

PLAINTIFF'S
EXHIBIT
POS-884

NOTE: Conversion factors—
 $10^3 \times 35.3 =$ million particles per cubic meter
 $\times 2.83 =$ particles per c.c.
 Millions of particles per cubic foot of air, based on
 filter samples counted by light-scatter techniques.
 The percentage of crystalline silica in the formula
 is amount determined from airborne samples,
 plotted in those instances in which other methods have
 been found to be applicable.
 As determined by the membrane filter method at
 100% relative humidity.
 Both crystalline and amorphous quartz for the
 portion of this limit are to be determined from
 fraction passing a size-selector with the following
 characteristics:

measurements under this note refer to the use of an EEC instrument. If the respirable fraction of coal is determined with a MHE, the value corresponding to that of 2.4 $\mu\text{g}/\text{M}$ in the table for coal dust is 4.3 $\mu\text{g}/\text{M}$.

a) *Definitions.* For the purpose of this section, (1) "Asbestos" includes vermiculite, amosite, crocidolite, tremolite, anthophyllite, and actinolite.

3) Permissible exposure to airborne concentrations of asbestos fibers—(1) mandated effective July 7, 1972. The our time-weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed five fibers, longer than ten micrometers, per cubic centimeter of air as determined by the method prescribed in paragraph (c) of this section.

(3) *Ceiling concentration.* No employee shall be exposed at any time to airborne concentrations of asbestos fibers in excess of 10 fibers, longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in paragraph (c) of this section.

(1.) *Local exhaust ventilation.* (a) 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.

(iii) *Particular tools.* All hand-operated and power-operated tools which may produce or release asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section, such as, but not limited to, saws, scorers, abrasive wheels, and drills, shall be provided with local exhaust ventilation systems in accordance with subdivision (ii) of this subparagraph.

(ii) **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 paragraph (b) of this section.

(d) *Personal protective equipment*—
(1) Compliance with the exposure limits prescribed by paragraph (b) of this section may not be achieved by the use of respirators or shift rotation of employees, except:

(ii) In work situations in which the methods prescribed in paragraph (c) of this section are either technically not feasible or feasible to an extent insufficient to reduce the airborne concentrations of asbestos fibers below the limits prescribed by paragraph (b) of this section: or

(iv) Where both respirators and personnel rotation are allowed by subdivisions (i), (ii), or (iii) of this subparagraph, and both are practicable, personnel rotation shall be preferred and used.

(i) *Air purifying respirators.* A reusable or single use air purifying respirator, or a respirator described in subdivision (ii) or (iii) of this subparagraph, shall be used to reduce the concentrations of airborne asbestos fibers in the respirator below the exposure limits prescribed in paragraph (b) of this section, 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.

(iii) *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 paragraph (b) of this section, when the ceiling or the 8-hour time-weighted average airborne concentrations of asbestos fibers are reasonably expected to exceed 100 times those limits.

(iv) *Establishment of a respirator program.* (c) 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 Z39.2-1969 and the maintenance of an historic file in connection therewith. The address of the American National Standards Institute is given in § 1910.100.

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(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 where 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) **Laundrying:** (a) Laundrying 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 paragraph (b) of this section.

(b) Any employer who gives asbestos-contaminated clothing to another person for laundrying shall inform such person of the requirement in (a) of this subdivision 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.

(c) **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 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—(1) Samples** shall be collected from within the breathing zone of the employees, on membrane filters of 0.8 micrometer po-

rosity 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 subparagraph (1) of this paragraph, 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—(1)** 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 subparagraph (1) of this paragraph, 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 subdivision (1) of this subparagraph shall conform to the requirements of 20" x 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.....	3/4" Sans Serif, Gothic or Block.
Avoid Breathing Dust.....	1/2" Gothic.

Wear Assigned Protective Equipment. 1" Gothic.
Do Not Remain In Area. 1/2" Gothic.
Date: Your Work Requires It.
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—(1) Labeling.** Caution labels shall be affixed to all containers, equipment, or materials containing asbestos fibers or to their component parts, except that no labels are required where asbestos fibers have been modified by a bonding agent, cement, 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 subdivision (1) of this subparagraph shall be printed in letter 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 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 3 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) **Employee access.** Every employee and former employee shall have reasonable access to any record required to be maintained by subparagraph (1) of the paragraph, 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 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 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 1 second (FEV₁).

(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 1 second (FEV₁).

(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 1 second (FEV₁).

(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*. The contents of the records of the medical examinations required by this paragraph shall be made available, 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 this paragraph shall furnish to the employer of the examined employee all the information specifically required by this

paragraph, and any other medical information related to occupational exposure to asbestos fibers.

[37 F.R. 11318]

§ 1910.94 Ventilation.

(a) *Abrasive blasting*—(1) *Definitions applicable to this paragraph*—(i) *Abrasive*. A solid substance used in an abrasive blasting operation.

(ii) *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.

(iii) *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.

(iv) *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.

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

(vi) *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.

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

(viii) *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.

(ix) *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.

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

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

(xii) *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*. (i) *Abrasives and the surface* coated 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.

(ii) 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 § 1910.93.

(iii) *Grain abrasives* which are combustible shall be used only in automatic systems. Where flammable or explosive dust mixtures may be present, the construction of the equipment, including the exhaust system and all electric wiring shall conform to the requirements of American National Standard Installation of Blower and Exhaust Systems for Dust, Soot, and Vapor Removal or Conveying, Z-39.1-1971 (NFPA 9-1971), and the National Electrical Code, NFPA 70-1971; Art. 51 (1-1971) (rev. of 1968). The blast nozzle shall be banded and grounded to prevent the build up of static charges. Where flammable or explosive dust mixtures may be present, the abrasive blasting enclosure, the ducts, and the dust collector shall be constructed with loose panels or explosion venting areas, located on sides away from any occupied area, to provide for pressure relief in case of explosion, following the principles set forth in the National Fire Protection Association Explosion Venting Guide, NFPA 68-1954.

[37 F.R. 3431, effective 3/15/72]

(3) *Blast-cleaning enclosures*. (i) Blast-cleaning enclosures shall be exhaust ventilated in such a way that a continuous inward flow of air will be maintained at all openings in the enclosure, during the blasting operation.

(a) All air inlets and access openings shall be banded or so arranged that by the combination of inward air flow and baffling the escape of abrasive or dust particles into an adjacent work area will be minimized and visible sprays of dust will not be observed.

(b) The rate of exhaust shall be sufficient to provide prompt clearance of the dust-laden air within the enclosure after the cessation of blasting.

(c) Before the enclosure is opened, the blast shall be turned off and the exhaust system shall be run for a sufficient period of time to remove the dusty air within the enclosure.

(d) Safety glass protected by screening shall be used in observation windows, where hand deep-cutting abrasives are used.

(e) Silt abrasive-resistant baffles shall be installed in multiple sets at all small access openings where dust might escape, and shall be inspected regularly and replaced when needed.

(f) Doors shall be flanged and tight when closed.

(g) Doors on blast-cleaning rooms shall be closable from both inside and outside, except that where there is a small operator access door, the large work access door may be closed or opened from the outside only.

Excerpts

ADVISORY COMMITTEE SUGGESTS MONITORING, RECORD-KEEPING OF EXPOSURE

Proposed standards for employee asbestos exposure monitoring and maintenance of exposure records were included in the report made by the Advisory Committee on Asbestos to the Assistant Secretary of Labor for Occupational Safety and Health, George C. Guenther.

Final recommendations adopted by the committee and submitted to the Assistant Secretary will be included in next week's Current Report. Recommendations for monitoring and records determined at the February 23 meeting of the committee follow:

(g) Monitoring and Records

Employee exposure monitoring shall be undertaken by the employer on the basis of the membrane filter method at 400-150X magnification (4 millimeter objective) phase contrast illumination as specified by the National Institute for Occupational Safety and Health in Criteria for a recommended standard . . . Occupational Exposure to Asbestos (HSM72-10267). Employers will be required to maintain records of employees' exposure to asbestos in the work area based on the following monitoring schedule and procedures:

(1) Personal exposure (Breathing Zone) samples will be collected and recorded at least every six months for projected high risk work operations. Samples will be collected from a number but not necessarily all employees whose exposure may be considered representative of the specific work area.

(2) Personal exposure samples will be collected and evaluated as both time-weighted average and peak values.

(3) Personal exposure samples will be collected and recorded at least once a month from those work areas found to be in excess of the standard.

(4) Monitoring will be required on a monthly basis until the workplace air levels are in compliance with the standard.

(5) The first sampling period will be completed within time frame specified by the Secretary.

(6) Records of the evaluation of the workplace air will be maintained by the employer for a period of time determined by the Secretary of Labor. Employees shall have access to these records upon request.

(7) Exposed employees shall be informed of their workplace air levels.

Opinions

Monitoring is not frequent enough, Andy Haas, Asbestos Workers International, said.

Monitoring provisions should not go into extreme detail, Jack Balhoff, chief engineer, New York Division of Industrial Hygiene, said. Monitoring is part of the overall professional expertise of the industrial hygienist who is going to do the work. There must be assurance that entering results are reasonable and are done by people competent to do the job. The NIOSH membrane filter method should be used.

Balhoff recommended registration and Haas agreed, "You

cannot enforce until you know where to enforce," Balhoff said.

Methods of Compliance

Provision for housekeeping was added to methods of compliance. The recommendations include the following:

(b) Methods of Compliance

(1) Engineering methods.

One or more of the following engineering methods, either singly or in combination, shall be used to achieve and maintain airborne concentrations of asbestos fibers at or below the exposure limits prescribed in paragraph (a) of this section.

(i) Substitution of a material, mixture, process or method of operation which will prevent or reduce the dissemination of airborne asbestos fibers.

(ii) Local exhaust ventilation designed, constructed, installed and operated in accordance with the latest revision of American National Standard Institute Fundamentals Governing the Design and Operation of Local Exhaust Systems; ANSI Z9.2.

(iii) Application of water or other wetting agent.

(iv) Enclosure or isolation of the operation.

(2) Housekeeping.

(i) Housekeeping methods shall be in conformance with good engineering practices and procedures. No dry sweeping of floors shall be performed. Where feasible, all cleanup of asbestos dust shall be performed by vacuum cleaners or wet methods.

(ii) Asbestos containing waste, scrap, bags and containers shall be collected and disposed of in sealed impermeable paper or plastic bags or in other closed containers and shall be labeled in accordance with subsequent paragraph (f).

(3) Personal Protection

When the limits of exposure to asbestos fibers prescribed in paragraph (a) of this section are exceeded and engineering control methods required by subparagraph (1) of this paragraph are not feasible or do not reduce the concentration of asbestos fibers to or below the limits prescribed in paragraph (a) of this section, the employer shall supply, and the employee shall use a personal respiratory protective device and protective clothing selected in accordance with paragraph (c) and (d) of this section.

Respiratory Protection and Protective Clothing

Recommendations for respiratory protective devices were approved unanimously. The provision that protective clothing be used when dust concentration is projected to be greater than 10 times the limit was described as "unnecessarily restrictive" by Balhoff and Isaac Weaver, corporate director, Environmental Controls, Raybestos-Manhattan Corporation.

The recommendations follow:

(c) Respiratory Protective Devices

(1) Where engineering methods are not feasible, or do not reduce the concentrations to or below the limits prescribed in paragraph (a) of this section, respiratory protective devices (respirators) shall be selected and used

in accordance with the following conditions. Except for emergency respirators, they may be used only when a variance is required and pending or granted. Selection of respirators shall be decided on the basis of peak concentration limits. Only approved (30 CFR Part 111) respirators shall be selected. The selection of allowable respirators shall be based on the following concentration limits for each type of device. However, a respirator approved for higher concentrations may be used.

(2) For protection up to 5 times the limit, a single use, valveless, filter respirator shall be used.

(3) For protection up to 10 times the limit, a reusable or single use type with valve filter respirator shall be used.

(4) For protection up to 100 times the limit, a full facepiece "high efficiency" filter respirator shall be used.

(5) For protection up to 500 times the limit, a powered "high efficiency" filter respirator shall be used.

(6) For protection exceeding 500 times the limit, a Type C continuous flow supplied-air respirator shall be used.

(7) The employer shall establish a respirator program in accordance with the requirements of the latest revision of the American National Standard Practice for Respiratory Protection Z88.2, with the exception that no employee should be assigned to tasks requiring use of respirators if his most recent medical examination indicates: (i) Forced vital capacity less than 70% of predicted value for age, height and sex or (ii) Forced vital capacity less than 80% of predicted value for age, height or sex in addition to at least two of the following criteria:

- (a) X-ray evidence of asbestosis
- (b) Dyspnea (shortness of breath)
- (c) Cough
- (d) Chubbng of fingers

(8) The employee shall use the respirator provided in accordance with the requirements of ANSI Z88.2.

(9) The respirators provided each employee shall be properly fitted, inspected, cleaned, repaired, and stored.

(d) Protective Clothing

(1) The employer shall provide each employee with protective clothing when they are required to work in a variance area and it is projected that the asbestos dust concentration will be greater than 10 times the limit. Such clothing may be coveralls or similar full body protective clothing and head gear.

Work Practices

Concerning particular operations and products under the proposed asbestos standard, it was recommended that paragraphs (1) and (2) be omitted and that other paragraphs be revised and relocated.

Recommendations for work practices follow:

(a) Work Practices

(1) Asbestos cement, mortar, coatings, grout, and plaster shall be mixed in closed bags or in other closed containers or in mixers equipped with local exhaust ventilation that conforms to the latest ANSI standard

Z9.2 covering design and operation of local exhaust systems.

(2) Use of compressed air jets for cleaning purposes shall be prohibited unless the following conditions are met:

(a) All persons not engaged in the cleaning operations are vacated from the area.

(b) All entrances to the area are posted with warning signs or signals.

(c) The workers performing the cleaning work use personal protective equipment as in accordance with section (b)(3) of this standard.

(3) Employees exposed to the spraying of asbestos, to the demolition of pipes, structures, or equipment covered or insulated with asbestos, or to the demolition of insulating strippings, shall be provided with personal protection in accordance with paragraph (b)(3) of this section.

Weaver suggested a safety practices guide be developed for particular major categories of asbestos work. Balitt suggested a work practices guide be developed for all asbestos operations. Development of a work practices manual probably is the responsibility of NIOSH. Charles Powell, assistant director of NIOSH for research and standards development said:

Recommendations for warning label and signs follow:

(f) Warning Label and Signs

1. Proposed warning label for raw products, mixtures, and finished products containing 5 or more percent by weight of asbestos.

DANGER
Contains ASBESTOS fibers.
Do not make unnecessary dust.

DO NOT BREATHE DUST - MAY CAUSE
ASBESTOSIS AND CANCER

2. Proposed warning sign to be used when material or products require an asbestos warning label or where known hazards exist

DANGER
ASBESTOS Dust Area
Unauthorized persons and other trades
KEEP OUT
When ASBESTOS work is being done,
Breathing dust may cause ASBESTOSIS
and CANCER

In the second sentence an airborne concentration "Paragraph (2) of this section" was replaced by "The above standard" (Current Report, February 17, p. 864). Additional changes were made at an earlier committee meeting (Current Report, February 24, p. 896).

The first sentence on medical surveillance was amended to read "A comprehensive history and physical examination shall be performed on all workers and applicants" (Current Report, February 24, p. 896). In the last sentence "Preemployment" was changed to "The initial"

Asbestos**ADVISORY COMMITTEE MEMBER PROTESTS
PROCEDURE, CALLS RECOMMENDATIONS INVALID**

Proper procedures for the conduct of advisory committee hearings were not followed and the recommendations of the Asbestos Advisory Committee are "totally invalid and must be discredited," Jesse Weaver, corporate director, Environmental Controls, Raybestos-Manhattan Corporation, said.

In a letter to Assistant Labor Secretary George C. Guenther, the advisory committee member said the asbestos industry was denied its right to be heard before the technical advisory committee.

During the hearings of the committee, representatives from the National Institute for Occupational Safety and Health were permitted to testify as expert witnesses on behalf of the NIOSH criteria package proposals, Weaver said. Because of the exclusion of other outside testimony, the hearings are patently biased in favor of the NIOSH proposal, he said.

In a statement during the February 23 meeting of the committee Weaver questioned the propriety of the presence of NIOSH personnel at meetings. He said he considered it improper for the NIOSH representative on the committee to have the benefit of supportive comment from NIOSH associates while he was denied the privilege of calling on some of the "equally conscientious and respected men in medical and scientific circles whose data, opinions, interpretations, and theories may differ from those supported by NIOSH."

Text of Letter

The text of Weaver's letter to Guenther, dated February 25, follows:

I understand that the Advisory Committee on Asbestos must submit its report and recommendations to you on February 25, today. That report is being written by the Chairman of the Advisory Committee. I will not have an opportunity to review this report in its final form before submission. Whatever this report may contain, I hereby make known to you my dissent to the proceedings of the Advisory Committee. I believe the impropriety of the proceedings goes to the heart of, and invalidates, the recommendations.

During the hearings of the Advisory Committee, representatives of NIOSH, who were not Committee members, are permitted to testify as expert witnesses on behalf of the NIOSH criteria package proposals. All other outside testimony was denied. Because of the exclusion of other outside testimony, the hearings are patently biased in favor of the NIOSH proposal.

I submit that an intent of the statute providing for advisory committees is to provide a forum at which the industry to be regulated may be adequately heard. When the Act was before the House Labor Committee, the following comments were made with regard to advisory committees.

... "Industry wants to be assured that it will be heard and its technical input properly evaluated. ... Public hearings before technical advisory committees will better

accomplish this since the openness of meetings imposes an extra duty of preparation and rebuttal."

The asbestos industry has been denied this right.

The tightness of the time schedule is no excuse for a one-sided proceeding that can only result in improperly developed recommendations for asbestos dust regulations. The asbestos industry, which in its wide diversity affects more than a half million jobs, respectfully demands adequate representation and time concerning an issue of this magnitude.

Inasmuch as the proper procedures for the conduct of the hearings of an advisory committee were not followed, the recommendations of the committee are totally invalid and must be disqualified from consideration in the proposed rulemaking.

Standards**CONSTRUCTION COMMITTEE CHANGES DATE
OF STANDARDS FOR ROLLOVER PROTECTION**

The Construction Safety Advisory Committee has agreed to recommend a change in the date that equipment manufactured on or after July 1, 1972, must be equipped with rollover protective structures to September 1, 1972.

The decision was made on the recommendation of Allan Martin, chairman of the subcommittee on Proposed Revision of Subpart W, during the full committee meeting February 23. The Labor Department proposed changes in the rollover requirements October 29 (Current Report, November 4, p. 516).

Other effective dates contained in 1926.1000 (formerly 1518.1000) were modified accordingly, in the committee recommendations. Machines manufactured on or after January 1, 1972, "shall be fitted no later than April 1, 1973," was the recommended language for 1926.1000(c)(1). The effective date for these machines was suggested for January 1, 1973.

Firm recommendations which the Secretary will act upon, should be made. Barry C. Brown, director of the Michigan Department of Labor and chairman of the subcommittee on tunnel safety, told the committee.

Manufacturers should be putting out machines that are in compliance as soon as possible, Brown said.

Manufacturers have avoided retrofit, fearing machines might not be strong enough to satisfy standards and manufacturers might be subject to suit, David V. MacCollum, subcommittee member, told the group. It would be better to look at this issue from the point of view of protecting the operator from being crushed, he said, in reference to rollover protective structures.

Employer liability

If a particular machine does not have a specific standard calling for a rollover protective device, but does, in fact, roll over and the operator is killed, to what degree would the employer be liable and would this be a violation under the general duty clause Brown asked.

There would be no trouble with such a case, the legal

* Appropriate nomenclature of participants for cubic
model is:
(See footnote 1) is used to avoid confusion with
existing models (11)

As suggested by method that does not collect water.
For control of general food use, biological monitoring
is essential for (a) research (b) control

TABLE G-2

Material	Short time weighted average	Acceptable ceiling concentration	Acceptable maximum peak when the accepted ceiling concentration is not exceeded	
			Concentration	Maximum duration
Isocyanate (Z37.2-1971)	10 p.p.m.	25 p.p.m.	50 p.p.m.	10 minutes
Barium and strontium compounds (Z37.2-1971)	2 mg./M ³	5 mg./M ³	25 mg./M ³	30 minutes
Calcium fluoride (Z37.2-1971)	0.1 mg./M ³	3 mg./M ³	.....	.....
Calcium chloride (Z37.2-1971)	0.2 mg./M ³	6 mg./M ³	.....	.....
Carbon disulfide (Z37.2-1971)	20 p.p.m.	20 p.p.m.	100 p.p.m.	1 hr.
Carbon tetrachloride (Z37.2-1971)	10 p.p.m.	20 p.p.m.	200 p.p.m.	8 minutes in any 4 hours
Ethylene dichloride (Z37.2-1971)	20 p.p.m.	50 p.p.m.	80 p.p.m.	8 minutes
1,1,2,2-tetrachloroethane (Z37.2-1971)	50 p.p.m.	100 p.p.m.	200 p.p.m.	8 minutes in any 4 hours
Formaldehyde (Z37.2-1971)	3 p.p.m.	4 p.p.m.	10 p.p.m.	30 minutes
Hydrogen fluoride (Z37.2-1971)	0.2 mg./M ³	.....	.....	.....
Hydrogen chloride (Z37.2-1971)	2 mg./M ³	.....	.....	.....
Lead and lead compounds (Z37.2-1971)	0.2 mg./M ³	.....	.....	.....
Methylene chloride (Z37.2-1971)	100 p.p.m.	200 p.p.m.	300 p.p.m.	8 minutes in any 4 hours
Methylene chloride (Z37.2-1971)	600 p.p.m.	1,600 p.p.m.	2,600 p.p.m.	8 minutes in any 2 hours
Organic alkyl mercury (Z37.2-1971)	0.01 mg./M ³	0.01 mg./M ³	.....	.....
Pyrene (Z37.2-1971)	100 p.p.m.	200 p.p.m.	600 p.p.m.	3 minutes in any 3 hours
Trichloroethylene (Z37.2-1971)	do.	do.	300 p.p.m.	8 minutes in any 2 hours
Tetrachloroethylene (Z37.2-1971)	do.	do.	do.	3 minutes in any 3 hours
Toluene (Z37.2-1971)	200 p.p.m.	300 p.p.m.	800 p.p.m.	10 minutes
Hydrogen sulfide (Z37.2-1971)	.....	20 p.p.m.	80 p.p.m.	10 minutes once only if no other exposure occurs
Mercury (Z37.2-1971)	.....	1 mg./M ³	.....	.....
Crotonaldehyde and chloroacetaldehyde (Z37.2-1971)	.....	0.1	.....	.....

TABLE G-2-MUSKIE: DEPTH

[illegible]^a As determined by the membrane filter method at 450 X phase contrast illumination.

Activity Unit in Kilometer (Unit slowly at there)	Distance in Meter receptor
2	90
2.5	75
3.5	60
5.0	55
10	0

10. *Journal of the American Medical Association*, 2000; 283: 2686-2692.

...and the ...

6 1910.92 Effective date.

(b) The following provisions shall be-

1-1312-61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886

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(b) Notwithstanding any other provision of law, no person shall be held liable for any act or omission under this section if the person can demonstrate that the act or omission was necessary to protect the public health or safety.

3. Section 1510.114 of Subject X is:

5 1010 111. RF Equine data

(a) The provisions of this Subpart II:

(b) The following provisions shall be-

(1210 101 (b))

1 1910.103 (A)(2), (b)(1)(i), (b)(1)(iii).

1-1010-105. (b)(1) (b)(2) (b)(3) 278 (b)

1.12:10.106 (b)(2), (c)(2), (c)(3).

(11), (c) (6) (D), (c) (4) (12), (c) (5) (IV).

(e) (3) (v), (e) (4), (e) (7), (2) (c) (ii),
 (f) (2) (i), (f) (2) (ii), (f) (4) (iv), (f) (6)

11610 107 (b) (1), (2) (7), (3) (2), (2) (5).

(2) (7), (3) (2), (4) (16), (5) (1), (6) (12),

$$(1)(1), (1)(2), \dots, (1)(12), (1)(2), (1)(2),$$

$$(1)(2), (1)(2), (1)(2), (1)(2), (1)(2), (1)(2),$$

15) (4), and (2, 15).

1 1010 110.

(c) Notwithstanding anything in

tion, any provision in any other section

specific effective date or time limitation shall become effective on such date or

shall apply in accordance with such
limitations

127-1772-10 (a) of (b) of this section. If

other than a national consensus stand-

205.2(a)(1), is or becomes applicable to:

of employment, by virtue of the Walsh-

the Contract Act of 1905, or the National

of 1965, may correspondingly diminish

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Figure 1