PLAINTIFF'S EXHIBIT
Union Carbide 197

INTERNAL CORRESPONDENCE

MINING AND METALS DIVISION

P. O BOX 579, NIAGARA FALLS, NEW YORK 14302

To (Name) Mr. W. N. Johnson
Division Mining & Metals
Location New York, New York

Date February 18, 1972
Originating Dept. CALIDRIA Asbestos - Marketing
Research and Development Department
Answering letter date

Copy to NF-File

Subject Interim Toxicology Report

The enclosed is our version of your proposal for the Subject dated 2/1/72. If you concur with the enclosure, please obtain the necessary management, medical and legal approvals for us to use it for general mailing.

We are receiving numerous inquiries and must have something NOW which has "Corporate" approval.

John

John L. Myers

/cvb
Enclosure

Bill - Also enclosed is a copy of the OSHA material Safety Data Sheet which we are sending to many customers. Any comments on it?

John

Calidria ASBESTOS

UNION CARBIDE

THE DISCOVERY COMPANY

UNION CARBIDE CORPORATION • MINING & METALS DIVISION • P.O. BOX 579 • NIAGARA FALLS, N.Y. 14302 • TEL: 716-285-3311

TO: Our Customers

The enclosed is a preliminary report to answer some of your immediate questions regarding the use of asbestos and products containing asbestos. A more comprehensive report will be issued as regulations are clarified and as new information is available.

Copies of the following items are available from this office:

"Airborne Asbestos" National Research Council, 1971
"Questions & Answers" Asbestos Information Association/North America
Dust Collecting & Counting Information
Respirator Requirements
Federal Register copies of Existing and Proposed Regulations

Please contact us if you have any specific questions or particular problems, or if you would like a copy of any of the above.

John L. Myers

John L. Myers
Marketing Manager

/cvb
Enclosure

UNION CARBIDE CORPORATION
MINING AND METALS DIVISION
4625 ROYAL AVE., P.O. BOX 579, NIAGARA FALLS, NEW YORK 14302

RESEARCH AND
DEVELOPMENT
DEPARTMENT

Recently, both governmental agencies and the public press have viewed with alarm the potential health hazards of asbestos. The false impression has been given that asbestos is an extremely dangerous material with immediate and dire results following contact or inhalation. It has been known for over sixty years that inhalation of high levels of asbestos dust for extended periods can cause a disabling and sometimes fatal fibrosis of the lungs. More recently, other serious effects, such as cancer, have been associated with occupational exposures. It has also been recognized that the general public is probably exposed to extremely low concentrations of airborne asbestos arising from both industrial emissions and natural sources. This has led to some speculation by the scientific community and a great deal of emotionalism by the general public which pictures asbestos as a deadly trace poison and demands for very stringent controls have resulted.

There have been some major dust problems such as emissions from asbestos slurry spraying for fire proofing and acoustical control during building construction. Such major emissions can and should be avoided. However, after extensive study of all available data in 1971, a distinguished committee of the National Academy of Sciences* concluded that "at present, there is no evidence that the small numbers of fibers found in most members of the general population affect health or longevity." They did, nevertheless, recommend emission controls to define and control the major sources of man-made asbestos emission into the atmosphere.

When inhalation of asbestos has been great enough to cause asbestosis, an increased occurrence of lung cancer has also been found. There is no evidence, however, that low levels of exposure increase the incidence and there is strong evidence that the safe TLV standard for asbestosis is also adequate to prevent cancer. A synergistic effect of cigarette smoking and asbestos exposure was strongly suggested by a study of insulation workers.** Anti-smoking campaigns are, therefore,

---

*"Airborne Asbestos" 1971 National Research Council

**Selikoff, J.J., E. C. Hammond and J. Churg. Asbestos Exposure, Smoking and Neoplasia, JAMA 204: 1060112, 1968.

recommended for asbestos workers. The reasons for the synergism are not known and could include transportation of cigarette-smoke carcinogens by asbestos fibers as well as other factors. Selikoff* did observe that "We have yet to see in New York City a death due to lung cancer in an asbestos worker who didn't smoke cigarettes."

As mentioned by the earlier noted Committee of the National Research Council, mesothelioma or primary malignant tumor of the pleura and peritoneum are exceedingly rare. They are so rare that until recent years some medical authorities have even questioned their existence. Although the extensive publicity they have received may give the impression that they are commonplace, there are less than 2000 cases in all recorded medical history.

Asbestos is too important in our technology and economy for its essential use to be stopped. But, because of the known serious effects of uncontrolled inhalation of asbestos minerals in industry and the uncertainty as to the shape and character of the dose-response curve in man, it would be highly imprudent to permit unrestricted additional contamination of the public environment with asbestos. Continued use at minimal risk to the public requires that the major sources of man-made asbestos emission into the atmosphere be defined and controlled. In the absence of such controls, local fiber concentrations might at times approach those in occupational sites. Analytical methods and epidemiological data are inadequate for the development of ambient air standards, but emission controls are needed and appear feasible. The United States is currently in a period of great emphasis on occupational safety and environmental control. There seems to be no real question that some such controls are long overdue. As in most reform movements in the past, however, there is a pronounced tendency to go to extremes. It is in such an atmosphere that the Federal Government and a number of state governments are enacting legislation to control the use of asbestos.

The federal rule making comes from two sources, that relative to occupational exposures from the Occupational Health and Safety Administration (OSHA) and that relative to environmental discharges from the Environmental Protection Agency (EPA). At the present time, the only new federal regulations in force are a set of emergency standards published by OSHA on December 7, 1971. Proposed permanent standards were published by OSHA on January 12, 1972 and proposed environmental standards were published by EPA on December 7, 1971. Both of these proposed standards are subject to public hearings and written arguments and it will be a number of months before the final versions are settled. Since the OSHA standard of December 7, 1971 is in force, it is useful to outline its main provisions. The following discussion is intended to describe in general terms the main requirements of the standard. It is not a legal interpretation or opinion.

The new OSHA standards published in the Federal Register, Vol. 36, No. 234, December 7, 1971 (article 1910.93a) set a maximum allowable

---

*Selikoff, J.J., E. C. Hammond and J. Churg. Asbestos Exposure, Smoking and Neoplasia, JAMA 204: 1060112, 1968.

- Threshhold Limit Value (TLV) for occupational exposure to airborne asbestos of 5 fiber/ml. greater than 5μ in length over an 8-hour time-weighted average. Exposures are not to exceed 10 fibers per ml. up to a total of 15 minutes per hour for up to 5 hours in an 8-hour day. Application of engineering methods to achieve dust control to the prescribed levels is mandated where feasible. If this does not reach the allowable TLV, appropriate respiratory protective devices must be worn as summarized below.

ASBESTOS DUST RESPIRATORY PROTECTION

Airborne Concentration (1)			
8 Hour Exposure (2)	15 Minute Exposure (3)	Required Mask Type	Typical Mask
5 max.	10 max.	None Required	-------
25 max.	50 max.	U.S. Bur. of Mines Schedule 21B. Negative pressure on breathing. Covers nose and mouth.	Willson Model 1(with R-520 Filte and M-S-A No. 86432 with Type H, Ultra-Filter.
250 max.	500 max.	U.S. Bur. of Mines Schedule 21B Powered filter positive pressure.	-------
Over 250	-----	U.S. Bur. of Mines Schedule 19B Type C positive pressure, air supplied.	-------

(1) Fibers per milliliter greater than 5 microns in length, as determined by the membrane filter method at 400-450X magnification (4 millimeter objective) phase contrast illumination.

(2) 8-Hour time weighted average.

(3) 15 Minutes in an hour for up to 5 hours in an 8-hour day.

Reference: "American National Standard Practice for Respiratory Protection Z88.2-1969"

In addition to the basic requirements just described, there are special provisions covering certain specific operations and the use of certain tools. These come into effect when the TLV is exceeded and include the use of hand or power operated tools which produce asbestos dust, the spraying of asbestos, and the demolition of structures containing asbestos. When the TLV is exceeded the tools must be fitted with local exhaust ventilation. Asbestos cement, plaster, etc. must also be mixed in closed bags or other containers, asbestos waste and scrap must be collected and disposed of in sealed containers, and the cleanup of asbestos dust must be done by vacuum cleaning.

If your employees are exposed to asbestos dust, a survey should be made to determine actual fiber counts. Assistance in making a survey can be obtained from State Industrial Hygiene Departments and qualified commercial groups.

The proposed EPA regulations for fabricating and manufacturing operations include:

1) Registration of any operation which could emit asbestos fiber. This registration is simply name and address of the owner or operator and a brief description of the operation and of equipment used to measure and control emissions.

2) The use of fabric filters, or the equivalent, on forced gas streams of particulates and on any visible emissions.

3) Visible emissions from operations directly open to the atmosphere are not allowed.

4) Prohibiting the spraying of any product which contains asbestos in an area directly open to the atmosphere.

These regulations are proposed, rather than final, but will be enacted probably with modification, on or about June 4, 1972. The prohibition against "spraying", per se, is far too restrictive; and we feel that the final regulations will include a definition of spraying which includes only products containing high asbestos levels and/or those in which the asbestos is not held by an efficient binder.

Many industrial materials have been listed as "airborne contaminants" and threshold limit values established by OSHA. Standards have been set, for example, for silica, styrene, mica, talc, coal dust, etc. Amorphous silica, for example, has a TLV of 20 million particles per cubic foot. Should that level, which is visible, be exceeded respirators are required. OSHA has advised industry that five materials (lead, carbon monoxide, silica, cotton dust and asbestos) will receive special attention as "Target Hazards."

The fact that considerably less Calidria Asbestos is needed for many applications vs. Canadian asbestos or pyrogenic silica should not be overlooked. In addition to the advantage of reduced volume handling, there is simply less volume to cause dust problems. Union Carbide is the only source of pelletized asbestos and most "Calidria" products are available in pellet form. Pellets reduce or eliminate dust, cost

less to ship and warehouse because of high bulk density, and are amenable to bulk shipment in hopper cars or trucks. They can be handled in-plant by conventional conveying systems.

Chrysotile asbestos is a unique raw matetial and valuable to the national economy. It has been the experience of Union Carbide, both as an asbestos producer and consumer, that the Threshold Limit Values can be obtained with appropriate dust control techniques. Like most industrial raw materials, asbestos presents certain toxicological hazards and should be handled with respect, not fear: It does not now present any real hazard to the general population and realistic regulations and controls can protect both the worker and the public. Union Carbide Corporation endorses such regulations and controls.