PLAINTIFF'S EXHIBIT
UC-1281

AIR

ASBESTOS AND HEALTH

Asbestos, used since antiquity, has widespread and important applica
technological society. Approximately 3,000 different products contai ... are in daily use throughout the world. Its increased use in the 20th century has lent urgency to the need to cope with occupational health problems related to the excessive inhalation of asbestos dust.

Such problems are not unique to the asbestos industry. Many substances and materials in common use today can be detrimental to the health and safety of industrial workers under uncontrolled conditions. A vital and widely used raw material, asbestos is but one of a number of potentially harmful substances used by industry.

Basically, the known facts about asbestos-related disease can be summed up as follows:

First, asbestos-related health risks today are almost exclusively confined to the occupational setting.

Second, the effects of excessive inhalation of asbestos are both time and dose related. This means that asbestos-related diseases may develop, generally, only after the inhalation of substantial amounts of asbestos dust over a substantial period of time. Thus, there are levels of exposure that will not result in any increased risk of disease.

Third, there is presently no evidence of risk to the general public from exposure to the minute amounts of asbestos that have been found in community air.

Fourth, because of the long latent period of asbestos-related disease, the disease being found today among some long-term industry employees is not an indication of present day conditions, but is a result of conditions existing decades ago, at a time when neither the industry, government, or the medical profession knew very much about the health effects of asbestos and even less about the proper means for their control.

These facts are well recognized by the asbestos manufacturing industry, which has made substantial progress over the years in protecting those who work with asbestos and in eliminating emissions of free asbestos fiber into the community air.

Known and Suspected Occupational Risks

There are three primary diseases known to be caused or exacerbated by prolonged and heavy inhalation of asbestos fibers. They are asbestosis, bronchogenic (lung) cancer, and mesothelioma. Prolonged heavy exposure does not necessarily result in disease and death—but there is little question that risks are significantly increased.

Asbestosis

This is an occupational disease characterized by lung scarring, and is one of the lung diseases called pneumoconioses. It is the most common of the three asbestos related illnesses and is found only among those who have worked regularly and continuously with asbestos under inadequately controlled conditions. The average time span from first exposure to the first clinical signs of asbestosis is 17 years, although some cases have been reported in as few as ten years.

Asbestosis is neither malignant nor necessarily fatal. Many asbestos workers with minor cases can and do continue to work and lead normal lives without difficulties. The asbestos

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industry has long recognized the risk of this disease and has implemented safeguards to protect workers' health.

As far as can be determined, asbestosis never has been found in the general public, even among people living in close proximity to asbestos mines and processing plants.

Bronchogenic (Lung) Cancer

A number of medical studies have linked heavy asbestos exposure with an increased risk of lung cancer. While lung cancer occurs far less frequently among asbestos industry workers than asbestosis does, under some circumstances it occurs more frequently than in the general population.

As with asbestosis, the amount of fiber to which an employee is exposed is an important factor in lung cancer development. A continuing study of workers in a British asbestos textile plant has shown that dust control measures, which had substantially reduced the incidence of asbestosis, also reduced the incidence of lung cancer among the workers to that existing in the general public. In addition, it is the considered opinion of many scientists that lung cancer will not develop in an employee if he did not first have asbestosis.

Unquestionably, factors other than heavy asbestos exposure are important in the causation of lung cancer among asbestos industry workmen. The most documented example is cigarette smoking. Studies conducted of as many as 17,500 asbestos insulation workers show that those who smoke have a much greater risk of contracting lung cancer than non-smokers in the general public, but that those asbestos industry workmen who do not now smoke cigarettes and who have never smoked regularly, have no greater risk of lung cancer than the average man-in-the-street who does not smoke.

Mesothelioma

This disease is an extremely rare cancer of the lining of the chest (pleura) or the abdominal cavity (peritoneum). It is found more frequently among those with occupational asbestos exposure than among the general population. It also has been found among people who, in the past, lived in close proximity to uncontrolled crocidolite asbestos plants or mines, and even, on rare occasions, in the households of employees who worked in crocidolite asbestos factories or mines and who presumably brought substantial quantities of this particular type of asbestos fiber into their homes on their work clothes. This has not been found to be the case with individuals exposed only to chrysotile asbestos, which accounts for 97% of the asbestos fiber used in the U.S. today.

Since the latent period for mesothelioma ranges from 30 to 45 years, it is impossible at this late date to determine precisely the exposure levels experienced by these "neighborhood" and "household" cases. However, they were probably quite high by today's standards. In any case, as technology was developed for the control of asbestos dust levels, both in the plant and out, these potentially hazardous conditions were eliminated.

A relatively small number of cases have also been reported among employees in shipyards and on construction projects who, while not working directly with asbestos, were exposed to heavy concentrations of airborne fiber by working in close proximity to those who did. Exposures of this type have been reduced by strictly enforced industrial safety devices and procedures.

The search for answers to the mesothelioma problem is complicated by a number of factors. In the first place, the number of cases being found, even today, is still relatively small. In all of Canada, for example, only 165 cases were reported in the ten-year period ending in 1968. Secondly, it appears highly likely that certain varieties of asbestos (crocidolite and amosite) are more likely to cause mesothelioma than others. Thirdly, its diagnosis and recognition are still considered problems among medical experts. It is also certain that

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there are other causes of mesothelioma besides asbestos. Unfortunately, what those other causes might be is still unknown. Until these and other equally important factors are thoroughly investigated, the mesothelioma question will remain unresolved.

Other Tumors

Some researchers have reported higher-than-normal rates of gastrointestinal cancer among some heavily exposed industry groups. Other researchers have reported no increase of this type of cancer. The consensus of medical opinion is that the evidence is too scanty for a definitive conclusion.

Asbestos and the General Public

Medical reports of excess asbestos-related disease among occupationally exposed populations have been frequently cited by some writers, environmentalists, politicians and others as "proof" that the health of the general public is endangered by the minute amounts of asbestos dust being found in community air. "Neighborhood" and "household" cases of mesothelioma are cited extensively in this regard, as are the frequent reports of the findings of free asbestos fibers and so-called ferruginous bodies (which sometimes contain asbestos) in the lungs of some city dwellers at autopsy.

The truth is, however, that there is no evidence—either from experience or from scientific research—that anyone in the general public has ever contracted any asbestos-related disease from exposure to these minute amounts of airborne asbestos, which are many times lower than levels which have been demonstrated to result in no excess of disease in occupationally exposed populations.

This conclusion is supported by both the Asbestos Panel of the National Academy of Sciences' Committee on Biologic Effects of Atmospheric Pollutants, and the 33 member Advisory Committee on Asbestos Cancers of the International Agency for Research on Cancer, a division of the World Health Organization.

In its 1971 booklet, entitled "Asbestos: The Need For And Feasibility of Air Pollution Controls," the NAS Asbestos Panel, which consisted of seven of the nation's top experts on asbestos and health, stated that "there is no evidence that persons in the general population—without occupational, household or neighborhood exposures—have any increased risk of neoplasm, even though there may be ferruginous bodies or fibers in their lungs."

Warning against conclusions of the type frequently reached by the uninformed with regard to asbestos, the report further stated: "One cannot extrapolate from the mortality experience of, on the one hand, those who are directly and indirectly exposed to asbestos in their employment to, on the other hand, the general public, who have had moderate or slight exposures from ambient air."

The report concluded with the statement that "there is no evidence that the small numbers of fibers found in most members of the general population affect health or longevity."

The report of the IARC Advisory Committee represents the consensus of present world medical opinion on all aspects of the asbestos-health problem. Meeting immediately after the October 1972 Lyon Conference on the Biological Effects of Asbestos, the Committee, with representation from ten different countries, drafted the following opinions on asbestos-related disease and the general public:

Asbestosis: "There is at present no evidence of lung damage by asbestos to the general public. The amount of asbestos in the lungs of members of the general public is very small, compared to those occupationally exposed."

Lung Cancer: "The evidence . . . suggests that an excess lung carcinoma risk is not detectable when the occupational exposure has been low. These low occupa-

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tional exposures have almost certainly been much greater than that to the public from general air pollution."

Mesothelioma: "There is no evidence of a risk to the general public at present."

Because of some recent controversy in the United States and Canada on this subject, the question was also examined whether there is any "evidence of an increased risk of cancer resulting from asbestos fibers present in water, beverages, food or in the fluids used for the administration of drugs." The answer of the Committee was: "Such evidence as there is does not indicate any risk."

While the conclusions of these two eminent scientific bodies should be reassuring to those concerned with the presence of minute amounts of asbestos in the ambient air, the asbestos manufacturing industry in the United States will continue in its efforts to reduce asbestos emissions so that potentially hazardous levels will never be permitted to develop in the future.

Asbestos and Health Research

Extensive medical and technical research into the health effects of asbestos and the proper means for their control is being conducted in laboratories throughout the world. A significant percentage of this research is being sponsored, co-sponsored or cooperated in by the world asbestos industry. In fact, two of the largest non-governmental sources of funds for asbestos-health research are the Institute of Occupational and Environmental Health (IOEH) in Montreal, which is sponsored by the Quebec Asbestos Mining Association, and the Asbestosis Research Council, sponsored by the British asbestos manufacturing industry. The results of research sponsored by these two agencies and also by individual companies acting independently have contributed significantly to our knowledge of the biological effects of asbestos.

In addition, industry environmental control experts are constantly working to develop new or improved methods of handling asbestos and asbestos-containing products safely.

Much has been learned about asbestos and health in a very short time—especially when you consider that the greater part of all medical information about asbestos-related disease is less than a decade old. According to Dr. Premysl Pelnar of the Institute of Occupational and Environmental Health, approximately 90 per cent of all information and data now available is the result of medical studies undertaken during the past ten years.

Much more is still needed: In late 1972, The International Agency for Research on Cancer made recommendations for further research and indicated priorities for work of immediate and long-term value. Emphasis was placed on epidemiological and pathological studies, and high priorities were urged for certain projects.

These included:

1. Usefulness of early detection in the prevention of progressive fibrosis and asbestos cancers and in the identification of hazardous conditions;
2. Assessment of excess cancer risks following exposure to only one variety of asbestos;
3. Amount and type of asbestos in the lungs of mesothelioma cases;
4. Secular changes in incidence of pleural and peritoneal mesotheliomas nationally and internationally;
5. Possible association between past exposure to asbestos and cancer of sites other than lung, pleura and peritoneum;
6. Relationship between asbestosis and risk of carcinoma.

The asbestos manufacturing industry will continue to support and cooperate in research projects of this nature. The Asbestos Information Association, for example, is presently

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sponsoring a study at the Harvard School of Public Health on chest ausculation (breathing sounds) as an early detection device in the diagnosis of asbestos-related disease. While this needed additional information and data is being developed, the industry will take all steps necessary to assure a safe working environment for its employees and for applicators and fabricators of asbestos-containing products.

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