WV-0222#3

UNION CARBIDE CORPORATION
Specialty Chemicals Division — Sistersville, WV

February 6, 1987



MEMO TO: D. G. Beddow
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L. W. Phair

COPY TO: E. L. Doerflein
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SUBJECT: Asbestos Removal Strategy

Please find attached a brief on the strategy and resources to meet the newly required OSHA asbestos handling guidelines. Particularly noteworthy are:

* Additional resources approaching $350,000/year.

* Major insulation craft productivity loss.

* Use of encapsulation techniques without negative air systems.

Please be prepared to review at our next managers' meeting.

For the cause,

Bill Summers

W. V. Summers

WVS/jec
Attachment
2382A

UCC 007044

SISTERSVILLE PLANT ASBESTOS STRATEGY

1. Plant will meet the OSHA intent for additional personnel protection.

2. Industrial hygiene will monitor asbestos procedures and methods to ensure exposure levels are below 0.1 F/CC or that work procedures are commensurate for levels in excess of 0.1 F/CC.

3. Asbestos monitoring will be done within the Sistersville plant laboratory to facilitiate maintenance productivity.

4. A decision process by maintenance management will be used in selecting the proper procedure to remove asbestos.

   A. Emergency jobs (spill, leak, fire hazard or other imminent safety and/or environmental threat).

      * Wetting is appropriate for emergency removal in conjunction with required breathing/filter devices.

   B. Routine, short duration jobs.

      * Utilize glovebag technique which includes vacuum and wetting techniques.
      * It is appropriate to move bag along the pipe.

   C. Encapsulation of asbestos.

   * Use of lag-seal or other encapsulant is appropriate without negative air system.
   * I/H samples should be taken to confirm past exposure profile and history of less than 0.1 F/CC.

   D. Major asbestos removal (indoor or outdoor)

      * The negative air technique is to be employed.

   All other means of the new OSHA guidelines will be adhered to (decontamination facilities, shower, clean room, etc.).

5. Resources required to meet OSHA guidelines.

   Materials:

* Stock glove bags	$ 3,000
* G. B. vacuum unit	$ 2,500
* Stock lag seal encapsulant	$ 2,000
* Purchase decontamination trailer	$ 25,000
* Laboratory analytical equipment	$ 10,000
* Negative air vacuum/HEVA filtration units * 2000/1000 CFM unit * 600 CFM unit	$ 6,000
* New respirators	$ 1,000
* Scaffolding/misc supplies	$ 10,000
	$ 61,500

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Personnel

* One additional lab technician	$ 50,000
* Four insulators to offset productivity loss	$160,000
* Contractor for tent building/scaffolding	$100,000
	$310,000

Above requirements are unbudgeted items and will require budget overrun exceptions.

6. Other Considerations

* Consider use of contractor for all major asbestos removal jobs. Utilize maintenance for application of insulation and small removal jobs.

* Address/compare other locations strategy at next maintenance managers meeting.

* Modify scope of asbestos insulation project ($2.1MM) to:

  * Contract encapsulation of all exposed asbestos within the plant.
  * Identify by marking all asbestos insulation.
  * Upgrade/removal asbestos as necessary.
  * Project should receive priority approval.

D.T. issues

* Company needs to take position on whether to:
  1. Upgrade/encapsulate/remove asbestos insulation, or
  2. Totally remove from plant.

I believe that in the next 5-7 years the government will legislate removal from the workplace. All future upgrade projects should be aimed at Total Removal.

  * Implement plant wide asbestos removal training program.

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DRAFT

ASBESTOS CONTAINING MATERIAL - REMOVAL AND DISPOSAL

Purpose:

Establish requirements for the removal, cleanup and disposal of materialscontaining asbestos.

Introduction:

This procedure is written to ensure compliance with all applicable OSHA and Union Carbide Corporation's Requirements and Regulations. Compliance with this procedure will ensure proper handling and preparation of asbestos containing materials for removal and disposal in such manner as to prevent unnecessary exposures of employees to asbestos fibers.

Definition:

For the purpose of this procedure, asbestos shall be defined as any material that contains chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite asbestos.

Competent person, means an employee who has a responsibility to oversee the project involving the asbestos abatement to ensure the work is carried out in compliance with the requirements of the OSHA standard.
This individual shall have training in all aspects of asbestos abatement.
Such training shall be obtained in a comprehensive course such as conducted by an EPA Asbestos Training Center.

Regulated area means an area where airborne concentrations of asbestos can reasonably expected to exceed the permissible exposure limit.

Exposure limits:

Permissible Exposure Limit (Based on an eight-hour time-weighted average (TWA_8))	0.2 fiber/cc of air
Action Level Exposure Limit (TWA8)	0.1 fiber/cc of air

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General Requirements:

1. Street cloths shall not be worn by employees involved in the asbestos abatement projects.

2. Two sets of coveralls shall be worn by all employees involved in the asbestos abatement project.

3. The outer set of coveralls shall be disposable type and the inner set of coveralls shall be either disposable or reusable type.

4. The inner set of coveralls shall be made of such suitable material that keeps the employee warm in the winter and relatively cool in the hot work environments.

5. If inner set of coveralls are reusable type they shall be washed at the end of the work day.

6. Disposable head covering shall be worn at all times while in the regulated area. Disposable coveralls equipped with hood are acceptable with provision for elastic in the arm sleeves and pant legs.

7. Disposable overshoes or rubber boots shall be used at all time in the regulated area. Disposable overshoes shall be removed when going outside of the regulated area. If rubber boots are used they shall be washed and cleaned before going outside of the regulated area.

8. Rubber gloves shall be used while conducting asbestos abatement project. Gloves will be disposed off at the end of the work day.

9. Respiratory protective equipment shall be worn by all employees in the regulated area.

10. Full face supplied air respirator in a positive pressure mode shall be used in all asbestos abatement projects, except, high efficiency particulate air (HEPA) filter negative pressure respirator shall be used when employees are being monitored for exposure to asbestos by the Industrial Hygiene Department or when using glove bag technique for exposure control.

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11. All major asbestos abatement projects will require a detailed project review by the Technical Center Industrial Hygienist.

12. Regulated area shall be demarcated in all asbestos abatement projects. The following types of regulated areas shall be considered for each job.

Negative Pressure Enclosure:

As the name suggest this system maintains negative pressure within the enclosed work area compared with that of the outside environment. The negative pressure inside the enclosure shall be achieved by means of HEPA-filtered power exhaust unit.

The enclosure shall be fabricated with 6-mil polyethylene plastic and lumber or other material for support where the existing walls are not available.

All openings inside the negative pressure enclosure shall be sealed with 6-mil polyethylene plastic and tape to prevent airborne asbestos from escaping into areas outside of the work area. Openings that require sealing are typically found around electric conduits, telephone wires, water supply and drain pipes, air supply and exhaust ducts.

Glove Bag Enclosure:

Small scale jobs shall be conducted using the glove bag technique. Glove bags are fitted with arms through which the work can be performed. It allows workers isolation from the asbestos containing material being removed inside the glove bag.

The bags shall be made of transparent 7-mil thick polyethylene plastic fitted with arms equipped with rubber gloves. The glove bags shall have a tool pouch and a port for introducing spray nozzel and vacuum hose.

These bags shall be considered as single use control device and disposed of at the end of each job.

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The glove bag shall be installed in such a manner that they completely cover pipe or the other structure where asbestos removal work is to be done. All openings in the bag must be sealed using the duct tape.

A minimum protective equipment required while using the glove bag for asbestos abatement is single disposable body coverall, head cover, HEPA filter negative pressure respirator, and disposable shoe covers or rubber boots.

13. Sufficient warning signs shall be posted around the regulated area to warn all employees of the asbestos hazard. The sign and the regulated area shall remain in place until the job is completed. The warning sign shall read:

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

14. Employees shall not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the restricted area.

15. Access to regulated areas shall be limited to authorized fully protected persons.

16. High-speed abrasive disc saws that are not equipped with appropriate engineering contols shall not be used for work related to asbestos.

17. Compressed air shall not be used to remove asbestos unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud created by the compressed air.

18. Wetting the asbestos material shall be achieved by using amended water or formulated wetting agents to reduce the number of fibers from becoming airborne.

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19. Any residue that remains on the surface of the object from which asbestos is being removed shall be cleaned by wet method or by HEPA equipped vacuum cleaner.

20. Asbestos material shall be removed and placed directly into a prelabeled bag for proper disposal in accordance with the location Environmental Protection disposal procedures.

The label shall contain the following information:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

21. Disposable coveralls, polyethylene plastic enclosure material, filters used on negative pressure exhauster shall be disposed of in the same manner as the asbestos material. Respirator shall be worn at all times during the cleaning and disposal procedure.

22. Before leaving the regulated area for luch, breaks, or at the end of the work day employees shall clean the outer coverall with HEPA equipped vacuum cleaner and wet clean the rubber shoes.

The outer coveralls including head cover and shoe covers, if used, shall be placed in the asbestos disposal bag.

23. Employees shall wash their hands and face in a clean facility before lunch or coffee breaks.

24. Employees shall take shover before putting on their street cloths and leaving the plant premises.

Responsibility of Craft supervisor or suprintendent:

a. consult with the owner of the piping or equipment from which the insulation is to be removed to determine if the insulation contains asbestos.

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b. if it can not be determined that the insulation material contains asbestos, the responsible craft supervisor or suprintendent shall provide a sample of the material for analysis to the Technical Center Industrial Hygiene Department.

c. any job involving the demolition of any structural member containing friable asbestos material or any job involving the removal of at least 160 sqare feet or atleast 260 linear feet of insulation shall notify the location Environmental Protection Department for approval prior to the start of the job.

d. notify the Technical Center Industrial Hygienist at extension 3750, the intention of removal of the asbestos containing insulation.

e. if needed, set up an inspection and planning review with the Industrial Hygienist for determining procedure to be used for removal of asbestos insulation.

f. fill out a supervisor's report (attachment I) for asbestos insulation removal and disposal. send the report to Industrial Hygienist for each day the work is performed for asbestos removal.

g. insure a competent person shall be available to oversee the project through completion.

h. insure that all employees including laborers, involved in the asbestos abatement work, have been provided:

   i. asbestos training by the Technical Center Industrial Hygiene Department within last twelve months,

   ii. training in the use of respiratory protective equipment which includes fit test, proper use, care, and limitations of the equipment. If employees are required to use High Efficiency Particulate Air (HEPA) filter negative pressure respirator, the training must have been done within the last six months,

   iii. medical examination within last twelve months.

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i. notify Industrial Hygiene, Medical and Safety Departments when an employee is added or deleted from use in the asbestos abatement project.

j. provide a list of employees, used in the asbestos abatement projects, to Industrial Hygiene department for verifying compliance with the OSHA requirements. The list shall contain the dates of Industrial Hygiene training, respiratory protection training, and medical surveillance.

k. when industrial hygiene exposure monitoring is conducted, the results shall be communicated to affected employees and written ducumentation shall be obtained by having employees to sign the report. The signed report shall be returned to Technical Center Industrial Hygienist Building 701, room 330.

l. plan and provide necessary personal protective equipment and other supplies specified in the general requirement section of this procedure to ensure satisfactory completion of the work.

RESPONSIBILITY OF COMPETENT PERSON:

a. ensure the integrity of the enclosure

b. control entry to and exit from the enclosure

c. supervise employees being monitored by Industrial Hygiene Department

d. ensure the use of protective clothing and equipment

e. ensure that employees are trained in the use of engineering controls, work practices, and personal protective equipment

f. ensure the use of hygiene facilities and the observance of proper decontamination procedures

g. ensure that engineering controls are functioning properly

h. ensure that unauthorized personnel do not enter the restricted area

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i. ensure that the asbestos waste is properly disposed

j. ensure that the supervisor's report is sent to Technical Center Industrial Hygienist.

RESPONSIBILITY OF INDUSTRIAL HYGIENE DEPARTMENT:

Help management stay in compliance with the regulatory requirements by providing:

a. technical assistance

b. employee's training

c. recommendations for personal protective equipment

d. recommendations for procedures

e. recommendations for equipment used for asbestos abatement

f. exposure monitoring of employees

g. repository of records for documentation of compliance

h. liaison to other location Industrial Hygiene personnel

RESPONSIBILITY OF SAFETY DEPARTMENT:

a. provide respiratory protection training

b. provide personal protective equipment

c. maintain training records

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RESPONSIBILITY OF MEDICAL DEPARTMENT:

A. provide medical clearance for respiratory fit test for employees involved in the asbestos abatement project.

B. provide medical surveillance to employees in accordance with the requirements of the OSHA standard 29 CFR1926.58 which shall include:

a. initial employee's questionnaire and medical examination

b. annual employee's questionnaire and medical examination

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ASBESTOS INSULATION REMOVAL AND DISPOSAL

CONSTRUCTION/SERVICES DEPARTMENT SUPERVISOR'S REPORT

(LOCATION OF JOB:) PLANT:_____ AREA:_____ ZONE:_____ BLDG:_____ UNIT:_____

JOB SUPERVISOR:_____ DATE JOB PERFORMED:_____

DESCRIPTION OF JOB:_____

LOCATION ASBESTOS INSULATION DISPOSED:_____

ESTIMATED FEET REMOVED:_____ LINEAL FEET _____ SQUARE FEET

EMPLOYEES INVOLVED IN ACTUAL JOB(S):_____

_____ _____ _____

_____ _____ _____

	YES	NO	N/A
Plant 511 Hygienist notified (M. A. Patel - ext. 3750)	___	___	
Negative pressure enclosure feasible?	___	___	___
Negative pressure enclosure installed?	___	___	___
Use of Glove Bag feasible?	___	___	___
Glove Bag used?	___	___	___
Barrier tape used	___	___	___
Warning signs used	___	___	___
Protective clothing used - boots, head cover, gloves, coveralls	___		
Outer coverall vacuumed before removing	___	___	
Outer coverall removed before leaving barricaded area	___	___	
Plastic used on floor and over equipment	___	___	___
Area vacuumed	___	___	___
Employee showered before reapplying street clothes	___	___	
Proper clean-up (area housekeeping)	___	___	___
Barricades down (after clean-up only)	___	___	___
Employee(s) monitored by Industrial Hygiene	___	___	___
Type of respirator used:			
Half-face AO R57-A (HEPA)	___		
Half-face Willson R-12 (HEPA)	___		
Supplied Air-Full Face - Positive Pressure	___		
Employee trained for respirator in last 6 months (If not using Supplied Air - Positive Pressure)	___	___	___
Employee trained for OSHA Asbestos Standard in last 12 months	___	___	

COMMENTS:_____

_____

_____ Telephone :_____

(Form Filed By:)

Return filled out form (original) after completion of the job to: M. A. Patel - Bldg. 701/330

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