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(iv) *Establishment of a respirator program.* (*a*) The employer shall establish a respirator program in accordance with the requirements of the American National Standards Practices for Respiratory Protection, ANSI Z88.2-1969, which is incorporated by reference herein.

(*b*) See § 1910.6 concerning the availability of ANSI Z88.2-1969 and the maintenance of a historic file in connection therewith. The address of the American National Standards Institute is given in § 1910.100.

(*c*) No employee shall be assigned to tasks requiring the use of respirators if, based upon his most recent examination, an examining physician determines that the employee will be unable to function normally wearing a respirator, or that the safety or health of the employee or other employees will be impaired by his use of a respirator. Such employee shall be rotated to another job or given the opportunity to transfer to a different position whose duties he is able to perform with the same employer, in the same geographical area and with the same seniority, status, and rate of pay he had just prior to such transfer, if such a different position is available.

(3) Special clothing: The employer shall provide, and require the use of, special clothing, such as coveralls or similar whole body clothing, head coverings, gloves, and foot coverings for any employee exposed to airborne concentrations of asbestos fibers, which exceed the ceiling level prescribed in paragraph (b) of this section.

(4) Change rooms: (i) At any fixed place of employment exposed to airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section, the employer shall provide change rooms for employees working regularly at the place.

(ii) Clothes lockers: The employer shall provide two separate lockers or containers for each employee, so separated or isolated as to prevent contamination of the employee's street clothes from his work clothes.

(iii) Laundering: (*a*) Laundering of asbestos contaminated clothing shall be done so as to prevent the release of air-borne asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section.

(*b*) Any employer who gives asbestos-contaminated clothing to another person for laundering shall inform such person of the requirement in paragraph (d)(4)(iii)(*a*) of this section to effectively prevent the release of airborne asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section.

(*c*) Contaminated clothing shall be transported in sealed impermeable bags, or other closed, impermeable containers, and labeled in accordance with paragraph (g) of this section.

(e) *Method of measurement.* All determinations of airborne concentrations of asbestos fibers shall be made by the membrane filter method at 400-450 × (magnification) (4 millimeter objective) with phase contrast illumination.

(f) *Monitoring*—(1) *Initial determinations.* Within 6 months of the publication of this section, every employer shall cause every place of employment where asbestos fibers are released to be monitored in such a way as to determine whether every employee's exposure to asbestos fibers is below the limits prescribed in paragraph (b) of this section. If the limits are exceeded, the employer shall immediately undertake a compliance program in accordance with paragraph (c) of this section.

(2) *Personal monitoring*—(i) Samples shall be collected from within the breathing zone of the employees, on membrane filters of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be taken for the determination of the 8-hour time-weighted average airborne concentrations and of the ceiling concentrations of asbestos fibers.

(ii) Sampling frequency and patterns. After the initial determinations required by paragraph (f)(1) of this section, samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of employees. In no case shall the sampling be done at intervals greater than 6 months for employees whose exposure to asbestos may reasonably be foreseen to exceed the

limits prescribed by paragraph (b) of this section.

(3) *Environmental monitoring.* (i) Samples shall be collected from areas of a work environment which are representative of the airborne concentrations of asbestos fibers which may reach the breathing zone of employees. Samples shall be collected on a membrane filter of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be taken for the determination of the 8-hour time-weighted average airborne concentrations and of the ceiling concentrations of asbestos fibers.

(ii) *Sampling frequency and patterns.* After the initial determinations required by paragraph (f)(1) of this section, samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of the employees. In no case shall sampling be at intervals greater than 6 months for employees whose exposures to asbestos may reasonably be foreseen to exceed the exposure limits prescribed in paragraph (b) of this section.

(4) *Employee observation of monitoring.* Affected employees, or their representatives, shall be given a reasonable opportunity to observe any monitoring required by this paragraph and shall have access to the records thereof.

(g) *Caution signs and labels*—(1) *Caution signs*—(i) *Posting.* Caution signs shall be provided and displayed at each location where airborne concentrations of asbestos fibers may be in excess of the exposure limits prescribed in paragraph (b) of this section. Signs shall be posted at such a distance from such a location so that an employee may read the signs and take necessary protective steps before entering the area marked by the signs. Signs shall be posted at all approaches to areas containing excessive concentrations of airborne asbestos fibers.

(ii) *Sign specifications.* The warning signs required by paragraph (g)(1)(i) of this section shall conform to the requirements of 20" × 14" vertical format signs specified in § 1910.145(d)(4), and to this subdivision. The signs shall display the following legend in the lower panel, with letter sizes and styles of a visibility at least equal to that specified in this subdivision.

Legend	Notation
Asbestos	1" Sans Serif, Gothic or Block.
Dust Hazard	1" Sans Serif, Gothic or Block.
Avoid Breathing Dust	1" Gothic.
Wear Assigned Protective Equipment.	1" Gothic.
Do Not Remain In Area Unless Your Work Requires It.	1" Gothic.
Breathing Asbestos Dust May Be Hazardous To Your Health.	14 point Gothic.

Spacing between lines shall be at least equal to the height of the upper of any two lines.

(2) *Caution labels*—(i) *Labeling.* Caution labels shall be affixed to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers, except that no label is required where asbestos fibers have been modified by a bonding agent, coating, binder, or other material so that during any reasonably foreseeable use, handling, storage, disposal, processing, or transportation, no airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section will be released.

(ii) *Label specifications.* The caution labels required by paragraph (g)(2)(i) of this section shall be printed in letters of sufficient size and contrast as to be readily visible and legible. The label shall state:

CAUTION

Contains Asbestos Fibers

Avoid Creating Dust

Breathing Asbestos Dust May Cause Serious Bodily Harm

(h) *Housekeeping*—(1) *Cleaning.* All external surfaces in any place of employment shall be maintained free of accumulations of asbestos fibers if, with their dispersion, there would be an excessive concentration.

(2) *Waste disposal.* Asbestos waste, scrap, debris, bags, containers, equipment, and asbestos-contaminated clothing, consigned for disposal, which may produce in any reasonably fore-

seeable use, handling, storage, processing, disposal, or transportation airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section shall be collected and disposed of in sealed impermeable bags, or other closed, impermeable containers.

(i) *Recordkeeping*—(1) *Exposure records.* Every employer shall maintain records of any personal or environmental monitoring required by this section. Records shall be maintained for a period of at least 20 years and shall be made available upon request to the Assistant Secretary of Labor for Occupational Safety and Health, the Director of the National Institute for Occupational Safety and Health, and to authorized representatives of either.

(2) *Access.* Employee exposure records required by this paragraph shall be provided upon request to employees, designated representatives, and the Assistant Secretary in accordance with 29 CFR 1910.20 (a)-(e) and (g)-(i).

(3) *Employee notification.* Any employee found to have been exposed at any time to airborne concentrations of asbestos fibers in excess of the limits prescribed in paragraph (b) of this section shall be notified in writing of the exposure as soon as practicable but not later than 5 days of the finding. The employee shall also be timely notified of the corrective action being taken.

(j) *Medical examinations*—(1) *General.* The employer shall provide or make available at his cost, medical examinations relative to exposure to asbestos required by this paragraph.

(2) *Preplacement.* The employer shall provide or make available to each of his employees, within 30 calendar days following his first employment in an occupation exposed to airborne concentrations of asbestos fibers, a comprehensive medical examination, which shall include, as a minimum, a chest roentgenogram (posterior-anterior 14 × 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second ($FEV_{1.0}$).

(3) *Annual examinations.* On or before January 31, 1973, and at least annually thereafter, every employer shall provide, or make available, comprehensive medical examinations to each of his employees engaged in occupations exposed to airborne concentrations of asbestos fibers. Such annual examination shall include, as a minimum, a chest roentgenogram (posterior-anterior 14 × 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second ($FEV_{1.0}$).

(4) *Termination of employment.* The employer shall provide, or make available, within 30 calendar days before or after the termination of employment of any employee engaged in an occupation exposed to airborne concentrations of asbestos fibers, a comprehensive medical examination which shall include, as a minimum, a chest roentgenogram (posterior-anterior 14 × 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second ($FEV_{1.0}$).

(5) *Recent examinations.* No medical examination is required of any employee, if adequate records show that the employee has been examined in accordance with this paragraph within the past 1-year period.

(6) *Medical records*—(i) *Maintenance.* Employers of employees examined pursuant to this paragraph shall cause to be maintained complete and accurate records of all such medical examinations. Records shall be retained by employers for at least 20 years.

(ii) *Access.* Records of the medical examinations required by this paragraph shall be provided upon request to employees, designated representatives, and the Assistant Secretary in accordance with 29 CFR 1910.20 (a)-(e) and (g)-(i). These records shall also be provided upon the request to the Director of NIOSH. Any physician who conducts a medical examination required by this paragraph shall furnish to the employer of the examined employee all the information specifi-

cally required by this paragraph, and any other medical information related to occupational exposure to asbestos fibers.

(Secs. 6(b), 8(c) and 8(g) (84 Stat. 1593, 1599, 1600; 29 U.S.C. 655, 657), the Secretary of Labor's Order 8-76 (41 FR 25059) and 29 CFR Part 1911, Ch. XVII of Title 29)

[39 FR 23502, June 27, 1974. Redesignated at 40 FR 27073, May 28, 1975, and amended at 41 FR 11505, Mar. 19, 1976; 45 FR 35281, May 23, 1980]

§ 1910.1002 Coal tar pitch volatiles; interpretation of term.

[illegible] used in § 1910.1000 (Table Z-1), tar pitch volatiles include the polycyclic hydrocarbons which volatilize from the distillation residues of coal, petroleum, wood, and other organic matter.

(Sec. 8(g), 84 Stat. 1600, 29 U.S.C. 657)

[39 FR 23502, June 27, 1974. Redesignated and amended at 40 FR 23073, May 28, 1975]

§ 1910.1003 4-Nitrobiphenyl.

(a) *Scope and application.* (1) This section applies to any area in which 4-Nitrobiphenyl, Chemical Abstracts Service Registry Number 92933 is manufactured, processed, repackaged, released, handled, or stored, but shall not apply to trans-shipment in sealed containers, except for the labeling requirements under paragraphs (e) (2), (3), and (4) of this section.

(2) This section shall not apply to solid or liquid mixtures containing less than 0.1 percent by weight or volume of 4-Nitrobiphenyl.

(b) *Definitions.* For the purposes of this section: (1) "Absolute filter" is one capable of retaining 99.97 percent of a mono disperse aerosol of 0.3 μm particles.

(2) "Authorized employee" means an employee whose duties require him to be in the regulated area and who has been specifically assigned by the employer.

(3) "Clean change room" means a room where employees put on clean clothing and/or protective equipment in an environment free of 4-Nitrobiphenyl. The clean change room shall be contiguous to and have an entry from a shower room, when the shower room facilities are otherwise required in this section.

(4) "Closed system" means an operation involving 4-Nitrobiphenyl where containment prevents the release of 4-Nitrobiphenyl into regulated areas, non-regulated areas, or the external environment.

(5) "Decontamination" means the inactivation of 4-Nitrobiphenyl or its safe disposal.

(6) "Director" means the Director, National Institute for Occupational Safety and Health, or any person directed by him or the Secretary of Health, Education, and Welfare to act for the Director.

(7) "Disposal" means the safe removal of 4-Nitrobiphenyl from the work environment.

(8) "Emergency" means an unforeseen circumstance or set of circumstances resulting in the release of 4-Nitrobiphenyl which may result in exposure to or contact with 4-Nitrobiphenyl.

(9) "External environment" means any environment external to regulated and nonregulated areas.

(10) "Isolated system" means a fully enclosed structure other than the vessel of containment of 4-Nitrobiphenyl, which is impervious to the passage of 4-Nitrobiphenyl, and which would prevent the entry of 4-Nitrobiphenyl into regulated areas, nonregulated areas, or the external environment, should leakage or spillage from the vessel of containment occur.

(11) "Laboratory type hood" is a device enclosed on three sides and the top and bottom, designed and maintained so as to draw air inward at an average linear face velocity of 150 feet per minute with a minimum of 125 feet per minute; designed, constructed, and maintained in such a way that an operation involving 4-Nitrobiphenyl within the hood does not require the insertion of any portion of any employee's body other than his hands and arms.

(12) "Nonregulated area" means any area under the control of the employer where entry and exit is neither restricted nor controlled.

(13) "Open-vessel system" means an operation involving 4-Nitrobiphenyl in an open vessel, which is not in an iso-

04.0102 Asbestos. (a) Definitions, for the purpose of 04.0102.

(1) "Asbestos" includes chrysotile, amosite, crocidolite, tremolite, anthophylite, and actinolite.

(2) "Asbestos fibers" means asbestos fibers longer than five micrometers.

(b) Permissible exposure to airborne concentrations of asbestos fibers.

(1) Standard effective July 7, 1972. The 8-hour time weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed five fibers, longer than five micrometers, per cubic centimeter of air, as determined by the method prescribed in 04.0102(e).

(2) Standard effective July 1, 1976. The 8-hour time weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed two fibers, longer than five micrometers, per cubic centimeter of air, as determined by the method prescribed in 04.0102(e).

(3) Ceiling concentration. No employee shall be exposed at any time to airborne concentrations of asbestos fibers in excess of 10 fibers, longer than five micrometers, per cubic centimeter of air, as determined by the method prescribed in 04.0102(e).

(c) Methods of compliance.

(1) Engineering methods.

(A) Engineering controls. Engineering controls, such as, but not limited to, isolation, enclosure, exhaust ventilation, and dust collection, shall be used to meet the exposure limits prescribed in 04.0102(b).

(B) Local exhaust ventilation.

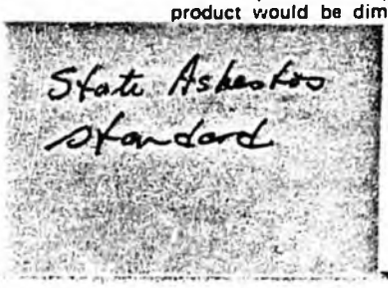
(i) Local exhaust ventilation and dust collection systems shall be designed, constructed, installed, and maintained in accordance with the American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, ANSI Z9.2-1971, which is incorporated by reference herein.

(ii) See 1910.6 of the Federal Occupational Safety and Health Act concerning the availability of ANSI Z9.2-1971, and the maintenance of a historic file in connection therewith. The address of the American National Standards Institute is given in 04.0109.

(C) Particular tools. All hand-operated and power-operated tools which may produce or release asbestos fibers in excess of the exposure limits prescribed in 04.0102(b), such as, but not limited to, saws, scorers, abrasive wheels, and drills, shall be provided with local exhaust ventilation systems in accordance with 04.0102(c)(1)(B).

(2) Work practices.

(A) Wet methods. Insofar as practicable, asbestos shall be handled, mixed, applied, removed, cut, scored, or otherwise worked in a wet state sufficient to prevent the emission of airborne fibers in excess of the exposure limits prescribed in 04.0102, unless the usefulness of the product would be diminished thereby.



(B) Particular products and operations. No asbestos cement, mortar, coating, grout, plaster, or similar material containing asbestos shall be removed from bags, cartons, or other containers in which they are shipped, without being either wetted, or enclosed, or ventilated so as to prevent effectively the release of airborne asbestos fibers in excess of the limits prescribed in 04.0102.

(C) Spraying, demolition, or removal. Employees engaged in the spraying of asbestos, the removal, or demolition of pipes, structures, or equipment covered or insulated with asbestos, and in the removal or demolition of asbestos insulation or coverings shall be provided with respiratory equipment in accordance with 04.0102(d)(2)(C) and with special clothing in accordance with 04.0102(d)(3).

(d) Personal protective equipment.

(1) Compliance with the exposure limits prescribed by 04.0102(b) may not be achieved by the use of respirators or shift rotation of employees, except:

(A) During the time period necessary to install the engineering controls and to institute the work practices required by 04.0102(c);

(B) In work situations in which the methods prescribed in 04.0102(c) are either technically not feasible or feasible to an extent insufficient to reduce the airborne concentrations of asbestos fibers below the limits prescribed by 04.0102(b); or

(C) In emergencies.

(D) Where both respirators and personnel rotation are allowed by 04.0102(d)(1)(A), (B) or (C), and both are practicable, personnel rotation shall be preferred and used.

(2) Where a respirator is permitted by 04.0102(d)(1), it shall be selected from among those approved by the Bureau of Mines, Department of the Interior, or the National Institute for Occupational Safety and Health, Department of Health, Education, and Welfare, under the provisions of 30 CFR Part 11 (37 F.R. 6244, Mar. 25, 1972), and shall be used in accordance with 04.0102(d)(2)(A), (B), (C) and (D).

(A) Air purifying respirators. A reusable or single use air purifying respirator, or a respirator described in 04.0102(d)(2)(B) or (C), shall be used to reduce the concentrations of airborne asbestos fibers in the respirator below the exposure limits prescribed in 04.0102(b), when the ceiling or the 8-hour time weighted average airborne concentrations of asbestos fibers are reasonably expected to exceed no more than 10 times those limits.

(B) Powered air purifying respirators. A full facepiece powered air purifying respirator, or a powered air purifying respirator, or a respirator described in 04.0102(d)(2)(C), shall be used to reduce the concentrations of airborne asbestos fibers in the respirator below the exposure limits prescribed in 04.0102(b), when the ceiling or the 8-hour time weighted average concentrations of asbestos fibers are reasonably expected to exceed 10 times, but not 100 times, those limits.

(C) Type "C" supplied-air respirators, continuous flow or pressure-demand class. A type "C" continuous flow or pressure-demand, supplied-air respirator shall be used to reduce the concentrations of airborne asbestos fibers in the respirator below the exposure limits prescribed in 04.0102(b), when the ceiling or the 8-hour time weighted average airborne concentrations of asbestos fibers are reasonably expected to exceed 100 times those limits.

(D) Establishment of a respirator program.

(i) The employer shall establish a respirator program in accordance with the requirements of the American National Standards Practices for Respiratory Protection, ANSI Z88.2–1969, which is incorporated by reference herein.

(ii) See 1910.6 of the Federal Occupational Safety and Health Act concerning the availability of ANSI Z88.2–1969 and the maintenance of a historic file in connection therewith. The address of the American National Standards Institute is given in 04.0109.

(iii) No employee shall be assigned to tasks requiring the use of respirators if, based upon his most recent examination, the examining physician determines that the employee will be unable to function normally wearing a respirator, or that the safety or health of the employee or other employees will be impaired by his use of a respirator. Such employee shall be rotated to another job or given the opportunity to transfer to a different position whose duties he is able to perform with the same employer, in the same geographical area and with the same seniority, status, and rate of pay he had just prior to such transfer, if such a different position is available.

(3) Special clothing. The employer shall provide, and require the use of, special clothing, such as coveralls or similar whole body clothing, head coverings, gloves, and foot coverings for any employee exposed to airborne concentrations of asbestos fibers, which exceed the ceiling level prescribed in 04.0102(b).

(4) Change rooms.

(A) At any fixed place of employment exposed to airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in 04.0102(b), the employer shall provide change rooms for employees working regularly at the place.

(B) Clothes lockers. The employer shall provide two separate lockers or containers for each employee, so separated or isolated as to prevent contamination of the employee's street clothes from his work clothes.

(C) Laundering.

(i) Laundering of asbestos contaminated clothing shall be done so as to prevent the release of airborne asbestos fibers in excess of the exposure limits prescribed in 04.0102(b).

(ii) Any employer who gives asbestos-contaminated clothing to another person for laundering shall inform such person of the requirement in 04.0102(d)(4)(C)(i) to effectively prevent the release of airborne asbestos fibers in excess of the exposure limits prescribed in 04.0102(b).

(iii) Contaminated clothing shall be transported in sealed impermeable bags, or other closed, impermeable containers, and labeled in accordance with 04.0102(g).

(e) Method of measurement. All determinations of airborne concentrations of asbestos fibers shall be made by the membrane filter method at 400–450 X (magnification) (4 millimeter objective) with phase contrast illumination.

(f) Monitoring.

(1) Initial determinations. Within six months of the publication of 04.0102 every employer shall cause every place of employment where asbestos fibers are released to be monitored in such a way as to determine whether every employee's exposure to asbestos fibers is below the limits prescribed in 04.0102(b). If the limits are exceeded, the employer shall immediately undertake a compliance program in accordance with 04.0102(c).

(2) Personal monitoring.

(A) Samples shall be collected from within the breathing zone of the employees, on membrane filters of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be taken for the determination of the 8-hour time-weighted average airborne concentrations and of the ceiling concentrations of asbestos fibers.

(B) Sampling frequency and patterns. After the initial determinations required by 04.0102(f)(1), samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of employees. In no case shall the sampling be done at intervals greater than six months for employees whose exposure to asbestos may reasonably be foreseen to exceed the limits prescribed by 04.0102(b).

(3) Environmental monitoring.

(A) Samples shall be collected from areas of a work environment which are representative of the airborne concentration of asbestos fibers which may reach the breathing zone of employees. Samples shall be collected on a membrane filter of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be taken for the determination of the 8-hour time-weighted average airborne concentrations and of the ceiling concentrations of asbestos fibers.

(B) Sampling frequency and patterns. After the initial determinations required by 04.0102(f)(1), samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of the employees. In no case shall sampling be at intervals greater than six months for employees whose exposures to asbestos may reasonably be foreseen to exceed the exposure limits prescribed in 04.0102(b).

(4) Employee observation of monitoring. Affected employees, or their representatives, shall be given a reasonable opportunity to observe any monitoring required by 04.0102 and shall have access to the records thereof.

(g) Caution signs and labels.

(1) Caution signs.

(A) Posting. Caution signs shall be provided and displayed at each location where airborne concentrations of asbestos fibers may be in excess of the exposure limits prescribed in 04.0102(b). Signs shall be posted at such a distance from such a location so that an employee may read the signs and take necessary protective steps before entering the area marked by the signs. Signs shall be posted at all approaches to areas containing excessive concentrations of airborne asbestos fibers.

(B) Sign specifications. The warning signs required by 04.0102(g)(1)(A) shall conform to the requirements of 20 inches by 14 inches vertical format signs specified in 01.1202(d)(4), Subchapter 1, General Safety Code, AOSAHS, and to 04.0102(g)(1)(B). The signs shall display the following legend in the lower panel, with letter sizes and styles of a visibility at least equal to that specified in 04.0102(g)(1)(B).

Legend	Notation
Asbestos	1 in. Sans Serif, Gothic or Block
Dust hazard	3/4 in. Sans Serif, Gothic or Block
Avoid breathing dust	¼ in. Gothic
Wear assigned protective equipment	¼ in. Gothic
Do not remain in area unless your work requires it.	¼ in. Gothic
Breathing asbestos dust may be hazardous to your health	14 point Gothic

Spacing between lines shall be at least equal to the height of the upper of any two lines.

(2) Caution labels.

(A) Labeling. Caution labels shall be affixed to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers, except that no label is required where asbestos fibers have been modified by a bonding agent, coating, binder, or other material so that during any reasonably foreseeable use, handling, storage, disposal, processing, or transportation, no airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in 04.0102(b) will be released.

(B) Label specifications. The caution labels required by 04.0102(g)(2)(A) shall be printed in letters of sufficient size and contrast as to be readily visible and legible. The label shall state:

CAUTION

Contains Asbestos Fibers
Avoid Creating Dust
Breathing Asbestos Dust May Cause
Serious Bodily Harm

(h) Housekeeping.

(1) Cleaning. All external surfaces in any place of employment shall be maintained free of accumulations of asbestos fibers if, with their dispersion, there would be an excessive concentration.

(2) Waste disposal. Asbestos waste, scrap, debris, bags, containers, equipment, and asbestos-contaminated clothing, consigned for disposal, which may produce in any reasonably foreseeable use, handling, storage, processing, disposal, or transportation, airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in 04.0102(b), shall be collected and disposed of in sealed impermeable bags, or other closed, impermeable containers.

(i) Recordkeeping.

(1) Exposure records. Every employer shall maintain records of any personal or environmental monitoring required by 04.0102. Records shall be maintained for a period of at least 20 years and shall be made available upon request to the Commissioner of Labor, the Director of the Division of Occupational Safety and Health, and to authorized representatives of either.

(2) Employee access. Every employee and former employee shall have reasonable access to any record required to be maintained by 04.0102 (l)(1) and 8 AAC 61.270 which indicates the employee's own exposure to asbestos fibers.

(3) Employee notification. Any employee found to have been exposed at any time to airborne concentrations of asbestos fibers in excess of the limits prescribed in 04.0102(b) shall be notified in writing of the exposure as soon as practicable but not later than five days of the finding. The employee shall also be timely notified of the corrective action being taken.

(j) Medical examinations.

(1) General. The employer shall provide or make available at his cost, medical examinations relative to exposure to asbestos required by 04.0102(j).

(2) Preplacement. The employer shall provide or make available to each of his employees, within 30 calendar days following his first employment in an occupation exposed to airborne concentrations of asbestos fibers, a comprehensive medical examination, which shall include, as a minimum, a chest roentgenogram (posterior–anterior 14 x 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at one second ($FEV_{1.0}$).

(3) Annual examinations. On or before January 31, 1973, and at least annually thereafter, every employer shall provide, or make available, comprehensive medical examinations to each of his employees engaged in occupations exposed to airborne concentrations of asbestos fibers. Such annual examination shall include, as a minimum, a chest roentgenogram (posterior–anterior 14 x 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at one second ($FEV_{1.0}$).

(4) Termination of employment. The employer shall provide, or make available, within 30 calendar days before or after the termination of employment of any employee engaged in an occupation exposed to airborne concentrations of asbestos fibers, a comprehensive medical examination which shall include, as a minimum, a chest roentgenogram (posterior–anterior 14 x 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at one second ($FEV_{1.0}$).

(5) Recent examinations. No medical examination is required of any employee, if adequate records show that the employee has been examined in accordance with 04.0102(j) within the past one-year period.

(6) Medical records.

(A) Maintenance. Employers of employees examined pursuant to 04.0102(j) shall cause to be maintained complete and accurate records of all such medical examinations. Records shall be retained by employers for at least 20 years.

(B) Access. The contents of the records of the medical examinations required by 04.0102 (j) shall be made available, in accordance with 8 AAC 61.270 for inspection and copying, to the Assistant Secretary of Labor for Occupational Safety and Health, the Director of NIOSH, to authorized physicians and medical consultants of either of them, and, upon the request of an employee or former employee, to his physician. Any physician who conducts a medical examination required by 04.0102 (j) shall furnish to the employer of the examined employee all the information specifically required by 04.0102 (j) and any other medical information related to occupational exposure to asbestos fibers.

04.0103 Ventilation. (a) Abrasive blasting.

(1) Definitions applicable to 04.0103.

(A) Abrasive. A solid substance used in an abrasive blasting operation.

(B) Abrasive-blasting respirator. A continuous flow air-line respirator constructed so that it will cover the wearer's head, neck, and shoulders to protect him from rebounding abrasive.

(C) Blast cleaning barrel. A complete enclosure which rotates on an axis, or which has an internal moving tread to tumble the parts, in order to expose various surfaces of the parts of the action of an automatic blast spray.

(D) Blast cleaning room. A complete enclosure in which blasting operations are performed and where the operator works inside of the room to operate the blasting nozzle and direct the flow of the abrasive material.

(E) Blasting cabinet. An enclosure where the operator stands outside and operates the blasting nozzle through an opening or openings in the enclosure.

(F) Clean air. Air of such purity that it will not cause harm or discomfort to an individual if it is inhaled for extended periods of time.

(G) Dust collector. A device or combination of devices for separating dust from the air handled by an exhaust ventilation system.

(H) Exhaust ventilation system. A system for removing contaminated air from a space, comprising two or more of the following elements: (a) enclosure or hood, (b) duct work, (c) dust collecting equipment, (d) exhauster, and (e) discharge stack.

(I) Particulate-filter respirator. An air purifying respirator, commonly referred to as a dust or a fume respirator, which removes most of the dust or fume from the air passing through the device.

(J) Respirable dust. Airborne dust in sizes capable of passing through the upper respiratory system to reach the lower lung passages.

(K) Rotary blast cleaning table. An enclosure where the pieces to be cleaned are positioned on a rotating table and are passed automatically through a series of blast sprays.

(L) Abrasive blasting. The forcible application of an abrasive to a surface by pneumatic pressure, hydraulic pressure, or centrifugal force.

(2) Dust hazards from abrasive blasting.

(A) Abrasives and the surface coatings on the materials blasted are shattered and pulverized during blasting operations and the dust formed will contain particles of respirable size. The composition and toxicity of the dust from these sources shall be considered in making an evaluation of the potential health hazards.

(B) The concentration of respirable dust or fume in the breathing zone of the abrasive-blasting operator or any other worker shall be kept below the levels specified in 04.0101.

Asbestos Abatement Fact Finding Committee

I Introduction

Commissioner Robison to satisfy many petitions to approve asbestos abatement training programs, such as described by the following excerpt from a "Request for Proposals" by the Municipality of Anchorage:

> "Contractor shall provide notarized certification by name and social security (number) certifying that all employees involved in asbestos removal have been thoroughly instructed through an Asbestos Removal Training Program as approved by the State of Alaska Department of Labor in the hazards of exposure to asbestos fibers; proper care and use of protective clothing; decontamination procedures and all other conditions and requirements as reviewed under relevant DOSH, EPA, and OSHA standards."

and a response by the purchasing officer to the members of the request for proposal evaluating committee to wit: That eight of the nine proposers offered training programs of varying scope and strength. "Not withstanding inferences to the contrary, no federal, state, or municipal guidelines exist against which specific training programs can be objectively evaluated. Absent such guidelines, the adequacy of individual programs remain in question."

The Commissioner recognizing the need as identified above and his responsibility to lead the way in this critical area of worker safety and health, appointed our industry (government, labor and management) task force to act as a fact finding committee for asbestos abatement and related problems.

The committee represents all aspects of this industry with over 125 years combined experience in asbestos-related work.

The committee includes:

1. Chair, Ambrose Bittner - State Director
   U.S. Department of Labor - Bureau of Apprenticeship and Training; Member, Alaska Safety Advisory Council

2. Co-Chair, Ron Cunningham - Safety and Health Director
   Alaska General Construction Company
   Member AGC Safety Committee

3. Ray Jorgensen - Chief of Industrial Health Compliance
   Alaska Department of Labor, Division of Labor Standards and Safety, Occupational Safety and Health Section

4. Dan Middaugh - Member Asbestos Workers Local 97
   Joint Apprenticeship and Training Committee
   Asbestos Abatement Instructor
   President, Board of Directors, Alaska Health Project

5. Leonard Limtiaco - Occupational Safety & Health Manager
   U.S. Department of Labor, Occupational Safety and
   Health Administration

6. Joe Churchill - Manager
   E. J. Bartell Company
   Secretary - Asbestos Workers Joint Apprenticeship and
   Training Committee
   President, Alaska Chapter, Western Insulation
   Contractors Association
   Secretary-Treasurer - Western Insulation Contractors
   Association

7. Les Lauinger - Training Director
   AGC - Laborers Training Trust
   Instructor - Asbestos Abatement

8. Nancy Cannington - Special Assistant to the Commissioner
   Executive Assistant - Alaska Safety Advisory Council

The Committee in its collective wisdom did not attempt to reinvent a wheel, but rather outline and describe existing practices and procedures. The committee report outlines procedures and programs to deal with the safety and health concerns of those involved in an asbestos abatement project.

Our report follows.

II Scope

This report is intended to describe recommended rules which are in existence and to establish minimum content for an acceptable training program, provide for certification of trainers, recognition of trainers, and to establish the requirements for a presurvey and provide disposal procedures while performing demolition, removal, enclosure, remodeling and disposal of asbestos contaminated materials.

III Asbestos Abatement Safety and Health Standards, Rules and Regulations

A. Agencies

There are many regulations that must be followed to implement an effective asbestos abatement program. There are, for the most part, four agencies that are responsible for administering asbestos related regulation:

1. U.S. Environmental Protection Agency (EPA)

2. Alaska Department of Environmental Conservation (DEC)

3. U.S. Department of Labor, Occupational Safety and Health Administration (OSHA)

4. Alaska Department of Labor, Labor Standards and Safety Division, Occupational Safety and Health Section (DOSH)

B. Regulations

EPA and DEC regulation covers non-work related exposures, transportation and disposal of asbestos containing material. Municipalities have set up procedures and areas for the disposal sites. Virtually all of the OSHA regulations are mirrored by DOSH regulation. The State Department of Labor has enforcement jurisdiction at most places of employment in Alaska (exceptions are navigable water ways and federal/ military employees). The regulations and/or industry standards are:

1. EPA 40 CFR Part 61 Subpart M

The Environmental Protection Agency's 40 CFR Part 61 is the national emission standard for hazardous air pollutants. Subpart M is the national emission standard for asbestos.

2. Occupational Safety and Health Standards Subchapter 4, Article 1, Occupational Health and Environmental Control (OH & EC)

Occupational SAfety and Health Standards Subchapter 4, Article 1, Occupational Health and Environmental Control (OH & EC) Section 04.0102 specifically lists the requirements to abate exposure to asbestos. It defines the permissible exposure to airborne concentrations of asbestos fibers, methods of compliance, monitoring and medical records.

3. Occupational Safety and Health Standards Subchapter/General Safety and Health Code (GSC) Articles/Section 01.0101 to Article 15

   Occupational Safety and Health Standards Subchapter/General Health Safety Code Articles/ Section 01.0101 to Article 15.15.0101(j)(14) lists the requirements for establishing an accident prevention program, work platforms, hazardous materials and operations, personal protective equipment including respiratory protection, medical and first aid, fire protection, etcetera on to hazard communication (the right to know and be informed of hazardous substances in the work places).

4. 30 CFR Part II (37F.R. 6244, Mar. 25, 1972)

   Provides for the approval of respirators by NIOSH.

5. Alaska Statutes (AS) Section 1860.010-18.60.105

   Alaska Statutes Secs. 18.60.010-18.60.105 Alaska Department of Labor, Division of Labor Standards and Safety "Prevention of Accident and Health Hazards". This statute lists the duties of the Department of Labor. Some of the duties described enable the Department of Labor to (a) plan and execute safety programs, including educational campaigns, (b) establish and enforce occupational safety and health standards, (c) participate in occupational safety and health programs, and (d) assist employers to identify and obtain information on toxic and hazardous substances and develop employee education programs.

6. Alaska Administrative Code (AAC) Title 8 8AAC60.010-8AAC 80.010.

   Alaska Administrative Code Title 8 8AAC60.010-8AAC80.010 Alaska Department of Labor Division of Labor Standards and Safety charge the division with the responsibility and the authority to:

   a. Enforce all laws and lawful orders requiring work and work places to be safe and healthful;

   b. Investigate disabling or fatal occupational injuries and illnesses;

   c. Develop occupational safety and health standards which, after adoption, have the affect of law and,

d. Establish special orders, or rules and regulations, to cover a specific place of employment or process or work.

Section 8 AAC 61.270 provides for the access to records of employee's past or present exposure to toxic substances or harmful physical agents and job duties or working conditions by the Department of Labor and employees or their representatives.

7. American National Standards (ANSI) 288.2-1969 and 1980 are adopted by reference in the GSC and OH & EC.

American National Standards 288.2 - 1969 and 1980 cover the use of respiratory protection.

288.2 - 1980 section 7.2 requires the respirator issuer and wearer be given adequate training by a qualified person and describes training subjects (topics).

288.2 - 1969 section 7.4 requires the supervisors and workers be so instructed by competent persons and lists minimum training (topics).

American National Standards 29.2 - 1971 addresses the design and operation of local exhaust systems required to control exposure to asbestos.

In addition to enforced regulations, the agencies have enforcement policies and regulation interpretations that affect the owner/operator, contractor/employer, and worker/employee of asbestos abatement/compliance programs.

IV Asbestos Abatement Project Responsibilities

A review of the standards and regulations in Section III of this report revealed a need for the assignment of specific responsibilities of owners/operators, contractors/employers and workers/employees prior to the initiation or commencement of work on any asbestos abatement project. Therefore, this Fact Finding Committee has determined that specific responsibilities be assigned:

A. Owners/Operators

1. Ensure that a survey is conducted to identify the presence of asbestos materials and the actual location of these materials prior to the preparation of bid specifications for the abatement project.

2. Include in the bid specifications the designated disposal site and methods/procedures for disposal.

3. Provide in the bid specifications the requirements for inspection and monitoring of the work performance during the abatement project.

B. Contractor/Employer

1. Provide a skilled workforce of qualified workers who have received safety and health training prior to commencement of any asbestos abatement work.

2. Provide adequate material and equipment to safely perform the asbestos abatement project such as: approved respirators, personal protective equipment and clothing, work clothing change rooms, disposal packaging materials and monitoring equipment. (Reference - Attachment 1)

3. Ensure that trainers/instructors and supervisors are familiar with Safety and Health Rules and Regulations and Environmental Protection Agency Standards.

4. Provide a written training program for workers and maintain documentation of the completed training of each worker.

C. Workers/Employees

1. Be familiar with and abide by Safety and Health requirements and procedures when working with asbestos materials.

2. Be familiar with personal protective equipment and ensure that equipment and protective clothing are used and worn when working with asbestos materials.

V Recommended Procedures for Abatement Projects

In Alaska, the magnitude of the asbestos problem is just now being uncovered. Recently, many of our schools, military structures, and other public and private buildings have been found to contain asbestos. Legislation has been introduced this year to determine in more detail the extent of the asbestos problem in Alaska. At issue is the actual and potential dangers from "intermittent" asbestos exposure Alaskan construction workers face as they remodel and/or demolish these structures. In order to combat this problem and prevent future unsuspected asbestos exposure to Alaskan

workers, a proper survey of any building and plant prior to remodel or demolition is the most important first step.

Such a survey would check all materials in a building or plant that are known to possibly contain asbestos. Materials found to contain asbestos would then be charted as to type and amount (percentage) of asbestos present. This would allow the survey personnel to recommend removal/handling techniques to keep exposure at a minimum. (Reference Attachment 2)

A. Owner/Operator

1. Have survey performed by appropriate agency. (Reference Attachment 3)

Only properly trainined personnel should pre-survey remodel/demolition operations for asbestos-bearing materials. Survey personnel must be familiar with building construction, as well as be acquainted with all materials that may contain asbestos. Such persons should be capable of locating the suspect materials, collecting bulk samples, checking the samples and following them through the lab procedure and making recommendation on how to handle these materials during demolition/remodel.

The training of survey technicians is very important. These persons are the key in preventing unnecessary exposure to asbestos. Survey personnel must be proficient in self protection, removal, encapsulation, monitoring, lab techniques, basic building construction and identification of asbestos bearing materials.

2. Disposal Site

It is recommended that each owner/operator be be required to identify, in the bid specifications of all asbestos abatement projects, the location of the disposal site and provide disposal procedures to include as a minimum : (Reference Attachment 3)

a. The geographical area or locale which the disposal facility will accept materials from.

b. The time and dates that the facility will accept asbestos materials for disposal.

c. Procedures for making arrangements for disposal to include contact points and telephone numbers.

d. Procedures for packaging, transporting, labeling and processing of the materials for acceptance at the disposal facility.

3. Specifications for Worker Safety-Health and Environmental Concerns.

The following general specifications are recommended for demolition, removal, disposal, enclosure and remodeling of asbestos abatement projects. If these recommended specifications are incorporated into contracts and strictly enforced, the exposure of asbestos to both public and employees will avoid unsafe and unhealthful exposures. Contractors must receive training and must train their workers in safe work practices. Owners/operators of buildings must identify projects with asbestos contained materials prior to issuance of bids. (Reference Attachment 4)

a. Regulations

Contractors shall comply with the requirements of the EPA regulations, OSHA regulations on asbestos, and any applicable State and Local Government regulations which are incorporated by reference.

b. Scope of Work

1. The contractor shall furnish all labor, materials, services, insurance, and equipment necessary to carry out the operation in accordance with the EPA and OSHA regulations (and any applicable State and Local Government regulations).

2. The contractor shall be responsible for obtaining approval for a waste disposal site in compliance with section 61.25 of the EPA regulations.

3. Contractors shall post the EPA, OSHA, State DOSH and any applicable Local Government regulations at the job site.

c. Workers Protection (any and all personnel entering contaminated area)

1. The contractor shall provide workers with approved respirators as determined by the exposure level (filtration or air supplied) as applicable. The contractor shall provide a sufficient quantity of filters approved for asbestos so that 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 job site in the change room and shall be totally protected from exposure to asbestos prior to their use.

2. Workers shall always wear a respirator properly fitted on the face in the work area.

3. Contractors shall instruct and train workers in proper respirator use.

4. Workers shall wear disposable, full-body coveralls and disposable head and foot wear 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.

5. The contractor shall set up a decontamination facility to include a shower outside of the work area. (Example: Reference Attachment 5)

6. All workers without exception shall:

   a. Remove street clothes in the change room and put on the disposable coveralls and head covers and respirator before entering the work area.

   b. 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.

   c. Shower at the end of each day's work before entering the change room to change into street clothes.

7. 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 respirators while showering with soap and water. Workmen shall then dress into new, clean, disposable coverall to eat, smoke, or drink. The new coverall can be worn to reenter the work area.

8. The contractor shall provide a respirator and disposable coveralls, head cover, and footwear to any official representative who inspects the job site.

9. All persons entering the work area shall wear an approved respirator and disposable coveralls, head cover, and footwear.

d. Work Area Preparation

1. The Contractor shall set up a decontamination facility outside of the work area which will consist of a change room, shower area, and equipment area. (Reference Attachment 5)

2. The contractor shall isolate the work area for the duration of the work by completely sealing off all openings and fixtures in the work areas including, but not limited to, heating and ventilation ducts, doorways, corridors, windows, skylights, and lighting with plastic sheeting taped securely in place.

3. The contractor shall build double barriers of plastic sheeting at all entrances and exits to the work area so that the work area is always closed off by one barrier when workers enter or exit.

4. All floor and wall surfaces in the work area shall be covered with plastic sheeting taped securely in place to protect from water damage (or damage by sealants).

5. Before the work has begun, the contractor shall wet clean all removable items and equipment, remove them from the work area, and then return these items and equipment to the work area after the job has been completed and the area has been decontaminated.

6. The contractor shall cover all non-removable items and equipment in the work area with plastic sheeting taped securely in place.

7. After work area isolation the contractor shall take out detachable electrical heating, ventilation equipment, and other items located on the asbestos material, clean them before covering with plastic sheeting taped securely in place, and return them to their proper places after the job has been completed and the work area has been decontaminated.

8. The contractor shall remove all heating, ventilation, and air conditioning system filters, pack them in sealable plastic bags (6-mil minimum) for burial in the approved waste disposal site and replace them with new filters.

9. The contractor shall establish emergency and fire exits from the work area. Emergency procedures shall have priority.

e. Method of Removal

1. The asbestos material shall be sprayed with water containing a wetting agent to enhance penetration. A fine spray of the amended water shall be applied to reduce fiber release preceeding removal of the asbestos material. The material shall be sufficiently saturated to prevent emission of airborne fibers in excess of the exposure limits prescribed in the OSHA and State regulations referenced in these specifications.

2. The asbestos material shall be removed in small sections by two-man teams on staging platforms. Before beginning the next section, the material shall be packed while still wet into sealable plastic bags (6-mil minimum) and placed into fiber or metal drums or skips for transport. Bags, drums, and skips shall be marked with the OSHA/State DOSH label prescribed by the OSHA/State DOSH regulations referenced in these specifications. The outside of all containers shall be clean before leaving the work area.

3. All plastic sheeting, tape, cleaning material, clothing and all other disposable material or items used in the work area shall be packed into sealable plastic bags (6-mil minimum) and placed into metal or fiber drums or skips for transport. The drums and skips shall be marked with the OSHA/State DOSH label prescribed by the OSHA/State DOSH regulations referenced in these specifications.

4. The contractor shall transport the sealed drums or skips to the approved waste disposal site. The sealed plastic bags may be dumped from the drums into the burial site unless the bags have been broken or damaged. The damaged bags shall be left in the drum and the entire contaminated drum shall be buried. Uncontaminated drums may be recycled.

5. As a highly recommended engineering control method and as an industrywide practice whenever feasible, HEPA filtered air exhaust should be used to create a negative pressure and allow for thorough cleanup.

f. Decontamination of Work Area

1. The contractor shall completely decontaminate all tools before removal from work area. The contractor shall clean all surfaces with a HEPA filtered vacuum (HEPA - High Efficiency Particulate Absolute) and/or water. (HEPA vacuums fail when used on wet material.) After cleaning the work area, the contractor shall wait 24 hours to allow for settlement of dust and then wet-clean all surfaces in the work area. After completion of wet-cleaning and when all surfaces are completely, dry, the contractor shall take two air samples, minimum six hours duration each, within 48 hours and 24 hours apart. Such air samples shall be taken while activities normal to the use of the area are simulated i.e., sweeping floor, dusting counters, vacuuming with standard vacuum, air handling system functioning, or any other air disturbing activity that would normally take place in the area after takeover by owner/operator.

2. If the air samples results show that the work area has not been decontaminated, the contractor shall repeat the cleaning and air monitoring until the work area is in compliance.

3. After the work area is found to be in compliance, all entrances and exits are unsealed and the plastic sheeting, tape, and any other trash and debris is disposed of in sealable plastic bags (6-mil minimum) and buried in the approved waste disposal site.

g. Air Monitoring

1. Air monitoring shall be conducted by a certified agency/laboratory to ensure compliance with the OSHA/State DOSH regulations.

2. Air monitoring will be conducted according to the method prescribed by OSHA/State DOSH regulations.

3. Air monitoring shall be performed to provide the following samples during the period of asbestos operations.

Area to be Sampled	Minimum Number of Samples for each Work Day	Each Sample Minimum Time
Work Area	2	6 Hrs.
Personnel	Each Job Title	6 Hrs.
Outside Building	1	6 Hrs.
Outside Work Area	1	6 Hrs.

B. Contractor/Employer

1. Provide Asbestos Abatement Training Program

The Committee recommends a minimum three-day asbestos training program, as outlined in Attachment 6.

2. Provide Qualified Supervisors and Instructors

The Committee recommends the following minimum requirements:

a. Recognize distinction between legal vs. recommended practices.

b. Capable of reading analyses between bulk and air samples.

c. Know requirements of OSHA, State DOSH, EPA and DEC in regards to asbestos.

d. Knowledge of jurisdictional issues between regulatory agencies listed in item C.

e. Knowledgeable in respirator requirements.

C. Worker/Employee

1. The employee should receive instruction pertaining to aforementioned training. (Health effects, respirator program, abatement procedures, engineering controls, waste disposal, and any applicable regulations.)

2. Follow procedures outlined in the training program.

3. Participate in on-the-job safety meetings.

4. Work with the contractor to identify and participate in any corrective actions deemed necessary.

5. Avoid shortcuts in work procedures involving safety.

6. Be a productive and safe worker by following recommended practices.

VI. Conclusions - Committee Recommendations to the Commissioner

1. Require pre-surveys for asbestos containing materials in demolition and remodeling projects. Pre-survey should be performed by competent person using a check list of prominent asbestos containing materials.

2. Identify appropriate sites and provide operational guidelines for disposal of asbestos containing materials consistent with VA2, page 7.

3. Adopt minimum training standards for asbestos abatement (Reference Attachment 6)

4. Establish instructor qualifications for Asbestos Abatement training (Reference VB2, page 8)

5. Require workers to successfully complete minimum training program prior to employment in hazardous or contaminated work areas, (Reference VC2 Page 9)

We further recommend that the Commissioner adopt certification procedures for standards of training, instructor qualifications and worker skills.

Respectfully Submitted:

Ambrose Britton II — Chairman

Ronald E. Cunningham — Co-Chairman

Daniel McClanahan — Member

Lloyd L. Churchill — Member

Leslie H. Billings — Member

Leonardo P. Fuentes — Member

Raymond L. Jorgenson — Member

Nancy E. Carrington — Member

Attachment 1

ASBESTOS ABATEMENT

EQUIPMENT MANUFACTURERS

Mention of trade names of specific products does not constitute endorsement by the committee.

1. High Efficiency Particulate Air (H.E.P.A.) Vacuum

    a. Nilfisk
    b. Pullman-Holt

2. Protective Clothing

    a. Durafab
    b. Tyviek
    c. Best Manufacturing

3. Respirators

    a. Filtered Face Masks

        1. HSC
        2. Norton
        3. Wilson

    b. Self Contained Air Supplied Systems

        1. 3M
        2. Aqualung-Safety Division
        3. Scott

    c. Grade "D" Air Supplied Systems

        1. Racal
        2. Scott

4. Negative Air Pressure Systems With H.E.P.A. Filters

    a. Nilfisk
    b. Pullman-Holt

5. Removal Bags

    a. Profo
    b. Durafab
    c. Safe-T-Strip

6. Disposal Bags

    a. Profo
    b. Associated Bag
    c. DuraFab

ASBESTOS ABATEMENT

EQUIPMENT MANUFACTURERS

7. Warning Signs

   a. Sa-So
   b. National Marker Co.

8. Decontamination Trailers

   a. Mators Mobile Detox

9. Surfactant Wetting Application Sprayer

   a. Hudson

ASBESTOS ABATEMENT

EQUIPMENT SUPPLIERS

Sahlberg Equipment Inc.
1702 Ship Ave.
Anchorage, Alaska 99501

E. J. Bartells Co.
601 Whitney Rd.
Anchorage, Alaska 99501

Reynolds Equipment Co., Inc.
1537 E 5th Ave
Anchorage, Alaska 99501

Safety and Supply Co.
901 Orca
Anchorage, Alaska 99502

EQUIPMENT NEEDED FOR ASBESTOS ABATEMENT

1. On Site Decontamination

   a. Portable Trailer
   b. Visqueen Enclosure

2. Scaffolding

3. Showers

4. H.E.P.A. Vacuum

TOOLS REQUIRED

1. Saws

2. Nippers (Wire Cutters)

3. Scissors

4. Scrapers

5. Knife and Sharpener

MATERIALS NEEDED

1. Framing Lumber

2. Visqueen Walls and Ceilings 4 Mil; Floors 6 Mil

3. Respirators

4. Protective Clothing

5. H.E.P.A Filters

6. Removal and Disposal Bags

7. Warning Signs

8. Tape

Attachment 2

ASBESTOS ABATEMENT
WHERE TO LOOK IN A BUILDING FOR ASBESTOS BEARING MATERIALS

1. Floors

   Vinyls
   Linoleum
   Underlayment for Sheet Type Flooring

2. Ceilings
   Accoustic Tiles
   Sprayed/Non-Sprayed Textures
   Paints

3. Outer Walls (Outside)

   Sidings

4. Above Ceilings

   Sprayed Fireproofing
   Insulation Products - Asbestos Insulation
   Asbestos Insulation Cement, i.e., Grease Ducts
   Mud Fittings, Mud Seams on Air Ducts with Canvas
   Covers Over Insulation

5. Walls

   Drywall Seam Filler (Taping Mud)
   Asbestos Wallboard (Cement Asbestos Board)
   Asbestos Millboard (At Fireplaces or Around Furnaces)
   Paints (Masonry or Concrete Filler Type)
   Wall Texture
   Felt Type Vapor Barriers (Under Drywall)
   Chalkboards (Schools)
   Plaster

6. Mechanical Rooms

   Electrical Switchboards
   Insulations on any Mechanical Appliance or Piping System
   Mud Seams on Ductwork with Canvas over Insulation
   Insulation on Flues
   Insulation on Emergency Generator
   Exhaust Systems

7. Roofs

   Fire Retardant Cedar Underlayment
   Shingles
   Felt Type Vapor Barrier
   Built-Up Roofing Membrane
   Roofing Felt
   Asphalt/Asbestos Roof Coatings

8. Laboratories

   Furniture
   Hoods/Vents for Corrosive Chemicals
   Gas Vapor Ducts for Corrosive Compounds
   Table Pads/Heat Protective Mats
   Fire proof Draperies

9. Theaters

   Curtains
   Sprayed Accoustic Materials

Attachment 3

MUNICIPALITY OF ANCHORAGE
SOLID WASTE SERVICES

OPERATIONS PROCEDURE

TITLE: ASBESTOS DISPOSAL

EFFECTIVE DATE:

1. Only asbestos generated within the Municipality will be accepted for disposal.

2. Asbestos will be accepted at the Merrill Field Landfill on a scheduled basis. (The time and dates will be established by the department.)

3. Prior arrangements, by the asbestos generator/disposer, will be made with the Processing and Disposal General Foreman before asbestos is accepted.

4. Asbestos must be transported, packaged, and marked in accordance with all federal, state, and municipal regulations. These regulations include, as a minimum:

   -transport in a closed vehicle
   -asbestos must be thoroughly wetted and placed in a water tight container before burial. Containers may be barrels, drums, or doubled 6 mil or thicker plastic bags. All asbestos containers will display the following label:

   CAUTION
   CONTAINS ASBESTOS
   AVOID OPENING OR BREAKING CONTAINER
   BREATHING ASBESTOS IS HAZARDOUS TO YOUR HEALTH

   -all containers will be hand placed in designated area.
   -any asbestos containers determined by Solid Waste Services to be inadequate will be repackaged or removed, by the disposer, from the Merrill Field Landfill immediately.

5. All asbestos will be covered on a daily basis by at least six inches of soil.

6. Cost for disposal of asbestos will be based on actual time and materials and will include but not be limited to equipment rental, equipment operator's time, administrative time and cover material as required.

Attachment 4

GENERAL INSTRUCTIONS AND GUIDELINES FOR ASBESTOS REMOVAL

1. Notify proper authorities of intent to remove asbestos

2. Seal off work area, put up caution signs and build change areas and transition area.

3. If possible, have adequate "wet down" water supply available. If a pressure system is not available, provide sprayer cans.

4. Provide each employee with duplicate copies of the Asbestos Removal Instructions. Retain employee-signed copy in files.

5. Have all equipment necessary, i.e., disposable coveralls, respirators, etc., available.

6. Have air monitoring equipment in position.

7. Proceed with the removal and bagging procedure.

8. Dispose of waste. The dump area should be checked out prior to actual haouling to be sure it will accept asbestos waste.

9. Provide to each employee, by hand or mail, duplicate copies of the medical examination form. Retain employee-signed copy in files.

10. Records of all medical examinations shall be retained for the required 20 years storage.

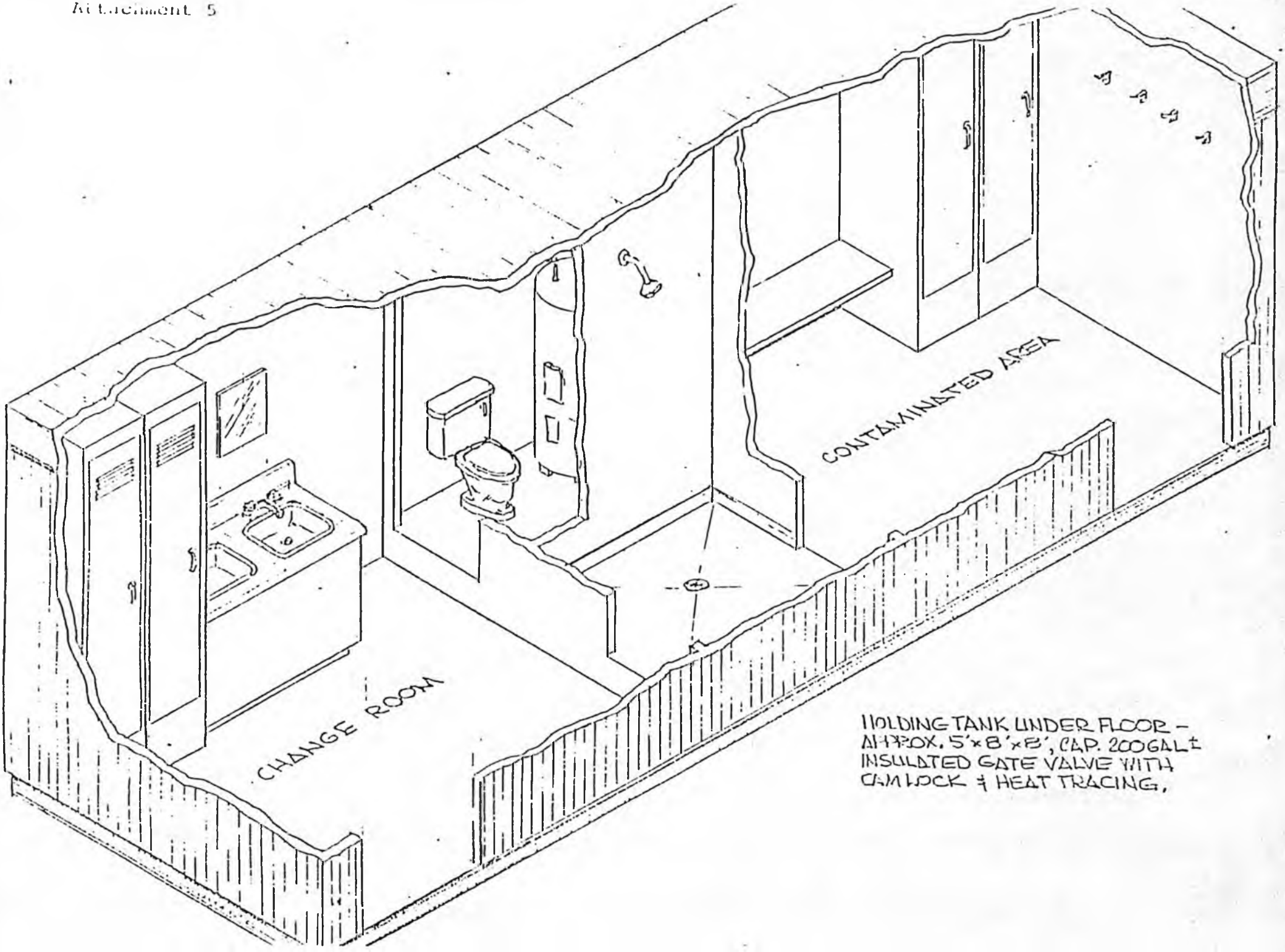
11. Monitoring records will also be retained for the required 20 years storage.

12. Any employee found to have been exposed to airborne concentrations of asbestos fibers in excess of the limits set in paragraph (b) of the)SHA standards shall be notified in writing within five (5) days.

13. The key to a successful operation is the keep the fiber count down. This means containment of the fibers either by water or encapsulation.

14. Check local EPA or State requirements.

Attachment 5



Attachment 6

MINIMUM ASBESTOS ABATEMENT TRAINING

DAY 1

8:00 - 12:00	INTRODUCTIONS - Asbestos History Health Affects (Lecture, film, slides, materials, speakers) "More Than A Paycheck" "A Way To A Dusty Death"
12:30 - 1:30	Federal Asbestos Standards State Asbestos Standards (Each Student Should Receive A Copy Of The Current Standards And The Class Should Go Through It In Its Entirety)
1:30 - 3:30	Respirator Protection/Standards (Different Types, Uses, Fit Testing, What A Respirator Program Consists Of, Filters, Maintenance)
3:30 - 4:30	Respirator Lab (Part Of The Class Does Fit Testing With Different Masks)

MINIMUM ASBESTOS ABATEMENT TRAINING

DAY 2

8:00 - 12:00	Engineering Controls
	(Lowering Fiber Count With Encapsulation, Negative Air Pressure, HEPA Vacuums, Decontamination Rooms, Protective Clothin Wet Methods, House Keeping.)
12:30 - 1:30	Air Monitoring
	(Instructional Film, Practical Applicatio
1:30 - 2:30	Work Area Preparation - Hazard Recognitio
	(Taping, Planning, Draw Schematic of Actu Work Site) Ask Students to Outline How T Proceed With This Particular Project.
2:30 - 3:30	Waste Disposal
	(EPA Regulations, Labeling, Double Baggin Land Fills)
3:30 - 4:30	Respirator Fit Testing
	(Other Half of Group Doing Fit Testing Wi Different Masks)

MINIMUM ASBESTOS ABATEMENT TRAINING

DAY 3

8:00 - 10:00	Working With Scaffolding (Setting Up, Tearing Down, Safety Regulation, Asbestos Abatement Applicatior
10:00 - 12:00	Actual Work Area Preparation (Scaffold Setting, Taping, Setting Up Change Rooms)
12:30 - 2:30	Continuing Hands On Work Area Preparation (Switch Tasks, Suit Up In Asbestos Abatement Gear, Using Respirators, And Perform Work Area Preparation.)
2:30 - 3:30	Review and Give Final Test on Material Covered

ANCHORAGE
SCHOOL DISTRICT
4600 DeBarr Avenue
Pouch 6-614
Anchorage, Alaska 99502
[907] 333-9561

May 14, 1984

The Honorable Joe P. Josephson
Alaska State Legislature
Pouch V
Juneau, Alaska 99811

Dear Senator Josephson:

The Anchorage School District has been monitoring the asbestos fiberous material that is located within 55 schools since 1979. This requirement was federally mandated by the Environmental Protection Agency (EPA). In June, 1983, we were again mandated by the EPA to post each school that contained asbestos and to notify all occupants of the building of its location.

The Anchorage School District structured a formal process by which prequalified bidders were selected and given the opportunity to bid on six abatement projects. Bartlett-Begich Junior/Senior High School was a separate item due to the magnitude of asbestos within the school. The five other schools were bid as a unit which includes West, East, and Dimond High Schools, Clark Junior High School, and Mt. Spurr Elementary School.

The bids were opened on Wednesday, May 9, 1984. The base bid for Bartlett had a low $13,005,300 and a high of $22,166,000. We received three bids for this project. We received two bids for the five school project with a high of $1,980,000 to a low of $1,538,240.

We will be approximately $10 million short from awarding a contract for the removal of asbestos at Bartlett. At the present time the District is very appreciative of the approximately $6.5 million which was awarded in HB 403.

The low bid, if accepted, is $14,543,540. This bid indicates that Bartlett would have to be closed for at least one semester. The District is analyzing some of the options for Bartlett's 2,000 students which would not impact on the educational program.

If Bartlett was to be completed over two summers, it would require an additional $4 million. This, however, does not include storage for all of the furniture and equipment housed in Bartlett's 324,000 square feet.

The options available to us is to reject all bids, rebid the five schools by themselves, or reject Bartlett because of lack of funds. This question comes to the School Board on May 21, 1984, and it is imperative that the District receive the funding for this very important program.

We have appreciated all your efforts on behalf of the Anchorage community, its children, and their future.

Sincerely,

E. E. (Gene) Davis

E. E. (Gene) Davis, Ed.D.
SUPERINTENDENT

cl
CIP.3

cc Bill Miles

P.S. Enclosed is an article from "What's Happening In Washington", published by The National PTA.

ANCHORAGE
SCHOOL DISTRICT
4600 DeBarr Avenue
Pouch 6-614
Anchorage, Alaska 99502
[907] 333-9561

March 7, 1984

RECEIVED

Honorable Joe Josephson
Alaska State Legislature
Pouch V (MS 3100,
Juneau, Alaska 99811

Dear Senator Josephson:

Subject: Asbestos Abatement Program For The Anchorage School District

The following information has been gathered to provide you with backup knowledge of the asbestos problem facing the Anchorage School District.

The Anchorage School District has not moved hastily into its decision on asbestos. The District began by implementing the EPA's voluntary asbestos identification program in 1979, and continued with the EPA's mandatory asbestos identification and notification program in 1982. The School Board appointed a Technical Advisory Panel which included local and state health officials, outside medical consultants with expertise and knowledge of asbestos health hazards, School Board members, and local government and civic leaders. This Panel was Chaired by School Board Member Jim Robinson. The Panel did not just debate the issue, but researched it on their own, attended educational and informational seminars, and solicited advice and information from knowledgeable and experienced sources, before making their recommendations.

Enclosed is School Board Memorandum #534 (82-83), May 23, 1983, which approved the recommendations by the Panel and authorized the Superintendent to search for a competent firm to assist the District in designing the abatement program. The firm of Gobbell Hays Pickering was approved by the School Board on July 11, 1983, ASD Memorandum #9 (83-84). The firm is from Nashville, Tennessee. It was chosen to do the design work and the monitoring of the abatement project. This firm has done over 500 school buildings and over 140 hospitals and government-type buildings. They have over 230 personnel in their firm and are well versed on the current state of the art of asbestos removal and replacement processes.

Also enclosed is the U. S. Attorney General's Asbestos Liability Report to the Congress and it states "Congress has determined that 'medical science has not established any minimum level of exposure to asbestos fibers which is considered to be safe to individuals exposed to fibers' and 'the presence in school buildings of friable or easily damaged asbestos creates an unwarranted hazard to the health of the school children and school employees who are exposed to such materials.'"

Enclosed is some medical research data which indicates that there are no safe lower limits of exposure. A letter from Mr. Wayne Tansil, Gobbell Hays Pickering, is enclosed which outlines encapsulation problems versus removal, and other information indicating the hazards of asbestos.

There are numerous reported examples of premature deaths from low-level exposure. Steve McQueen died of mesothelioma--his only reported exposure was a summer as a dock worker. A similar situation was reported with a Georgia Tech football coach. A Yale librarian was reported to have died of mesothelioma after seven years working in a library with deteriorating asbestos fireproofing above a dropped ceiling. A thirteen year old boy died of mesothelioma developed from exposure to asbestos while helping his father work on brake linings.

I believe the information contained within this booklet outlines the compounding health hazard to school children of asbestos exposure. This means children exposed to friable asbes[illegible] at an early age have the possibility of being affecte[illegible]y an asbestos-related disease in the prime of life, given the 20-30 year latency period of such diseases.

If I could be of further assistance, please let me know.

Sincerely,

L. T. Freeman
Assistant Superintendent
for Business Management

cl
BM5.33

Enclosure

KETCHIKAN GATEWAY BOROUGH SCHOOL DISTRICT

Darroll Hargraves
SUPERINTENDENT

ASBESTOS HAZARD ABATEMENT in the KETCHIKAN GATEWAY BOROUGH SCHOOL DISTRICT

INTRODUCTION:

Asbestos hazard abatement and rehabilitation of existing schools is a recognized need in Ketchikan. The situation leaves planners anxious to create safe and adequate abatement. Hazard abatement efforts require considerable financial backing. State involvement in funding efforts is an essential component of asbestos hazard abatement. The asbestos dilemma is a serious one, with no easy solution. Some Alaskan communities have experienced considerable expense in asbestos abatement programs. Excessive expense and unsafe removal are situations that Ketchikan wants to avoid.

PRUDENT PLANNING:

Good planning for asbestos removal is prudent, necessary and will allow for a variety of options to be investigated. The planning stage is a vital, necessary and cost saving effort. It is initially inexpensive when compared to the long term inconvenience of a poorly planned hazard abatement program.

POUCH Z • KETCHIKAN, ALASKA 99901 • (907) 225-2118

COMMUNITY PRIORITY:

Education is a high priority in Ketchikan. Local taxpayers have recently passed a 16.9 million dollar bond issue which will enable the District to meet construction and maintenance needs.

Impending growth due to the anticipated opening of a new molybdenum mine near Ketchikan has forced the community to pay close attention to the current and future needs of public schools in Ketchikan, and make improvements as needed. The threat of asbestos means that state dollars are needed for study and subsequent asbestos hazard abatement.

BUDGET REQUIREMENTS:

A minimum of $1.5 million will be required to begin hazard abatement procedures in the Ketchikan schools. Limited study of the asbestos problem indicates that asbestos is present in some schools. Continued investigation is required to fully identify the extent of the problem.

Some asbestos hazard abatement and code upgrades will be in order subsequent to the initial study. Administration of the study and subsequent remedy is also a necessary expense.

CONCLUSION:

State sponsored allocation of the necessary funds to put adequate plans in place will help provide for an organized plan for encapsulation, containment or removal of asbestos throughout School District facilities. Such action will put Ketchikan in a position to "plan for the future" and deal with asbestos in a well organized, safe manner.

FUND: 01
LOCATION: 190 - District Wide
FUNCTION: ASBESTOS ABATEMENT

310	MANAGERIAL	9,000
330	CLASSIFIED	3,000
351	INSURANCE	1,200
353	UNEMPLOYMENT	50
354	WORKMAN'S COMPENSATION	5
355	FICA	270
356	RETIREMENT - TRS	750
357	RETIREMENT - PERS	550
359	OTHER EMPLOYEE BENEFITS	150
400	PROFESSIONAL & TECHNICAL SERVICES	100,000
426	TRAVEL	925
502	BUILDINGS	
	502-1 ARCHITECTS/ENGINEERS	130,000
	502-2 CONTRACTORS	1,250,000
530	OTHER EXPENSES	4,100
		$1,500,000.00

INFORMATION FOR NANCY BENNETT, Health Education and Social Services Committee.

The following information augments Les Riedlinger's January 25th's testimony regarding the need to ensure that the $26,000,000.00 proposed by HB57 has sufficient provision to accommodate $2,000,000.00 in additional funding for asbestos removal at the Fairbanks North Star Borough School District.

ITEM 1

Of the 31 major buildings managed by FNSBSD, 11 remain to be addressed in terms of asbestos removal. The amounts needed for each of the eleven is as follows:

$247,000	- Barnette Elementary School
160,000	- University Park Elementary School
342,000	- Hunter Elementary School
209,000	- Hutchison Career Center
37,000	- Joy Elementary School
915,000	- Lathrop High School
397,000	- Main School
229,000	- Nordale Elementary
214,000	- North Pole Elementary
257,000	- Ryan Junior High School
10,000	- West Valley High School
$3,017,000	- Total Cost
1,052,000	- LESS: Funds on hand from prior Legislative Appropriations
$1,965,000	- Additional Asbestos Removal Need. This amount takes into account total project costs, i.e. sampling, bid documents, construction award, consultants, etc.

ITEM II

With respect to a gross cost estimating guide for asbestos removal, the FNSBSD has developed the following format. It is based upon bid experience; advice from consultants and in-house technical expertise.

It can be applied, however, only in those instances where the need is to remove insulation from pipe, conduits, ducts, boilers, etc. It can not be used for costing asbestos removal associated

with its use as an acoustical control, fire protection, or any other spray application.

The format works as follows:

- Calculate the total number of linear feet of pipe insulation and the total number of square feet associated with boiler, hot water tank wrapping, etc.

- Each of these linear and square feet than is assigned the value of one unit.

- For each unit that is openly accessible, calculate $45.00/unit for total removal, replacement and all other project related costs such as bid documents, sampling, monitoring, consultant fees, contingencies, etc.

- For each unit that concealed, i.e. inaccessible without first demolishing rigid barriers such as floors, ceilings, and walls, calculate $75.00/unit. This amount covers all associated project related costs including replacement.

ITEM III

Finally, Mr. Riedlinger addressed that Fairbanks in conjunction with its consultants had developed a model set of asbestos removed technical specifications which incorporated all EPA rules and guidelines. They are attached.

ALASKA FEDERATION OF NATIVES, INC.
1984 ANNUAL CONVENTION

RESOLUTION NO. 84-32

TITLE: ASBESTOS ABATEMENT IN ALASKA SCHOOLS

WHEREAS, Believing that friable asbestos, similar to that which was discovered in schools in the Anchorage School District, exists in numerous other schools in school districts throughout the State; and

WHEREAS, Knowing that an Asbestos Technical Panel, convened in Anchorage by the Anchorage School Board, reviewed thoroughly health hazards associated with asbestos in Anchorage schools; and as a result, recommended that friable asbestos be removed from Anchorage schools as an unacceptable health hazard; and

WHEREAS, Believing that many Alaskan school children in school districts other than Anchorage may be exposed to health hazards from asbestos that are preventable,

NOW THEREFORE BE IT RESOLVED that the Alaska Federation of Natives urges the Governor to form a special task force with representatives of the Department of Health and Social Services, Department of Labor, Department of Education, Department of Transportation and Public Facilities, Department of Environmental Conservation, appropriate federal agencies, parents of school children, and teachers to implement an asbestos abatement program in all Alaska schools, including those under Bureau of Indian Affairs jurisdiction, in accordance with recognized standard for asbestos abatement and

BE IT FURTHER RESOLVED that the Alaska Federation of Natives urges implementation of an asbestos abatement program which will include the following tasks:

1. Implement and insure completion of a comprehensive survey to identify and categorize asbestos in all Alaska schools.

2. Evaluate health hazards associated with any asbestos (friable asbestos and asbestos in other forms) discovered in the survey and make recommendations for appropriate medical surveillance of students, teachers and workers exposed to asbestos.

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF LAW

OFFICE OF THE ATTORNEY GENERAL

POUCH K – STATE CAPITOL
JUNEAU, ALASKA 99811
PHONE: (907) 465-3600

January 25, 1985

Honorable Max F. Gruenberg, Jr.
Co-Chair
House Committee on Health, Education
and Social Services
Alaska State Legislature
Pouch V
Juneau, AK 99811

Dear Representative Gruenberg:

I am responding to your letter of January 23, 1985, inquiring whether inclusion of the proposed provisions of section 1 of SSHB 5 is necessary, in light of certain advice provided by this office to the Commissioner of Education last summer. A copy of that Memorandum of Advice is attached for your information.

While probably not necessary to deal with the most egregious asbestos situations, I suspect there still could be a variety of situations arising which, although not qualifying as a "emergency" under the general provisions of AS 14.03.030(2), would nonetheless fall within the scope of the proposed language in section 1 of SSHB 5. Consequently, I believe it would be advisable to include that language in the bill, both to assure that these lower-level asbestos problems are encompassed within the "emergency closure" provisions and to clarify the Commissioner of Education's authority in this regard.

Sincerely,

NORMAN C. GORSUCH
ATTORNEY GENERAL

By:
Ronald W. Lorensen
Deputy Attorney General

RWL:vrb

cc: Honorable Harold Raynolds
Commissioner
Department of Education

MEMORANDUM State of Alaska

TO: The Honorable Harold Reynolds
Commissioner
Department of Education

DATE: August 29, 1984

FILE NO: 366-017-85

TELEPHONE NO: 465-3600

FROM: Norman C. Gorsuch
Attorney General

By: Ronald W. Lorensen
Deputy Attorney General
Department of Law

SUBJECT: Emergency school closures under AS 14.03.030(2)

This confirms our conversation on Thursday, August 23, 1984.

Upon further review and analysis, I believe some clarification of my May 28, 1984, */ letter to Senator Joe Josephson regarding the scope of the "emergency school closure" provision of AS 14.03.030(2) is in order. In that letter I indicated in fairly absolute terms that planned activities such as an asbestos abatement program could never qualify as adequate grounds for an "emergency school closure."

The May 28 letter does not adequately acknowledge the discretion which AS 14.03.030(2) vests in you, as Commissioner of Education, to determine what constitutes an "emergency" justifying deviation from the normal 180-day school term. Under the law, "emergency closure days" may only be substituted for days in session with your approval. Since the legislature did not define "emergency" under AS 14.03.030(2), it is left to you to apply the appropriate standard and conditions for granting an "emergency school closure" based on the general policy and purposes underlying the school laws. See, e.g., Kenai Peninsula Fishermen's Co-op Association v. State, 628 P.2d 897, 907 (Alaska 1981).

As I indicated in my May 28 letter, pre-planned construction or maintenance activities would not normally be considered to constitute a situation covered by AS 14.03.030(2). However, that general conclusion should not be taken as implying that you may never approve a closure for a pre-planned activity when, in the exercise of your discretion in reviewing a specific case, you conclude that an emergency situation exists.

RWL:vrb

cc: Honorable Joe Josephson
Alaska State Senator

*/ Redated for printing July 1, 1984: 1984 Inf. Op. Att'y Gen. (July 1; 366-017-85).

02-001A/Rev. 10/79

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION X

1200 SIXTH AVENUE

SEATTLE, WASHINGTON 98101

MAR 14 1985

REPLY TO ATTN OF: M/S 524

Jim Robison, Commissioner
Alaska Department of Labor
P. O. Box 1149
Juneau, Alaska 99802

Dear Mr. Robison:

The U.S. Environmental Protection Agency (EPA) has been given the responsibility for implementation of the Asbestos School Hazard Abatement Act of 1984 (ASHAA). This Act addresses asbestos abatement procedures and the disbursement of financial assistance for schools performing asbestos abatement projects. It does not include identification, recordkeeping and notification requirements for friable asbestos in school buildings. These tasks are incorporated in the Asbestos-in-Schools Identification and Notification Rule promulgated in accordance with the Toxic Substance Control Act (TSCA).

The Asbestos Action Program in the EPA Office of Pesticides and Toxic Substances has been given the authority to fund cooperative agreements with some states whose projects fall within the funding limits imposed by ASHAA. The disbursement of funds under this program is contingent upon a 25% match by the respective recipient.

Projects which are eligible for funding include: 1) development of a state license/certification program for asbestos abatement contractors and maintenance personnel (EPA can provide a model abatement contract specification, and a model state contractor licensing regulation for state use), 2) asbestos abatement training for contractors and supervisory personnel, 3) voluntary technical assistance to schools in assessing hazards and deciding on abatement strategies, 4) dissemination of asbestos information to school employees, teachers, school administrators, and parents.

If the State of Alaska intends to request federal funding under this program, a pre-application proposal (Enclosure A) should be submitted to EPA as soon as possible. The project(s) identified in your pre-application will be reviewed. If the projects are approved you will be requested to submit completed application forms to EPA by April 15, 1985. The application forms can be obtained from our EPA Juneau Office (907) 586-7619.

Both the pre-application and the ensuing completed application proposals should be submitted to: Asbestos Action Program, U.S. EPA, TS-788A, 401 M Street S.W., Washington, D. C. 20460, Attn: Stephen Schanamann. Copies of the proposal should be sent to Kathryn Pazera, EPA, Alaska Operations Office, 3200 Hospital Drive, Suite 101, Juneau, Alaska 99801, and John Seitz, Office of Compliance Monitoring, U.S. EPA, 401 M Street, S.W., Washington, D.C. 20460.

If you should have any questions on this material, please contact Kathryn Pazera, 586-7619.

Sincerely,

Anita Frankel

Anita Frankel, Chief
Pesticides and Toxic Substances Branch

Enclosure

cc: Bill Ross, Department of Environmental Conservation
Rich Arab, Department of Labor

STATE OF MARYLAND

HARRY HUGHES
GOVERNOR

DOMINIC N. FORNARO
COMMISSIONER

DEPARTMENT OF LICENSING AND REGULATION
DIVISION OF LABOR AND INDUSTRY
OCCUPATIONAL SAFETY AND HEALTH
501 ST. PAUL PLACE . BALTIMORE, MARYLAND 21202-2272
301/659-4195

NANCY B. BURKHEIMER
DEPUTY COMMISSIONER

FREDERICK L. DEWBERRY
SECRETARY

RAYMOND E. LLOYD
ASSISTANT COMMISSIONER
MOSH

January 31, 1985

RECEIVED
FEB 04 1985

Mr. Richard Arab
P. O. Box 1149
Juno, Alaska 99802

Dear Mr. Arab:

As per our telephone conversation, a copy of Asbestos Licensing and Control Regulations is forwarded for your information. Please note that these regulations are enforced by the Department of Health and Mental Hygiene, 201 West Preston Street, Baltimore, Maryland, 21201 and not this Agency.

Please contact us if we can be of further service.

Sincerely,

Raymond E. Lloyd

Raymond E. Lloyd
Assistant Commissioner

REL/js

BALTIMORE METRO AREA 659-4195
OUTSIDE BALTIMORE METRO AREA
TOLL-FREE 1-800-492-6226

TTY FOR DEAF
BALTO. AREA 383-7555
D.C. METRO 565-0451

Asbestos

State of Maryland

DEPARTMENT OF HEALTH AND MENTAL HYGIENE
201 WEST PRESTON STREET • BALTIMORE, MARYLAND 21201 • Area Code 301 • 383-3245

Harry Hughes, Governor

Charles R. Buck, Jr., Sc.D. Secretary

January 24, 1983

TO: Interested Persons

SUBJECT: Asbestos Licensing and Control Regulations

I have enclosed a copy of the Asbestos Licensing and Control Regulations. Final changes were published in the Maryland Register on January 7, 1983.

The regulations were approved by Secretary Buck on December 27, 1982. The regulations will become effective on February 25, 1983. However, in order to provide time for businesses to train employees and apply for licenses, the Department is delaying the effective date of the licensing regulations until April 1, 1983.

Inquiries concerning applications for licenses to conduct asbestos projects should be directed to Mr. Frank Whitehead, Air Management Administration, 201 West Preston Street, Baltimore, Maryland 21201 (301-383-2776).

Inquiries concerning application for approval of training courses should be directed to Dr. Katherine Farrell, Division of Environmental Disease Control, 201 West Preston Street, Baltimore, Maryland 21201 (301-383-2759).

Yours Truly,

Joel H. Cooper
Air Management Administration

Enclosure

Maryland State Department of Health and Mental Hygiene
201 West Preston Street
Baltimore, Maryland 21201

(As amended through: December 27, 1982)

10.18.15 Toxic Air Pollutants
.01 Definitions
.02 Control of NESHAP Sources
.03 Control of Asbestos

.01 DEFINITIONS

A. "Asbestos project" means any activity involving the demolition, renovation, or encapsulation of friable asbestos materials.

B. "Demolition" means the wrecking or taking out of any load-supporting structural member and any related removing or stripping of friable asbestos materials.

C. "Encapsulate" means to coat, bind, or resurface walls, ceilings, pipes, or other structures to prevent friable asbestos from becoming airborne.

D. "Friable asbestos material" means any material that contains more than 1 percent asbestos by weight and that can be crumbled, pulverized, or reduced to powder, when dry, by hand pressure.

E. "National Emission Standards for Hazardous Air Pollutants source" (NESHAP source) means any source of mercury, beryllium, vinyl chloride, or asbestos (as defined in 40 CFR §61.21), which is subject to the provisions of 40 CFR Part 61, 1981 edition.

F. "Renovation" means the removal or stripping or friable asbestos materials used on any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member. Operations in which load-supporting structural members are wrecked or taken out are excluded.

G. "Structural member" means any load-supporting member, such as beams and load-supporting walls, or any non-supporting member, such as ceilings and non-load-supporting walls.

.02 CONTROL OF NESHAP SOURCES

A person may not construct, modify, or operate, or cause to be constructed, modified, or operated any NESHAP source which results or will result in violation of any provisions of 40 CFR Part 61, 1981 edition.

.03 CONTROL OF ASBESTOS

A. Applicability.

(1) This regulation applies to any person engaged in an asbestos project within Maryland.

(2) If a provision of Regulation .03 conflicts with Regulation .02, Regulation .02 takes precedence.

B. Control of Emissions from an Asbestos Project which is a NESHAP Source.

(1) Any Asbestos Project which is a NESHAP Source.

A person engaged in any asbestos project in which more than 260 feet (80 meters) of pipe covered or coated with asbestos materials are stripped or removed, or 160 square feet (15 square meters) of asbestos materials used to cover or coat any duct, boiler, tank, reactor, turbine, or structural member are stripped or removed shall comply with the following:

(a) Caution Signs.

Display 20-inch by 14-inch caution signs wherever airborne asbestos fibers may be present, in accordance with MOSH Regulation 29 CFR 1910.1001.

(b) Surfactant.

Wet asbestos materials to be stripped or removed with a solution containing one fluid ounce of surfactant mixed with five gallons of water. Surfactants containing 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether or equivalent are acceptable.

(c) Waste Disposal.

(i) Deposit all asbestos wastes, sealing tape, plastic mop heads, sponges, filters, and disposable clothing in clearly labeled containers and seal.

(ii) Wet large structural components containing asbestos material that cannot be placed in containers before loading and cover before transporting to the disposal site.

(iii) Transport and dispose of asbestos waste in a manner to prevent asbestos from becoming airborne. If disposing of asbestos waste within the State, use a landfill or site approved by the Department.

(d) Cleaning and Monitoring.

(i) For buildings or structures which are to be completely demolished: After removing any asbestos materials, clean the work area until no residue of asbestos material is visible.

(ii) For any other asbestos project which is subject to §B(1) above: After removing any asbestos materials, clean all surfaces in the work area using the water and surfactant solution prescribed in §B(1)(b). When the surface has dried, vacuum any remaining dry residue on all surfaces using a vacuum equipped with a high efficiency particulate air (HEPA) filter. Repeat the sequence of wet mopping and vacuuming in 24-hour intervals until no residue is visible and the airborne concentration of asbestos fibers longer than 5 microns is less than 0.1 fibers per cubic centimeter (8-hour time-weighted average).

(iii) For monitoring required by §B(1)(d)(ii) above, use procedures specified in the National Institute for Occupational Safety and Health (NIOSH) Analytical Method #P&CAM 239, Asbestos Fibers in Air, or equivalent.

(e) Enclosing and Sealing Materials.

Plastic sheeting shall be 6 mils thick or equivalent. Tape shall be either duct tape or equivalent waterproof tape.

(2) Demolition.

A person subject to §B(1) and engaged in demolition shall also comply with the following:

(a) Before beginning any demolition project, cover all windows, doors, and other openings with plastic sheeting and seal with tape.

(b) If a structure or building is to be partially demolished, construct a barrier of plastic sheeting sealed with tape to prevent asbestos from entering any portion of the structure or building not to be demolished, and seal ducts, including air conditioning and heat ducts, before wetting and removal.

(c) Wet all components that contain or may contain asbestos before stripping the asbestos or before removing those portions or supports which are to be removed.

(d) Wet the structure and components as necessary to assure that the asbestos materials remains wet during removal, loading, and transportation.

(3) Renovation.

A person subject to §B(1) and engaged in renovation shall also comply with the following:

(a) Before beginning any renovation project, remove all movable objects from the work area and cover all non-movable objects with plastic sheeting taped securely in place. Cover floors, other large areas such as walls, and all windows in the work area with plastic sheeting sealed with tape. Shut down all forced-air ventilation to the work area and seal exhaust and intake ducts.

(b) Construct double barriers of plastic sheeting at all entrances and exits to work area. Construct a decontamination area within the work area to be used for removal of contaminated protective clothing and for storage of contaminated items and tools. Provide a clean room where workers obtain clean protective clothing and respirators before entering the work area.

(c) Wet all areas or surfaces that contain or may contain friable asbestos. Assure that the asbestos-containing materials remain wet during the removal process.

C. Control of Asbestos from any other Asbestos Project.

(1) A person engaged in any other asbestos project not subject to Regulation .03B shall take reasonable precautions to prevent asbestos from becoming airborne.

(a) Wetting any asbestos (except asbestos to be encapsulated);

(b) Taking measures such as sealing the work area and using appropriate work practices to minimize the dispersal of particulate asbestos;

(c) Leaving no visible residue of asbestos after completing the project;

(d) Sealing asbestos waste in an appropriate container; and

(e) Disposing of the asbestos at a site or landfill approved by the Department in a manner that prevents asbestos from becoming airborne.

D. Exemptions.

(1) The Department may, on a case-by-case basis, approve an alternative procedure for control of emissions from an asbestos project provided that the person submits the alternative procedure to the Department in writing and demonstrates to the satisfaction of the Department that compliance with the prescribed procedures is not practical or not feasible, or that the proposed alternative procedure provides equivalent control of asbestos. The Department, following its review, may approve an alternative procedure if it determines that it will minimize the emissions of asbestos into the air.

(2) A person may not be exempt from the requirements of 40 CFR Part 61, 1981 edition except as provided there.

..Maryland State Department of Health and Mental Hygiene
201 West Preston Street
Baltimore, Maryland 21201

(As amended through: December 27, 1982)

10.18.23 License to Remove or Encapsulate Asbestos

.01 DEFINITIONS

A. "Asbestos project" means any activity involving the demolition, renovation, or encapsulation of friable asbestos materials.

B. "Business entity" means a partnership, firm, association, corporation, sole proprietorship, or other business concern.

C. "Demolition" means the wrecking or taking out of any load-supporting structural member and any related removing or stripping of friable asbestos materials.

D. "Encapsulate" means to coat, bind, or resurface walls, ceilings, pipes, or other structures to prevent friable asbestos from becoming airborne.

E. "Friable asbestos material" means any material that contains more than 1 percent asbestos by weight and that can be crumbled, pulverized, or reduced to powder, when dry, by hand pressure.

F. "License" means any authorization issued by the Department to encapsulate or remove asbestos.

G. "Renovation" means the removal or stripping of friable asbestos materials used on any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member. Operations in which load-supporting structural members are wrecked or taken out are excluded.

H. "Structural member" means any load-supporting member, such as beams and load-supporting walls; or any non-supporting member, such as ceilings and non-load-supporting walls.

.02 GENERAL REQUIREMENT

A business entity may not engage in any asbestos project unless it is licensed by the Department under this chapter.

.03 REQUEST FOR DETERMINATION OF APPLICABILITY

A. A business entity may request that the Department determine whether a project is an asbestos project subject to this chapter. The Department will make the determination in writing not later than 30 days after it has received a written request describing the asbestos-containing materials, the proposed project, and the business entity.

B. An erroneous determination by the Department that a project is not subject to this chapter only relieves the business entity from the requirements of this chapter to the extent that the Department was provided with the appropriate information to make a correct determination.

.04 WORKER PROTECTION REQUIREMENTS

A. Respiratory Protection Program.

A business entity, before it engages in any asbestos project, shall prepare a written respiratory protection program as defined in MOSH regulation at 29 CFR 1910.134 and make the program available to the Department and workers at the job site.

B. Physical Examination.

The business entity shall ensure that each worker who will be involved in an asbestos project has been examined within the preceding year and has been declared by a physician to be physically capable of working with [while] wearing a respirator.

C. Training.

The business entity shall ensure that each employee or agent of the business entity who will come in contact with asbestos or will be responsible for an asbestos project receives the following training:

(1) An initial course approved by the Department, completed before engaging in any asbestos projects; and

(2) An annual review course approved by the Department.

D. Protective Clothing and Equipment.

The business entity shall provide workers with protective clothing and equipment including the items listed below and ensure that workers involved in any esbestos project use the items:

(1) Disposable clothing, including hair cover, foot covers, and gloves, as appropriate; and

(2) Respirators approved by the National Institute of Occupational Safety and Health (NIOSH), and at a minimum, capable of being qualitatively fit tested using positive and negative methods.

E. No Smoking, Eating, or Drinking.

The business entity shall ensure that there is no smoking, eating or drinking in the work area.

F. Alternative Procedures.

The Department may, on a case-by-case basis, approve an alternative to a worker protection requirement in §§A-E for an asbestos project provided that the business entity submits the alternative procedure to the Department in writing and demonstrates to the satisfaction of the Department that the proposed alternative procedure provides equivalent worker protection.

.05 LICENSE APPLICATION

A. To apply for or to renew a license, a business entity shall:

(1) Submit a completed application to the Department on forms provided by the Department; and

(2) Pay the fee in §B below by certified check made payable to the Department of Health and Mental Hygiene.

B. License Fee.

Number of Employees to be Engaged in Asbestos Projects	License Fee
2 or less	$ 50
3 to 5	$200
6 or more	$300

.06 ACTION ON AN APPLICATION

A. Within 15 work days after receiving an application, the Department will acknowledge receipt of the application and notify the applicant of any deficiency in the application. Within 60 calendar days after receiving a completed application, including all additional information requested by the Department, the Department will issue a license or deny the application.

B. Denial.

(1) The Department will deny an application if it determines that the applicant has not demonstrated the ability to comply fully with applicable requirements, procedures, and standards established by the:

(a) Department in this chapter and in COMAR 10.18.15;

(b) U.S. Environmental Protection Agency in 40 CFR Part 61; and

(c) Maryland Occupational Safety and Health Program in 29 CFR Part 1910.1001 and .134

(2) If the Department denies a license, the Department will return to the applicant the application fee, less $25.

(3) The Department will send the denial of an application by certified mail. The applicant may request a hearing within 10 days after receipt of the certified mail. If it receives a timely request, the Department will hold a hearing in accordance with Article 41, §251 et seq., Annotated Code of Maryland.

C. Conditions and Generic Alternative.

(1) In granting a license, the Department may impose reasonable terms and conditions to ensure continuous compliance with the requirements of this chapter.

(2) In granting a license, the Department may approve an alternative procedure for controlling emissions from a specified type of asbestos project provided that the following conditions are satisfied:

(a) The business entity submits in writing a specific, detailed description of the type of asbestos project and the alternative procedure;

(b) The business entity demonstrates to the satisfaction of the Department that compliance with a procedure prescribed in COMAR 10.18.15.03 is not practical or not feasible or that the proposed alternative procedure provides equivalent control of asbestos; and

(c) The Department determines that compliance with the proposed alternative procedure will minimize the emission of asbestos in the air.

.07 REPRIMANDS, SUSPENSIONS, AND REVOCATION

As provided in Sections §§6-415 and 6-416 of the Health-Environmental Article, Annotated Code of Maryland, and subject to applicable hearing requirements, the Department may reprimand any licensee or revoke or suspend any license.

.08 DURATION AND RENEWAL OF A LICENSE

A. Unless the Department revokes or suspends a license, the license shall remain in effect for 1 year from the date of issuance.

B. The Department may renew a license annually if the business entity:

(1) Submits a completed application for a renewal on forms provided by the Department no sooner than 90 days and no later than 30 days before the license expires;

(2) Pays to the Department by certified check a renewal application fee as specified in Regulation .05B; and

(3) Has complied fully with all applicable requirements.

.09 NOTIFICATION

A. NESHAP Sources.

A person who intends to engage in an asbestos project which is a NESHAP source shall notify the Department in accordance with the requirements of 40 CFR Part 61, 1984 edition.

B. All Other Asbestos Projects.

After obtaining or renewing a license, a business entity shall notify the Department at least 3 days before beginning each of its first two planned asbestos projects. A business entity shall notify the Department of additional asbestos projects upon request by the Department.

.10 RECORDS

A. Eached licensed business entity shall maintain records of all asbestos projects which it performs, and shall make these records available to the Department upon request. The business entity shall retain the records for at least 6 years.

B. The business entity shall record the following information for each project:

(1) Name and address of supervisor responsible for the project;

(2) The location and description of the project, and the estimated amount of asbestos removed or estimated area encapsulated at each project;

(3) Starting and completion dates;

(4) Summary of the procedures used to comply with applicable requirements; and

(5) Name and address of the waste disposal site where the asbestos waste was deposited.

.11 HEALTH AND SAFETY TRAINING

A. Application for Approval of a Training Course.

A person may apply for approval of a course on the health and safety aspects of asbestos demolition, renovation, and encapsulation for purposes of Regulation .04C by submitting a written application on forms provided by the Department.

B. Criteria for Initial Course.

In order to obtain or retain Department approval, a person sponsoring a course shall substantially satisfy the following criteria:

(1) Provide at least 5 hours of instruction on the following topics:

(a) Recognition of asbestos, including its physical characteristics and uses;

(b) Health hazards, including the relationship between asbestos exposure, smoking, and diseases;

(c) Worker protection, including respiratory protection, protective clothing, safety equipment, air monitoring, medical surveillance, and personal hygiene;

(d) Work practices, including area preparation, decontamination, and waste disposal;

(e) A detailed description of respirators and their use and care, including the degree of protection afforded, fitting and testing procedures, and maintenance and cleaning;

(f) Requirements, procedures, and standards established by the:

(i) U.S. Environmental Protection Agency at 40 CFR Part 61, Subparts A and B,

(ii) Maryland Occupational Safety and Health Program at 29 CFR Part 1910.134, and

(iii) Department in this chapter and in COMAR 10.18.15

(2) Provide each student at least 15 minutes of individual instruction consisting of individual respirator fit tests and an opportunity to use respirators.

(3) Ensure that instruction is given or supervised by:

(a) An industrial hygienist who is at least Core certified by the American Board of Industrial Hygiene; or

(b) An individual with equivalent education and experience as determined by the Department.

(4) Maintain lists of students trained and the dates on which training occurred, and make this information available to the Department upon request.

(5) Provide an opportunity for students to complete written course evaluations.

(6) Issue to each student who completes the course a certification of attendance containing information required by the Department.

C. Criteria for Review Course.

In order to obtain or retain Departmental approval, a person sponsoring a review course shall provide at least 2 hours of instruction adequately addressing the topics in §B(1) and shall substantially satisfy the criteria in §B(2)-(6).

D. Action on an Application for Course Approval.

(1) The Department will acknowledge receipt of an application within 10 working days after receiving the application.

(2) The Department will act on an application within 90 days after it is complete.

(3) The Department will approve a course if the Department determines the course substantially satisfies or will substantially satisfy the criteria in §B or C.

.12 PENALTIES

A person who violates any provision of this chapter or any regulation in this chapter is liable to the criminal or civil penalties under the Health-Environmental Article, §6-422, Annotated Code of Maryland.

ROUTE SLIP 191

TO: NAME: Richard Arad Date:

OFFICE OR ROOM NUMBER: N.J. LABOR

To return to sender, write "TO" below, and fold back on dotted line

FROM: Wm N Van Arnum

[ ]	Take Necessary Action	[ ]	Reply For My Signature
[ ]	See Me	[ ]	For Your Signature
[ ]	Telephone Me	[ ]	For Your Approval
[ ]	Initial and Circulate	[ ]	For Your Comment
[ ]	Note and Return	[ ]	For Your Information
[ ]	Note and File	[X]	Per Your Request

REMARKS

AD-69 (R-10-84) N.J. DEPARTMENT OF LABOR

P. L. 1984, CHAPTER 173, *approved October 31, 1984*

1984 Assembly No. 1820 (*Official Copy Reprint*)

AN ACT concerning the application, removal, and encapsulation of asbestos, and making an appropriation.

BE IT ENACTED *by the Senate and General Assembly of the State of New Jersey:*

1. The Legislature finds that the application, **enclosure,** removal and encapsulation of asbestos when improperly performed creates unnecessary health and safety hazards which are detrimental to the State's interest, and that of its citizens, in terms of wage loss, insurance, medical expenses, disability compensation payments, family life, preservation of human resources and unfair competition to craftspersons, their unions and their employers.

2. The Legislature declares it to be its purpose and policy to reduce asbestos-related hazards by:

a. Encouraging contracting parties, citizens and insurance companies in their efforts to reduce disabling asbestos hazards and to stimulate initiation of new and to perfect existing programs for controlling the application, use and removal of asbestos, an extremely dangerous substance;

b. Creating a climate for developing innovative methods, techniques and approaches for dealing with life-destroying asbestos materials;

c. Encouraging competence, knowledge and reduced exposure to asbestos through the licensing of contractors and workers;

d. Providing for the adoption of standards for the application,

EXPLANATION—Matter enclosed in bold-faced brackets [thus] in the above bill is not enacted and is intended to be omitted in the law.

Matter printed in italics thus is new matter.

Matter enclosed in asterisks or stars has been adopted as follows:

*—Assembly Amendments adopted in accordance with Governor's recommendations September 20, 1984.

enclosure, removal, encapsulation, storage, sale, disposal and use of asbestos and asbestos-containing material; and

e. Establishing an enforcement program for these standards, which shall include reporting procedures.

3. As used in this act:

a. "Asbestos" means the asbestiform varieties of chrysotile (serpentine); crocidolite (riebeckite); amosite (cummingtonite-grunerite); anthophyllite; tremolite; and actinolite;

b. "Asbestos-containing material" means any material which contains more than 1% asbestos by weight;

[c. "Commissioner" means the Commissioner of Labor, or his designee;]

[d.] *c.* "Employee" means any person suffered or permitted to work by an employer;

[e.] *d.* "Employer" means a body, board, person, corporation, partnership, proprietorship, joint venture, fund, authority or similar entity employing, permitting or suffering another to work. This term shall apply to private employers and to the State, its political subdivisions and any boards, commissions, schools, institutions or authorities created or recognized thereby*[;*

f. "Journeyman" means a person who has served a four-year apprenticeship in the asbestos and frost-worker field].

4. Any private or public agency letting contracts for application, *enclosure,* removal or encapsulation of asbestos shall include in these contracts specifications that these contracts are to be performed by contractors and subcontractors licensed by the *[commissioner]* *Commissioner of Labor*.

5. No employer shall either directly or indirectly perform any of the functions of application, *enclosure,* removal, or encapsulation of asbestos without first obtaining a license from the *[commissioner]* *Commissioner of Labor*. This license shall be in writing, shall be dated when issued, shall contain an expiration date, and shall be signed by the commissioner. It shall give the name and address of the employer to whom it is issued. Licensed employers shall post a sign indicating, in letters more than four inches in height, "LICENSED BY THE STATE OF NEW JERSEY FOR ASBESTOS WORK," readily visible outdoors at the work site. The actual license shall be readily available at the work site for inspection by representatives of the *[commissioner]* *Commissioners of Labor and Health* and the contracting agency.

6. Every employee, performing functions of application, *enclosure,* removal, or encapsulation of asbestos shall first procure from the *[commissioner]* *Commissioner of Labor* a perfor-

mance permit. *No permit shall be issued unless the employee has taken a course of training in asbestos control and removal, passed an examination thereon, and demonstrated the ability to perform asbestos control and removal safely, in accordance with the current state-of-the-art technology. The Commissioner of Health shall certify the course of training necessary.* This permit shall be in writing, shall be dated when issued, shall contain an expiration date, and shall be signed by the *[commissioner]*. *Commissioner of Labor*. It shall give the name and address of the employee to whom it is issued. The permit shall be carried upon the worker's person and be readily available for inspection by representatives of the *[commissioner]* *Commissioners of Labor and Health* and the contracting agency.

7. Beginning not later than one year following the effective date of this act, licenses and permits shall be issued by the *[commissioner]* *Commissioner of Labor*, or his designee, and shall be valid for at least 12 months, in accordance with regulations promulgated under provisions of the "Administrative Procedure Act," P. L. 1968, c. 410 (C. 52:14B-1 et seq.). Fees for these licenses shall not exceed, for a 12-month period, $100.00 for a license and $25.00 for a permit, in accordance with a fee schedule contained in the regulations.

8. Not later than six months after the effective date of this act, the *[commissioner]* *Commissioners of Labor and Health jointly* shall, in consultation with the *[Commissioner of Health, and the]* Commissioner of Environmental Protection, adopt all standards and regulations which *[he deems]* *they deem* necessary for the proper administration and enforcement of this act. These standards and regulations shall include, but shall not be limited to, protective equipment specifications; application, *enclosure,* removal, and encapsulation procedures; administrative penalties; waste disposal; self-monitoring; cleanup; health checkup; license and permit issuance and revocation; fee charges; experience necessary for license or permit qualification; general subject matter of qualifying examinations; and continuing education. License and permit qualification standards shall include provision for *[asbestos and frost-worker foremen and journeymen, with at least one year in journeyman status at the effective date of this act,]* *experienced asbestos workers* to apply for and receive a permit without examination for a period not in excess of one year from the effective date of this act.

9. This act, and its standards and regulations, shall be enforced by the *[commissioner]* *Commissioners of Labor and Health*,

who *[has]* *have* the right-of-entry to all pertinent premises and records for purposes of inspection and information. In the event *[the]* *that either* commissioner believes that an imminent hazard exists, he is empowered to apply to a court of competent jurisdiction to restrain and cause to cease the activity which is the cause of the hazard.

10. Any person who hinders or delays the *[commissioner]* *Commissioner of Labor or Health*, or *[his]* *the* authorized representative *thereof*, in the performance of *[his duties in enforcing]* *the duty to enforce* this act, or fails to obtain licenses or permits required by the provisions of this act, or refuses to make these licenses or permits accessible to *[the]* *either* commissioner, or *[his]* *the* authorized representative *thereof*, or otherwise violates any provision of this act or any regulation adopted under this act, is guilty of a disorderly persons offense and liable to a fine of $1,000.00 or imprisonment not in excess of six months, or both. As an alternative, or in addition to, the fines and imprisonment specified by this section, *[the]* *either* commissioner, or *[his]* *the* designee *thereof* may impose, after granting an opportunity to be heard, an administrative penalty, not to exceed $1,000.00 for each offense, in accordance with a schedule promulgated by regulation.

11. Any employer who discriminates against or otherwise sanctions an employee who complains or cooperates with the *[commissioner]* *Commissioner of Labor or Health*, or *[his]* *the* designee *thereof*, in administering this act is a disorderly person and upon conviction is subject to the penalties specified in section 10 of this act.

12. There is appropriated *[the sum of $75,000.00]* from the General Fund *$75,000.00* to the Department of Labor *and $75,000.00 to the Department of Health* for the first-year administration of this act.

13. This act shall take effect immediately.

January 18, 1984

MEMORANDUM

To: HESS Committee members

From: Nancy Bennett, Committee staff

Re: Asbestos history/Alaska information

IN YOUR FOLDER:

A copy of SSHB 5, asbestos health hazard enabling legislation, and HB 57, the companion appropriation bill.

A section analysis of SSHB 5 and memorandum from DOTPF on the costs of inspecting state buildings for asbestos.

School district information on asbestos.

Relevant periodical and newspaper articles.

Information from the EPA/Alaska specific.

Alaska Health Project asbestos packet.

Packet of materials from the Association of General Contractors

ALASKA SCHOOLS INFORMATION:

The EPA has estimated from their Alaskan survey that only half of the school districts have inspected their facilities for asbestos, leaving approximately 220 buildings for review. By regulation, all schools in the USA were to be tested by June 30, 1983, parents and school boards were to be notified of the findings, school employees were to be instructed on minimization of health risks and records were to be maintained on testing and notification.

District needs in Alaska for asbestos abatement:

Kodiak	$ 1,138,507	
Petersburg	107,000	
Delta Greely	99,700	
Cordova	120,000	
Nenana	15,000	
Anchorage	11,000,000	(Phase II)
Skagway	25,000	
Kuspuk	5,296	
Mat-Su	105,959	
Juneau	300,000	(expended, estimate the possiblility of several million)

Ketchikan (unknown, estimates the possiblity of several million)

HISTORY

Following World War II, asbestos was widely recognized as a miracle fiber - it was an excellent insulator and would not burn - and was therefore widely used in construction during the "Baby Boom" period.

Asbestos was known to be dangerous long before Congressional hearings in the late 1970's, when the Johns-Manville Corporation admitted to paying physicians to down-play the health hazards. Most early reported cases were among pipefitters and shipyard workers who faced heavy exposure in the workplace, but it was soon discovered that family members and people living in close proximity to factories were also affected. Asbestos is an inert material which cannot be removed from the body, and although the symptoms of asbestosis and mesothelioma often take decades to surface, the diseases are always fatal.

Congressional action in 1980 aimed at the removal of asbestos from schools was prompted by the increased susceptibility of children to asbestos because of their higher activity level and elevated respiration.

In 1984, the EPA began applying sanctions to individual school districts for non-compliance, rewrote their regulations for demolition and renovations with asbestos products and have more recently been receiving public pressure to take a more aggressive stance on asbestos in schools. Many speculate that the regulations were designed to bring pressure on states to fund asbestos removal by public notification, placing districts in the precarious position of raising concern about an issue they are unable to address financially. The $172 million authorized by the Asbestos Health Hazard Detection and Control Act of 1980 was never appropriated, although the federal government has made limited funds available in some schools on federal land.

A flurry of lawsuits filed in the last few years against manufacturers, contractors and school districts has pointed out confusion over the issue of liability. In addition, resource limitations of the EPA (they have .1 staff working on asbestos in Alaska) have created difficulty for rural schools districts to receive the type of assistance needed in this technical area

ALASKA CHAPTER

ASSOCIATED GENERAL CONTRACTORS OF AMERICA, INC.

Position Statement

on legislation establishing

AN ASBESTOS HEALTH HAZARD ABATEMENT PROGRAM

CSSS HB 5 (FIN)am

APRIL 3, 1985

POSITION PAPER ON CSSS HB 5

The Alaska Chapter, Associated General Contractors of America, Inc. (A.G.C.) represents more than 900 companies, including most of the general contracting companies engaged in Alaska's commercial construction. We appreciate the opportunity to comment on CSSS HB 5 (FIN)am.

The A.G.C. agrees with the intension of this bill - the abatement of asbestos health hazards. Many A.G.C. contractors are or have been involved in this very important safety effort. There is, however, a section of the bill that unnecessarily duplicates existing safety regulations and should, therefore, be deleted.

Before continuing it may be worth noting that the term certification is semantically incorrect. The correct term for government approval or permission is license. Webster's New World Dictionary defines license as; formal permission to do something; especially authorization by law to do some specified thing.

Specifically, we draw your attention to Page 5, Section 18.28.030, Certification Programs. In this section, the Department of Labor is given authority to license contractors and employees who intend to conduct asbestos abatement.

What the bill essentially requires is a State license to do asbestos work. But is there a need for such a license? We think not.

Another serious concern that needs to be addressed is that of liability. Asbestos work is plagued with lawsuits. Through the proposed Department of Labor licensing program, the State may become party to these suits by licensing contractors, employees and labor organizations as competent to undertake this work, the State may have liability if an employer or employee is licensed improperly. We suggest an opinion from the attorney general's office be obtained prior to passage of this bill from committee.

Finally, in examining the fiscal requirements of this proposed licensing program, it appears that millions of dollars would be needed for its administration, rather than the proposed $300,000. It is virtually impossible to competently administer the proposals contained in HB 5 for $300,000. We suggest that an inadequately administered program is worse than no program at all. A realistic fiscal note must be developed so that lawmakers may assess the true costs of proposed legislation.

We believe once the true cost of this program is known, the question will arise: What does a licensing program provide that is not already enforceable under existing DOSH general safety code regulations? The answer is "nothing". Sufficient asbestos health standards already exist, including requirements for employer training and proper respirator usage.

In conclusion, we request this committee to thoroughly determine the fiscal costs of the proposed legislation, including potential State liability and to balance the cost against the benefits received. A.G.C. contends that for the licensing program, the dollar cost will be high and without significant benefits due to the existence of sufficient asbestos health standards presently exist.

We strongly urge the deletion of the licensing section of CSSS HB 5.

FISCAL NOTE

THE LEGISLATURE OF THE STATE OF ALASKA
FOURTEENTH LEGISLATURE
BILL/RESOLUTION NO: CS SS for HB 5 (House Labor and Commerce Committee)
TITLE: "An Act relating to establishing asbestos health hazard abatement"
AGENCY AFFECTED: Department of Labor

There are approximately 550 school buildings in Alaska. Of these buildings we know that 140 buildings have been surveyed for asbestos. This is based on information from the U.S. Environmental Protection Agency (EPA), that they have made on-site inspections for compliance with their regulations in the Juneau, Anchorage, Fairbanks, Ketchikan, Sitka and Kodiak school districts. These school districts contain approximately 140 buildings. We are estimating that of the pproximately 410 other school buildings, that a third have been properly surveyed or a school district will use a private consultant to survey their buildings. We estimate therefore, that the department will be required to make physical inspections of approximately 270 buildings that have either not been surveyed or have been improperly surveyed.

It is important that these school districts survey their buildings within two years to allow them time to budget and plan for the work necessary to abate the asbestos health hazards in their school districts.

It is assumed that the responsibility for training and certification outlined in AS 18.38.030 of CS SS HB 5 (L&C) will mainly be with the employer and that the department will only be responsible for establishing training guidelines and certifying training programs.

A lead industrial hygienist, a clerk typist and monies to enter into a contract for surveying and abatement evaluation will be needed for the first year. To assure that the program is implemented without delay, we would need to hire the industrial hygienist and clerk on July 1, 1985. We estimate that it will take two months to set up the schedule for surveying schools and three months to develop the regulations and guidelines for the certification program. Because of difficulties we anticipate in hiring a full-time position for only 10 months, we would enter into a contract by September with two other health specialists to perform the majority of the surveys. It is estimated that by the end of the first year, we would survey and evaluate potential health hazards in approximately 220 of the 270 school buildings yet to be surveyed. In the first year of operation the one time special costs would include:

- Sampling Pumps (3)	$6,000.00
- Training Films/Slides	$4,000.00
- Air Supplied Respirators (3)	$3,000.00
- Protective Clothing (3)	$3,000.00
- Contract for Two Health Specialists	$110,000.00
- Contract to Analyze the Bulk Asbestos Samples (5 per buildings)	$38,500.00

During the second year only the hygienist and clerk would be maintained to monitor the completion of the program and to continue the certification program. These positions will also be retained in FY 88, 89, and 90 to certify, evaluate, and monitor the training programs of contractors who work with asbestos. It is assumed in FY's 88-90 that personal services costs will increase by 3.5% per year and non-personal services will increase by 6% per year.

MEDICAL ASPECTS OF ASBESTOS EXPOSURE

MATERIAL PRESENTED IN THIS SECTION PREPARED BY:

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1984 ASBESTOS SYMPOSIUM
THE GEORGIA INSTITUTE OF TECHNOLOGY
ATLANTA, GEORGIA
MARCH 19-23, 1984

Asbestos-Related Diseases

and

Medical Surveillance

Prepared by:

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ENVIRONMENTAL SCIENCES LABORATORY
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I Causes of death among 17,800 insulators (1). Estimated exposure approximately 15 fibers/ml. of mostly chrysotile and some amosite throughout working life. Note that almost 10% of deaths were due to asbestosis, but that the major problem is cancer.

TABLE 1 DEATHS AMONG 17,800 ASBESTOS INSULATION WORKERS IN THE UNITED STATES AND CANADA, JANUARY 1, 1967 TO DECEMBER 31, 1976*

Underlying Cause of Death	Expected†	Observed (BE)	Observed (DC)	Ratio, Observed/Expected (BE)	Ratio, Observed/Expected (DC)
Total deaths, all causes	1658 9	2271	2271	1.37	1.37
Total cancer, all sites	319.7	995	922	3 11	2.88
Cancer of lung	105.6	486	429	4.60	4.06
Pleural mesothelioma	‡	63	25	—	—
Peritoneal mesothelioma	‡	112	24	—	—
Mesothelioma, n.o.s	‡	0	55	—	—
Cancer of esophagus	7.1	18	18	2.53	2.53
Cancer of stomach	14.2	22	18	1.54	1.26
Cancer of colon-rectum	38.1	59	58	1.55	1.52
Cancer of larynx	4.7	11	9	2 34	1.91
Cancer of pharynx, buccal	10.1	21	16	2.08	1.59
Cancer of kidney	8.1	19	18	2.36	2.23
All other cancer	131.8	184	257	1.40	1.91
Non-infectious pulmonary diseases, total	59.0	212	188	3.59	3.19
Asbestosis	‡	168	78	—	—
All other causes	1280.2	1064	1161	0 83	0.91

*Number of men 17,800, men-years of observation 166,853

†Expected deaths are based upon white male age-specific U S death rates of the U S National Center for Health Statistics, 1967-1976

‡Rates are not available, but these have been rare causes of death in the general population

(BE) Best evidence Number of deaths categorized after review of best available information (autopsy, surgical, coll

(DC) Number of deaths as recorded from death certificate information only

II Concept of mesothelioma as a "signal" tumor (2). When mesothelioma occurs in the United States, the cause is likely to be past asbestos exposure until proven otherwise. But note that mesothelioma is frequently mis-diagnosed, especially the peritoneal (abdominal) variety, and hence under-reported. Mesothelioma may occur with minimal exposure (bystanders, household contacts, neighborhood cases).

III Lung cancer numerically the most important problem. This burden falls mainly on cigarette smokers (3). Risk of lung cancer among cigarette smoking insulators approximately 53 times risk of non-smoking U.S. white males. However, risk is elevated among non-smoking and ex-smoking insulators as well.

IV Latency Period. Crucial concept for understanding asbestos-related diseases. Note that only a few deaths of lung cancer, mesothelioma, and the other asbestos-related diseases occur prior to 20 years from the time of first exposure (4). However, the duration of exposure need not be long (a few days for mesothelioma, a few weeks, perhaps, for lung cancer - the lower limits are not entirely known). Note that if exposure begins early, cancers will occur in young adulthood or middle age.

TABLE 2

DEATHS AMONG 17,800 ASBESTOS INSULATION WORKERS IN UNITED STATES AND CANADA, JANUARY 1, 1967-DECEMBER 31, 1976
ANALYSIS BY DURATION FROM ONSET OF EMPLOYMENT

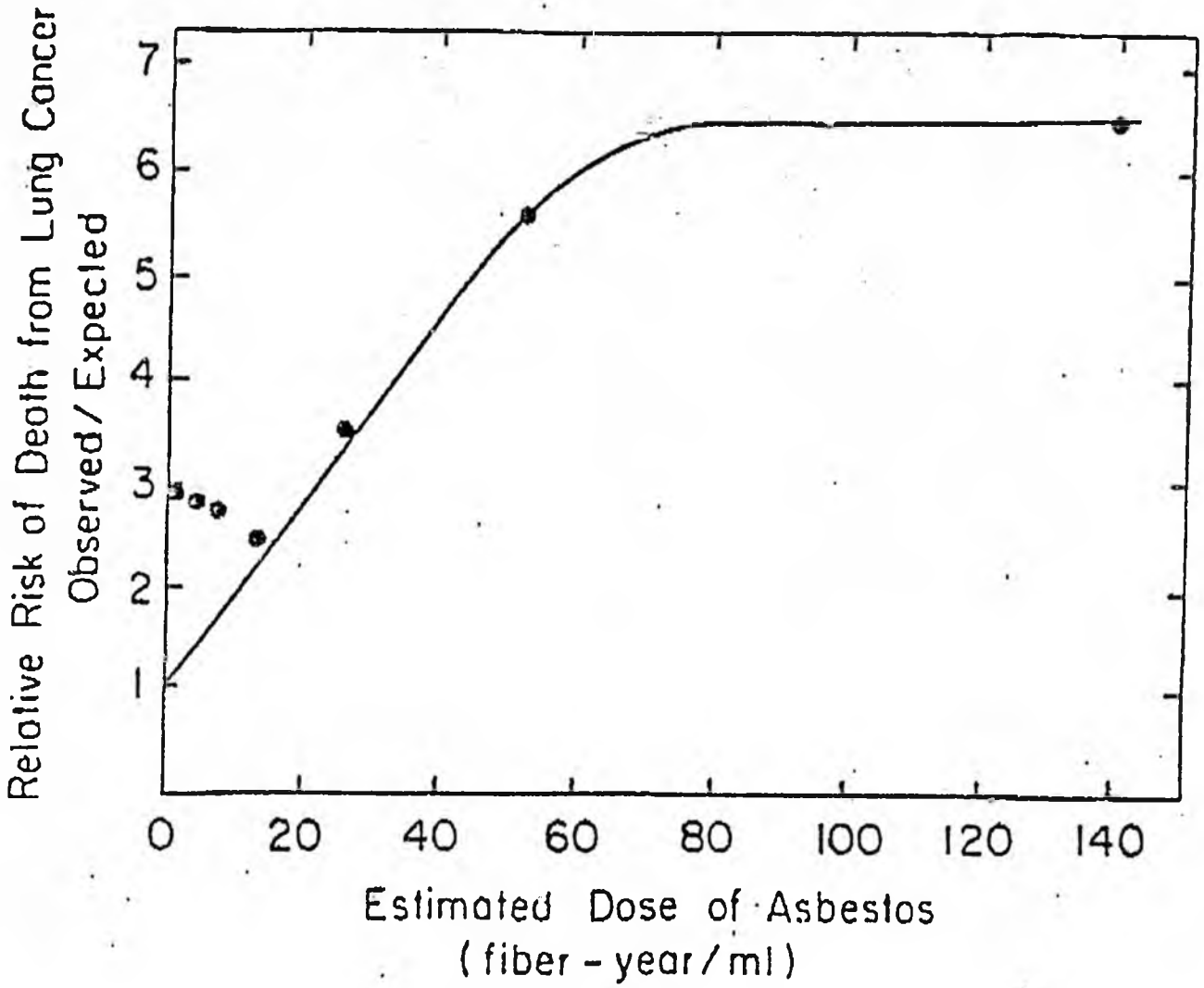
Duration from Onset (Years)	Number of Men	Person-years of Observation	Lung Cancer					Pleural Mesothelioma			Peritoneal Mesotheliom		
			Exp.*	Observed (BE)	Observed (DC)	Ratio o/e (BE)	Ratio o/e (DC)	Number (BE)	Number (DC)	No./1000 Person-years (BE)	Number (BE)	Number (DC)	No./1(Perso year (BE
<10	8,190	26,393	0.7	0	0	—	—	0	0	0	0	0	0
10-14	9,063	29,003	2.7	7	5	2.55	1.82	0	0	0	0	0	0
15-19	9,948	34,066	8.5	29	27	3.40	3.17	2	2	0.06	3	0	0.09
20-24	8,887	31,268	17.0	59	57	3.46	3.36	6	4	0.19	3	2	0.10
25-29	6,596	20,657	21.0	105	96	5.00	4.58	13	5	0.63	19	3	0.92
30-34	3,547	11,598	18.4	112	103	6.09	5.59	9	3	0.78	23	6	1.98
35-39	2,020	5,403	11.5	65	57	5.68	4.98	15	4	2.78	19	5	3.52
40-44	1,108	3,160	8.1	40	131	4.93	3.82	4	3	1.27	16	3	5.06
45+	1,448	5,305	17.8	69	53	3.89	2.98	14	4	2.64	29	5	5.47

*Expected deaths are based upon white male age-specific U.S. death rates of the U.S. National Center for Health Statistics, 1967-1976. Smoking habits not taken into account.

(BE): Best evidence. Number of deaths categorized after review of best available information (autopsy, surgical, clinical).

(DC): Number of deaths as recorded from death certificate information only.

V Dose-Response Relationship. Extremely complex subject. All data available are compatible with a linear dose-risk relationship with a levelling-off, or "saturation", of risk at higher levels. The corollary of this is: no known zero-risk exposure level (5).



VI Medical Surveillance of People Exposed to Asbestos. Contents of such a program determined by objective:

A. Objective: to determine whether asbestos exposure has been sufficient in a given population to cause disease. For this objective, medical data are a useful adjunct to dust measurements, engineering specifications and information concerning work practices. Unique advantage of medical data: dust levels in the past cannot be known if no measurements were done, but the human body acts as an "integrator" of exposure over the years. Most useful medical tools here would be chest X-ray, medical history, occupational history and search for mesothelioma deaths among people with sufficient latency period (20 years or more since first exposure).

B. Objective: Minimization of disease among those known to have been exposed and known to be at risk. This objective essentially calls for secondary prevention of disease, early detection, and aggressive treatment of early lesions, especially cancer.

VII Elements of the Port Allegany Asbestos Health Program

A. Establishment of a computerized registry of all those at risk: workers and their household contacts.

1. Maintenance of the registry (address changes, name changes, etc.)

B. Establishment of intensive medical surveillance tailored to each person's degree of risk (cigarette smoking, latency very important). Utilization of standard cancer-detection tests: chest X-rays, sputum cytology, stool blood, examination of mouth, tongue and throat, etc.

C. Health education for those at risk. Necessary to provide a balanced view of the risks; useful in promoting compliance with program, calming unwarranted fears, and promoting good health behavior.

D. Smoking cessation assistance. A powerful intervention.

E. Continuing education for local medical providers concerning asbestos-related diseases.

F. Adjunct measures: influenza and pneumonia vaccines.

G. Review and evaluation.

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ASBESTOS:

ITS HEALTH HAZARDS AND ITS PROBLEMS

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