WV-0097 # 26

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M. A. PATEL

To (Name) B. R. McMakin - 2009
Division R. W. Scoular - 701
Location
Area

Date May 21, 1987
Originating Dept. EM&TS - HS&EA
Area Industrial Hygiene
Subject Draft Asbestos Procedure

Copy to J. W. Barna - 2009
P. D. Gossage - 701/4
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L. R. Noble - 725
R. E. Rucker - 704
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Attached is a draft procedure for "Asbestos Containing Material - Removal and Handling". Please review the procedure, make changes as necessary and make it a part of your department safety and health manual. Before you make final decision on contents of the procedure, I would like to have an opportunity to review the finished procedure for your department. I draw your attention to a significant requirement shown in paragraph 5.4, its purpose is to have a management control which would become an auditable item among many other requirements.

If you need any clarifications, please give me a call.

Manhar A. Patel

Manhar A. Patel

Attachment

MAP:rab
2338P

This looks like a very well written procedure. I made a couple of minor comments

Thanks, JEL
5-28

DRAFT

ASBESTOS CONTAINING MATERIAL - REMOVAL AND HANDLING

1.0 PURPOSE:

To provide a procedure that complies with all Federal, State, and Local regulations for the safe removal, cleanup, handling, and disposal of asbestos containing materials.

2.0 DEFINITIONS:

DOES EVERYBODY KNOW WHAT "AMENDED" WATER IS? DOES IT NEED TO BE DEFINED?

Asbestos - A fibrous material which has unique properties such as fire resistance, high tensile strength, noise absorption, thermal insulation, resistance to corrosive chemicals etc., and used in applications such as fire proofing, pipe insulations, gaskets, packings, brake lining, floor tile, roofing, siding etc. For the purposes of this procedure, asbestos shall be defined as any material that contains chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.

Competent Person - A competent person shall have completed a training course offered by an EPA sponsored National Asbestos Training Center, or equivalent. A competent person means an employee who has the responsibility to oversee the asbestos abatement project to ensure that the work is carried out in compliance with the regulations and this pocedure.

Exposure Limits - Permissible Exposure Limit (PEL) is 0.2 fibers per c.c. of air based on an eight-hour time weighted-average (TWA8) exposure. The Action Level Standard is one-half of PEL, i.e., 0.1 fibers per c.c. of air TWA8 exposure.

High Efficiency Particulate Air (HEPA) filter - A filter capable of trapping and retaining at least 99.97% of all particles of 0.3 micrometers in diameter or larger.

Regulated Area - An area where airborne concentrations of asbestos can reasonably be expected to exceed the permissible exposure limit.

3.0 RESPONSIBILITIES:

3.1 Craftsperson and Laborer - It is the responsibility of the person assigned to the asbestos abatement project to:

a. follow the established procedures and work in such a manner to minimize the release of asbestos fibers in the work environment,

b. use personal protective equipment in a manner to prevent exposures,

c. have the knowledge and awareness of the hazards of the exposure to asbestos fibers and methods used to avoid such exposures,

d. maintain proper housekeeping during and after the performance of the work assignment.

3.2 First Line Supervisor and Competent Person - It is the responsibility of the first line supervisor/competent person assigned to the asbestos abatement project to:

a. insure that all employees (insulators and laborers) assigned to the asbestos abatement project meet the asbestos training and respiratory protection training requirements of the OSHA standard. In addition, assure that employees are on medical surveillance program and are familiar with the requirements of this procedure.

b. assure compliance with all requirements of this procedure.

c. fill out the checklist form as shown in appendix I and promptly return the form to Industrial Hygiene, Building 701-330.

d. notify Industrial Hygiene of each job to determine the need for exposure monitoring.

e. insure that the location Environmental Protection Department has obtained proper permits from the Air Pollution Control Commission if the job involves asbestos removal in excess of 260 linear feet on piping or 160 square feet on other facility components.

f. establish the negative pressure enclosure, ensure integrity of such enclosure during its use and control entry to and exit from the enclosure.

g. supervise exposure monitoring when Industrial Hygiene conducts such monitoring.

h. ensure that employees involved in the asbestos abatement projec wear the appropriate personal protective equipment, are trained in the use of appropriate methods of exposure control and the use of specified hygiene facilities and decontamination procedures.

j. ensure that engineering controls in use are in proper operating condition and are functioning properly.

k. evaluate all proposed asbestos removal jobs and determine the type of controls and procedures that will be required to conduct the work.

3.3 Craft Superintendent - It is the responsibility of the craft suprintendent to:

a. audit the asbestos abatement project.

b. ensure that employees assigned to the asbestos abatement jobs are trained in the OSHA required asbestos training, respiratory protection training and are on medical surveillance program.

c. notify employees when Industrial Hygiene has reported the exposure monitoring results and obtain necessary documentation by having employees to sign the report showing that employees have been notified. Forward documentation to Industrial Hygiene, Building 701-330.

d. assure that sufficient protective equipment and supplies are available for use by the supervisor or competent person.

3.4 Industrial Hygiene Department - It is the responsibility of the Industrial Hygiene Department to:

a. provide training that meets the requirements of the OSHA standard.

b. monitor employee's exposure to asbestos and report the results of monitoring and recommendations to the management.

c. provide technical advice to management to comply with the OSHA asbestos standard.

d. recommend personal protective equipment and other equipment necessary to control the release of asbestos fibers in the environment.

e. maintain documentation of the employee's exposure monitoring records.

f. maintain documentation of the employee's training records.

3.5 Medical Department - It is the responsibility of the Medical Department to:

a. provide the initial and annual medical examination to employees engaged in the asbestos abatement projects in accordance with the requirements of the OSHA asbestos standard 29 CFR 1926.58.

b. advise management of the work restrictions for employees in the asbestos abatement projects.

3.6 Safety Department - It is the responsibility of the safety Department:

a. to provide respiratory protection training.

b. at the Technical Center to provide respiratory and personal protective equipment.

4.0 REGULATED AREA:

A regulated area shall be established in work areas where airborne concentration of asbestos may exceed or can reasonably be expected to exceed the permissible exposure limit (PEL) of 0.2 fibers per cubic centimeter of air as an 8-hour time-weighted average. The negative pressure enclosure or the use of a glove bag shall be determined not based on the exposure criteria, but, as a standard practice to prevent the release of fibers in other work areas.

4.1 The regulated work area shall be established with yellow barricade tape before the removal and cleanup of asbestos containing material begins. This is to minimize the number of persons within the area and to protect persons outside the area from exposure to airborne concentrations of asbestos.

4.2 Warning sign shall be displayed at each regulated area. The warning sign will bear the following information:

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

4.3 Access to regulated area shall be limited to authorized personnel only.

4.4 All persons allowed to enter the regulated area shall use an appropriate respirator and protective clothing. Street clothes shall not be used.

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

5.0 PREPARATION OF THE WORK AREA:

5.1 Whenever feasible, glove bag shall be used for removal of small sections of asbestos containing insulation from pipes, conduits, around valves etc.

5.2 If the asbestos abatement project is too large for a glove bag use, an enclosure of the job shall be considered.

5.3 Feasibility of performing the asbestos abatement project inside the negative pressure enclosure shall be determined based on the complexity, location, space limitations and hazards resulting from enclosures.

5.4 If the project is determined to be not feasible for enclosure, an agreement shall be reached between the plant representative knowledgeable in OSHA asbestos standard, the Technical Center Industrial Hygiene representative, and the Competent Person responsible for the project. The approval of non-feasibility of enclosure shall be signed off by the Plant Manager or a designee.

5.5 Inability or impracticality of enclosing structures within a single enclosure does not by itself mean that enclosures are infeasible. In such a case, the feasibility of several smaller enclosures must be considered. If it is physically possible to establish the smaller enclosures, then they are to be constructed and the removal is to be done section by section.

5.6 In small scale, short duration projects, minienclosures sufficiently large to allow one or two persons to work shall be considered in lieu of a glove bag or a large negative pressure enclosure. In a minienclosure the negative pressure could be provided by a HEPA equipped vacuum cleaner.

5.7 In those situations where an enclosure or the use of a glove bag is not feasible, utmost care shall be taken in preparation of the area and the work practices to avoid the release of asbestos fiber in the environment. Extra time used for wetting, careful removal and placement of the insulation directly in the bag, covering the ground or the floor with plastic, etc., shall be considered.

5.8 Attached to the negative pressure enclosure a decontamination area shall be constructed to allow employees to cleanup and change into new coveralls. This will allow employees to go to the hygiene facility to take a shower and change to street clothing.

5.9 Negative pressure in the enclosure shall be provided by the use of an exhauster equipped with a prefilter and a HEPA filter. At least four air changes per hour shall be provided to keep the pressure negative in the enclosure.

5.10 The polyethylene used for erecting an enclosure shall be at least 6-mil thickness. All openings inside the negative pressure enclosure shall be sealed with plastic and tape to prevent asbestos fibers from escaping into areas outside the work area. Openings that require sealing are typically found around pipes, electric conduits, telephone wires, air supply and exhaust ducts. All objects that can not be removed from the work area shall be covered and sealed with 6-mil polyethylene sheeting.

5.11 Mobile hygiene facility shall be located as close to the work site as possible. The hygiene facility shall consist of an equipment room, a shower area, and a clean room.

6.0 PERSONAL PROTECTIVE EQUIPMENT:

6.1 Protective clothing consisting of rubber gloves, rubber boots and hooded disposable full body coveralls shall be provided and used by employees in the asbestos abatement jobs. If hooded coverall is not available a separate head cover shall be used. Coveralls shall be taped to the gloves and to the boots. Additional protective equipment to satisfy the plant requirements shall be used.

6.2 NIOSH approved respiratory protection shall be used based on the following:

a. The supplied air full face respirator operating in a positive pressure mode shall be used in all asbestos abatement projects except conditions identified in 6.2 c. and d.

b. The supplied air respirator may be equipped with HEPA filter cartridge to allow employees to go to shower facility while wearing the respirator. If this type of respirator is not provided, a seperate HEPA cartridge respirator shall be provided in the decontamination area to switch from a supplied air to a negative pressure respirator.

c. High Efficiency Particulate Air (HEPA) filter negative pressure cartridge respirators can be used when the initial personal exposure monitoring show exposure conditions below the action level standard of 0.1 fibers per cubic centimenter of air. If this respirator is used in the negative pressure enclosure, a separate respirator is not required in the decontamination area.

d. High Efficiency Particulate Air (HEPA) filter negative pressure cartridge respirators can be used when a glove bag is used for asbestos removal.

e. High Efficiency Particulate Air (HEPA) filter negative pressure cartridge respirators can be used for exposure conditions up to 2.0 fibers per cubic centimenter of air provided employees are being monitored for asbestos exposures.

f. HEPA filter cartridges shall be used for a period no longer than a working day.

g. The respiratory protection equipment shall be maintained in accordance with the Respiratory Protection Program Policy of the department.

7.0 WORK PRACTICES:

Asbestos abatement project shall not be initiated before completion of the proper preparation of the work area and establishing the regulated area. Technical Center Industrial Hygiene Department shall be notified before starting any asbestos abatement project and a supervisor's report (see appendix I) shall be filled out each day of the abatement work.

7.1 Employees shall wear personal protective equipment as specified by the competent person.

7.2 Where practical, insulation containing asbestos shall be thoroughly wetted with amended water before removal to prevent release of airborne fibers in the environment.

7.3 In those situations where wetting cannot be done effectively or wetting may create electrical hazard, the HEPA vacuum cleaner should be positioned at the source to capture airborne fibers.

7.4 As the removal of asbestos progresses extreme care should be taken to avoid dropping of asbestos on the floor or the ground. Asbestos must be carefully placed in the bag and then the bag must be carefully lowered to the floor or the ground.

7.5 If a glove bag is used, it shall be installed in such a way that the pipe or the structure is completely covered and adequately sealed with duct tape to keep airborne fibers inside the glove bag.

7.6 The isulation inside the glove bag shall be thoroughly wetted with amended water.

7.7 After removal of the asbestos, the surfaces must be thoroughly cleaned with a wire brush and wet wiped to remove traces of asbestos.

7.8 When a partial removal of asbestos containing material is required from the pipes or the equipment, the exposed asbestos containing material that is left in place shall be sealed immediately with mastic or by an equivalent method. In some instances where removal of entire sections of pipes covered with asbestos is required, the insulation shall be wrapped with polyethylene and tape to avoid damage during lowering and transporting of the pipes.

7.9 Tools used inside the glove bag shall be rinsed inside the bag with ammended water, while bag is still attached to the pipe. Grasp the cleaned tools firmly and withdraw the hand until it is turned completely inside out. Tape the withdrawn tools tightly at the wrist and again about 8 to 10 inches back toward the body of the bag. Cut the arm of the bag between the taped places then fold the glove bag arm over and tape again. Tools can now be removed from the cleaned glove and used again.

7.10 After removal of asbestos insulation from the pipe, the hose from a HEPA vacuum cleaner shall be inserted through the port to remove any airborne asbestos fiber in the bag. When all of the air is removed from the bag the bag shall be tied in the middle and carefully removed from the pipe.

7.11 All external surfaces shall be maintained free of accumulation of asbestos fibers. Special attention must be given to cleaning all surfaces after the work.

7.12 All asbestos containing material, including used coveralls, gloves and respirator cartridges shall be placed and sealed in impermeable plastic bags properly labeled as below:

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

7.13 All bagged asbestos materials shall be properly removed from the job site and placed in a designated area as required by the plant procedures.

7.14 Asbestos containing waste with sharp edges will tear polyethylene bags and should be placed in closed, properly labeled drums for disposal.

7.15 Compressed air or power tools not equipped with proper engineering controls shall not be used to remove asbestos containing materials.

7.16 When the asbestos insulation removal job is completed, all polyethylene sheeting must either be HEPA vacuumed or dampened with a fine water mist. Then it must be folded up carefully and placed in an asbestos waste disposal bag. Sheeting must not be hosed down with water or blown off with air and must not be reused.

7.17 Any potentially contaminated respirators that are to be sent to the Safety Supply Room for cleaning and inspection shall first be rinsed or wiped with a damp cloth. The respirators shall be transported in sealed containers.

7.18 Work areas shall be kept as free of asbestos debris and accumulation as possible. Use appropriate equipment and tools for cleanup to prevent fiber release. Whenever possible, keep material in a damp state during the cleanup. The HEPA filter vacuum cleaner, when filled, shall be emptied in the enclosure in such a manner to minimize release of asbestos fibers in the workplace.

7.19 Before leaving the negative pressure enclosure, employee shall enter into the decontamination area attached to the enclosure. Employee shall clean the protective equipment including respirator with HEPA vacuum cleaner, remove the contaminated coveralls and don clean coveralls. If supplied air respirator is used, employee shall remove the facepiece and immediately don a clean half-face negative pressure respirator equipped with HEPA cartridges and proceed to the remote shower facility. If the supplied air respirator is equipped with HEPA cartridges, employee shall disconnect the air hose and breath through the cartridges. While wearing cartridge respirator, employee shall enter the equipment room of the hygiene facility, remove the coveralls and proceed to shower while wearing respirator. While taking
shower rinse the respirator with water and carefully remove it. After the shower enter the clean change room and put on street clothing, return respirator in a plastic bag to Safety Supply Shop.

8.0 REFERENCES:

8.1 29 CFR 1926.58, OSHA Asbestos Standard

MAP/May 11, 1987