UNION CARBIDE

INTERNAL CORRESPONDENCE

UNION CARBIDE CORPORATION P. O. BOX 8004, SOUTH CHARLESTON, WV 25303
SILICONES AND URETHANE INTERMEDIATES
SOUTH CHARLESTON PLANT

To (Name) C. R. Gillespie
Division
Location
Area

Date November 16, 1983
Originating Dept.
Area

Copy to W. E. Ballard

Subject Asbestos Handling Procedure

Currently there is considerable interest in the subject as more and more asbestosis cases are being diagnosed in our workforce. With your relatively recent diagnosis, you can personally relate to this concern and interest. Given the increased numbers of asbestosis cases, it is appropriate to review our handling procedures to insure the procedures, training, and enforcement are incorporated.

You are requested to form and chair a committee to perform and complete this work by January 1. It is suggested you include hourly personnel from the island and mainland insulator groups, first line insulator supervision, our safety representatives to the Union-Company Safety Committee, John Taylor, Wayne Williams, and others who you believe can contribute.

Please advise me frequently of your progress/problems, as I share the interest in proper handling of asbestos.

T. G. Swanson

TGSwanson:mb

UC 149-2

UNION CARBIDE INTERNAL CORRESPONDENCE

CHEMICALS AND PLASTICS • SOUTH CHARLESTON PLANT P. O. BOX 8004, SOUTH CHARLESTON, W. VA. 25303

To (Name) Maintenance Supervision
Division
Location

Date October 29, 1979
Department Dept.
Answering letter date

Copy to Mr. P. D. Balmert
Mr. R. N. Bates
Mr. W. B. Troutman
Mr. D. D. Wragg

Subject Removal of Insulation

Gentlemen:

The new asbestos handling procedure has resulted in questions about other crafts removing insulation. Although this procedure places restrictions on how insulation is removed, it does not specify who removes it.

Normally, employees in the insulator craft will be involved in large stripping jobs. Minor insulation removal, when incidental to other maintenance work, can be performed by other crafts. An example might be removal of insulation from flanges to replace a gasket.

The important thing to remember is that the provisions of the asbestos handling procedure apply to everyone. Obviously, the first step in any stripping operation is to determine whether or not the insulation contains asbestos. Area insulator supervisors are your best resource in this identification. IF POSITIVE IDENTIFICATION CANNOT BE MADE, CONSIDER THE INSULATION ASBESTOS.

Obviously, to comply with the procedure you will have to provide training and tools to employees who do this incidental insulation removal. It is your responsibility to: (1) identify who requires the training and ensure that training is provided, (2) provide the proper tools and equipment, and (3) enforce compliance with the procedure. By copy of this letter I am asking the Geographic Area Superintendents to make their insulation supervisors available to conduct the training and to advise you on the proper use of the procedure.

The asbestos handling procedure is Section XVIII of the Maintenance/ ~~Materials Management~~ Safety Manual. Be sure you read it and understand it.

Very truly yours,

L. W. Phair

LWP:mb

XVIII. HEALTH AND SAFETY CONSIDERATIONS FOR ALL CRAFTSPERSONS IN HANDLING MATERIAL THAT CONTAINS ASBESTOS

(With the intent of Covering every craftsperson who might come in contact with asbestos)

Understanding a few facts and observing some common sense practices listed below will eliminate the Health Hazards associated with the use of asbestos and will insure the health of all craftspersons.

A. Major Concern for Asbestos Health Hazards

In those instances when asbestos fibers are present that are longer than five micrometers, the greatest health hazard exists. If these fibers are inhaled into the respiratory system, they collect in the lung sacs. If the quantities of these fibers are great enough to accumulate through years of continued inhalation, they take up substantial space normally used for air. The way in which asbestos fibers are more harmful than other foreign particles that enter the lung sacs is that they are not dissolved and absorbed into body waste streams to be carried away and discharged from the body as other particles are. They remain in the lung sacs. Membranes then grow around each fiber, resulting in a fibrosis of the lung sacs. Fiber by fiber over the years results in what we term "asbestosis."

B. Normally Asbestos is Not a Major Health Hazard

Under most conditions, asbestos is not normally in fiber form small enough to be airborne in a person's breathing zone and small enough to pass through the nasal filtering system of hair and mucous that filter out all but the very finest fibers. However, it is these small fibers longer than five micrometers entering the lungs that are considered to be the culprits that cause asbestosis.

C. Health Risks Associated with the Use of Asbestos Have Been Greatly Reduced

Risk of harm to craftspersons from the use of asbestos is slight because asbestos-free insulating materials are used exclusively now. Woven asbestos tape and sock has been replaced with woven fiber glass tape and sock in stores. No asbestos tape or sock is to be available from plant stores. Furthermore, previous personal sampling of the breathing zone air of employees indicates that allowable limits are seldom reached even when asbestos fibers are present in any type material or activity provided normal precautions are observed.

XVIII. HEALTH AND SAFETY CONSIDERATIONS FOR ALL CRAFTS-PERSONS IN HANDLING MATERIAL THAT CONTAINS ASBESTOS

D. Our Concern - The Potential Harm from Existing Insulation Materials in the South Charleston Plant

The potential harm to employees at the South Charleston plant lies almost exclusively in the removal, cleanup and disposal of existing insulation materials which were applied prior to 1972.

The exposure we are concerned with is the stripping, cleanup, and disposal of old insulation. On piping, any insulation with tar paper weather barrier will most probably contain asbestos fibers. A number of steam-traced lines were insulated with "Unibestos" (trade name) and some of these lines will have either cloth and mastic or metal weather barrier. This material (Unibestos) contains asbestos, is easily recognized and must be handled, stripped off, cleaned up, and disposed of, using full precautions.

Now, we have another concern. A number of our steam lines are in the process of extensive repairs to the weather barrier and replacement of damaged sections of insulation. These will tie into present asbestos contained in pipe covering and will cover existing asbestos contained in insulation. In the future, all this insulation will have to be considered to contain asbestos and precautions taken to eliminate hazards.

Tank covers installed prior to 1972 will be treated as though they also contain asbestos and all precautions will be taken during stripping, cleanup, and disposal.

Old steam trap lines, steam tracers, etc. will have asbestos sock or tape. Should you encounter any of these situations, consider the insulation to contain asbestos and take the necessary precautions.

If you aren't sure of the kind of material you are getting ready to remove, ask your area insulator supervisor or observe all precautions.

E. Protection from Potential is Assured

By following a few precautionary measures as required by OSHA regulation 1910.1001 and using sound judgment, each employee can perform his/her work in a perfectly safe and healthful manner.

XVIII. HEALTH AND SAFETY CONSIDERATIONS FOR ALL CRAFTS-PERSONS IN HANDLING MATERIAL THAT CONTAINS ASBESTOS

E. Protection from Potential is Assured (continued)

Present OSHA Allowable Limit

During an eight-hour period, the time-weighted average shall not exceed two fibers longer than five micrometers, per cubic centimeter of air.

OSHA Ceiling Concentration

No employee shall be exposed at any time to airborne concentrations of asbestos fibers in excess of ten fibers, longer than five micrometers, per cubic centimeter of air. Methods of measuring airborne concentrations are spelled out in the OSHA Register, regulation 1910.001 (e).

March 1982
GAS/WBT/CED
Attachment

C. R. Gillespie ✓

514-149-2

UNION CARBIDE **INTERNAL CORRESPONDENCE**

CHEMICALS AND PLASTICS · SO. CHARLESTON PLANT · P. O. BOX 8004, SO. CHARLESTON, WEST VIRGINIA 25303

To (Name) J. S. Cornell
Division
Location Building 309-2/514

Date May 2, 1980
Originating Dept.
Answering letter date

Copy to Area Maintenance Superintendents
R. N. Bates
C. W. Carman
W. A. Garrett
R. W. Holland, Jr., M.D.
G. F. Hurley
L. R. Noble
L. W. Phair
R. A. Ream
L. A. Roebke
L. C. Stewart
W. B. Troutman
G. L. Wharton

Subject Asbestos Screening Test

A test method published by NIOSH, Center for Disease Control, Cincinnati, Ohio, for determining probable presence of asbestos has been successfully performed on insulation samples by the Plant Laboratory.

The colorimetric test is applicable to detection of magnesium (II) and iron (II) found in asbestos. Acid/glycerine wash procedures are attempted in case of positive tests to eliminate possible, interferring, soluble contaminants not attributable to asbestos; e.g., iron oxide (rust).

The test method should prove to be a valuable tool here in the plant, even though it may be subject to occasional "false positive" indication. Because due to general uncertainty about old/existing insulation most of it must be treated as if it contains asbestos anyway. This is very costly and has perhaps contributed, to some degree, to employee discontent when insulation stripping work must be performed by either the Maintenance Department or by Design and Construction. Demolition work is another potential asbestos exposure source to be considered.

Incidentally, NIOSH reports no "false negative" tests among some 200-odd field samples tested.

The Plant Safety Department is now ready to provide "on-site," field testing service. In the event of negative test results (absence of asbestos), work may proceed immediately without need of following OSHA/Plant 514 asbestos-insulation handling procedures. Positive test results, on the other hand, indicate possible presence of asbestos and present two options:

(1) proceed with work following mandatory procedures, or

(2) await further screening of representative samples by the Plant Laboratory which subsequently may permit avoiding costly procedures, e.g., initial positive test due to interferring contaminant(s).

To avoid possible work delays, timely field testing requests will be necessary. For example, samples requiring further screening in the Laboratory may take 2-3 additional days time, depending upon Laboratory daily work loads, etc.

Please call me on x-2434 if there are any questions or to schedule field testing of insulation for the possible presence of asbestos.

Bill Young

William C. Young

WCY:bl

MANDATORY PRECAUTIONS AND PROCEDURES TO BE FOLLOWED WHEN HANDLING AND WORKING WITH MATERIALS CONTAINING ASBESTOS

CHECK LIST

1. Respirators

Shall be worn while removing and cleaning up all insulation, whether asbestos is present or not. Disposable-types are allowed if they meet requirements. If upper limits are reached, supplied air respiratory equipment must be used.

2. Work Area Precautions

The work area will be roped off with yellow barricade tape during the removal and cleanup of asbestos-laden insulation. Warning signs to state: ASBESTOS -- AVOID BREATHING DUST -- WEAR PROTECTIVE EQUIPMENT -- DO NOT REMAIN IN AREA UNLESS YOUR WORK REQUIRES IT -- BREATHING ASBESTOS DUST MAY BE HAZARDOUS TO YOUR HEALTH -- must be posted outside each barricaded area to warn an employee desiring to enter the area so he/she can take the necessary protective steps. The barricade tape and warning signs are to remain in place until the job is complete.

If the work is being performed where areas cannot be swept, or above open grating, the work area shall be covered with plastic sheeting or tarpaulins to contain the asbestos-laden insulation. Over grating, this will prevent insulation from filtering through into other work areas and will protect other employees from the asbestos hazards. On slagged areas this will prevent mixing insulation in the slag, made for easier cleanup and not leave insulation residues on the ground.

3. Wet Cleanup

Insofar as practicable, insulation containing asbestos should be wet down before removal, cleanup and disposal to prevent the presence of airborne fibers. If this is not practicable, place plastic sheeting under the job being stripped and mist spray, with water, the removed insulation. Where possible, strip the insulation into labeled plastic bags on the job site (fiber-pacs can be used to support bags until bag is wired closed).

When wet removal, cleanup is impractical due to temperature - below 32°F - location and/or nature of the job, sweeping compound will be applied to the work area during cleanup.

All insulation will be stripped and bagged in the area in which it is removed.

CHECK LIST (continued)

4. Disposal

All removed insulation containing asbestos will be placed in dust-proof polyethylene bags, the bags wired closed and caution label attached to caution personnel about the asbestos contents. Bags with caution label on the bag front are being used. Each area insulation caution label on the bag front are being used. Each area insulation supervisor has a supply of these bags. The bagged insulation must be disposed of in landfill. This means we will place the bags in open top dumpsters and deliver to Goff Mountain only for covering up with soil.

5. Clothing Storage

Work clothing used by insulators will be stored in separate lockers away from their street clothing. Coveralls will be supplied for jobs where insulation containing asbestos is being removed, cleaned up, and disposed of. Coveralls will be changed each day when the concentration of asbestos fibers may be heavily concentrated. Coveralls should be removed or vacuumed before entering eating facilities or where food is handled.

Vacuums may be used to remove dust from clothing. CAUTION -- at no time will compressed air be used for dusting off skin or clothing.

6. Laundering

All protective coveralls used by insulators will be placed in dust-proof polyethylene bags, wired closed, and a caution label attached to each bag to alert the laundry employees of the possible asbestos contamination of the contents.

CAUTION -- Used bags are to be disposed of and coveralls returned in clean containers.

7. Monitoring

All jobs of significant size are to be monitored. Safety Department will monitor these jobs with designated equipment for air samples at the employees' breathing air zone. Results will be recorded. One-day notice should be given to the Safety Department so equipment can be prepared for the job. Monitoring results will be administered in accordance with Safety/Health Procedure No. 16.

8. EPA Notification

Stripping jobs of insulation containing asbestos must be reported to the plant EP Department (John Soice) for all large-scale jobs. A large-scale job is one where more than 260 linear feet of pipe is to be stripped or a job where more than 160 square feet is to be stripped. Notification must be 20 days in advance so proper notification can be filed with EPA.

9. Medical Records

Will be maintained by the Medical Staff.

Respirators approved for use:

a) Normal Dust Exposure - 3M Respirator No. 8710
Norton Respirator No. 7170

Both of the above are of the single use, disposable type.

b) Heavy Dust Exposure - Type "C" supplied air, continuous flow or pressure-demand type, supplied with full breathing air from breathing air cylinders.

WARNING SIGNS

To State: Asbestos
Dust Hazard
Avoid Breathing Dust
Wear Assigned Protective Equipment
Do Not Remain in Area Unless Your Work Require It
Breathing Asbestos Dust May be Hazardous to Your Health

Warning signs are located in each insulator building and must be used.

CAUTION LABELS

To State: CAUTION - Contains Asbestos Fibers
Avoid Breathing Dust
Breathing Asbestos Dust May Cause Serious Bodily Harm

Caution tags for polyethylene bags containing discarded asbestos insulation materials and polyethylene bags containing coveralls used by insulators being sent to the laundry are stocked by each insulator supervisor in the three geographic areas. Bags with caution notices printed on the front are now being stocked and will be used.

ASBESTOS HANDLING-CHECKLIST

DATE _____

JOB DESCRIPTION _____

_____

ESTIMATED QUANTITY REMOVED _____

LOCATION _____ / _____ / _____ / _____
AREA ZONE BLDG. ETC.

CRAFTSMEN _____

_____

	N/A	Yes	No
Barrier Tape Used	☐	☐	☐
Warning Signs Used	☐	☐	☐
Protective Clothing Used	☐	☐	☐
Coveralls Changed Daily	☐	☐	☐
Respirators Used	☐	☐	☐
Drop Cloth Used	☐	☐	☐
Wet Down Area	☐	☐	☐
Proper Disposal - (Bags to Land Fill)	☐	☐	☐
Dumpster Sealed or Wet Down	☐	☐	☐
Proper Clean-up (Area Housekeeping)	☐	☐	☐
Barricades Down (After Clean-up Only)	☐	☐	☐
Plant 514 Hygienist Notified	☐	☐	☐

COMMENTS _____

_____

_____

Routing
1. Area Safety File
2. W. C. Young - Safety Dept.

_____
Supervisor

12-1-83

LABELING EQUIPMENT COVERED WITH ASBESTOS
PROCEDURE

RESPONSIBILITY

Areas 1 & 5	C. R. Gillespie	R. L. Boggess
Areas 2 & 3	J. J. Ashworth	W. B. Spurlick

1. Request Shop Orders from Client to install caution signs.
2. Dedicate two or more insulators to install signs.
3. Sign installation

2" X 3"	Install on small equipment
4" X 10"	Install on 6" pipe or larger and large equipment. The piping signs will be installed on both sides of flanges.
Wrap around Signs	Installed in center of pipe runs, no more than 10' apart

4. Signs shall be installed in a location to be the most visible.
5. Completion date for the total plant shall be March 31, 1984.

Note: Signs shall be furnished by C. R. Gillespie.

MANDATORY SAFETY / HEALTH TRAINING

LESSON PLAN

S.& U.I.

SOUTH CHARLESTON,WV.

514

UNION CARBIDE

ASBESTOS

ASBESTOS MATERIAL REMOVAL AND DISPOSAL

(LEADERS GUIDE)

STAIRS Code: 514-2421

OBJECTIVES:

Upon completion of training participants will be able to:

1. Identify asbestos.
2. Safely strip, clean up, and dispose of asbestos.
3. Identify proper personal protection required.

MATERIALS REQUIRED OR RECOMMENDED:

1. Maintenance Materials Safety Manual, Section XVIII.
2. Inventory

ADDITIONAL AIDS:

1. Caramate Slide Program and Caramate projector. (Optional) - - - (May be obtained from Wayne Williams, Bldg. 308-2 - - X-2856.)

RECOMMENDED METHOD OF INSTRUCTION:

Safety Meeting

One-On-One

TIME REQUIRED:

1 Hour

SPECIAL NOTES:

1. Annual retraining is required for this subject. Successful completion of the inventory will satisfy the retraining requirement.
2. Both the initial training and annual retraining should be entered in STAIRS using code 514-2421.

ASBESTOS MATERIAL REMOVAL AND DISPOSAL

Suggested Lesson Plan

Estimated Time - 1 Hour

STEP I (10 Min.)

INTRODUCTION, CONCERNS AND EMPLOYEE'S OBJECTIVES - STATE: Subject matter, precautions and procedures in handling or working around materials containing asbestos.

THE CONCERN: Inform the participants the potential harm is from insulation materials purchase or installed prior to 1972. The exposure is during stripping, clean-up and disposal of these materials.

OBJECTIVES SET FOR THOSE ATTENDING:

A. They will learn to identify potential asbestos suspects.

B. They will be able to safely strip, clean up and dispose of these materials.

C. They will be able to use proper personal protection before, during and after exposure to asbestos.

STEP II (15 Min.)

LESSON MATERIAL RESOURCES

(A) Maintenance Materials Safety Manual, Section XVIII - Key Points to cover:

1. Inform employee the asbestos fibers that are harmful are those longer than five (5) micrometers. When these fibers are inhaled and collect in the lung sacs, they are not dissolved or absorbed into the body's waste stream. They remain in the lung sacs and membranes form around the fibers, lessening the area in the lungs, thereby resulting in asbestosis.
2. Assure the employee that since 1972 asbestos free materials have been used in the South Charleston Plant, thereby reducing the exposure to asbestos fibers.
3. Inform the employee of some of the telltale signs of asbestos materials are:
   A. Tank covers installed prior to 1972.

B. Unibestos pipe coverings (gray, cement crust, old steam traced lines).

C. Pipe lines with cloth weather barriers.

D. Pipe lines with rusted metal jacketing.

E. Trap lines or tracers with sock or tape.

F. If they have doubts, ask an insulator or insulator supervisor.

4. Make the employee aware of the OSHA standard for exposure to asbestos. This standard limits their exposurer to two (2) fibers longer than 5 micrometers per cubic centimeter of air averaged over the workday (8 hours), and a ceiling of 10 fibers longer than 5 micrometers per centimeter^3 of air, must not be exceeded at any time.

STEP III

PERSONAL PROTECTION

- 1. When removing or cleaning up insulation containing asbestos, respirators must be worn. Encourage the employees to wear respirators and monogoggles any time they are working with insulation of any kind.
  - (a) When removing any insulation it should be treated as containing asbestos.
  - (b) Many times insulation can be soaked with chemicals and dried. When breathing those dust particles they can also cause respiratory problems.
- 2. Instruct the participants in the preparation and precautions of the work area in which asbestos laden insulation is being removed.
  - (a) Barricade tape is to be used to isolate the area.
  - (b) Proper caution signs placed in strategic points.

Those signs must state:

CAUTION - ASBESTOS - AVOID - BREATHING DUST - WEAR PROTECTIVE EQUIPMENT - DO NOT REMAIN IN AREA UNLESS YOUR WORK REQUIRES IT - BREATHING ASBESTOS CAN BE HAZARDOUS TO YOUR HEALTH. Stress the point that these signs must be honored by everyone.

- 3. The work area clean up:
  Use plastic or tarps on slagged areas and gratings. This will eliminate particles from blowing around later and make an easier clean-up.
- 4. Impress the importance of wetting down and a wet clean-up if possible.
- 5. Insulation being removed should never be dropped. If dropped it is broken causing the release of dust and asbestos, thereby, creating a greater hazard and a large clean-up problem.
- 6. When practical and safe, insulation should be placed in plastic bags and lowered to the ground. Finally, point out the importance of removing barricade tape and returning caution signs to their storage place when clean up is completed.

- 7. DISPOSAL: Inform those in attendance the importance of proper disposal of insulation containing asbestos.
Asbestos must be buried in an approved land fill (Goff Mountain).
First, it must be put into poly-ethylene bags which are labeled with CAUTION - ASBESTOS information on them. They must also be wired closed, set along the road to be picked up by trucking to be hauled to Goff Mountain.
If these bags are used for anything besides asbestos materials, they must be turned inside out to prevent special disposal treatment.
Larger amounts may be placed in open top dumpsters if wet down thoroughly, covered with plastic, labeled and secured to prevent dust loss.

- 8. STORING OF CLOTHING: Coveralls will be supplied (standard or paper) but must be kept separated from street clothes.
    (a) Coveralls must be changed daily if working with asbestos. They must be removed or vacuumed before entering an eating place (never use compressed air).

(b) When sending coveralls to the laundry they must be placed in sealed plastic bags with a tag labeled: CAUTION - ASBESTOS DUST - HAZARDOUS TO BREATH, ETC.

- 9. Assure each participant these standards, guidelines, protective equipment and records are all for their protection as well as their fellow workers.
- 10. EPA and/or S/H may monitor some jobs and they may be asked to wear a small monitor near their breathing area.
- 11. Medical checks and records are kept and available to their personal physician on request.
- 12. In wrapping up, encourage participants to follow these few precautions and thereby make everyones environment cleaner.

-- THANK THEM --

--- ASK FOR QUESTIONS.

CED
5/14/82

ASBESTOS INVENTORY

Name_____

Dept._____ Date_____

1. _____ _____ should be worn any time insulation is being removed.

2. Plastic or tarps should be spread on _____ and _____ to make clean-ups easier.

3. _____ should be used before stripping and in final clean-up.

4. Following proper procedures can lessen the chances of _____.

5. We have had asbestos-free insulation since: (Check correct answer)

   1980 1977 1972 1968

6. Asbestos material should be disposed of in _____.

SAVE YOUR BREATH BY PROTECTING YOUR LUNGS

CED
4/14/82