PLAINTIFF'S EXHIBIT

UC-3135

DH file W/coor

BUSINESS CONFIDENTIAL

UNION CARBIDE CORPORATION

ENGINEERING, MANUFACTURING AND TECHNOLOGY SERVICES DEPARTMENT
HEALTH, SAFETY AND ENVIRONMENTAL TECHNOLOGY
SOUTH CHARLESTON, WEST VIRGINIA

M E M O R A N D U M

May 19, 1987

TO: Mr. J. R. Dement
Mr. J. F. Dodd
Mr. D. A. Gosselin
Mr. R. L. Foster
Mr. E. D. Southard

COPY: Mr. W. D. Bradbury
Mr. T. E. Hanning
Dr. P. R. Kavasmaneck
Dr. D. Liebeskind
Mr. R. R. Rankin
Mr. ~~S. Rossi~~ B.N. Gliatta
Mr. A. D. Williamson

FROM: L. S. Magelssen
H. W. Wegert

SUBJECT: Health, Safety, and Environmental Review
Asbestos Insulation Removal Upgrade - Phase I
South Charleston

The Insulation Upgrade Project at South Charleston was reviewed by CED's Health, Safety and Environmental Technology Section and recommended for endorsement on October 30, 1986 (see attached). Since that review OSHA Regulation 29 CFR 1926.58 has been promulgated (January 16, 1987), significantly increasing the cost of removing and repairing asbestos insulation due to increased job preparation, execution, and cleanup requirements. Negative pressure enclosures are required "where feasible" for large scale removal, demolition, and renovation operations.

The long-term plan is to remove asbestos insulation from idle equipment, replace damaged asbestos insulation with an approved type, and seal all remaining asbestos insulation. This Phase I project is a working budget project to be completed in 1987 for work on the asbestos insulation that presents the highest exposure potential to employees. Subsequent projects over the next few years are planned to complete this upgrade program.

Project executions will be in compliance with all applicable OSHA and EPA Regulations including the recently enacted OSHA 29 CFR 1926.58. The EPA will be notified that the removal of asbestos insulation could occur at the South Charleston Plant. Removed asbestos insulation will be disposed of at the Goff Mountain Landfill.

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Endorsement of this project is recommended contingent upon the following:

1. Maintenance Procedures XVIII Provisions for Asbestos Material Removal and Disposal Safety be revised to be in compliance with the latest OSHA Standards 29 CFR Parts 1910.1001 and 1926.58.

2. Procedure XVIII be revised in accordance with the environmental concerns listed in the attached October 30, 1986 review.

Scott Magelssen
L. S. Magelssen

Harvey W Wegert
H. W. Wegert

LSM:HWW:mw
7601D

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Dft File W/WP

BUSINESS CONFIDENTIAL

UNION CARBIDE CORPORATION

ENGINEERING, MANUFACTURING AND TECHNOLOGY SERVICES DEPARTMENT
HEALTH, SAFETY AND ENVIRONMENTAL TECHNOLOGY
SOUTH CHARLESTON, WEST VIRGINIA

MEMORANDUM

October 30, 1986

TO: Mr. J. R. Dement
Mr. J. F. Dodd
Mr. D. A. Gosselin
Mr. R. L. Foster
Mr. E. D. Southard

COPY: Mr. W. D. Bradbury
Dr. P. R. Kavasmaneck
Dr. D. Liebeskind
Mr. R. R. Rankin
Mr. S. Rossi
Mr. A. D. Williamson

FROM: H. W. Wegert
G. M. Whipple

SUBJECT: Health, Safety, and Environmental Review
Insulation Upgrade Project, South Charleston

This Health, Safety, and Environmental review was based on the draft Outline of Project and the South Charleston Plant Maintenance Procedure XVIII Provisions for Asbestos Material Removal and Disposal Safety. Attached are the applicable Summary Checklists; the Project Safety Summary Checklist was not included as no product is produced as a result of this project.

The review was conducted by qualified engineers from CED's Health, Safety and Environmental Technology Section. Endorsement of the project is recommended contingent upon the items listed at the end of this memo. Written response to the contingency items by project personnel is requested prior to start of work in the field.

This project will upgrade asbestos insulation in the South Charleston Plant over the next three years. Much of the asbestos insulation in the plant is in poor condition and presents a potential exposure problem for plant personnel. The plan is to remove asbestos insulation from idle equipment, replace damaged asbestos insulation with an approved type, and seal all remaining asbestos insulation.

This project will be executed in accordance with all applicable OSHA and EPA Regulations and the South Charleston Plant procedure for handling asbestos material. The EPA will be notified that the removal of asbestos insulation could occur at the South Charleston Plant.

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The plant procedures for asbestos material removal and disposal safety was reviewed by CED Health Technologist Terry Hanning. The procedure should be revised in accordance with Terry's comments (see attached memo) for conformance with OSHA 29 CFR 1910.1001.

Additional comments on this procedure from an environmental viewpoint are:

- The procedure does not refer to review of State Air Pollution Regulation No. 15 which deals with notification of the West Virginia Air Pollution Commission.
- The procedure does not refer to state requirement to notify the West Virginia Department of National Resources before land filling.
- The procedure does not refer to NESHAPS 40 CFR 61.152 (Disposal Container labels) or 40 CFR 61.156 (Warning Signs at Landfill). However, the procedure does refer to OSHA warning label requirements and these are probably equivalent to the NESHAPS requirements. The procedure should clarify this issue, particularly the signs required at the landfill.

Based on review of the draft Outline of Project and Maintenance Procedure XVIII, endorsement of the project is recommended contingent upon the following:

1. Maintenance Procedure XVIII Provisions for Asbestos Material Removal and Disposal Safety be revised to be in compliance with the latest OSHA Standard 29 CFR 1910.1001 per Terry Hanning's memo.
2. Procedure XVIII be revised in accordance with the environmental concerns listed above.

Harvey W. Wegert
H. W. Wegert

Gary M. Whipple
G. M. Whipple

HWW:GMW:mw
6536D

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HS&E REVIEW SUMMARY

Reviewers

EP - L. K. (Linda) Scholl, Senior Chemist in CED's Land Disposal Technology Group

HS - H. W. (Harvey) Wegert, Group Leader of CED's Safety & Fire Protection Technology Group

Project Data

a. Material Balance - Not applicable

b. Environmental Releases - Asbestos removal wastes will be landfilled.

c. Governmental Requirements - HS&E regulations that apply to this project include OSHA 29 CFR 1910.1001, W. Va. State Air Pollution Regulation No. 15, and NESHAPS 40 CFR 61.152 & 156.

d. Corporate HS&E Policy Requirements - No variances are required.

e. Project Reviews

- o Process Safety/Health Review - Not applicable
- o Safety/Health Review Board - Not applicable
- o Pre-startup Safety/Health Review - Not applicable

Concerns

There are no HS&E concerns that had not been adequately discussed in the checklists or the endorsement review memo.

HWW:GMW:mw
6001D

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ENGINEERING, MANUFACTURING AND TECHNOLOGY SERVICES DEPARTMENT
HEALTH, SAFETY AND ENVIRONMENTAL TECHNOLOGY
SOUTH CHARLESTON, WEST VIRGINIA

MEMORANDUM

October 28, 1986

TO: Mr. H. W. Wegert

COPY: Mr. S. W. Clark
Mr. J. F. Dodd
Mr. D. A. Gosselin
Dr. P. R. Kavasmaneck
Mr. J. E. Neff

FROM: T. E. Hanning

SUBJECT: Review of South Charleston Plant Procedures
Removal and Disposal of Asbestos Materials

The following updates/changes apply to the 514 Maintenance Department's procedure for handling and disposal of asbestos insulation:

Definitions

1. The OSHA allowable limit for personnel exposure to asbestos was revised in July 1986.

2. The 8-hour time-weighted average for asbestos shall not exceed 0.2 fibers, longer than five micrometers, per cubic centimeter of air.

3. There is no ceiling concentration in the revised standard.

4. The revised standard calls for an action level of 0.1 fibers, no longer than five micrometers, per cubic centimeter of air. This level triggers monitoring, medical, and employee information and training requirements.

UCC 019743

Overview of Procedure

1. The warning signs mentioned in Item 4 should state:

   DANGER - ASBESTOS:
   CANCER AND LUNG DISEASE
   HAZARD-AUTHORIZED PERSONNEL ONLY:
   RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED
   IN THIS AREA

2. Item 7 should be expanded to read: Remove asbestos to special containers for handling/disposal. These containers should be properly labeled as follows:

   DANGER - CONTAINS ASBESTOS FIBERS:
   AVOID CREATING DUST;
   CANCER AND LUNG DISEASE HAZARD.

   Disposal containers should be leak-tight and discarded in an approved landfill.

3. Item 6 should be expanded to state: Where feasible, the employer shall establish negative-pressure enclosures before commencing removal, demolition, and renovation operations.

Respirators

Disposable (throw away) respirators are not permitted under the July 1986 asbestos revision. Respirators are to be selected by the following scheme.

Airborne Concentration	Required Respirator
1. Not in excess of 2.0 f/cc (10 X PEL)	1. Half-mask air-purifying respirator equipped with high-efficiency filters.
2. Not in excess of 10.0 f/cc (50 X PEL)	1. Full-facepiece air purifying respirator equipped with high-efficiency filters.
3. Not in excess of 20 f/cc (100 X PEL)	1. Any powered air-purifying respirator equipped with high efficiency filters. 2. Any supplied-air respirator operated in continuous flow mode.
4. Not in excess of 200 f/cc (1000 X PEL)	1. Full facepiece supplied-air respirator operated in pressure demand mode.

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5. Greater than 200 f/cc (greater than 1000 X PEL or unknown concentration)	1. Full facepiece supplied-air respirator operated in pressure demand mode equipped with auxiliary positive pressure self-contained breathing apparatus.

OSHA has also required that employers provide powered air-purifying respirators for employees who request them for concentrations of asbestos-fibers less than 100 times the PEL. This recognizes that the proper use of respirators may depend on the worker's comfort and preference for various types of respirators.

Work Area Precautions

Warning signs should contain the same message as stated in Number 1 under Overview of Procedure in this letter.

Wet Cleanup

Any asbestos insulation left in place will contain a visible label, where feasible. The label will contain the same information as stated in Number 2 under Overview of Procedure in this letter.

Clothing Storage

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. Employees exposed to asbestos during their work shift must shower before leaving the plant and must not leave wearing contaminated work clothing. Employees working in asbestos areas must have ready access to filtered air lunchrooms and must wash their face and hands prior to eating or smoking. Protective clothing must not be worn in the lunchroom unless cleaned beforehand.

We question the use of vacuums to clean asbestos - contaminated clothing unless high-efficiency filters are attached to the vacuum exhaust. This action could also prevent an employee from properly disposing his clothing after a designated work period.

Laundering

Caution labels will contain the same information as stated in Number 2 under Overview of Procedure in this letter.

Disposal by Trucking

Under RCRA truck drivers do not need a properly filled-out manifest for asbestos disposal.

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References

The 1972 standard is redesignated as 29 CFR 1910.1101 to distinguish it from the revised standard for general industry which is designated as 29 CFR 1910.1001. Asbestos information for construction activities is under 29 CFR 1926.58.

Terry E. Hanning

Terry E. Hanning

TEH:mw
6284D

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