fumes from the Lockland plant.

There is no limit to the amount of money for such air pollution suits. (Brush Beryllium was sued for \$750,000.00 in each case)

A competent attorney and the climate of the courts relative to air pollution would make the success of such suits a distinct probability.

Since this one case can be multiplied many times over for the surrounding population of the Lockland plant and the problems of other areas (which would not be ascertained until a survey was made), it is evident that the company needs to know, on a sound and regular basis, the exact concentrations and the identity of the various chemicals dispersed by its plants and that contributed by other industries in the surrounding areas, together with comprehensive data on wind direction, velocity, etc.

Unless the company immediately initiates such a program, it will not have any data from which a possible defense may be derived. Unfortunately, such information is no longer available for the preceding years. However, an experienced industrial hygiene engineer may indirectly, through reconstruction of processes and production, estimate the range and composition as it relates to present operations, etc. Wind data over the past years can be obtained from meteorological stations.

It is highly possible that after an adequate appraisal of all the company operations relating to occupational exposures and air pollution by the industrial hygiene engineer and an industrial medical consultant, The Philip Carey Manufacturing Company may find it financially desirable to change, re-locate or discontinue certain processes and to reappraise further investments in production changes at particular plants where future liability may be excessive.

The Philip Carey Manufacturing Company is not in a position at this time, without such survey data, to appraise or determine the extent of its financial liability in the future, or to make the necessary immediate decisions on control.

2. Conduct medical studies which have a direct bearing on sales of the company products and legal liability through a medical director, medical consultant, university contract, or other arrangement. This relates to the questions which are inevitable and will be raised by all users and consumers and in general, by the public, because of the accumulation of recent scientific reports showing the positive association between asbestos and cancer of the lung, pleura and peritoneum. In addition to cancer, positive association also exists with Cor pulmonale (right heart failure due to the fibrosis of the lungs) pulmonary emphysema (which follows fibrosis), chronic bronchitis, bronchiectasis and pneumonitis. As a consequence, there is a formidable array of medical problems now being recognized as directly related to asbestos exposure.

Some of the questions posed and to be readily anticipated nationally are:

Do these asbestos products or this particular asbestos product produce cancer?

Are we, as industrial users, going to be subjected to lung cancer and other cancer claims, because we are using this asbestos product, which will affect our compensation costs and employee relations and liability?

What other types of lung disease or medical problems may we expect from the use of this product?

At a concentration of dusts, percentage of asbestos, and particle size, for how many years, will cause cancer or other medical problems?

What types of medical and engineering safeguards are required for control and prevention of disease when we use this product?

Internally, within the company, the question has been raised as to why medical problems, particularly relating to cancer and asbestos, were not recognized before. Actually, they were recognized, but the asbestos industry chose to ignore and deny their existence. Evidence of this was as recent as the Industry Hygiene Foundation Study, sponsored by the Asbestos Industry, at a cost of \$40,000.00, which provided a basis for the companies to argue against this recognition of asbestos and lung cancer. The report, when properly analyzed, had many weaknesses, upon which the conclusion was drawn, and these weaknesses have been recognized in scientific circles.

Refutation of this report has already appeared in press and will appear in a number of publications. Consequently, the asbestos industry cannot rely on this report for legal defense.

A second more basic reason for the lack of recognition is that there was no planned, intelligent medical surveillance or supervision of the employees or the company activities, to detect what was happening to the employees over the years. In some companies, large numbers of cancers occurred among the employees, but there was no interest or medical effort obtained to recognize the occupational cancer and other lung disease problems.

It is also possible that there was no desire by these companies to recognize the problem because of the Workmen's Compensation implications. Evidently, what is not known cannot be recognized as an occupational disease.

A third reason for the lack of recognition of the cancer problem is the long latent period, the time from exposure to the development of cancer, for the majority of cases. Now, after 25 to 30 years, some of the cases will start appearing, and because of improved medical diagnosis and records, as required by the medical and insurance professions, there will be an increasing number of cases as additional years pass. This is also related to the number of years of exposure to asbestos. Usually, the higher concentration of exposure in years, the shorter the latent period, and similarly, the lower concentration of exposure, will have a much longer latent period, measured in years.

At The Philip Carey Manufacturing Company a high proportion of employees are in the older age group, and it will be difficult to disprove that exposure did not occur in the previous 20 or 30 years or more for the employees subsequently develop lung cancer. It is evident that an occupational cancer problem existed at Plymouth Meeting, and it is highly likely that occupational cancer also has occurred at the Lockland plant.

A fourth reason for the lack of recognition of the problem, not only at The Philip Carey Manufacturing Company, but at other asbestos industries, has been the inadequacy of medical records, which made accurate statistical evaluations difficult. This has been coupled with the absence of any plan of competent analysis of insurance, sickness and mortality data.

However, the situation now has changed. This information is now more widely known in scientific circles and is definitely known by the unions specifically involved because of their financial support in part of the subject, which reported positive findings with cancer.

Further, this matter will receive congressional and public attention because of national study underway by the United States Public Health Service on asbestos and cancer.

Attention may be directed to this before Workmen's Compensation Boards throughout the country, because asbestos serves as an excellent illustration of the weakness of Workmen's Compensation Laws relative to occupational cancer (statute of limitations). Further attention may occur as this illustration is used in collective bargaining contracts among unions, not only asbestos, but boilermakers, pipe fitters, etc., for extra risk pay, sickness insurance, changes in pensions, etc.

All of these events, individually and collectively, represent potential and actual sources of attention throughout the country, directed at asbestos as a health hazard, and represent a likely sequence of events.

Although attention has been focused on cancer in this report because this is a disease more readily recognized and appreciated by the user or consumer, as well as the general public, The Philip Carey Manufacturing Company must realize that a similar situation may be developing; i.e., a lack of recognition of other health problems, for the same reasons previously stated, for other chemicals and processes in the company operations.

Unless a medical study is made of the industrial population and various records, these problems will not be recognized in time to prevent an "outbreak" of a collection of cases of the same disease of occupational origin, nor recognized in time to protect the health of the employees, with the same sequence of events possible as related earlier to asbestos and cancer.

Planned medical studies are required to detect these problems as early as possible; certainly before they become serious in terms of sickness and Workmen's Compensation costs or liability. In this way, the company can protect the health of the employes and be forewarned relative to health problems and projected liabilities, and can design a course of action appropriate to the situation.

Some of the possibilities which require study are cancer and blood changes of specific groups exposed to asphalt, tar and other solvents; lung changes among those exposed to talc, silica and dusts of varying compositions, including fibrosis and emphysema which may be related to dusts and some other chemicals.

These medical studies are really what a competent medical director should and would do for a company to protect the health of the employee and the financial interests of the company. Such studies for those who may not be acquainted with the responsibilities of a medical director and the functions that would be normally carried out by an experienced medical director, might label such studies as research.

It is true that such studies do require additional skills and training available from a consultant to avoid the pitfalls that exist in the collection and analyses of such data, but the point being emphasized is that these medical studies are a normal, necessary function that every company, particularly one with many problems, would have carried out as an on-going current operation.

In this manner, management can be advised of various health problems, their nature, extent, location and the implications thereof, just as the research engineer, plant manager or employee relations director, do in their respective fields.

These medical studies of the employees exposed to specific dusts or chemicals provide observations which may serve as a basis of extrapolation to consumer use of these products.

By determining the dust concentrations of specific operations, the chemical composition of the dusts, particle size and duration of exposure, for specific population groups and noting changes in time of x-ray or laboratory findings, as well as observing the development of symptoms or related illnesses, correlations may be established. This would be done on a departmental comparison basis of employees characterized by sex, color, age, and duration of employment, but differing by occupational exposure.

It is possible, through use of existing employee records organized by Mr. Krieg, to establish a plant cohort as of 1950 or 1952, identified by department and the necessary characteristics, so that a follow-up study could be undertaken. This would involve study and search of medical records, sickness and insurance coverage, etc.

Similarly, observations of importance could be derived from studying the Plymouth Meeting population in particular, their mortality pattern; i.e., the pattern of the various causes of death of that employee population, to detect abnormalities or variations with controls, of specific causes of death. This may provide a clue as to the relative significance of asbestos exposure.

The Plymouth Meeting plant now recently closed, presents a unique and vital situation to study what factors or combination of factors in terms of duration of exposure to asbestos, is required for the development of cancer and related diseases. Estimates of concentrations may be derived and together with analyses of settled dust and the making of departmental comparisons of employee groups exposed under various conditions, some index may be derived relative to the years and types of exposure required.

The Plymouth Meeting plant, in comparison with the smaller groups exposed at Rockland, has the necessary size population exposed over a sufficiently long period of time to asbestos, from which meaningful observations or conclusions could be made. Now that the Plymouth Meeting plant is closed, a confidential and flexible study can be made within the company structure. With a common termination date for all employees, a better statistical evaluation can be made. This is an ideal situation to attempt to ascertain the standards and points of reference for comparison with employees of other plants.

Although dust determinations and necessary analyses were not done in the past for the various Philip Carey operations, an experienced industrial hygiene engineer can piece together production schedules, changes in operations, ventilation data, analyses of settled dusts, etc., to obtain some estimate of the probable range and composition of the dust exposures in the past, which can be related to medical data.

It is not known at present what has been the extent of chest x-rays in the various Philip Carey operations and plants over the years and to what extent these are available.

Forward prospective medical studies could and should be set up at the Canadian operations. This should be tied together with comprehensive engineering data and would serve as points of reference in succeeding years. A carefully supervised medical program with special examinations, including respiratory function studies, should be initiated and repeated at periodic intervals, to observe and detect the earliest changes in the lungs of employees of the Canadian operations. These findings then could be correlated with exposure data and would confirm the absence or presence of a health hazard early enough to do something about it and to prevent liability. Information from Canada, representing relatively new operations and employees, may provide important data for extrapolation to other areas and this opportunity should be utilized.

In essence, medical and engineering studies are considered vital to the company's operations and financial liability and sales.

3. Prepare and inaugurate a medical and engineering consultation service and program of consumer aid, for the evaluation and control of any health problems and proper guidance on ventilation controls for the company's products.

4. Discontinue the practice of placing on Philip Carey's payroll employes of sub-contractors in different areas of the country because of the occupational disease liability. It has already been established by the recent study supported by the union, that the union members have a high lung cancer rate.

It is highly likely that these installers, exposed to asbestos over the years, and generally continuing the same type of work, will develop high lung cancer rates. It is inadvisable to place the company in the position of defending against such claims and having such suits associated with Philip Carey. Such legal and medical costs can be avoided, as well as Workmen's Compensation claims. Such employes should remain the employes of the sub-contractors (Example noted in a national study - death certificate of lung cancer case, reported as an employe of The Philip Carey Manufacturing Company in Chicago - actually a sub-contract employe).

5. Set up rigid physical examinations and comprehensive pre-employment information on all new employes to exclude certain dust exposures, individuals with other chest diseases, etc.; special studies of specific occupational groups to detect early changes of harmful nature; procedures for medical surveillance, etc.; conduct special studies to determine those already affected and not recognized who can be transferred before further progression of the illness or disease.

6. Reconsider retirement and pension plans, sickness and insurance benefits to determine the most advantageous plan for employes and the company, in light of the large number of employes in certain age groups with many years of employment exposure who, in advanced ages, may develop the medical conditions discussed in this report.

Unfortunately, The Philip Carey Manufacturing Company is now confronted with seeing the consequences of a lack of a program of medical supervision of its employees' health over the years; lack of dust control; lack of awareness of the injurious nature of the various chemicals utilized in the working environment, as well as the community, in terms of air pollution. This build-up is now apparent.

It is necessary that top management be alerted to the financial liabilities which are at stake, in terms of:

- a. Occupational disease claims causing increasing funds to be set aside for Workmen's Compensation.
- b. Air pollution suits for harmful exposure, particularly lung cancer.
- c. Effect on sales by the publicity of the association of cancer with the use of and the manufacture of, asbestos products.

This information is necessary so that proper plans and judgments may be made as to a course of action in the over-all company management.

Such information and warnings should not be taken lightly, since the factors which would make such financial threats possible are already in existence and will be augmented in the near future by the additional publication of other scientific data.