



E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED

WILMINGTON, DELAWARE 19898

EMPLOYEE RELATIONS DEPARTMENT

HASKELL LABORATORY

FOR

TOXICOLOGY AND INDUSTRIAL MEDICINE

Handwritten signatures and initials:
~~CHM~~
~~WES~~

TO: PLANT MANAGERS
HASKELL LABORATORY LIAISON PERSONNEL

FROM: RICHARD J. HUBIAK

It has been proposed that a second Company-wide conference be held to discuss the health effects of the inhalation of asbestos and the means of measuring and controlling the hazards. This letter is an invitation to you to attend the Conference and to arrange for attendance by all persons in your department who have a need to know about these matters.

As you well appreciate, asbestos and asbestos products are widely used within the Du Pont Company. In the past, and continuing to the present, asbestos has been a commonly used insulating material for vessels, pipelines, etc. Insulating material that is purchased is fabricated within shops, is installed, and eventually is removed. Besides its use in insulating material, asbestos is also purchased and used as an additive material to perform special functions in some products. All of these operations and work associated with them are potential areas of employee exposure.

Mankind's knowledge of the health effects of inhaled asbestos, including asbestosis, pulmonary carcinoma, and mesothelioma has been and is being re-appraised in the light of new knowledge and re-evaluation of older facts. Standards that have been developed and used over the years for the control of inhalation and its health effects are changing. On December 29, 1970, the Occupational Safety and Health Act of 1970 (OSHA) was signed into law and became effective on April 28, 1971. This new legislation, designed to assure safe and healthful working conditions for the nation's working force, provides broad authority to the Department of Labor and the Department of Health, Education, and Welfare. Changes in the standards on asbestos have been made in the period after the Act became law.

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DUP 0907481

A Company-wide conference was held in Wilmington in May 1970. Facts concerning the effects of asbestos fibers on human health, the recognition and evaluation of asbestos-related disease, the prevention of hazardous exposures, and a review of Company resources to accomplish these ends were presented at that conference.

The purpose of the present meeting is to review some of these factors and to present new information, information with respect to compliance with the law, and future trends.

Attendance at the Conference will not be limited in numbers provided you will inform us in advance of the numbers from your department who will attend so that arrangements may be made.

It is anticipated that there will be some expenses involved in arranging the Conference, probably not exceeding twenty-five dollars per attendee. Haskell Laboratory will have to ask that the costs be borne by the departments sending participants in a manner similar to the registration fees for any professional conference.

The Conference will be a one-day conference and will be held on Friday, June 2, 1972 at the Du Pont Country Club. Attached to this letter is a tentative schedule for the seminar.

For those attendees not driving to the seminar, I would appreciate knowing where you intend to stay. If there is sufficient patronage at the Du Pont Hotel, bus transportation will be arranged both to and from the Country Club.

A reply to this invitation is needed by May 15, 1972. In so replying, please indicate the number attending from your site.

RJH/neh
Attachment

ASBESTOS SEMINAR

June 2, 1972

Tentative Program

8:45 a.m.	Introduction	
8:50 a.m.	Types and Uses of Asbestos	R. J. Hubiak
9:05 a.m.	Health Effects of Exposure to Asbestos	C. F. Reinhardt, M.D.
9:30 a.m.	Changing Requirements under OSHA	J. F. Morgan
10:00 a.m.	COFFEE BREAK	
10:30 a.m.	Medical Surveillance of Asbestos Workers	A. Azar, M.D.
11:00 a.m.	Surveillance of Working Environment	R. J. Hubiak
11:45 a.m.	LUNCH	
1:00 p.m.	Means of Dust Control	Com. S. Barboo, USN
1:45 p.m.	Potential Substitution of Asbestos in Insulation	G. E. Lang, III
2:00 p.m.	Discussion of Topics	
3:30 p.m.	Adjournment	

DUP 0907483

ASBESTOS RELATED DISEASES

J. FODERARO

Until the early 1950's asbestos was thought to be an inert material which did not cause any problem; although asbestosis was first described in 1906 in England and in 1930 in the U.S. and an association between asbestos exposure and lung cancer was noted as early as 1935, the fact that asbestos exposure could result in serious health problems was not widely accepted until much later.

It should be noted that large scale use of asbestos did not start until close to the end of the last century. This is important since in most cases diseases resulting from exposure to asbestos do not become evident until many years after the exposure begins, in some cases up to 40 years.

There are three disease entities which result from exposure to asbestos.

1. Asbestosis
2. Mesothelioma
3. Cancer of the lung and other sites

Asbestosis is a chronic lung disease in which the lungs become slowly scarred and inelastic and the pleura (the outer surface of the lung) becomes thickened and sometimes calcified. The exact mechanism of asbestosis is unknown, but we believe that asbestos fibers are inhaled, and become trapped in the small air sacs in the lungs. The movement of the lungs during breathing causes the fibers to work their way into the lining of the bronchial tubes where they create a chronic irritation. The body's defense mechanism deposits various materials around the fiber in an attempt² to destroy it or remove it. This is not possible and leads instead to the formation of a so called asbestos body. The chronic irritation continues and eventually, scarring develops around the "asbestos bodies". The ultimate condition of the lung is one of severe emphysema.

The disease develops slowly over the years and often continues to increase in severity even long after the exposure to asbestos has stopped.

The effect on the patient is a progressive restriction of his ability to move air in and out of his lungs, and the ability of gases to be exchanged in the lungs, so that the body tissues are provided little oxygen and are unable to adequately eliminate carbon dioxide.

The patient becomes progressively short of breath, and ultimately succumbs to intercurrent pulmonary infection or as a result of heart failure.

There is no effective treatment other than to provide some relief by restricting activities and providing temporary relief with oxygen and other respiratory aids.

Mesothelioma is a tumor which involves the lining of the cavities of the body, primarily the lining of the chest cavity, both the outer surface of the lung and the inner surface of the chest wall. It is also frequently found in the abdominal cavity, and in the cavities around the heart and the testicles.

Mesotheliomas are not very malignant tumors in that they do not have a great tendency to invade surrounding tissues, or to spread to distant sites, but they do

There are two distinct types of mesothelioma, localized and diffuse. Most of the localized mesotheliomas can be successfully resected and there is no tendency for them to recur. There has been no association demonstrated between exposure to asbestos and the localized type of mesothelioma.

The diffuse type begins in multiple areas within a body cavity. These "seedlings" grow laterally and finally coalesce and completely line the body cavity. If the lung is involved, expansion of the lung is restricted. At the same time they slowly invade the chest wall and result in severe pain. There is no effective treatment and death usually results in one year.

An association between diffuse mesothelioma and asbestos exposure was first described in 1960; since then several other epidemiological studies have confirmed this association.

Some epidemiological works shows excesses of diffuse mesothelioma even among members of the family of exposed workers and in the neighborhood of industrial sources of asbestos.

The disease has been induced in experimental animals both by inhalation and by injection of asbestos in the chest cavity.

The disease has also been induced in the chicken by a virus, suggesting that possibly asbestos acts by activating such a virus which then induces mesothelioma. This is still highly speculative.

The interval between the onset of exposure and development of the disease is long and is dose related. The average is said to be 30 years but varies between less than one year to 50 years.

There is no evidence of any association between cigarette smoking and mesothelioma.

DUP 0907487

Cancer of the Lung and Other Sites

Cancer of the lung and other sites, specifically the gastrointestinal tract and the larynx is the third type of disease associated with asbestos exposure.

The suspicion of an association between asbestosis and lung cancer was first published in 1935, but convincing evidence of such an association did not appear until 1955. As late as 1960 a standard textbook on occupational medicine stated: "Some authorities believe that asbestos may induce bronchogenic carcinoma, but as yet there is no impressive body of evidence to support this assumption."

In the middle sixties Selikoff investigated the mortality experience of insulation workers and concluded that the death rate from cancer of the bronchus and pleura was 6.8 times as high as that for the general United States white male population and cancer of the stomach, colon, and rectum was three times as common. Cases of mesotheliomas and asbestosis were also found in this group. The lung cancer risk in this group was dose related. Some increase in lung cancer was seen in workers with less than 3 months exposure. An increase in cancer incidence was seen as little as 10-14 years from the onset of work exposure, but the greatest increase occurred 30-45 years from the onset of the work exposure. When cigarette smoking was taken into account, it was also calculated that asbestos insulation workers with a history of regular cigarette smoking had eight times the risk of lung cancer deaths compared with cigarette smokers who did not do such work, and approximately 90 times the risk of men who neither worked with asbestos nor smoked cigarettes.

For non-smokers there was no clear indication that asbestos exposure resulted in an increase in the risk of lung cancer.

In the seventies there have been several other studies indicating an association between lung cancer and exposure to asbestos, practically all supporting a dose related response.

A dose related response has also been observed in the case of digestive system cancer.

Lung tumors have been induced in experimental animals by inhalation with exposures as short as one day.

All types of asbestos have been demonstrated to be able to produce both asbestosis and tumors; some however are more potent in inducing one response than the other.

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<u>Name</u>	<u>Location</u>	<u>Assignment</u>	<u>Phone</u>
J. G. Plasky	Nemours	Staff Engineer	4869
B. R. Bolton	Nemours	Safety & Fire	3646
H. S. Trigg	Wilm.	Legal	5637
H. E. Baldwin	Waynesboro	Engineering	2800
A. B. Culver	Seaford	Field Maint.	7298
W. C. Looney	Camden	Safety/Health	3461
B. E. Ranson	Camden	BCF Eng. Area	2591
W. D. Springs	Cape Fear	Engr. Spec.	4488
W. J. Stenger	Cape Fear	Environ. Cont. Supvr.	4223
L. H. Williams	Kinston	Environ. Cont.	6582
Carroll Wiggs	Kinston	Field Maint.	6544
B. R. Vaughan	Kinston	Insul. Super.	6634
K. K. Bailey	Waynesboro	Insul. Supvr.	2781
R. W. Calhoun	Seaford	S&F Prot. & OSHA	358
D. L. Swats	Martinsville	Area Maint.	2302
W. D. Whitlow	Martinsville	Safety	2348
O. H. Fitzgerald	Martinsville	Safety Supvr.	2348
G. E. Lang	Louviers	Materials Engg.	3435
J. R. Brown	Old Hickory	Chief Supvr.	7612
W. G. Roberts	Old Hickory	Section Supvr.	6722
E. T. Ruehl	Waynesboro	Safety, Health, Env. Affairs	2139
L. R. Robertson	Old Hickory	Env. Control	6160
A. V. Episcopo	Chestnut Run	Safety-OSHA	3512
W. J. Montgomery	Chestnut Run	Area Maint. Supvr.	3325
J. Mooyman	Maitland	Maint. Forem.	406
K. Ash	Kingston-Ontario	Maint. Foreman	681
J. H. Wright	Chattanooga	Area Maint. Supv.	1453
C. A. Smith	Cooper River	Area Maint. Supv. -Staple	9190
W. W. Dowdy	Chattanooga	Env. Cont.	7237
L. R. Moss	Spruance	S. H. E. A.	2104
T. J. Hampton	Spruance	Engr. Supv. -Field	2940

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