WHORFF'S To O.K. Gilleshe
INSTITUTE PLANT
Jan Dec

D R A F T MSP 329

PROTECTION AGAINST BREATHING ASBESTOS

1.0 PURPOSE:

To provide a safe procedure for the removal and handling (i.e. cleanup and disposal) of material containing asbestos for employees directly involved with performing the work as well as other individuals, either in the immediate area or down wind, who may be exposed to residual dust or fibers. (The maximum permissible exposure to airborne concentrations of asbestos fibers shall not exceed two (2) fibers, longer than five (5) micrometers, per cubic centimeter of air.) Insulation material containing asbestos is no longer installed at our plant (not since 1972); therefore, the concern of this procedure is to control renovation and demolition operations involving the removal of old, asbestos-containing insulation.

2.0 RESPONSIBILITY:

2.1 It is the responsibility of the appropriate maintenance first-line supervisor and craftspersons to control the safe removal and disposal of asbestos-containing material at the Institute Plant.

2.2 It is the responsibility of the first-line supervisor to notify the Environmental Protection Department (EPD) at Ext. 6228 and the Industrial Hygiene Department at Ext. 6106 of a stripping job of more than 260 linear feet of pipe insulation or more than 160 square feet prior to the beginning of such a job ~~such jobs~~.

2.3 The Industrial Hygiene Department shall be notified prior to the start of the job when job size, complexity and location warrant. At that time a decision will be made as to the need for and extent of any monitoring. It is the responsibility of the supervisor of the personnel handling the asbestos-containing material and the [redacted] individual to request monitoring.

2.4 Proper housekeeping is the responsibility of each individual in performance of the work assignment. Use appropriate equipment and tools for clean-up for prevention and dust release. Keep material in a "damp state" during clean-up.

PLAINTIFF'S EXHIBIT
UC-2300

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2.5 It is the responsibility of the individual craftsperson to wear protective respiratory equipment when stripping or cleaning up asbestos-containing insulation.

3.0 PROCEDURE:

3.1 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 1.0 of this procedure.

3.2 All asbestos-containing material will be handled with extreme care and our goal is to take appropriate measures to minimize airborne fibers.

3.3 The work area shall be roped off with yellow barricade tape during the removal and cleanup of asbestos-laden insulation. Warning signs are to state:

CAUTION
ASBESTOS DUST HAZARD
WEAR ASSIGNED PROTECTIVE EQUIPMENT
DO NOT REMAIN IN AREA UNLESS YOUR WORK REQUIRES IT
BREATHING ASBESTOS DUST MAY BE HAZARDOUS TO YOUR HEALTH

These signs must be posted outside each barricaded area to warn an employee desiring to enter so they can take the necessary protective steps. Signs must be posted at approximately 50-foot intervals, along the barricaded area and at all access routes to the job site; 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 grating, the work area shall be covered with plastic sheeting or tarpaulins (whenever feasible) to contain the asbestos-laden insulation. In open grating areas, 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 and make for easier cleanup

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and will not leave insulation residues on the ground.

3.4 When a partial removal of asbestos insulation is required, for whatever reason, it shall be the policy to properly reseal the ends of the asbestos insulation left in place.

3.5 Insofar as practicable, removed insulation shall be wetted and placed directly into labeled plastic bags (or properly tagged plastic bags) as per 3.12 or other suitable containers for disposal at the Goff Mountain Landfill. Otherwise, place plastic sheeting beneath the job site, mist 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 as effective alternate cleanup method. Sweeping compound shall be applied to the work area to prevent dust generation when sweeping.

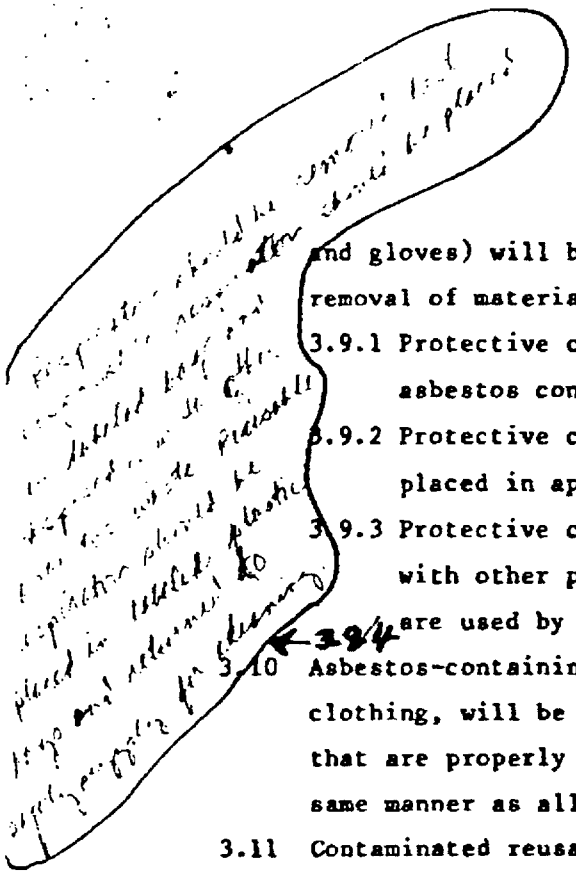
3.6 Employees engaged in the handling or removal of asbestos-containing material will wear approved respiratory protection. This respiratory protection is mandatory at this location for all exposures to asbestos-containing material. A reusable or single use, air purifying respirator may be used to reduce exposure below permissible limits, when the ceiling or the 8-hour time-weighted average airborne concentration of asbestos fibers is reasonably expected to exceed no more than 10 times the Permissible Exposure Limits (PEL). If not monitored and verified, a type "C" continuous ~~verified~~ flow or pressure-demand, supplied-air respirator must be used.

3.7 All external surfaces 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 stripping work.

3.8 Wetting of asbestos-containing material will be done in such a manner as not to wash the fibers into the ground, drainage trenches or sewer facilities. Any fibers contacting the ground will be gathered up and disposed of in approved containers.

3.9 Protective work clothing (such as disposable or standard coveralls

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and gloves) will be used on all jobs involving the handling or removal of material containing asbestos.

3.9.1 Protective clothing will be worn prior to contact with asbestos containing material.

3.9.2 Protective clothing will be removed at the work site and placed in approved containers.

3.9.3 Protective clothing will be removed prior to coming in contact with other personnel, eating, smoking or using facilities that are used by other personnel.

3.10 Asbestos-containing material, including used disposable protective clothing, will be collected in impermeable sealed bags or containers that are properly labelled as per 3.12 below and disposed of in the same manner as all other asbestos materials.

3.11 Contaminated reusable clothing will be collected and transported in sealed impermeable bags or closed containers, properly labelled as described in paragraph 3.12. This clothing will be sent to a commercial laundry which has facilities for cleaning asbestos contaminated clothing.

3.12 Disposal containers or laundry bags shall read:

CAUTION

Contains Asbestos Fibers

Avoid Creating Dust

Breathing Asbestos Dust

May Cause Serious Bodily Harm

3.13 Lockers and change rooms shall be utilized so as to minimize exposure to asbestos. Two lockers for each craftsperson are required--one for clean clothing and one for contaminated clothing.

3.14 Removal of asbestos-containing insulation prior to demolition is required if excessive dusting is expected. Loose insulation stripped from piping, equipment, etc. shall not be dropped or thrown to the ground. Any variance from this procedure must be approved by the Industrial Hygiene Department. All asbestos-containing insulation shall be handled as per 3.5.

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3.15 Disposal area requirements (by the Environmental Protection Department) are as follows:

3.15.1 Six inches of earth cover is provided over disposed insulation within 24 hours.

3.15.2 The area is fenced and warning signs are posted at 330-foot intervals. The signs shall state:

ASBESTOS WASTE DISPOSAL SITE

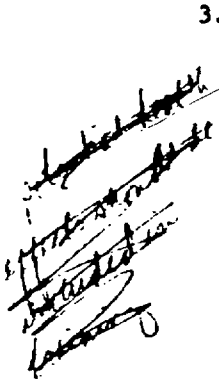
DO NOT CREATE DUST

BREATHING ASBESTOS IS HAZARDOUS TO YOUR HEALTH

3.16 Signs for posting work areas (3.3) are available through our Safety Supply group located in Building 307. They comply with OSHA copy, letter size, sign color, size, etc.

3.17 Tags and bags for insulation waste and contaminated clothing (3.12) are available in Plant Stores. They also comply with OSHA regulations regarding copy, letter size, size of tag, color, etc.

3.18 Training for all Maintenance personnel in the Insulator-Painter Work Classification shall be done annually and recorded on the STAIRS Program. This training shall cover such areas as the safe stripping, Potential health effects, cleanup and disposal of asbestos-containing materials; use of proper personal protection equipment before, during and after exposure to potential asbestos-containing materal; what to look for in potential asbestos-containing insulation i.e. pipe lines with cloth weather barriers, lines with rusted metal jacketing, trap lines or tracers with sock or tape, tank coverings known to have been installed prior to 1972, etc.; how to properly handle clothing that has been used in asbestos work; etc. The review of this entire procedure ~~should~~ must also be a part of each craftsperson's annual training.



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ASBESTOS MATERIAL REMOVAL AND DISPOSAL
ANNUAL TRAINING AID

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

OBJECTIVES SET FOR THOSE ATTENDING

1. They will learn to identify potential asbestos suspects.
2. They will be able to safely strip, clean up and dispose of asbestos-containing materials.
3. They will be able to use proper personal protection before, during and after exposure to asbestos.

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. Add this sentence asbestos also has known carcinogenic effects and cigarette smoking greatly enhances the possibility of developing cancer
2. Assure the employee that since 1972 asbestos free materials have been used in the Institute Plant, thereby reducing the exposure to asbestos fibers.

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3. Inform the employee that 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 exposure to two (2) fibers longer than 5 micrometers per cubic centimeter of air averaged over the workday (8 hours), and ceiling of 10 fibers longer than 5 micrometers per centimeter of air, must not be exceeded at any time. A ~~simple~~ 3M brand respirator (#8710) will adequately control almost any encounter if standard procedures are followed and material is work in a "wet state".

PERSONAL PROTECTION: 1. When removing or cleaning up insulation containing asbestos, respirators and proper protective clothing must be worn. Insist the employees wear respirators any time they are working with insulation of any kind. Encourage the use of monogoggles also.

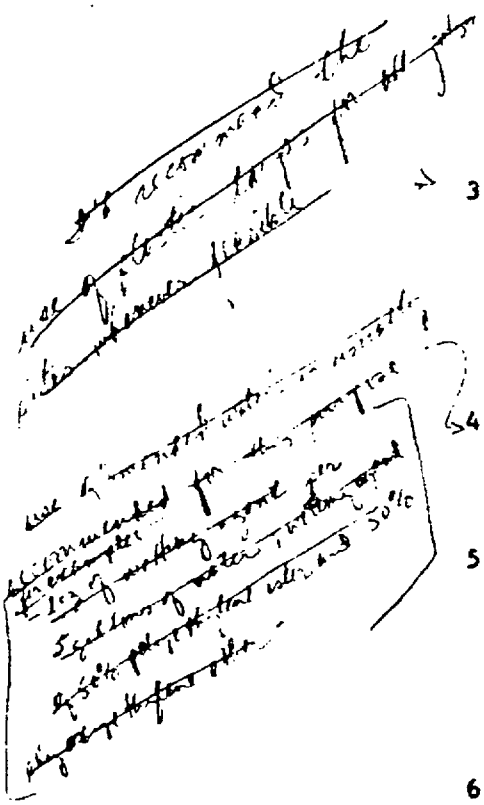
   A. When removing any insulation, except foamglass, fiberglass, urethane foam or mineral wool, it should be treated as containing asbestos, unless an electron ~~microscope test~~ laboratory analysis has tested negative or the manufacturer's identical system is evident.
   B. Many times insulation can be soaked with chemicals and dried. When breathing those dust particles they can also cause respiratory problems.

UCC 002563

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 sheeting or tarps on slagged areas and gratings and all other job sites whenever possible. 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. The use of a "wetting agent" which should be mixed @ 3 oz. to 5 gallons of water is encouraged for reducing the airborne fiber count and dust during demolition work, and particularly during the removal of friable asbestos. The material mix for this agent is 50% Polyoxyethylene esters and 50% Polyoxyethylene ether.

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.

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7. Assure each participant these standards, quidelines, protective equipment and records are all for their protection as well as their fellow workers.

8. EPA and/or Industrial Bygiene Department ~~employees~~ may ~~be~~ asked employees involved in asbestos demolition to wear a small monitor near their breathing area to evaluate potential exposures to airborne asbestos fibers.

Insert this

9. Medical checks and records are kept and are available* to their personal physician on request.

* in plastic bag

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 polyethylene bags which are labeled with ~~CAUTION — ASBESTOS~~ information on them and wired closed. If these bags are used for anything besides asbestos materials, they must be turned inside out to prevent special disposal treatment.

The label should state CAUTION Cordwise Asbestos fibers could form breathing dust Breathing asbestos dust May cause serious bodily harm

STORING OF CLOTHING: Coveralls will be supplied (standard or paper) but must be kept separated from street clothes.

1. Coveralls must be changed daily if working with asbestos. They must be removed or vacumned before entering an eating place (never use compressed air). Respirators should be removed after all other protective clothing has been removed.

Insert second time

2. 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~~.

In wrapping up, encourage participants to follow these few precautions and thereby make everyones environment cleaner.

--- THANK THEM---

UCC 002565

--- ASK FOR QUESTIONS.

PROCEDURE CRITIQUE

ASBESTOS [redacted]

NAME _____

DATE _____

DEPT _____

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

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

3. _____ should be used before and during 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

UCC 002566