PLAINTIFF'S EXHIBIT

UC-2344

UNION CARBIDE CORPORATION
TECHNICAL CENTER
SOUTH CHARLESTON, WEST VIRGINIA

MEMORANDUM

November 21, 1983

TO: Holders of Safety/Health Technology Manual

COPY TO: F. C. Graves

FROM: D. T. Watters X-4766

SUBJECT: Issue of Revised Standard Practice SH-256
"Removal and Handling Asbestos - Containing Insulation Material"

Attached is a copy of SH-256, "Removal and Handling Asbestos - Containing Insulation Material", Section 5 - Practices. Please remove and destroy your copy of SH-256. This practice has been revised to be consistent with the Emergency Temporary Standard (ETS) for Asbestos that was issued by OSHA on November 4, 1983 (Federal Register Vol. 48, No. 215, pp. 51086 - 51138). The revisions are:

(1) Permissible Exposure Limits

The eight-hour, time-weighted-average employee exposure to airborne concentrations of asbestos fibers is now 0.5 fibers, longer than 5 micrometers, per cubic centimeter of air, ~~rather than 2.0 fibers/cc.~~

(2) Work Practices

A sentence was added to paragraph 2.2.2 to specify the new requirement for posting signs that warn of the health hazards of asbestos at each location where airborne concentrations of asbestos fibers may exceed the revised 0.5 fibers/cc exposure limit. OSHA did not mandate in this ETS how to specify the health hazard on these signs, so the wording of the signs will be that chosen by the individual location.

(4) 2.5 Training

Paragraph 2.5.2 was completely rewritten to specify the training program that is mandated by the Asbestos ETS for all employees exposed to asbestos concentrations exceeding 0.5 fibers/cc (with or without the use of respirators). This program must include these topics:

1. Health effects of asbestos
2. Relationship between smoking and asbestos exposure in producing lung cancer
3. Nature of operations which could result in asbestos exposure and the necessary protective steps to minimize exposure

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4. Purpose, proper use, fitting instructions, and limitations of the respirators used to protect against asbestos fibers.
5. Review of the entire OSHA standard on asbestos.

All of these revisions were effective as of November 4, 1983, except the training program specifications. The training program as specified by the ETS must be instituted by December 4, 1983. This ETS is in effect until May 4, 1984; however, OSHA anticipates final revisions to its asbestos standard to be issued by that date which will probably incorporate these measures included in the ETS.

Revised practice SH-256 was not issued for normal review by Division representatives because the revisions are ETS related and UCC time of response was critical. If there are Division comments, please contact Greg Twait, Unicom 8-721-3701.

Donald T. Watters

D. T. Watters

DTW/GDT:abg

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REMOVAL AND HANDLING
ASBESTOS-CONTAINING INSULATION MATERIAL

1 GENERAL

1.1 This Practice provides a procedure for the safe removal and handling of asbestos-containing insulation material and compliance with OSHA 29 CFR 1910.1001. The purpose of the Practice is to ensure the safety and health of employees directly involved with performing the work and others, either in the immediate area or downwind, who may be exposed to residual dust/fibers. Insulation material containing asbestos is no longer installed by UCC; the concern of this Practice is to control the demolition of old, asbestos-containing insulation.

All insulation materials approved through the use of UCC Insulation Standards have been specified asbestos-free since 1976.

2 STANDARDS

2.1 Permissible Exposure Limits

2.1.1 Employee 8 hour time-weighted average exposure to airborne concentrations of asbestos fibers shall not exceed 0.5 fibers, longer than 5 micrometers, per cubic centimeter of air.

2.1.2 No employee shall be exposed at any time to airborne concentrations of asbestos fibers in excess of 10 fibers, longer than 5 micrometers, per cubic centimeter of air.

2.2 Work Practices

2.2.1 Insofar as practicable, demolition, removal or handling of asbestos-containing insulation shall be performed while the material is in a sufficiently wet state to prevent emission of airborne fibers exceeding exposure limits prescribed in 2.1.1 and 2.1.2.

2.2.2 Caution signs shall be posted at all approaches to areas which may contain excessive concentrations of airborne asbestos fibers so that an employee may read the signs and take necessary protective steps before entering the area. The signs shall conform to 20" x 14" vertical format and state:

ASBESTOS
DUST HAZARD
Breathing Asbestos Dust May Be Hazardous To Your Health
Avoid Breathing Dust
Wear Assigned Protective Equipment
Do Not Remain In Area Unless Your Work Requires It

Sign design specification details are found in 29 CFR 1910.145 (d) (4). In addition to these signs, legible signs warning of the health hazards of asbestos shall be provided and displayed at each location where airborne concentrations of asbestos fibers may exceed the exposure limits listed in Section 2.1.1.

2.2.2.1 An appropriate barricade, using colored tape for example, shall be erected around the perimeter of outdoor areas as a supplementary, protective measure to discourage unauthorized entry.

2.2.3 Insofar as practicable, removed insulation shall be wetted and placed directly into labeled plastic bags (or other suitable containers) for disposal at an approved landfill. Otherwise, place plastic sheeting beneath the job site, mist

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spray the removed insulation with water, and then place in plastic bags. When wet methods of removal/cleanup are impractical, e.g., when temperatures are below freezing, vacuuming or sweeping may serve as an effective alternate cleanup method. Sweeping compound shall be applied to the work area to prevent dust generation when sweeping.

2.2.4 Label Specifications - Container caution labels shall be printed in letters of sufficient size and contrast as to be readily visible and legible. The label shall state:

CAUTION
Contains Asbestos Fibers
Avoid Creating Dust
Breathing Asbestos Dust May Cause Serious
Bodily Harm

2.2.5 Housekeeping - All external surfaces in any place of employment shall be maintained free of accumulation of asbestos fibers, if, with their dispersion, there would be an excessive concentration. Special attention should be given to cleaning scaffolds used in demolition work.

2.2.6 Waste Disposal - Asbestos waste, scrap, debris, bags, containers, equipment, and asbestos-contaminated disposable clothing, consigned for disposal, which may produce airborne concentrations of asbestos fibers in excess of prescribed exposure limits shall be collected and disposed of in sealed impermeable bags, or other closed impermeable containers to an approved landfill.

2.3 Personal Protective Equipment

2.3.1 Respiratory Protection - Employees engaged in the spraying [wetting-down] of asbestos, the removal; in the demolition of pipes, structures, or equipment covered or insulated with asbestos; and in the removal or demolition of asbestos insulation or coverings shall be provided with respiratory equipment selected from among those approved by the Bureau of Mines, Department of the Interior, or the National Institute of Occupational Safety and Health, Department of Health and Human Services. Compliance with exposure limits prescribed in 2.1, Permissible Exposure Limits, shall not be achieved by the use of respirators, except:

1. During the time period necessary to install the engineering controls and to institute the work practices to prevent exposures from exceeding permissible limits.

2. In work situations in which either engineering controls or wet method work practices are not feasible to an extent to reduce the airborne concentrations of asbestos dust below limits prescribed.

3. In emergencies.

Where respirators are permitted:

1. A reusable or single use, air purifying respirator may be used to reduce exposure below permissible limits, when the ceiling or the 8-hour time-weighted average airborne concentrations of asbestos fibers are reasonable expected to exceed no more than 10 times the PEL limits. If not monitored and verified, a type "C" continuous verified flow or pressure demand, supplied-air respirator must be used.

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2. A full-facepiece powered air purifying respirator may be used to reduce exposure below permissible limits when the ceiling or the 8-hour time-weighted average airborne concentrations of asbestos fibers have been monitored and verified to exceed 10 times but not 100 times the PEL limits. If not monitored and verified, a type "C" continuous flow or pressure demand, supplied-air respirator must be used.

3. A type "C" continuous flow or pressure-demand, supplied-air respirator shall be used to reduce exposure below permissible limits when the ceiling or the 8-hour time-weighted average airborne concentrations are reasonably expected to exceed 100 times those limits.

2.3.2 Special Clothing - The employer shall provide and require use of special clothing, such as coveralls or similar whole body clothing, head coverings, gloves, and foot coverings for any employee exposed. Contaminated clothing should not be stored in lockers. It should be changed daily.

2.3.3 Change Rooms - At any fixed place of employment exposed to concentrations of asbestos fibers in excess of permissible exposure limits, the employer shall provide change rooms for employees working regularly at the place. Two separate lockers or containers shall be provided each employee, so separated or isolated as to prevent contamination of the employee's street clothes from his work clothes.

2.3.4 Laundering - Laundering of asbestos-contaminated clothing shall be done so as to prevent the release of airborne asbestos fibers in excess of prescribed exposure limits. Those performing laundering of asbestos-contaminated clothing must be informed of all requirements listed in Section 2.3, Personal Protective Equipment. Contaminated clothing shall be transported in sealed impermeable containers and labeled in accordance with Section 2.2.5, Label Specifications. If disposable coveralls are used, they should be placed into containers with asbestos for disposal.

2.4 Industrial Hygiene Responsibility

2.4.1 Monitoring - Employee exposure monitoring shall be conducted to determine compliance status with regard to permissible exposure limits and respiratory protection requirements. Environmental/Area monitoring shall be conducted along the periphery of the restricted area to assure that fugitive emissions exceeding permissible exposure limits do not extend past the demarcated area. Samples shall be collected on a membrane filter of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of the employees. In no case shall sampling be at intervals greater than 6 months for employees whose exposures to asbestos may reasonably be foreseen to exceed prescribed exposure limits. All determinations of airborne concentrations of asbestos fibers shall be made by the membrane filter method at 400 - 450 x (magnification) with phase contrast illumination as specified in Volume 3B Method 38C - 29 x 4 - RLa of UCC Industrial Hygiene methods.

2.5 Training

2.5.1 All employees who are exposed to airborne asbestos concentrations in excess of the exposure limit listed in Section 2.1.1 with or without the use of respirators must participate in a training program that includes these information topics:

1. Health affects associated with asbestos exposure.

2. Relationship between exposure to asbestos and smoking in producing lung cancer.

3. Nature of operations which could result in exposure to asbestos and necessary protective steps to minimize exposure including, as applicable, engineering controls, work practices, respirators, housekeeping and protective clothing.

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4. Purpose, proper use, fitting instructions, and limitations of the respirators used to protect against asbestos fibers.

5. Review of all provisions contained in 29 CFR 1910.1001, Asbestos.

2.5.2 Training records shall be maintained by the location.

2.6 Federal EPA Regulation, 40 CFR 61, Hazardous Air Pollutants

2.6.1 Applicability - To the demolition of structures or renovation of equipment and piping that involves removal of more than 160 square feet or 260 lineal feet of insulation containing more than one percent asbestos by weight, either in a single project or a predictable series of projects over the course of one year that are additive to this amount.

2.6.2 Overall Requirements of Regulation

Practices - Comply with defined removal and disposal practices.

Notification - Provide timely notification of EPA

2.6.3 Key Requirements - Removal Practices

1. Insulation shall be removed prior to demolition where the demolition would likely damage and expose insulation.

2. Insulation must be wetted prior to removal and kept wet until disposal is accomplished.

3. Insulation on pipe or equipment which is to be removed in sections must have exposed surfaces wetted and kept wet during dismantling.

4. Stripped insulation must not be dropped or thrown to the ground. Dust tight containers or chutes must be used for lowering removed insulation that is more than 50 feet above ground level.

2.6.4 Key Requirements - Disposal Practices

1. No visible emissions of insulation are allowed in transport to the disposal site.

2. No visible emissions may result from disposal operations.

3. For disposal areas one of the following requirements must be met:

a. A six-inch earth cover is provided over disposed insulation within 24 hours.

b. An effective resinous or petroleum-based dust suppression agent is applied at the end of each operating day.

c. A natural barrier adequately deters public access to the site.

d. The area is fenced and (20 x 14 inch) warning signs are posted at least every 330 feet.

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2.6.5 Requirements - EPA Notification

Timing - EPA and applicable States are to be notified either:

a. Annually, or
b. 10 days prior to planned demolition or renovation, or
c. As soon as possible after beginning an unplanned (emergency) removal project.

The above notification requirement applies whenever the total amount exceeds 160 square feet of equipment or 260 lineal feet of pipe insulation.

Office to be Notified

Federal: Director, Enforcement Division
Environmental Protection Agency
(Regional Office City Address)

State: (Applicable only in the following UCC States)
California (Sacramento County)
(Bay Area)
Georgia
New York
North Carolina

Suggested Text of Notification Letter - The attached notification relative to the demolition and/or renovation of facilities containing friable asbestos insulation is provided per requirements of 40 CFR 61, Subpart B, Section 61.22 (d). Please contact the writer if there are questions concerning information contained in the notification.

Form of Notification

NOTICE OF INTENT TO DEMOLISH OR RENOVATE STRUCTURES, EQUIPMENT OR PIPING INVOLVING FRIABLE ASBESTOS INSULATION

1. Name of Owner Union Carbide Corporation
2. Address of Owner (Location Street Address)
3. Description of Facility Various buildings, equipment and piping used in manufacture and distribution of chemicals and plastics.

2.7 AUDITS

2.7.1 Each location shall periodically audit this procedure to ensure understanding and compliance.

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