UNION CARBIDE CORPORATION
Health, Safety and Environmental Affairs
270 Park Avenue - 22nd Floor
New York, New York 10017

PLAINTIFF'S EXHIBIT
UC-914

August 3, 1978

Memorandum to: UCC Physicians Sponsor: Mr. J. B. Browning

Subject: Asbestos

Gentlemen:

A major governmental information campaign on the hazards of asbestos is under way. It will undoubtedly cause considerable anxiety among workers who have or think they may have been exposed to asbestos.

It is imperative that you respond to inquiries in a knowledgeable fashion. I know you are busy, but I would appreciate it if you would at least read the two-page background document attached. If you possibly can, I would also suggest that you read the Asbestos Standard and some extracted portions of the NIOSH Criteria Document, copies of which have also been enclosed.

The really heavy exposures to asbestos occurred during World War II when ventilation was poor and respirator use was almost non-existent. It now has been 35 years, and no major epidemic of asbestosis or mesotheliomas has occurred. I believe the popularly projected occurrence of asbestos-related diseases is grossly exaggerated and probably irresponsible.

We now have good industrial hygiene control of asbestos exposures in all our plants. I would urge you to check with the Assistant Corporate Medical Director responsible for your plant and division before you respond to any detailed inquiries about extent of past exposures or presumed medical risks. We will help you get the information you need if it is available.

The insulators' union, through the Insulators' Health Hazards Program, has been active in some locations requesting that chest x-rays be sent to Washington, D.C., to be interpreted by Dr. Irving J. Selikoff. If you should get such a request, we would appreciate learning about it.

Sincerely yours,

Thomas A. Lincoln, M.D.

TAL:BA
Attachments
cc: Mr. J. B. Browning
Mr. T. W. Carmody
Dr. H. H. Haynes

A13540

BACKGROUND

On April 26, 1978 the Secretary for Health, Education, and Welfare, Mr. Joseph Califano announced a governmental campaign to notify physicians, past workers, and others at risk of the associated with asbestos exposure. He made a reasonably objective presentation of the situation that emphasized past, extremely high exposures that occurred before the risk was recognized and before regulations were enacted. Shipyard exposure during World War II received particular attention.

This announcement came after several years of pressure by organized labor and a variety of environmental activist groups. A summary of the steps leading to the announcement and the information program planned by the government are given in Attachment I.

The press coverage of this announcement largely ignored the "high exposures well in the past" concept and implied the risk ~~applied to~~ significant excess occurred in all exposures including today's regulated uses. A good response to the inaccurate coverage is provided in a statement prepared by the Johns-Manville Corporation given here as Attachment II.

EXTENT OF THE MEDICAL PROBLEM

There is extensive, undisputed evidence that insulation workers in the construction trade are at a very substantial excess risk of developing asbestosis and mesothelioma. Those who smoke also are at very high risk from lung cancer.

Asbestos-containing insulation was widely used during World War II in ship

construction and repair. Typically it takes 20, 30 or more years from initial exposure for asbestos-related diseases to appear so that the critical time period for wartime activities is now here.

Over the past several years substantial evidence has accumulated that very heavy exposures did occur in the shipyards. They are not only found in the insulation workers but also in other trades who were present in the confined spaces common on shipboard. So far the results have been mainly seen as asbestosis and in various lung changes in shipyard workers, although some excessive mesothelomias have been found at some locations.

The number of people who may be affected is pure speculation at this time. It is generally agreed that the risk of contracting an asbestos-related disease depends directly on the intensity of exposure. The figures of 8-11 million workers exposed that are quoted apparently include all persons who have ever worked in a shipyard plus those from construction, mining and milling of asbestos and those involved with automotive brakes and brake repair. The insulation trade health experience is then applied to this total to arrive at the "five-seven million people will die of asbestos-related disease" statements that frequently appear in the media. This assumes that all of the millions of workers have been exposed at the intensity of those in the insulation trade and will have the same health response. We believe that this is a gross exaggeration due to the assumptions used but there is really no scientific basis to speculate on a more correct estimate.

The medical problem arising from heavy asbestos exposures 20-30 years in the past thus appears to be real and substantial but the extent is clearly undefined.

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[redacted]

[T.D. 72-153]

PART 10—ARTICLES CONDITIONALLY FREE, SUBJECT TO A REDUCED RATE, ETC.

Free Withdrawal of Supplies and Equipment for Aircraft

In accordance with section 309(d), Tariff Act of 1930, as amended (19 U.S.C. 1309(d)), the Department of Commerce has found and under date of April 25, 1972, has advised the Treasury Department that Poland allows privileges to aircraft registered in the United States and engaged in foreign trade substantially reciprocal to those provided for in sections 309 and 317 of the Tariff Act of 1930, as amended (19 U.S.C. 1309, 1317). The same privileges are therefore hereby extended to aircraft registered in Poland and engaged in foreign trade effective as of the date of such notification.

Accordingly, paragraph (f) of § 10.59, customs regulations, is amended by the insertion of Poland in appropriate alphabetical order and the number of this Treasury decision in the opposite column headed "Treasury Decision(s)" in the list of nations in that paragraph.

(Secs. 309, 317, 624, 46 Stat. 690, as amended, 696, as amended, 759; 19 U.S.C. 1309, 1317, 1624)

[SEAL] EDWIN F. RAINS,
Acting Commissioner of Customs.

Approved: May 25, 1972.

EUGENE T. ROSSIDES,
Assistant Secretary of the Treasury.

[FR Doc.72-8578 Filed 6-6-72;8:50 am]

Title 29—LABOR

Chapter XVII—Occupational Safety and Health Administration, Department of Labor

PART 1910—OCCUPATIONAL SAFETY AND HEALTH STANDARDS

Standard for Exposure to Asbestos Dust

On December 7, 1971, an emergency temporary standard concerning exposure to asbestos fibers was published in the FEDERAL REGISTER (36 F.R. 23207). In accordance with section 6(c)(3) of the Williams-Steiger Occupaional Safety and Health Act of 1970, a notice of proposed rulemaking regarding a permanent standard for exposure to asbestos fibers was published in the FEDERAL REGISTER on January 12, 1972 (37 F.R. 466). The notice invited interested persons to submit both orally and in writing, data, views, and arguments concerning the proposal.

On or about January 24, 1972, the Advisory Committee on Asbestos Dust was established and requested to make written recommendations with regard to the proposed standard on asbestos. On or about February 1, 1972, the Department of Health, Education, and Welfare transmitted to the Secretary of Labor a criteria document containing Recommendations for an Occupational Exposure Standard for Asbestos by the National Institute for Occupational Safety and Health (NIOSH). Public notice was given of the receipt of the recommendations and their availability for inspection and copying. On or about February 25, 1972, the Advisory Committee on Asbestos Dust submitted its written recommendations to the Assistant Secretary of Labor for Occupational Safety and Health.

Pursuant to the notice of rule making, a hearing was held on March 14 through 17, 1972, for the purpose of receiving oral data, views, and arguments concerning the proposed standard. On or about March 31, 1972, the presiding hearing examiner certified to the Assistant Secretary of Labor for Occupational Safety and Health the record of the proceeding. The record includes prehearing written comments, a transcript of the oral presentations made at the hearing, and numerous exhibits received during the course of the hearing or within the period allowed after the close of the hearing.

The proposed standard dealt with (1) permissible concentrations of asbestos fibers; (2) methods of compliance; (3) warning signs; (4) monitoring; (5) medical examinations; and (6) recordkeeping. Each of these major proposals elicited comments, arguments, objections, and counterproposals. They all have been examined and considered.

1. *Acceptable concentrations of asbestos dust.* The proposed standard would limit occupational exposure to 8-hour time-weighted average (TWA) airborne concentrations of asbestos dust not exceeding five fibers longer than five micrometers per milliliter. Concentrations above five fibers but not to exceed 10 fibers (ceiling concentration) would be permitted up to 15 minutes in an hour, but for not more than 5 hours in any one 8-hour day.

NIOSH in effect has recommended that the five-fiber TWA and 10-fiber peak concentrations be permitted only for 2 years; thereafter, TWA concentrations should be not more than 2 fibers per cubic centimeter ($cm.^3$) of air, and peak concentrations should not exceed 10 fibers/$cm.^3$, with no time restriction. Numerous objections and counterproposals have been made, with regard to both the limits of asbestos fiber concentrations and the time periods to comply with them. Some, for example, have recommended return to a 12-fiber standard of an earlier day; i.e., a level adopted under the Walsh-Healey Public Contracts Act in 1969. Others have recommended a two-fiber standard to become effective in 6 months, then a one-fiber standard for 2 years, and finally a zero-fiber standard after 3 years. These recommendations give a fair indication of the wide spread of the counterproposals.

No one has disputed that exposure to asbestos of high enough intensity and long enough duration is causally related to asbestosis and cancers. The dispute is as to the determination of a specific level below which exposure is safe. Various studies attempting to establish quantitative relations between specific levels of exposure to asbestos fibers and the appearance of adverse biological manifestations, such as asbestosis, lung cancers, and mesothelioma, have given rise to controversy as to the validity of the measuring techniques used and the reliability of the relations attempted to be established. Because of the long lapse of time between onset of exposure and biological manifestations, we have now evidence of the consequences of exposure, but we do not have, in general, accurate measures of the levels of exposure occurring 20 or 30 years ago, which have given rise to these consequences. There are also controversies concerning the relative toxicity of the various kinds of asbestos, and varying hazards in different workplaces.

It is fair to say that the controversy has centered in the area between a two-fiber TWA concentration and five-fiber TWA concentration, with variations on the time needed for compliance. Many employers support a five-fiber TWA. Most medical opinion is divided between a two-fiber standard and a five-fiber standard.

In view of the undisputed grave consequences from exposure to asbestos fibers, it is essential that the exposure be regulated now, on the basis of the best evidence available now, even though it may not be as good as scientifically desirable. An asbestos standard can be reevaluated in the light of the results of ongoing studies, and future studies, but cannot wait for them. Lives of employees are at stake.

It is concluded that there should be one minimum standard of exposure to asbestos applicable to all workplaces exposed to any kind, or mixture of kinds, of asbestos. Reasons of practical administration preclude a variety of standards for different kinds of asbestos and of workplaces. Also, while the evidence tends to show that crocidolite, for instance, is more harmful than chrysotile, the evidence is not sufficient to establish separate standards for varieties of asbestos.

Because there must be one standard governing exposure to all varieties of asbestos, and in workplaces apparently more hazardous than others; because some present employees with regular exposure to asbestos have probably already accumulated great doses of asbestos fibers, due to higher levels of exposure in the past; because it appears that levels of exposure which may be safe with regard to asbestosis are not safe with regard to mesothelioma; because the statute requires the protection of every employee, even of one who may have regular exposure to asbestos during a working life which may reach, or even exceed, 40 years; and because of several other considerations which have been urged and are reflected in the record of the proceeding, the conflict in the medical evidence is resolved in favor of the health of employees. As of July 1, 1976, TWA concentrations of asbestos fibers longer than 5 micrometers will not be allowed to exceed two fibers/cc., with a ceiling value of 10 fibers/cc. The current TWA concentrations of five fibers, and

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ceiling concentrations of 10 fibers/cc. will be permitted until July 1, 1976, during what will be a transitional period deemed necessary to allow employers to make the needed changes for coming into compliance with the more stringent standard.

The record shows that the many work operations subject to the single asbestos standard (textile, manufacturing, industrial, and marine installation, etc.) will meet varying degrees of difficulty in complying with the standard. In some plants, extensive redesign and relocation of equipment may be needed. It appears, however, the delay in the effective date of the two-fiber standard will provide all employers a reasonable time to comply. At the same time, so long as the ceiling limit is complied with, no harm is reasonably expected to result from exposures during the transitional period.

2. *Methods of compliance.* It has been pointed out by many persons, that protection against asbestos fibers is best obtained by controlling the generation of fibers first, and secondly, by controlling the dispersion of released fibers into the ambient air of the workplaces. Therefore, the standard requires feasible technological controls and appropriate work practices as the primary means of compliance. Rotation of employees as a way of meeting the TWA concentration requirement is allowed only in stated exceptional circumstances, because, as a general rule, it would be difficult to implement. Personal protective equipment, such as respirators, cannot be relied upon because, among other reasons, they may be so uncomfortable as to be burdensome, except for short periods of time. Therefore, it is expected that respirators and shift rotation will be used during the period necessary to install engineering controls and to train employees in sound work practices, but, after technological compliance has been achieved, their use must be limited to special work situations and emergencies. Where both are practicable, shift rotation is required.

3. *Labeling.* The proposed standard stopped short of requiring labeling asbestos and asbestos-containing products. The proposed standard would have required only warning signs at locations where asbestos hazards are present. However, labeling, rather than warning signs, has proved to be a point of controversy. Both NIOSH and the Advisory Committee on Asbestos Dust recommended labels for asbestos products and containers, and these recommendations became very controversial in the course of the proceeding. Many counterproproposals have been made as to the language of the warning as well as to the products to be subject to the labeling requirements. Employers, in general, strongly contend that (1) finished products which effectively entrap asbestos fibers, so that these would not be released in the normal use of the products, should not be required to be labeled; and (2) words such as "danger" and "cancer" are unwarrantedly alarming.

Both contentions have merit, and the standard has been changed accordingly.

4. *Monitoring.* The proposed standard would have required personal monitoring and environmental monitoring. Many issues have been raised concerning the availability and reliability of measuring instruments, frequency of monitoring, and conditions in which monitoring should be required. The adopted standard takes the objections into consideration. It requires periodic monitoring at intervals no longer than 6 months, thus allowing considerable time and discretion, and prescribes the use of the membrane filter method, which is an acceptable method for determination of asbestos fibers.

It has also been recommended that employees or their representatives should have an opportunity to observe the monitoring. The recommendation has been accepted.

5. *Medical examinations.* The proposed standard would only require an appropriate medical examination on a periodic basis. The generality of the proposal has attracted many objections and also many helpful comments. The recommendations of NIOSH and of the Advisory Committee on Asbestos Dust were much more specific with respect to both frequency and type of medical examinations to be required. The comments vary as to the class of employees to be examined and as to the frequency of the examinations.

The adopted standard requires medical examinations both at the beginning and the termination of employments exposed to concentrations of asbestos fibers, and also requires annual medical examinations of every employee exposed to airborne concentrations of asbestos. It has been pointed out that in certain industries, such as construction, an employee may work for several employers during the same year. Accordingly, the standard does not require either preemployment, or termination, or periodic examinaton of any employee who has been examined in accordance with the standard within the past year.

One question which has been raised goes to whether the employer or the employee should be allowed to choose the examining physician. The standard gives the option to the employer. Since some employers already have a medical examination program in operation, and, also, have medical departments with some expertise in the diagnosis of abestos-related diseases, it seems more reasonable to permit them to utilize the present programs and expertise, than to permit an employee to choose a private general practitioner.

6. *Records.* The standard, as proposed and as adopted, requires maintenance of records of monitoring and of medical examinations. Most of the controversy in this area has revolved around the question whether an employer should be allowed to have access to the results of the required medical examinations. The apprehension of those who have argued against employer access is based on the expectation that some employers will use the medical examinations as a means of screening employment applicants, and worse, as grounds for discharging current employees, who show signs of being affected by exposure to asbestos. Since the purpose of the medical examinations is to monitor the health of employees exposed to the hazards of abestos, employees cannot in reason be granted the privilege of refusing to disclose to their employers results of occupational exposure. It does not make sense to require employers to provide medical examinations if they cannot know and use the results of the examinations. For these reasons the standard provides that employers may have a restricted access to some medical information.

On the other hand, there is no intention to allow employers to abuse medical information obtained pursuant to the Act, to the detriment of employees. Therefore, the administration of the medical records requirement will be closely watched, and, in cases of abuse, appropriate action will be considered.

The issues discussed above are believed to be the major ones. Numerous other issues have been raised in the rulemaking proceedings. Some have been referred to incidentally. Many recommendations, for instance, about work practices, are so obviously meritorious that their adoption needs no exposition here. Other recommendations and many objections have not been adopted for a variety of reasons which should be manifest. Several, for instance, have recommended the use of respirators only pursuant to a variance, or in cases of emergency and occasional short-term exposures. The recommendation with respect to variances undoubtedly has many merits, but is considered administratively impractical.

Accordingly, after consideration of the whole record of the proceeding, and pursuant to sections 6 (b) and (c) and 8(c) of the Williams-Steiger Occupational Safety and Health Act of 1970 (84 Stat. 1593, 1596, 1599; 29 U.S.C. 655, 657), 29 CFR 1910.4, and to Secretary of Labor's Order No. 12–71 (36 F.R. 8754), Part 1910 of Title 29 of the Code of Federal Regulations is amended as set forth below.

(1) Section 1910.93 is amended by revising Table G–3 to read as follows:

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