Handout

Report referred to in Senate discussion attached.

The Psychology Department is concerned about recent reports from the University Administration regarding safety procedures in academic buildings containing asbestos. Because of the large number of buildings involved, we would like the Faculty Welfare Committee to investigate the possible hazards presented to faculty, staff, and students from asbestos in campus buildings and to submit a report to the Senate.

EAST CAROLINA UNIVERSITY

GREENVILLE, NORTH CAROLINA 27858-4353

Office Of
Occupational Health and Safety

Telephone: (919) 757-6166

MEMORANDUM

TO: Wilbur A. Castellow, PhD., Chairman
Department of Psychology

FROM: A. L. Colclough, Director *ALC*
Occupational Health and Safety

DATE: March 2, 1988

SUBJECT: Asbestos in Rawl Building

I am replying to your concern about the safety in Rawl Building, in relation to asbestos material sprayed on the ceilings. There is no cause for concern with the safety in this building, as it has been inspected by this office and by Mr. John "Pat" Curran, CIH, Chief Industrial Hygienist with the N. C. Dept. of Human Resources. These inspections were conducted three or four years ago and the recommended procedure was to spray paint on the ceilings to encapsulate the material. This will keep any asbestos fibers from being dislodged into the air by vibrations or air movement. The only way for this ceiling to release fibers is for someone to disturb the material by removing or drilling through it.

The ceiling is no problem and will not be a safety hazard, unless the material is disturbed. Any alterations to the ceilings in this building is required to be reported to the Occupational Health and Safety Office prior to any work being done.

I appreciate your concerns for the health and safety of your staff, and this office will continue to inspect these areas for damage. If we may be of further service, please contact this office.

/jk
cc: John S. Bell

EAST CAROLINA UNIVERSITY

GREENVILLE, NORTH CAROLINA 27858-4353

Assistant Vice Chancellor
for Business

919-757-6910

MEMORANDUM

TO: Deans, Directors, Department Heads and
Maintenance Supervisors

FROM: John S. Bell

DATE: October 15, 1987

SUBJ: Asbestos Maintenance and Operation Program

The University Health and Safety Office has developed a maintenance and operation program for control of asbestos containing materials in facilities at the University. The program is designed to comply with regulations and guidelines of the Environmental Protection Agency, OSHA and the Department of State Construction with primary concern for the safety and health of University employees.

The program is adopted as part of the ECU Safety Policy and will be published as part of the University Business Manual with the next revision.

It is required that all departments involved in the maintenance and operation of University facilities and/or located in areas containing asbestos become familiar with the program. Questions or concerns pertaining to this program should be directed to the Occupational Health and Safety Office (757-6166).

JSB/alc

cc: Dr. Richard R. Eakin
Chancellor

Vice Chancellors

Attachment

OPERATION AND MAINTENANCE PROGRAM

FOR THE CONTROL OF ASBESTOS CONTAINING MATERIALS
IN FACILITIES AT

EAST CAROLINA UNIVERSITY

OCTOBER 1987

Occupational Health and Safety Office
OLD CAFETERIA BUILDING
GREENVILLE, N. C. 27858-4353

1. Introduction

Asbestos is a proven human carcinogen. Exposure to airborne asbestos can cause respiratory disease, lung cancer, mesothelioma, and other types of cancer. The use of asbestos in construction materials has raised concern about exposure to airborne asbestos in some buildings. If asbestos containing material (ACM) remains in good condition and is unlikely to be disturbed, exposure will be negligible. However, when ACM is damaged or disturbed, asbestos fibers are released creating a potential hazard for building occupants.

In July 1985 the EPA published a revised asbestos guidance document: "Guidance for Controlling Asbestos Containing Materials in Buildings, 1985 Version" (EPA - 560/5-85-024). It provides the most recent information on assessing potential exposure to asbestos in buildings with ACM and on developing an asbestos control program. It suggests a structured process for identifying ACM, instituting a special operations and maintenance (O&M) program, determining if additional corrective measures are needed, and selecting an abatement method beyond O&M if necessary.

This report is to supplement information in the 1985 Guidance Document. It discusses the purpose of a special (O&M) program, and describes how the program should be organized, developed, implemented, and enforced.

An O&M program for ACM is a set of activities and procedures designed to minimize exposure of buildings occupants and workers to asbestos fibers that either have been or may be released in the building. This program should be maintained until all ACM (including both friable and nonfriable forms) are removed. In other words, no abatement action or any abatement short of removal (i.e., encapsulation, enclosure, or repair) requires that an O&M program be maintained.

The new OSHA asbestos exposure standard for the construction industry (29 CFR 1926.58 as published June 20, 1986) covers several of the O&M activities discussed here, namely, those associated with renovation and maintenance in buildings with ACM, and asbestos abatement, to the extent that limited abatement is included in an O&M program. The relevant OSHA regulations (Appendix G to 1926.58) regarding engineering controls, work practices, worker protection, and record-keeping are used as a reference point for the guidance offered in this document.

The National Standards for Hazardous Air Pollutants (40 CFR Part 61, Subpart-M, National Emission Standard for Asbestos) also regulates the renovation and demolition of buildings containing asbestos materials and is designed

primarily to prevent asbestos from entering the outdoor atmosphere. The regulation requires the State of North Carolina's Division of Environmental Management be notified prior to any demolition project or renovations which contain asbestos. Like the OSHA regulation, Subpart-M establishes work practices, methods of handling, transport and disposal of ACM.

2. Program Objectives

The goal of the asbestos O&M program is to minimize the exposure of personnel to airborne asbestos by the proper management of ACM in University operated buildings. The two objectives of the program to accomplish this goal are: (1) reduce or eliminate the airborne concentration of asbestos fibers released by controlling the disturbance of ACM, and (2) removing those asbestos fibers which have previously been released. The focus of this program is activities including building renovation, maintenance, and repair work on utility systems and custodial work.

3. Program Elements

The O&M program will include the following activities: (1) alert University and private contractors to the location of ACM (2) establish work practices for maintaining the buildings (3) establish work practices for building renovation (4) establish emergency procedures for accidental fiber release (5) establish a respirator program (6) provide training to employees.

3.1 Organization and Planning

The O&M program will be administered by the following units:

ECU Division of Business Affairs: Responsible for the day to day physical plant operations of the University.

Asbestos Safety Officer: Mr. A. L. Colclough, Director of Occupational Health and Safety, responsibilities include the planning and supervision of the O&M program and advisor to all University agencies on asbestos related issues. Reviews all renovation plans. Will act as liaison between the University and other regulatory agencies. Provide assistance to Physical Plant in determining if suspect material contains asbestos. Notify the Division of Enivornmental Management prior to renovation conducted by University personnel.

ACM Control Supervisor: Mr. James Riggs, Industrial Hygienist. Responsibilities include medical surveillance of respirator users as well as conducting fit test and respirator use training. On site air monitoring. Observe projects to determine if accepted guidelines and federal regulations are followed. Conduct building surveys. Maintain written records of all asbestos related matters.

Director of Physical Plant: Responsible for providing asbestos training opportunities to all maintenance personnel. Provide the asbestos safety officer with plans of all maintenance and renovation projects. Determine who will remove ACM. Notify private contractors and University personnel concerning construction projects involving ACM.

Housekeeping Administrator: Responsible for providing asbestos training opportunity to all housekeeping staff involved with the asbestos O&M program.

3.2 Cleaning Practices

Housekeeping activities such as sweeping, vacuum cleaning, and dusting in the buildings with exposed friable ACM, may resuspend asbestos fibers that have settled out of the air. Therefore, all cleaning in buildings with friable ACM should be conducted using wet cleaning techniques. These methods are outlined in the EPA document: "Asbestos in Buildings, Guidance for Service and Maintenance Personnel" (EPA 560/5-85-018).

3.3 Maintenance and Renovation Procedures

University employees involved with the O&M program will operate within the guidelines set forth in 29 CFR 196.58 Appendix G, which has been made a part of this report and 40 CFR 61, Subpart-M. All asbestos removal projects must be approved in advance by the Asbestos Safety Officer. The Physical Plant will determine if ACM will be removed by private contractors or University personnel. If outside contractors are to perform removal, written removal plans and specifications must be submitted in advance for approval by the Asbestos Safety Officer. All asbestos removal contracts will be coordinated by Physical Plant.

3.4 Respirator Program

The respirator program is under the supervision of James Riggs, Industrial Hygienist. The program will be established in accordance with all applicable standards. A copy of the plan is attached to this report.

3.5 Employee Training

Training will be provided to all University employees involved in the asbestos O&M program. The training program includes health effects, recognition, glovebag removal techniques, mini-enclosure techniques and proper use of respiratory devices.

3.6 Project Coordination

The Physical Plant will submit all specifications for new construction, upcoming maintenance, renovation projects and work orders involving pipe insulation, vinyl floor tile or asbestos containing ceilings (see list), and/or disturbance of any ACM to the Asbestos Safety Officer for review. It is of the uppermost importance that any project involving vinyl floor tile, asbestos containing ceilings or pipe insulation be reported to the Asbestos Safety Officer. At this time, the Asbestos Safety Officer will determine if the project involves ACM and coordinate any testing of suspected ACM. The Asbestos Safety Officer will advise Physical Plant as to all potentials for disturbance of ACM. The Physical Plant, with recommendations from the Asbestos Safety Officer will make appropriate plans to conduct the project in the proper manner. The ACM Control Supervisor will observe the actual project to determine if accepted guidelines and federal regulations are followed. Attached is a list of buildings with ACM.

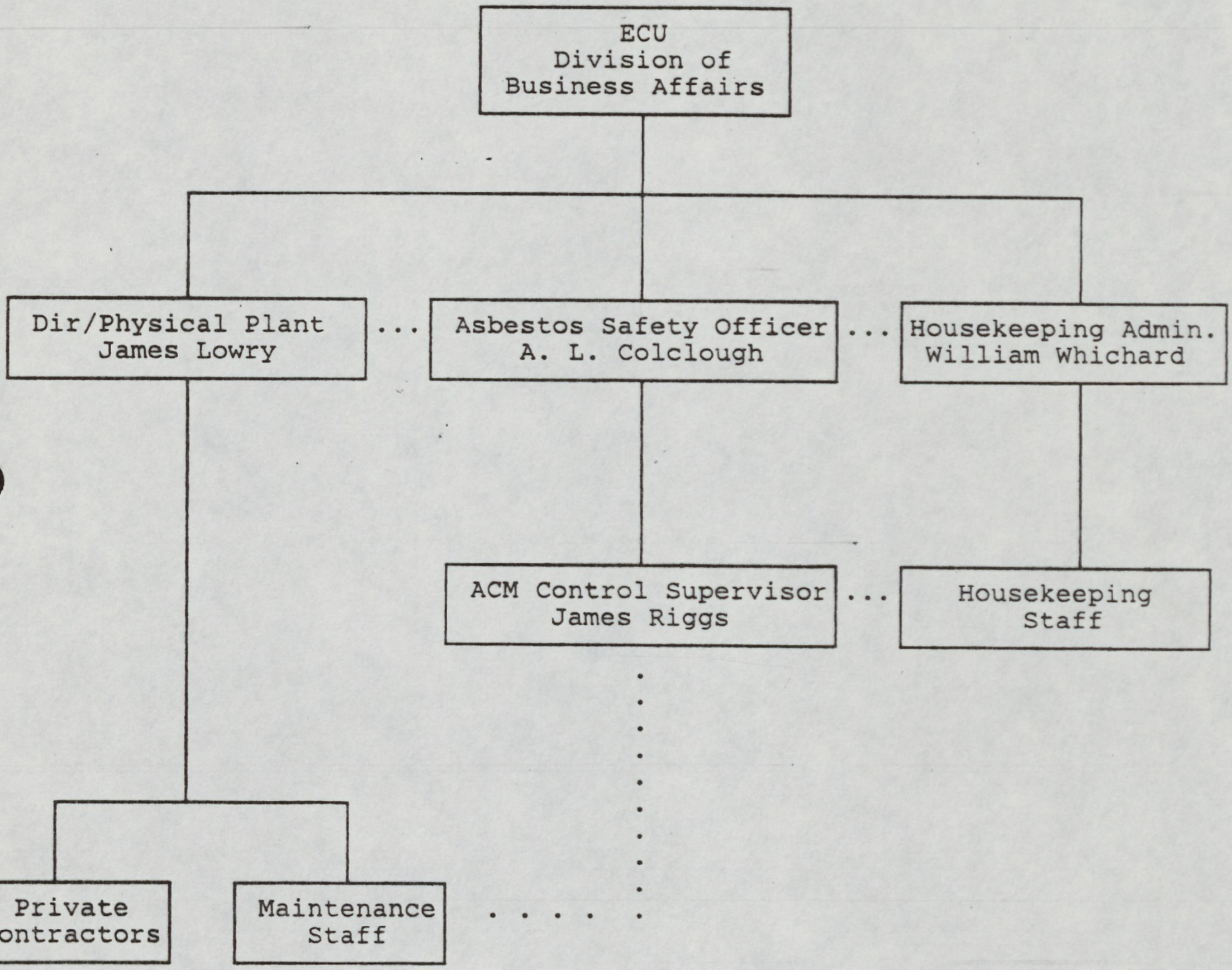
3.7 Inspection of ACM

Periodic inspection of the ACM will be conducted by the ACM Control Supervisor. Housekeeping and Maintenance personnel are instructed to observe the ACM in their areas and to contact the asbestos safety officer concerning any fiber release or other problem area needing immediate attention. Routine air monitoring will be conducted in selected areas.

3.8 Recordkeeping

All written documentation pertaining to the asbestos control program at the University will be maintained in the file for 30 years or as required.

O&M PROGRAM ORGANIZATIONAL STRUCTURE



Buildings with ACM - East Carolina University

Building	Type of Application
Carol Belk	Sprayed Structure
Graham	Sprayed Ceilings
Austin	" "
Rawl	" "
Home Economics	" "
Nursing	" "
Whichard Annex	" "
Spilman	" "
Fletcher Dormitory	" "
Speight	" "
Boiler Plant	Pipe Insulation
Steam Distribution	" "

All of the ceilings have been encapsulated. There is no problem except when some of this material is to be removed or has been damaged by water or other materials.

All buildings on campus may have asbestos insulation on steam or hot water pipes. Treat as if it is asbestos.

STANDARDS AND INTERPRETATIONS

APPENDIX G TO 1926.58—WORK PRACTICES AND ENGINEERING CONTROLS FOR SMALL-SCALE, SHORT-DURATION ASBESTOS RENOVATION AND MAINTENANCE ACTIVITIES—NON-MANDATORY

This appendix is not mandatory, in that construction industry employers may choose to comply with all of the requirements of OSHA's final rule for occupational exposure to asbestos in the construction industry, §1926.58. However, employers wishing to be exempted from the requirements of paragraphs (e)(6) and (f)(2)(ii)(*B*) of §1926.58 shall comply with the provisions of this appendix when performing small-scale short-duration renovation or maintenance activities. OSHA anticipates that employers in the electrical, carpentry, utility, plumbing, and interior construction trades may wish to avail themselves of the final standard's exemptions for small-scale, short-duration renovation and maintenance operations.

Definition of Small-Scale, Short-Duration Activities

For the purposes of this appendix, small-scale, short-duration renovation and maintenance activities are tasks such as, but not limited to:

- Removal of asbestos-containing insulation on pipes;
- Removal of small quantities of asbestos-containing insulation on beams or above ceilings:
- Replacement of an asbestos-containing gasket on a valve;
- Installation or removal of a small section of drywall;
- Installation of electrical conduits through or proximate to asbestos-containing materials.

Evidence in the record (see the Summary and Explanation section of the preamble for paragraph (g), Methods of Compliance, for specific citations) suggests that the use of certain engineering and work practice controls is capable of reducing employee exposures to asbestos to levels below the final standard's action level (0.1 f/cc). Several controls and work practices, used either singly or in combination, can be employed effectively to reduce asbestos exposures during small maintenance and renovation operations. These include:

- Wet methods;
- Removal methods

—Use of Glove bags
—Removal of entire asbestos insulated pipes or structures
—Use of mini-enclosures

- Enclosure of asbestos materials; and
- Maintenance programs.

This appendix describes these controls and work practices in detail.

Preparation of the Area Before Renovation or Maintenance Activities

The first step in preparing to perform a small-scale, short-duration asbestos renovation or maintenance task, regardless of the abatement method that will be used, is the removal from the work area of all objects that are movable to protect them from asbestos contamination. Objects that cannot be removed must be covered completely with a 6-mil-thick polyethylene plastic sheeting before the task begins. If objects have already been contaminated, they should be thoroughly cleaned with a High Efficiency Particulate Air (HEPA) filtered vacuum or be wet wiped before they are removed from the work area or completely encased in the plastic.

Wet Methods

Whenever feasible, and regardless of the abatement method to be used (e.g., removal, enclosure, use of glove bags), wet methods must be used during small-scale, short duration maintenance and renovation activities that involve disturbing asbestos-containing materials. Handling asbestos materials wet is one of the most reliable methods of ensuring that asbestos fibers do not become airborne, and this practice should therefore be used whenever feasible. As discussed in the Summary and Explanation section of the preamble for paragraph (g), Methods of Compliance, wet methods can be used in the great majority of workplace situations. Only in cases where asbestos work must be performed on live electrical equipment, on live steam lines, or in other areas where water will seriously damage materials or equipment may dry removal be performed. Amended water or another wetting agent should be applied by means of an airless sprayer to minimize the extent to which the asbestos-containing material is disturbed.

Asbestos-containing materials should be wetted from the initiation of the maintenance or renovation operation and wetting agents should be used continually throughout the work period to ensure that any dry asbestos-containing material exposed in the course of the work is wet and remains wet until final disposal.

Removal of Small Amounts of Asbestos-Containing Materials

Several methods can be used to remove small amounts of asbestos-containing materials during small-scale, short-duration renovation or maintenance tasks. These include the use of glove bags, the removal of an entire asbestos-covered pipe or structure, and the construction of mini-enclosures. The procedures that employers must use for each of these operations if they wish to avail themselves of the final rule's exemptions are described in the following sections.

Glove Bags

As discussed in the Summary and Explanation section of the preamble for paragraph (g), Methods of Compliance, evidence in the record indicate that the use of glove bags to enclose the work area during small-scale, short-duration maintenance or renovation activities will result in employee exposures to asbestos that are below the final standard's action level 0.1 f/cc. This appendix provides requirements for glove bag procedures to be followed by employers wishing to avail themselves of the standard's exemptions for each activities. OSHA has determined that the use of these procedures will reduce the 8 hour time weighted average (TWA) exposures of employees involved in these work operations to levels below the action level and will

thus provide a degree of employee protection equivalent to that provided by compliance with all provisions of the final rule.

Glove Bag Installation. Glove bags are approximately 40-inch-wide times 64-inch-long bags fitted with arms through which the work can be performed (see Figure G–1(A)). When properly installed and used, they permit workers to remain completely isolated from the asbestos material removed or replaced inside the bag. Glove bags can thus provide a flexible, easily installed, and quickly dismantled temporary small work area enclosure that is ideal for small-scale asbestos renovation or maintenance jobs.

These bags are single use control devices that are disposed of at the end of each job. The bags are made of transparent 6-mil-thick polyethylene plastic with arms of Tyvek* material (the same material used to make the disposable protective suits used in major asbestos removal, renovation, and demolition operations and in protective gloves). Glove bags are readily available from safety supply stores or specialty asbestos removal supply houses. Glove bags come pre-labeled with the asbestos warning label prescribed by OSHA and EPA for bags used to dispose of asbestos waste.

Glove Bag Equipment and Supplies. Supplies and materials that are necessary to use glove bags effectively include:

(1) Tape to seal the glove bag to the area from which asbestos is to be removed;

(2) Amended water or other wetting agents;

(3) An airless sprayer for the application of the wetting agent;

(4) Bridging encapsulant (a paste-like substance for coating asbestos) to seal the rough edges of any asbestos-containing materials that remain within the glove bag at the points of attachment after the rest of the asbestos has to be removed;

(5) Tools such as razor knives, nips, and wire brushes (or other tools suitable for cutting wire, etc.);

(6) A HEPA filter-equipped vacuum for evacuating the glove bag (to minimize the release of asbestos fibers) during removal of the bag from the work area and for cleaning any material that may have escaped during the installation of the glove bag; and

(7) HEPA-equipped dust cartridge respirators for use by the employees involved in the removal of asbestos with the glove bag.

Glove Bag Work Practices. The proper use of glove bags requires the following steps;

(1) Glove bags must be installed so that they completely cover the pipe or other structure where asbestos work is to be done. Glove bags are installed by cutting the sides of the glove bag to fit the size of the pipe from which asbestos is to be removed. The glove bag is attached to the pipe by folding the open edges together and securely sealing them with tape. All openings in the glove bag must be sealed with duct tape or equivalent material. The bottom seam of the glove bag must also be sealed with duct tape or equivalent to prevent any leakage from the bag that may result from a defect in the bottom seam (Figure G–1(B)).

(2) The employee who is performing the asbestos removal with the glove bag must don a half mask dual-cartridge HEPA-equipped respirator, respirators should be worn by employees who are in close contact with the glove bag and who may thus be exposed as a result of small gaps in the seams of the bag or holes punched through the bag by a razor knife or a piece of wire mesh.

(3) The removed asbestos material from the pipe or other surface that has fallen into the enclosed bag must be thoroughly wetted with a wetting agent (applied with an airless sprayer through the pre-cut port provided in most gloves bags or applied through a small hole cut in the bag) (Figure G–1(C)).

(4) Once the asbestos material has been thoroughly wetted, it can be removed from the pipe, beam or other surface. The choice of tool to use to remove the asbestos-containing material depends on the type of material to be removed. Asbestos-containing materials are generally covered with painted canvas and/or wire mesh. Painted canvas can be cut with a razor knife and peeled away from the asbestos-containing material underneath. Once the canvas has been peeled away, the asbestos-containing material underneath may be dry, in which case it should be resprayed with a wetting agent to ensure that it generates as little dust as possible when removed. If the asbestos-containing material is covered with wire mesh, the mesh should be cut with nips, tin snips, or other appropriate tool and removed.

A wetting agent must then be used to spray any layer of dry material that is exposed beneath the mesh, the surface of the stripped underlying structure, and the inside of the glove bag.

(5) After removal of the layer of asbestos-containing material, the pipe or surface from which asbestos has been removed must be thoroughly cleaned with a wire brush and wet wiped with a wetting agent until no traces of the asbestos containing material can be seen.

(6) Any asbestos containing insulation edges that have been exposed as a result of the removal or maintenance activity must be encapsulated with bridging encapsulant to ensure that the edges do not release asbestos fibers to the atmosphere after the glove bag has been removed.

(7) When the asbestos removal and encapsulation have been completed, a vacuum hose from a HEPA filtered vacuum must be inserted into the glove bag through the port to remove any air in the bag that may contain asbestos fibers. When the air has been removed from the bag, the bag should be squeezed tightly (as close to the top as possible), twisted, and sealed with tape, to keep the asbestos materials safely in the bottom of the bag. The HEPA vacuum can then be removed from the bag and the glove bag itself can be removed from the work area to be disposed of properly (Figure G–1(D)).

Mini-Enclosures

In some instances, such as removal of asbestos from a small ventilation system or from a short length of duct, a glove bag may not be either large enough or of the proper shape to enclose the work area. In such cases, a mini-enclosure can be built around

*Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

STANDARDS AND INTERPRETATIONS

the area where small-scale, short-duration asbestos maintenance or renovation work is to be performed (Figure G-2). Such an enclosure should be constructed of 6-mil-thick polyethylene plastic sheeting and can be small enough to restrict entry to the asbestos work area to one worker.

For example, a mini-enclosure can be built in a small utility closet when asbestos-containing duct covering is to be removed. The enclosure is constructed by:

(1) Affixing plastic sheeting to the walls with spray adhesive and tape;

(2) Covering the floor with plastic and sealing the plastic covering the floor to the plastic on the walls;

(3) Sealing any penetrations such as pipes or electrical conduits with tape; and

(4) Constructing a small change room (approximately 3 feet square) made of 6-mil-thick polyethylene plastic supported by 2-inch by 4-inch lumber (the plastic should be attached to the lumber supports with staples or spray adhesive and tape).

The change room should be contiguous to the mini enclosure, and is necessary to allow the worker to vacuum off his protective coveralls and remove them before leaving the work area. While inside the enclosure, the worker should wear Tyvek[1] disposable coveralls and use the appropriate HEPA filtered dual cartridge respiratory protection.

The advantages of mini-enclosures are that they limit the spread of asbestos contamination, reduce the potential exposure of bystanders and other workers who may be working in adjacent areas, and are quick and easy to install. The disadvantage of mini-enclosures is that they may be too small to contain the equipment necessary to create a negative pressure within the enclosure; however, the double layer of plastic sheeting will serve to restrict the release of asbestos fibers to the area outside the enclosure.

Removal of Entire Structures

When pipes are insulated with asbestos-containing materials, removal of the entire pipe may be more protective, easier, and more cost-effective than stripping the asbestos insulation from the pipe. Before such a pipe is cut, the asbestos-containing insulation must be wrapped with 6-mil polyethylene plastic and securely sealed with duct tape or equivalent. This plastic covering will prevent asbestos fibers from becoming airborne as a result of the vibration created by the power saws used to cut the pipe. If possible, the pipes should be cut at locations that are not insulated to avoid disturbing the asbestos. If a pipe is completely insulated with asbestos-containing materials, small sections should be stripped using the glove bag method described above before the pipe is cut at the stripped sections.

Enclosure

The decision to enclose rather than remove asbestos-containing material from an area depends on the building owner's preference, i.e., for removal or containment. Owners consider such factors as cost effectiveness, the physical configuration of the work area, and the amount of traffic in the area when determining which abatement method to use.

If the owner chooses to enclose the structure rather than to remove the asbestos-containing material insulating it, a solid structure (airtight walls and ceilings) must be built around the asbestos covered pipe or structure to prevent the release of asbestos-containing materials into the area beyond the enclosure and to prevent disturbing these materials by casual contact during future maintenance operations.

Such a permanent (i.e., for the life of the building) enclosure should be built of new construction materials and should be impact resistant and airtight. Enclosure walls should be made of tongue-and-groove boards, boards with spine joints, or gypsum boards having taped seams. The underlying structure must be able to support the weight of the enclosure. (Suspended ceilings with laid in panels do not provide airtight enclosures and should not be used to enclose structures covered with asbestos-containing materials.) All joints between the walls and ceiling of the enclosure should be caulked to prevent the escape of asbestos fibers. During the installation of enclosures, tools that are used (such as drills or rivet tools) should be equipped with HEPA-filtered vacuums. Before constructing the enclosure, all electrical conduits, telephone lines, recessed lights, and pipes in the area to be enclosed should be moved to ensure that the enclosure will not have to be re-opened later for routine or emergency maintenance. If such lights or other equipment cannot be moved to a new location for logistic reasons, or if moving them will disturb the asbestos-containing materials, removal rather than enclosure of the asbestos-containing materials is the appropriate control method to use.

Maintenance Program

An asbestos maintenance program must be initiated in all facilities that have asbestos-containing materials. Such a program should include:

- Development of an inventory of all asbestos-containing materials in the facility;
- Periodic examination of all asbestos-containing materials to detect deterioration;
- Written procedures for handling asbestos materials during the performance of small-scale, short-duration maintenance and renovation activities;
- Written procedures for asbestos disposal; and
- Written procedures for dealing with asbestos-related emergencies.

[1]Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

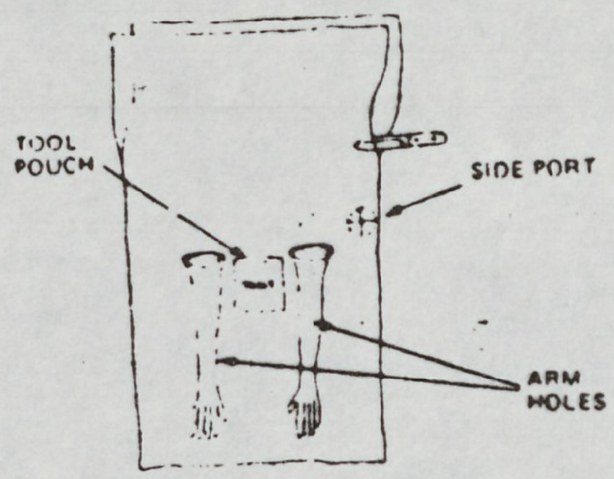
Members of the building's maintenance engineering staff (electricians, heating/air conditioning engineers, plumbers, etc.) who may be required to handle asbestos-containing materials should be trained in safe procedures. Such training should include at a minimum;

- Information regarding types of asbestos and its various uses and forms;
- Information on the health effects associated with asbestos exposure;
- Descriptions of the proper methods of handling asbestos-containing materials; and
- Information on the use of HEPA-equipped dual cartridge respiratory and other personal protection during maintenance activities.

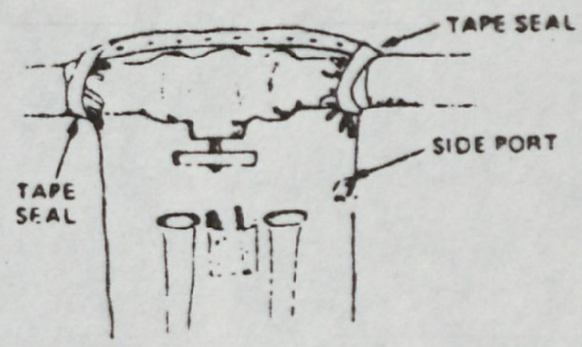
Prohibited Activities

The training program for the maintenance engineering staff should describe methods of handling asbestos-containing materials as well as routine maintenance activities that are prohibited when asbestos-containing materials are involved. For example, maintenance staff employees should be instructed:

- *Not* to drill holes in asbestos-containing materials;
- *Not* to hang plants or pictures on structures covered with asbestos-containing materials;
- *Not* to sand asbestos-containing floor tile;
- *Not* to damage asbestos-containing materials while moving furniture or other objects;
- *Not* to install curtains, drapes, or dividers in such a way that they damage asbestos-containing materials;
- *Not* to dust floors, ceilings, moldings or other surfaces in asbestos-contaminated environments with a dry brush or sweep with a dry broom;
- *Not* to use an ordinary vacuum to clean up asbestos-containing debris;
- *Not* to remove ceiling tiles below asbestos-containing materials without wearing the proper respiratory protection, clearing the area of other people, and observing asbestos removal waste disposal procedures;
- *Not* to remove ventilation system filters dry; and
- *Not* to shake ventilation system filters.



(A)



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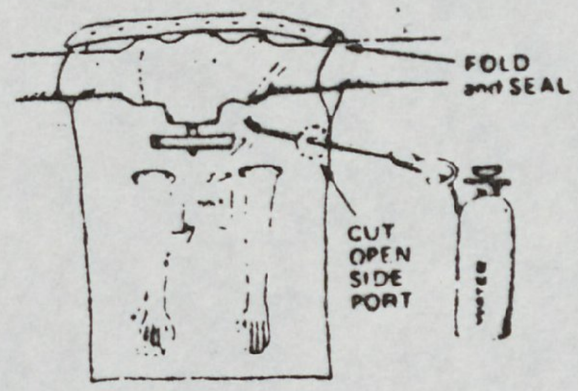

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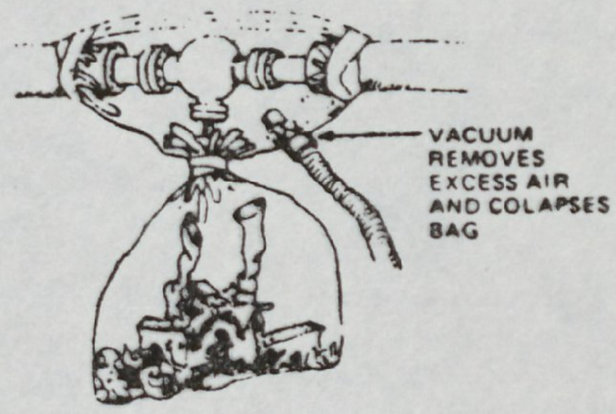

(D)

Figure G–1. Diagrams Showing Proper Use of Glove Bags in Small-Scale, Short-Duration Maintenance and Renovation Operations.

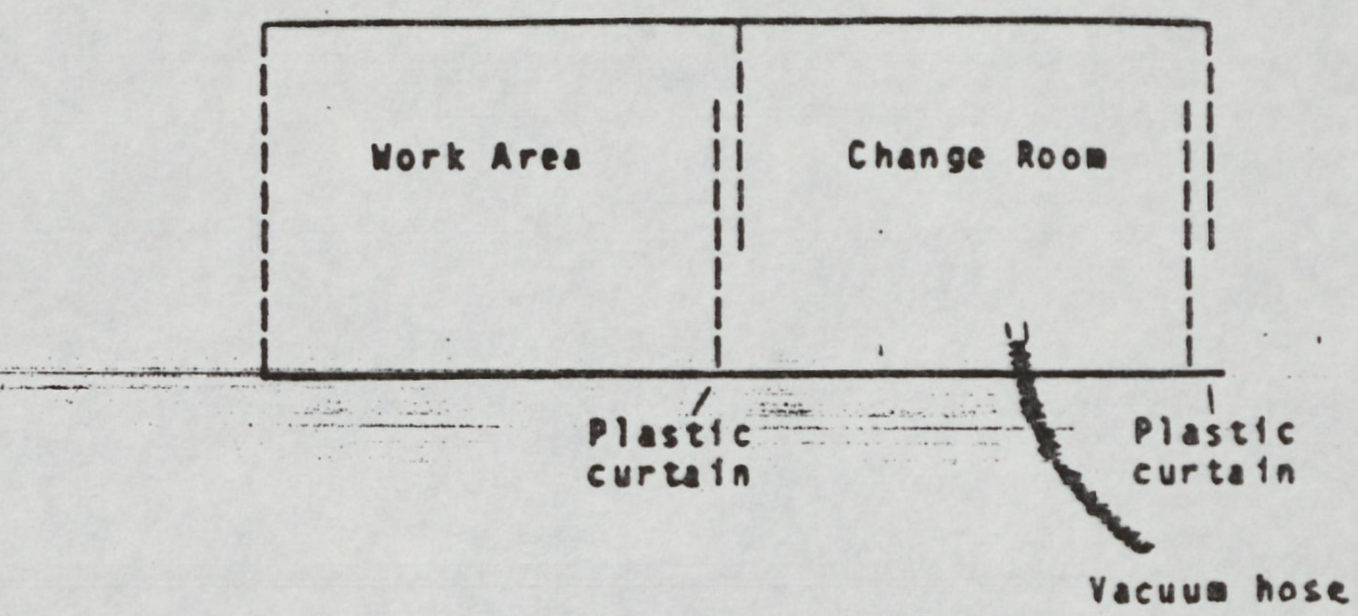

Figure G-2. Schematic of Mini-enclosure

EAST CAROLINA UNIVERSITY

BUSINESS MANUAL

Administrative Policies and Procedures

SECTION	PART
HSO	Policy

STATEMENT 16

PAGE 1 OF 1

TITLE: RESPIRATORY PROTECTION

EFFECTIVE DATE: September 25, 1981

OSHA Requirements

According to OSHA, the minimum acceptable respiratory protection program must include written procedures governing the selection and use of respirators; appropriate training for employees; regular cleaning, proper storage, and routine inspection of respirators; medical surveillance; and program evaluation. The University Occupational Health and Safety Office is responsible for administering an effective respirator program to insure the fulfillment of the above requirements. Each employee is responsible for using the provided respiratory protection in accordance with instructions and training received.

Engineering Controls

Atmospheric contamination by harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors must be eliminated as far as feasible by accepted engineering control measures, such as enclosure or confinement of the operation, general and local ventilation, or substitution of less toxic materials.

Safety Plan

For work environments requiring the use of respirators, the work supervisor is responsible for preparing a Safety Plan outlining the nature of the work, the hazard to which employees are exposed, and safety procedures to be followed. This Safety Plan must be reviewed by the Occupational Health and Safety Office before respirators are issued to employees. Planning assistance is also available from this office.

Classification of Respiratory Hazards and Respirators

Respiratory hazards include: oxygen deficiency, gas and vapor contaminants, particulate contaminants, and the combination of vapor and particulate contaminants. Respirators fall into the following general classifications, according to the mode of operation: atmosphere-supplying respirators, air-purifying respirators, and combination atmosphere-supplying and air-purifying respirators.

Selection of Respirators

The selection of a respirator for any given situation requires consideration of the following factors: nature of the hazard, extent of the hazard, work requirements and conditions, and characteristics and limitations of available respirators.

Standby Assistance

For atmospheres immediately dangerous to life or health, standby personnel must be present with suitable rescue equipment.

Training

Both the user of the respirator and the supervisor must be trained in the proper selection, use, and maintenance of respirators. Minimum training is to include the following:

- nature of the hazard
- explanation of why more positive control is not immediately feasible
- discussion of the respirator's capabilities and limitations
- instruction in the actual use of the respirator
- training to recognize and cope with emergency situations
- special training as needed for special use

Cleaning

Routinely used respirators must be collected, cleaned, and disinfected as frequently as necessary to insure that proper protection is provided for the wearer. Respirators maintained for emergency use must be cleaned and disinfected after each use.

Storage

Respirators must be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Respirators placed at stations and work areas for emergency use should be stored in compartments built for the purpose, be quickly accessible at all times, and be clearly marked. Routinely used respirators, such as dust respirators, may be placed in plastic bags. Respirators should not be stored in such places as lockers or tool boxes unless they are in carrying cases or cartons.

Inspection

Respirators are to be inspected before and after each use. A respirator that is not routinely used but is kept ready for emergency use must be inspected after each use and at least monthly. Respirator inspection is to include a check of the tightness of connections and the condition of the facepiece, headbands, valves, connecting tube, and cartridges. A record is to be kept of inspection dates and findings for respirators maintained for emergency use.

Medical Surveillance

Workers should never be assigned to any operation requiring respiratory protection until a physician has determined that they are physically and physiologically capable of working with the equipment. When respirators are worn in toxic atmospheres, the individual should be provided appropriate periodic laboratory tests. These may include urine, blood, or fecal analyses and other techniques to determine the intake and excretion of toxic substances.

Evaluation

The respirator program will be monitored and evaluated by the Occupational Health and Safety Office to determine its effectiveness by evaluating the degree of wearer acceptance, examination of respirators in use, and periodic medical examinations to evaluate the protection afforded.