

KERR-McGEE CORPORATION

INTERNAL CORRESPONDENCE

TO Distribution DATE June 4, 1986
FROM Evan R. Goltra, M.D. SUBJECT Asbestos
Corporate Medical Director

The enclosed Rules For Abatement of Friable Asbestos Materials have been adopted by the State Department of Labor. These rules are applicable for Kerr-McGee facilities in the State of Oklahoma engaging contractors for asbestos abatement.

You should become familiar with these rules. Prior to any asbestos abatement, Corporate Medical Services should be notified.

Any questions concerning this memo or asbestos abatement should be directed to Dennis Johnson (extension 2918) and/or Janet Smith (extension 2534).

ERG/lh

enclosure

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CORPORATE

LABOR AND EMPLOYMENT—REMOVAL OF

FRIABLE MATERIALS

(Title 40, Oklahoma Statutes Section 451-457)

AN ACT RELATING TO LABOR WHICH RELATES TO REMOVAL OF FRIABLE MATERIAL; MODIFYING TERMS AND DEFINITIONS AND DEFINING ADDITIONAL TERMS; REQUIRING LICENSURE FOR ASBESTOS ABATEMENT; INCREASING FEE; REQUIRING CERTIFICATION OF EMPLOYEES AND PROHIBITING CERTAIN ACTION; PROVIDING EXEMPTIONS FROM CERTIFICATION FEE; SPECIFYING POWERS AND DUTIES OF COMMISSIONER OF LABOR; PROVIDING FOR PENALTIES; PROVIDING FOR INSPECTION OF PROPERTY; SPECIFYING POWERS AND DUTIES OF COMMISSIONER OF HEALTH.

BE IT ENACTED BY THE PEOPLE OF THE STATE OF OKLAHOMA:

Section 451. Definitions

1. "Friable asbestos materials" means any material that contains asbestos of one percent (1%) or more that can be crumbled, pulverized or reduced to powder by hand pressure;
2. "Friable asbestos material abatement" means the removal, encapsulation or enclosure of friable asbestos containing material;
3. "Friable asbestos material encapsulation" means the application of a bonding agent called a sealant, which penetrates and hardens the asbestos material or covers the surface of the material with a protective coating, thus preventing fiber release from the asbestos material;
4. "Friable asbestos material removal" means the actual physical removal of any friable asbestos containing material from a facility, when the asbestos is either attached to or detached from any device or structure;
5. "Contractor" means any public or private entity that engages in friable asbestos containing material abatement in any facility, in this state except private residences or apartment houses of less than six family units;
6. "Commissioner" means the Commissioner of Labor.

Section 452. License Required—Fee—Exemptions

A. No contractor shall abate any friable material containing asbestos without having first obtained a license to do so from the Commissioner of Labor. The Commissioner shall issue an asbestos abatement license to a qualified contractor upon proper application, as determined by the Commissioner. The annual fee for such license shall be Three Hundred Dollars (\$300.00). The annual fee for examining and certifying workers employed by a contractor for asbestos abatement shall be Twenty-five Dollars (\$25.00). Uncertified workers shall not be used on any asbestos abatement projects.

B. The state and political subdivisions thereof, counties and political subdivisions thereof and municipalities and political subdivisions thereof, and their supervisors and employees, shall be exempt from any certification fees required by this section when such entities act as a contractor. Any contractor not performing abatement work during the period of the issued license shall be considered a new applicant for purposes of licensing and training.

Section 453. Powers and Duties of Commissioner

A. The Commissioner of Labor shall have the following powers and duties:

1. To develop and adopt standards for the abatement of friable asbestos materials which shall be consistent with general industry standards;

2. To instruct and examine contractors, employees and supervisors on the safe abatement of friable asbestos materials;

3. To hire sufficient personnel to carry out the provisions of this act consistent with funds allocated and full-time-equivalent employees authorized;

4. To inspect all asbestos abatement projects, to issue, modify and revoke orders; to issue cease and desist orders; and to require mandamus and seek injunctive relief for enforcement of orders; and

5. To exercise all incidental powers which are necessary to carry out the provisions of this act.

B. The violations of any rule or standards shall be grounds for the Commissioner to evoke any penalties set forth in Section 456 of this title.

Section 454. Suspension, Revocation or Refusal to Issue License—
Hearing--Appeal

If the Commissioner finds that a contractor has violated any of the provisions of this act or any rule promulgated pursuant to this act, the Commissioner may suspend, revoke or refuse to issue the license of the contractor after a hearing held for such purpose. Such hearing shall be held within thirty (30) days after written notice has been sent to the contractor by certified mail. If, after such hearing, the Commissioner finds cause to suspend, revoke or refuse to issue a license, the contractor shall be given written notice of the decision of the Commissioner and the basis therefor. The decisions shall become final at the end of thirty (30) days from the date of such notice, unless appealed to the district court. All appeals from the Commissioner's order shall be taken in the manner prescribed by law.

Section 455. Inspection and Investigation

The Commissioner of Labor or an authorized representative shall have the power and authority to enter at reasonable times upon any property for the purpose of inspecting and investigating contractors relating to the abatement of any friable material containing asbestos.

Section 456. Violations—Penalties—Injunction

A. Any person who violates any of the provisions of Sections 451 through 457 of this act or who violates any rule or order promulgated pursuant to Sections 451 through 457 of this act shall be guilty of a misdemeanor and may be enjoined from continuing such action. Each day's violations shall constitute a separate violation.

B. The Attorney General shall, upon request of the Commissioner, bring an action for injunction against any person violating any provision of Sections 451 through 457 of this act or violating any order or determination of the Commissioner. In any action for injunction, any finding of the Commissioner, after notice, shall be prima facie evidence of the facts found therein.

C. A district attorney, upon request of the Commissioner, shall prosecute any violation of Sections 451 through 457 of this act.

Section 457. Powers and Duties—Commissioner of Health

The Commissioner of Health shall have the following powers and duties:

1. To inspect public buildings for the presence of friable asbestos materials;

2. To collect and analyze samples to determine the presence and condition of friable asbestos materials;

3. To determine the extent of public health hazard posed by the presence of friable asbestos materials;

4. To recommend appropriate abatement measures for friable asbestos materials;

5. To inspect private property upon request of the owner for presence of friable asbestos materials; and

6. To perform such other duties as the Commissioner of Health may determine are essential to the protection of public health from hazards posed by friable asbestos materials.

Signed Into Law July 15, 1985, Effective November 1, 1985.

RULES FOR ABATEMENT OF FRIABLE ASBESTOS MATERIALS

IMPLEMENTING

TITLE 40, SECTIONS 451 THROUGH 457, OKLAHOMA STATUTES AS AMENDED

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RULE I

Definitions

- A. Friable asbestos materials means any material that contains asbestos of one percent (1%) or more that can be crumbled, pulverized or reduced to powder by hand pressure.
- B. Friable asbestos material abatement means the removal, encapsulation or enclosure of friable asbestos-containing material by any public or private entity, in any facility in this state except private residences or apartment houses of less than six family units.
- C. Friable asbestos material encapsulation means the application of a bonding agent called a sealant, which penetrates and hardens the asbestos material or covers the surface of the material with a protective coating, thus preventing fiber release from the asbestos material;
- D. Friable asbestos material removal means the actual physical removal of any friable asbestos-containing material from a facility, when the asbestos is either attached to or detached from any device or structure;
- E. Contractor means any public or private entity that engages in friable asbestos-containing material abatement in any facility in this state except private residences or apartment houses of less than six family units;
- F. Worker means any employee of a contractor physically engaged in the abatement of asbestos, or performing a task for the contractor in which direct contact with asbestos is likely.
- G. NIOSH means the National Institute for Occupational Safety and Health.

- H. OSHA means the Occupational Safety and Health Administration of the United States Department of Labor.
- I. EPA means the United States Environmental Protection Agency.
- J. DOL means the Oklahoma State Department of Labor.
- K. DOT means the Oklahoma State Department of Transportation.
- L. HEPA means high efficiency particulate absolute.
- M. Commissioner means the Commissioner of Labor.
- N. Private entities engaged in removal, encapsulation, or enclosure, within their own facilities, and with their own employees, of friable asbestos materials related to industrial functions in areas not accessible to the general public shall be exempt from the provisions of these rules.

RULE II

Adoption of Standards:

- A. The following National Standards are hereby adopted as they pertain to friable asbestos material abatement. In any instance where adopted standards are in conflict with each other, or with the rules of the Commissioner the most stringent, as determined by the Commissioner, shall apply.
1. 29 CFR 1910, latest edition, General Industry Standards;
 2. 40 CFR 61, Subpart M
 3. ANSI Z88.2 - 1980;
 4. Contractors will abide by all other applicable laws, rules, and regulations, including, but not limited to those relating to:
 - a. Worker's compensation;
 - b. Prevailing wage rates;

- c. Public contracts;
- d. Liability Insurance;
- e. EPA, OSHA, DOT, and DOL rules and regulations;

RULE III

Contractor and Worker Licensing and Requirements

A. Applications.

1. Applications shall be submitted on forms prescribed by the Commissioner.
2. The license fee of three hundred dollars (\$300) for contractors and twenty-five dollars (\$25) for workers shall accompany the application.
3. Documentation of contractors and workers accredited training/examination shall accompany the application.
4. The renewal license shall be handled as an original license application.
5. Licenses shall be issued for a period of one year from the date of issuance.

B. Licensing of Contractors and Asbestos Abatement Workers:

1. Contractors shall have successfully completed and shall have documentation provided for:
 - a. A written examination prepared by the Commissioner.
Passing is 80% correct answers;
 - b. Attendance at not less than two (2) asbestos abatement courses or other such substituted training, either of which must be approved by the Commissioner. At least one of the courses shall have been within one year immediately prior to the application.

2. Workers shall have successfully completed and shall provide documentation for:
 - a. A written examination prepared by the Commissioner.
Passing is 70% correct answers;
 - b. Attendance at not less than one asbestos abatement course, or other such substituted training, either of which must be approved by the Commissioner within the one year immediately prior to the application.
3. The worker license shall be issued in the name of the applicant and shall be valid only when working for a licensed contractor.
4. Worker license cards shall be available at the jobsite for inspection by the Department of Labor.
5. The initial training course shall provide, at a minimum, and as preparation for the examinations, information on the following topics:
 - a. Physical characteristics of asbestos.
 - b. The health hazards of asbestos.
 - c. Employee personal protective equipment and clothing.
 - d. Medical monitoring procedures and requirements.
 - e. Best available work practices for asbestos abatement activities including:
 1. Site Preparation.
 2. Operational Procedures.
 3. Work practices requirements as they apply to removal, encapsulation, enclosure, and operation and maintenance.

- f. Air monitoring procedures.
- g. Personal hygiene.
- h. Packaging and transportation of asbestos containing/contaminated materials.
- i. Landfill/storage requirements.
- j. OSHA, NIOSH, EPA, DOL or other applicable standards.
- k. Contractors training - Contractors shall receive additional instruction covering the following topics:
 - 1. Contract specifications and bidding procedures, liability insurance and bonding, and legal considerations related to asbestos abatement.
 - 2. Establishing respiratory protection programs, medical surveillance programs, and EPA, OSHA, and DOL record keeping requirements.
- 6. Ninety days must lapse prior to re-examination.
- 7. Contractors and workers shall be required to attend an annual review course which, at a minimum, adequately reviews the topics listed in Rule III.B.5, updates information on best available abatement procedures and equipment, and reviews regulatory changes and interpretations.
- 8. Training courses may be provided by governmental agencies, private sector firms, educational institutions and individuals, each of which will be evaluated by the Commissioner for knowledge and experience required to properly train abatement personnel. Course content will be scrutinized for adequacy and accuracy in training techniques. Entities providing such training may also apply to the Commissioner to administer DOL licensing examination

in conjunction with on-site training.

RULE IV

Contractor and Worker Records of Violations

- A. A record of violations (both serious and non-serious) will be kept by the Oklahoma Department of Labor to review contractor performance on abatement jobs. This record will include number and frequency of violations.
- B. This record will be used by the Commissioner to review contractors' and workers' performances, before renewal of asbestos abatement licenses.
- C. If a significant number of violations is found to exist, the Commissioner shall have the authority to suspend, revoke, or deny licensing to that specific contractor or worker.

RULE V

Contractor Procedures:

- A. Contractors shall notify the Commissioner in writing twenty (20) days prior to performing any asbestos abatement work. Notification shall include:
 - 1. Contractor's Name, Address, and Phone Number;
 - 2. Owner's Name, Address, and Phone Number;
 - 3. Location of Job Site;
 - 4. Projected Starting Date;
 - 5. Projected Ending Date;
 - 6. Abatement Technique;
 - 7. Amount of asbestos to be abated: Linear Feet, Square Feet; and laboratory reports showing the type and approximate percentage of asbestos to be abated.

8. Names and addresses of all consultants, industrial hygienists, testing laboratories, or other subcontractors to be utilized during the project.
 9. Name and address of landfill to be used for asbestos disposal.
 10. Plans for decontamination facilities.
 11. Copies of project documents, including:
 - a. Specifications
 - b. Bonds and insurance certificates
 - c. NESHAPS notification
 12. A list of all vehicles and/or trailers, not owned by the contractor, which will be used to transport asbestos-containing articles or containers.
- B. Notification by phone is permitted in the case of an emergency involving protection of limb, life and property. Notification shall include the information contained in Sections A.1 through A.12 above, and the date of the contract. The written notification items A.1 through A.12 above shall be submitted to the Commissioner within 10 days after the start of abatement.
1. The Contractor shall immediately notify the Commissioner of any changes in the information provided under Sections A.1 through A.12 above.
- C. Contractors shall not start to abate any asbestos-containing materials until:
1. An authorization to begin abatement activity has been received by the contractor from the Commissioner.
 - a. The authorization to proceed will state whether or not

the site preparation must be approved by the Department of Labor prior to gross removal of asbestos-containing material.

3. Documentation and required materials for prior abatement projects has been received by the Commissioner. This includes but is not limited to outstanding daily air sample test results, bonds, physical examinations, and correction of prior violations.

- D. A copy of the Contractor's written respirator program shall be submitted to the Commissioner.
- E. The Contractor shall immediately inform owner and the Commissioner of health hazards created during abatement. This will include, but is not limited to such occurrences as breaching the containment area, air monitoring tests indicating airborne asbestos above acceptable levels, accidents, etc.

RULE VI

Air Sampling

- A. Daily air monitoring requirements shall consist of the following:
 1. One personal air sample for every four workers, but a minimum of two (2) personal air samples, collected from within the work area by a method to be determined by the Commissioner. One of these personal air samples must be from a worker collecting and bagging asbestos.
 2. Minimum of, but not limited to, one (1) air sample from each independent exit area collected directly outside and adjacent to the work area by a method to be determined by the

Commissioner.

3. Minimum of, but not limited to, one (1) additional air sample, location and method to be determined by the Commissioner.
 4. Air monitoring equipment shall be calibrated to draw the required flow rate during the sampling period.
- C. After all abatement and clean-up procedures are concluded, a clean test shall be conducted by the contractor to ensure cleanliness of the abatement area, prior to re-occupancy of the abatement area.
1. Clean Test (re-occupancy) samples shall not be conducted until visual inspection is performed by Oklahoma Department of Labor personnel.
 2. Clean Test samples shall be by aggressive sampling techniques, the number and method of such tests to be determined by the Commissioner.
 3. To be approved, the clean test concentration shall be less than 0.005 fibers per cubic centimeters, or the air concentration of asbestos fibers outside the abatement area, which ever is greater.
- D. All asbestos analyses shall be performed by a laboratories certified by the American Industrial Hygiene Association or by a laboratories which:
1. Utilize only laboratory technicians which have successfully completed NIOSH approved courses in the type analyses performed by the technician, and
 2. Which participates in the:
 - a. EPA bulk asbestos sample quality assurance testing program, latest round, and attained a seventy-five (75) percent correct score for that round, for laboratories

providing bulk sample analyses, and/or:

- b. NIOSH Proficiency Analytical Testing Program, latest round, and attained average results not more than one (1) standard deviation from the NIOSH reported average for the round, for laboratories providing fiber counting analyses.
- E. All reports of analyses shall be signed by the technician performing the analysis.

RULE VII

Glovebag Operations:

- A. Glovebag operations for the purpose of abatement shall be treated the same as other abatement procedures. Therefore, air sampling shall be consistent with Rule VI.
- B. Glovebag operations for the purpose of maintenance, repair, or service of piping, valves, or fittings, and which involve less than 20 linear feet of asbestos removed will be exempt from:
 - 1. The prior notice requirement of Rule V, provided that within thirty days, the Commissioner receives from the owner a complete list of all such operations for the previous month.
 - 2. The air monitoring provisions of Rule VI, providing all proper measures to protect the workers and the public from the potential hazards of asbestos are taken, and providing the contractor has on file with the Commissioner a glovebag operation program approved by the Commissioner.
- C. Personnel involved in glovebag abatement shall be required to wear appropriate personal protective equipment (e.g., proper respiratory

protection and full-body protection of VIII.E.)

- D. A HEPA vacuum system shall be utilized during all glovebagging operations.

RULE VIII

Worker and Work Area Protection

- A. The contractor shall provide workers with respirators in accordance with the approved respirator program. The contractor shall provide a sufficient quantity of filters approved for asbestos so workers can change filters during the work day. Filters shall not be used any longer than one (1) work day. The respirator filters shall be stored at the jobsite in the change room and shall be totally protected from exposure to asbestos prior to their use. Single use, disposable respirators will not be approved.
- B. Workers shall always wear in the work area, a respirator properly fitted to the face.
- C. Contractors shall instruct and train workers in proper respirator use and maintenance.
- D. Type "C" respiratory protection.
 - 1. Shall be worn for all gross asbestos removal, excluding glovebag operations:
 - a. Unless an initial determination by a representative number of air samples collected during full work shifts of eight hours by a method approved by the Commissioner verifies airborne fiber concentration levels which indicate reduction to powered air purifying or air purifying respiratory protection would be adequate (29

CFR 1910.1001 (d)(2)(i)(ii)).

- b. If more than 24 hours elapse from the previously measured air samples, or if the air samples indicate airborne fiber concentrations are at a level above which air powered or air purifying respiratory protection would be inadequate, or if an incident occurs with the potential for raising the airborne fiber concentration to such a level, then the type "C" shall be worn.
- E. Workers shall wear disposable, full-body coveralls and disposable head covers and footwear in the work area. Footwear may be disposable. Non-disposable footwear shall be left in the work area at all times until disposal at job completion.
- F. The contractor shall provide a change room to put on the disposable coveralls, respirators, and head covers before entering the work area.
- G. All workers without exception shall:
 - 1. Remove street clothes in the change room and put on the disposable coveralls and respirators before entering the work area.
 - 2. Remove the disposable coveralls, head covers, and footwear in the work area before leaving the work area. Still wearing their respirators, proceed to the showers and remove their respirators, while showering with soap and water.
 - 3. Shower at the end of each day's work before entering the change room to change into street clothes.
- H. Workers shall not eat, drink, smoke, chew gum, or chew tobacco in the

work area. To eat, drink, or smoke, workers shall remove the disposable work clothes and footwear in the work area before leaving the work area. Still wearing their respirators, workers shall proceed to the showers and remove their respirators while showering with soap and water. Workmen shall then dress into a new, clean, disposable coverall to eat, smoke, or drink. The new coverall can be worn to re-enter the work area.

- I. The contractor shall provide a respirator and disposable coveralls, headcover, and footwear to any official representative of the owner, or any regulatory official who inspects the jobsite.
- J. All persons entering the work area shall wear approved respirators and disposable coveralls, headcover, and footwear, and shall follow the decontamination procedures of Section VIII.G
- K. Work Area Preparation.
 - 1. The contractor shall set up a decontamination facility outside the work area which shall consist of a change room, shower area, and equipment area. The decontamination facility shall be subject to the approval of the Commissioner.
 - 2. All shower water waste shall be filtered down to the 5 micron range utilizing filtering mechanisms approved by the Commissioner. The shower filtrate shall be disposed of as a contaminated material.
 - 3. All shower decontamination facilities shall be required to have hot running water.
- L. The contractor shall establish emergency and fire exits from the work area. Emergency procedures shall have priority.
 - 1. The work area shall have a dry-charge ammonium phosphate

fire extinguisher with an Underwriters Laboratories, Inc. rating of at least 10A:B:C, which must be decontaminated upon removal.

- M. Any clothing worn in work areas prior to the cleaning of the work area in accordance with XI.H.3. shall be disposed of as contaminated material or properly bagged for transportation and use at another work area.

RULE IX

Minimum Abatement Standards

A. Scope of Work.

1. The contractor shall furnish all labor, material, services, insurance and equipment necessary to carry out the abatement operation, in accordance with regulations and job specifications.
2. The contractor shall be responsible for obtaining approval for a waste disposal site in compliance with the Oklahoma State Department of Health.
3. Contractors shall post the EPA and OSHA regulations (and any applicable State and Local government regulations) at the job site.

B. Materials

1. Polyethylene sheeting for walls and stationary objects shall be a minimum of 4-mil thickness. For floors and all other uses sheeting of at least 6-mil thickness shall be used in widths selected to minimize the frequency of joints. Special

materials required to protect objects in the work area should be detailed (e.g. plywood over carpeting or hardwood floors to prevent damage from scaffolds and falling material)).

a. Polyethylene sheeting utilized for worker

decontamination enclosure shall be opaque white or black in color.

2. Disposal bags shall be of 6 mil polyethylene, with labels to meet EPA or OSHA requirements.
3. Disposal drums shall be metal or fiberboard with locking ring tops, with labels to meet EPA or OSHA requirements.
4. Surfactant (wetting agent) shall be a 50/50 mixture of polyoxyethylene ether and polyoxyethylene ester, or equivalent, mixed in a proportion of 1 fluid ounce to 5 gallons of water or as specified by manufacturer.

C. Equipment.

1. A sufficient quantity of negative pressure ventilation units, if utilized, shall be equipped with HEPA filtration and operated in accordance with ANSI 29.2-79 (local exhaust ventilation requirements) and EPA guidance document EPA 560, latest edition, Guidance for Controlling Asbestos-Containing Materials in Buildings "Recommended Specifications and Operating Procedures For the Use of Negative Pressure Systems for Asbestos Abatement" shall be utilized so as to provide one workplace air change every 15 minutes, and shall not exhaust into occupied areas.
2. A sufficient supply of disposable mops, rags and sponges for work area decontamination shall be available.

3. A sufficient supply of scaffolds, ladders, lifts and hand tools (e.g., scrapers, wire cutters, brushes, utility knives, wire saws, etc.) shall be provided as needed.
4. Sprayers for spraying amended water shall be provided as needed.
5. Rubber dustpans and rubber squeegees shall be provided for cleanup.
6. Brushes utilized for removing loose asbestos-containing material shall have nylon or fiber bristles, not metal.
7. A sufficient supply of HEPA filtered vacuum systems shall be available during cleanup.
8. Hand tools equipped with HEPA filtered local exhaust ventilation shall be utilized during the installation of enclosures and supports if there is any need to disturb asbestos-containing materials. (As an alternative, asbestos material may be partially removed following proper removal procedures prior to the installation of supports and enclosures.)

D. Preparation of Work Areas.

1. Shut down and lock out electric power to the work area. Provide temporary power and lighting. Ensure safe installation (including ground fault interruption) of temporary power sources and equipment by compliance with all applicable electrical code requirements and OSHA requirements for temporary electrical systems.
2. Shut down and lock out all heating, cooling and air conditioning system (HVAC) components that are in, supply, or

pass through the work area. Seal all intake and exhaust vents in the work area with tape and 6-mil polyethylene. Also seal any seams in system components that pass through the work area.

3. The contractor shall provide sanitary facilities for abatement personnel outside the enclosed work area and maintain them in a clean and sanitary condition throughout the project.
4. Clean all movable objects within the work area using a HEPA filtered vacuum and/or wet cleaning methods as appropriate. After cleaning, these objects shall be removed from the work area and stored in an uncontaminated location. Carpeting, drapes, clothing, upholstered furniture and other fabric items shall be properly decontaminated or disposed of as contaminated waste.
5. Clean all fixed objects in the work area using HEPA filtered vacuums and/or wet cleaning techniques as appropriate. Careful attention must be paid to machinery behind grills or gratings where access may be difficult but contamination significant. Also pay particular attention to wall, floor, and ceiling penetrations behind fixed items. After cleaning, enclose fixed objects in a minimum of 4 mil polyethylene sheeting and seal securely in place with tape.
6. Clean all surfaces in the work area using HEPA filtered vacuums and/or wet cleaning methods as appropriate. Do not use any methods that would raise dust such as dry sweeping or vacuuming with equipment not equipped with HEPA filters. Do not disturb asbestos-containing materials during the

initial cleaning phase.

7. Floors shall be covered with two layers of 6 mil (minimum) sheeting. Additional layers of sheeting may be utilized as drop cloths to aid in cleanup of bulk materials.
 - a. Plastic shall be sized to minimize seams. If the floor area necessitates seams, those on successive layers of sheeting shall be staggered at least 6 feet to reduce the potential for water to penetrate to the flooring material.
 - b. Floor sheeting shall extend at least 12" up the sidewalls of the work area.
 - c. Sheeting shall be installed in a fashion to prevent slippage between successive layers of material.
8. Walls shall be covered with a minimum of 4 mil polyethylene sheeting.
 - a. Seams in walls shall be staggered and separated by a distance of at least 6 feet.
 - b. Wall sheeting shall overlap floor sheeting by at least 12 inches beyond the wall/floor joint to provide a better seal against water damage. Wall sheeting shall be securely attached to the floor sheeting.
 - c. Wall sheeting shall be secured adequately to prevent it from falling away from the walls. This will require additional support/attachment when negative pressure ventilation systems are utilized.

E. Removal Procedures.

1. Isolate and clean the work area.

2. Wet all asbestos-containing material with an amended water solution using equipment capable of providing a fine spray mist. Saturate the material to the substrate. However, do not allow excessive water to accumulate in the work area. Keep all removed material wet enough to prevent fiber release until it can be containerized for disposal.
3. Saturated asbestos-containing material shall be removed in manageable sections. Removed material shall be containerized before moving to a new location for continuance of work. Surrounding areas shall be periodically sprayed and maintained in a wet condition until visible material is cleaned up.
4. Material removed from building structures or components shall not be dropped or thrown to the floor.
5. Containers (6-mil polyethylene bags or drums) shall be sealed when full. Bags shall not be overfilled. They shall be securely sealed to prevent accidental opening and leakage by tying tops of bags in an overhand knot or by taping in a gooseneck fashion. Do not seal bags with wire or cord. Bags may be placed in drums for staging and transportation to the landfill. Bags shall be decontaminated on exterior surfaces by wet cleaning and HEPA vacuuming before being placed in clean drums.
6. Large components removed intact shall be wrapped in a minimum 2 layers of 6-mil polyethylene sheeting secured with tape for transport to the landfill.
7. Asbestos-containing waste with sharp-edged components (e.g. nails, screws, metal lath, tin sheeting) may tear the

polyethylene bags or sheeting and shall be placed into drums, or boxes wrapped in a minimum of 2 layers of 6 mil polyethylene sheeting, secured with tape.

8. After completion of all stripping work, surfaces from which asbestos-containing materials have been removed shall be wet brushed and sponged or cleaned by some equivalent method to remove all visible residue.
9. Clean-up shall proceed in accordance with Section H.

F. Encapsulation Procedures

1. Isolate and clean the work area in accordance with Section D.
2. Repair damaged and missing areas of existing materials with non-asbestos-containing substitutes. Material must adhere adequately to existing surfaces and provide an adequate base for application of encapsulating agents. Filler material shall be applied in accordance with manufacturer's recommendations.
3. Remove loose or hanging asbestos-containing materials in accordance with the requirements of Section E.
4. Bridging-type encapsulants.
 - a. Apply bridging-type encapsulants according to manufacturers recommendations.
 - b. When using a bridging-type encapsulant use a different color for each successive coat.
5. Penetrating-type encapsulants.
 - a. Apply penetrating-type encapsulant according to manufacturer's recommendations.

- b. Apply penetrating-type encapsulant to penetrate existing sprayed asbestos materials uniformly down to substrate.
 - c. During treatment with a penetrating-type encapsulant, the Contractor shall remove selected core samples of the asbestos-containing materials to check the depth of penetration.
- 6. Apply encapsulants using airless spray equipment.
 - 7. Clean-up shall be in accordance with Section H.
 - 8. Encapsulated asbestos-containing materials shall be provided with caution labels printed in letters of sufficient size and contrast as to be readily visible and legible. Each room or area where the conditions requiring such labels exist shall have a minimum of one (1) such label, and such additional labels as may be necessary to ensure ready visibility and legibility. Piping shall have, as a minimum, one label every 30 feet. The label shall read:

CAUTION:

Contains Asbestos Fibers

Avoid Creating Dust

Breathing Asbestos Dust May Cause Serious Bodily Harm

G. Enclosure Procedures.

- 1. Isolate and clean the work area in accordance with Section D.
- 2. Spray areas that will be disturbed during the installation of hangers or other support/framing materials for the enclosure with water containing the specified surfactant.

Keep these areas damp to reduce airborne fiber concentrations.

3. Remove loose or hanging asbestos-containing materials in accordance with the requirements of Section E.
4. After installation of hangers and other fixing devices and before installation of enclosure, repair damaged areas of fireproofing/thermal insulation materials as required using a non-asbestos-containing replacement material. Prepare surfaces and apply replacement material in accordance with manufacturer's recommendations.
5. Use hand tools equipped with HEPA filtered local exhaust ventilation to drill, cut into, or otherwise disturb asbestos containing materials during the installation of support systems for the enclosures. (Alternatively, these areas of material could be removed prior to installation of supports.)
6. Use materials that are impact resistant and that will provide an air-tight barrier once construction is complete.
7. Move utilities as necessary and reinstall in a manner which permits proper utilization and does not disturb the integrity of the enclosures.
8. Enclosed asbestos-containing materials shall be designated in accordance with Section F (8) in order to warn building maintenance personnel in the event they are required to disturb the enclosure.

H. Clean-up Procedure.

1. Remove and containerize all visible accumulations of asbestos-containing material and asbestos-contaminated

debris utilizing rubber dust pans and rubber squeegees to move material about. Do not use metal shovels to pick up or move accumulated waste. Special care shall be taken to minimize damage to floor sheeting.

2. Wet clean all surfaces in the work area using rags, mops and sponges as appropriate.
3. Remove the cleaned outer layer of plastic sheeting from walls and floors. Windows, doors, HVAC system vents and all other openings shall remain sealed. The negative pressure ventilation units shall remain in continuous operation. Decontamination enclosure systems shall remain in place and be utilized.
4. After cleaning the work area, wait at least 24 hours to allow fibers to settle and HEPA vacuum and wet clean all objects and surfaces in the work area again.
5. Remove all containerized waste from the work area through the load-out airlock.
6. Decontaminate all tools and equipment and remove at the appropriate time in the cleaning sequence.
7. Inspect the work area for visible residue. If any accumulation of residue is observed, it will be assumed to be asbestos and the 24 hour settling period/cleaning cycle repeated.
8. After the work area has been rendered free of visible residue, a thin coat of a satisfactory lock-down agent shall be applied to all surfaces in the work area including structural members, building components and plastic sheeting

on walls, floors, and covering non-removable items, to seal in non-visible residue. The lock-down agent shall be tinted to ensure full coverage.

I. Disposal Procedures.

1. As the work progresses, to prevent exceeding available storage capacity on site, sealed and labeled containers of asbestos waste shall be removed and transported to the disposal location.
2. Disposal must occur at an authorized site in accordance with regulatory requirements of EPA and applicable State and Local guidelines and regulations.
3. All dump receipts, trip tickets, transportation manifests or other documentation of disposal shall be submitted to the Commissioner at the conclusion of the project.
4. Transportation to the landfill
 - a. Once drums, bags and wrapped components have been removed from the work area, they shall be loaded into a vehicle for transportation.
 - b. Asbestos to be transported in an open truck or trailer must be in 6-mil bags within sealed drums. Drums must be secured to prevent movement, and shall not be loaded higher than the sidewalls of the vehicle.
 - c. The cargo area of the truck shall be free of debris and lined with 6-mil polyethylene sheeting to prevent contamination from leaking or spilled containers. Floor sheeting shall be installed first and extend up the sidewalls. Wall sheeting shall be overlapped and taped into place.

- d. Drums shall be placed on level surfaces in the cargo area and packed tightly together to prevent shifting and tipping. Large structural components shall be secured to prevent shifting and bags placed on top. Do not throw containers into truck cargo area.
 - e. Personnel loading asbestos-containing waste shall be protected by disposable clothing including head, body and foot protection and at a minimum, half-facepiece, air-purifying, dual cartridge respirators equipped with high efficiency filters.
 - f. Any debris or residue observed on containers or surfaces outside of the work area resulting from clean-up or disposal activities shall be immediately cleaned up using HEPA filtered vacuum equipment and/or wet methods as appropriate.
5. Disposal at the landfill.
- a. Upon reaching the landfill, trucks are to approach the dump location as closely as possible for unloading of the asbestos-containing waste.
 - b. Bags, drums and components shall be examined as they are off-loaded at the disposal site. Material in damaged containers shall be repacked in empty drums or bags as necessary. (Local requirements may not allow the disposal of asbestos waste in drums. Check with appropriate agency and institute appropriate alternative procedures.)
 - c. Waste containers shall be placed on the ground at the

- disposal site, not pushed or thrown out of trucks.
- d. Personnel off-loading containers at the disposal site shall wear protective equipment consisting of disposable head, body and foot protection and, at a minimum, half-facepiece, air-purifying, dual cartridge respirators equipped with high efficiency filters.
 - e. Following the removal of all containerized waste, the truck cargo area shall be decontaminated using HEPA vacuums and/or wet methods to meet the no visible residue criteria. Polyethylene sheeting shall be removed and discarded along with contaminated cleaning materials and protective clothing, in bags or drums at the disposal site.
 - f. Any contractor using a vehicle or trailer not owned by the contractor for hauling asbestos to a landfill must first obtain a written release from the owner, and the vehicle or trailer must be thoroughly decontaminated before being returned to the owner. A copy of the release shall be submitted to the Commissioner at the conclusion of the project.

J. Re-establishment of the Work Area and Systems.

- 1. Re-establishment of the work area shall only occur following the completion of clean-up procedures and after clearance air monitoring has been performed and documented to the satisfaction of the Commissioner.
- 2. Remaining polyethylene barriers shall be removed from walls and floors at this time, maintaining decontamination enclosure systems and barriers over doors, windows, etc. as

required.

3. The Contractor shall notify the Commissioner for a visual inspection of the work area for any remaining visible residue. Evidence of contamination will necessitate additional cleaning requirements in accordance with Section H.
 4. Additional air monitoring shall be performed if additional clean-up is necessary.
 5. Following satisfactory clearance of the work area, remaining polyethylene barriers may be removed and disposed of as asbestos-contaminated waste.
 6. Remove contaminated HVAC system filters and dispose of as asbestos-contaminated waste. Decontaminate filter assemblies using HEPA vacuums and wet cleaning techniques.
 7. Replace all items or equipment removed in accordance with Rule IX.D.4, as appropriate.
- K. Items to be salvaged must be properly decontaminated.
- L. Abatement activities in occupied areas.
1. No abatement activity shall take place in occupied areas or buildings unless the contractor has taken sufficient measures to protect the health and safety of occupants of the building.
 - a. Contaminated areas shall be sufficiently secure as to prevent escape of asbestos fibers into occupied areas.
 2. No abatement activity shall take place in any nursery, child day care center, or elementary or secondary school, public or private, during normal operating hours unless:
 - a. The abatement activities can be isolated and secured from the

activities of the school, and from intrusion by occupants of the school.

- b. Containment area shall be sufficiently secure as to prevent escape of asbestos fibers into occupied areas. Negative air systems shall be used.

M. Rule IX is intended primarily for interior, non-industrial settings and may not be suitable in particular instances of industrial applications. In such cases:

- a. An industry or contractor may submit, in advance, an alternate plan of action to accomplish abatement in:
 - (i) A single, unique circumstance, or
 - (ii) A plan to cover typical and repetitive circumstances

RULE X

Variances

- A. Any request for variance from Rules II - IX shall be in writing and submitted to the Commissioner at least ten (10) days in advance. Approval of the variance is at the discretion of the Commissioner.
- B. The basis for the variance must be included in the request, as well as steps to be taken by the contractor to ensure that the intent of the regulations will be fully complied with.

RULE XI

Implementation Dates

- A. These rules shall take effect March 1, 1986 except:
 - 1. Rule III.B.1., which shall become effective:
 - a. Upon expiration of licenses issued prior to March 1, 1986.

b. September 1, 1986 for licenses or renewals issued after March 1, 1986.

(i) The Commissioner shall issue an interim renewal license between March 1, 1986 and August 31, 1986 upon submittal of the three hundred dollars (\$300) licensing fee. By September 1, 1986, the licensee then must have met all requirements for licensing, at which time a new license for the remaining licensing period shall be issued, at no additional charge.

(ii) The Commissioner shall issue an interim new license for new applicants upon submittal of the three hundred dollar (\$300) licensing fee, and submittal of verifiable certification of completion of an asbestos abatement training school approved by the Commissioner. By September 1, 1986 the licensee must then have met all requirements for licensing under Rule III, at which time a new license for the remainder of the licensing period shall be issued, at no additional charge.

2. Rule III.B.2., which shall become effective September 1, 1986.

3. Rule IV.D., which shall become effective December 1, 1986.

a. All analyses prior to December 1, 1986, shall be performed by a technician who has successfully completed a NIOSH course in the specific analytical method used, or other such training as approved by the Commissioner. Evidence of such training shall be submitted to the Commissioner prior to acceptance of any analytical results from the technician.