Asbestos 1972

ENVIRONMENTAL PROTECTION MONOGRAPH SERIES

ASBESTOS

PREPARED BY

ECOLOGY COUNCIL TASK FORCE

THE DOW CHEMICAL COMPANY

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c) Mutagenic and Teratogenic Effects

There is no evidence that asbestos is associated with mutagenesis or teratogenesis.

2) Humans - At the present time, approximately five million workers in the United States are exposed to airborne asbestos in occupations involving the industrial production and use of asbestos-containing products. Epidemiological studies have shown that occupational exposures to all commercially used forms of asbestos have resulted in high rates of asbestos-related diseases: asbestosis, cancer of the lung, cancers of the lining of the thoracic and abdominal cavities, and other cancers. The present state of knowledge indicates that once exposure has occurred, asbestos-related disease may appear even though the exposure is discontinued. The disease may be evident after a latency period of 20 years or more; consequently, unless a very careful history is conducted the possible association with asbestos exposure may be missed.

Recently, there has been considerable alarm about asbestos exposure of the general population. The major potential for risk appears to lie in individuals with indirect occupational contacts, household contacts, or residence in the immediate neighborhood of asbestos sources. At present, the significance and magnitude of nonoccupational exposures to asbestos are not resolved.

There are many variables in asbestos-related diseases that are not well understood. These include the duration, intensity and continuity of exposure(s); the specific type and dimensions of the asbestos fibers inhaled; the role of cofactors; the contaminants of the asbestos (e.g. trace metals and hydrocarbons); the presence of other concomitant dusts; the latency period; and individual idiosyncrasies.

Many authors have emphasized the gravity of the asbestos hazard and the need for stringent controls.

a) Pulmonary Asbestosis

Asbestosis, the first recognized disease associated with the prolonged inhalation of asbestos (all types), is a disabling or fatal scarring disease of the lungs (progressive diffuse pulmonary fibrosis). The risk varies directly with the length of exposure and the dust concentration. The chief symptoms of advanced asbestosis are a non-productive cough, shortness of breath, substernal chest pains, decreased chest expansion, weakness, emaciation, clubbed finger tips, and curved finger-nails. X-ray findings show a fibrosis of the lung fields which is usually, but not exclusively, basilar, mid-lung field adhesions, pleural plaques and calcifications.

b) Neoplasms from Inhalation of Asbestos

Lung Cancer

Many studies over the past twenty-five years have definitely confirmed an association between occupational exposure to

asbestos (all types) and a higher than expected incidence of lung cancer (bronchogenic carcinoma). The latent period between exposure to asbestos and evidence of lung cancer may be even longer than for asbestosis; however, there is very little information on the dose-time relationship. While lung cancer is the most common complication of asbestosis, cases of lung cancer apparently induced by asbestos have been reported unaccompanied by asbestosis.

Cigarette smoking vastly enhances the chances of asbestos workers developing lung cancer. In view of the continued poor outlook following removal from exposure to asbestos, the discontinuance of cigarette smoking is a paramount prevention measure.

Cancer of the Pleural and Peritoneal Surfaces

Very little serious consideration was given to asbestos as an etiological factor in mesothelial malignancies prior to 1960. Since then, many reports have been published supporting a relationship between asbestos and pleural and peritoneal mesotheliomas. An outstanding feature has been the long period, commonly over 30 years, between the first exposure to asbestos and the appearance of a tumor. As with lung tumors, there is no good correlation between the severity of asbestosis and the occurrence of mesotheliomas.

[redacted] 12:30 BL Room

Shirley - FYI.
S. Directors will give feedback to Jan Seth by next Monday. Thought you would be interested.
Carol

THIS MANUAL IS AN UPDATED EDITION OF THE HANDBOOK PREPARED IN 1972 AND REVISED IN 1977 AND IN 1979. THIS EDITION WAS REVISED BY THE ASBESTOS TASK FORCE DURING THE FIRST QUARTER OF 1985.

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SECTION II

SUMMARY

The health of those who breathe asbestos dust may be seriously affected. The injury, known as asbestosis, scars the lungs and reduces their normal function. This phenomena has been recorded since 1899. More recently (in the last several decades), overexposure to asbestos has also been associated with cancer of the lungs. Anyone handling asbestos on a regular basis is cautioned not to smoke due to the greatly increased cancer risk.

When working with materials containing asbestos fibers, care must be taken to minimize the dust exposures. Wetting of the material prior to handling, isolation of the work areas and use of respiratory protection are some of the measures that will help to protect people from overexposure. These procedures are particularly important in the removal of old, deteriorated insulation and during the sawing of transite.

Disposable protective coveralls provide the needed protection. Disposable clothing is to be disposed of in polyethylene bags properly labeled. In cases where regular coveralls are used, then a double changeroom with two lockers must be used to separate work clothes from street clothes. Asbestos contaminated clothing shall be placed in labeled polyethylene bags for special laundering. Do not wear home or take home for laundering asbestos contaminated clothing. Rubber boots must be worn and washed off before leaving the asbestos work area.

There are a number of dust respirators which have been approved for asbestos handling (see Appendix A). Special protective clothing, such as coveralls, head covering, and gloves may be required on some jobs. These requirements should be determined in the prejob planning prior to starting the work. (See Appendix A for advise on recommended equipment.)

All asbestos waste (old insulation, dust collector solids, disposable clothing, gaskets, packings, etc.) must be put in approved containers (polyethylene bags are available in Dow Stock) for disposal. The bags must be properly labeled to warn of the asbestos hazard.

The Safe Work Procedures outlined in this handbook are minimum guidelines for various type asbestos jobs. The project supervisor must provide specific procedures for each job that are based on the guidance from this handbook to assure we protect people. The "Asbestos Safety Checklist" should be utilized for each asbestos handling job.

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