

PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA 74004 918 336-6600

MEDICAL DEPARTMENT

February 7, 1972

Proposed Rule Making:
Standard for Exposure to
Asbestos Dust

AIR MAIL

Dr. Harold H. Golz
Medical Director
American Petroleum Institute
1801 K Street, N. W.
Washington, D. C. 20006

Dear Dr. Golz:

The members of the Subcommittee on Industrial Hygiene of the Medicine and Health Committee have reviewed the Proposed Rule Making as issued in the Federal Register on Wednesday, January 12, 1972. In order to meet the deadline of February 12, 1972, for submitting comments to the U. S. Department of Labor relative to the Proposed Rule Making, the Subcommittee members have discussed various sections of the regulation in some detail by telephone. It is the consensus of opinion of the members of the Subcommittee that you should relay the following comments and suggestions to the Office of Safety and Health Standards of the Occupational Safety and Health Administration before February 12, 1972. The submission can be made directly by your office or other appropriate channels of the API. We offer the following comments for consideration by the U. S. Department of Labor:

The Subcommittee on Industrial Hygiene of the API Committee on Medicine and Environmental Health have reviewed the Proposed Rule Making relative to a new standard for asbestos dust and consider the scope and requirements comprehensive; however, it is the opinion of Subcommittee members that certain provisions in the Proposed Rule Making require clarification to avoid misunderstandings in carrying out compliance with the requirements.

1. Section 1910.93a. Paragraph C, Subparagraph 2, specified that "a powered filter positive pressure respirator approved by the U. S. Bureau of Mines under the provisions of 30 CFR, Part 14 (Bureau of Mines Schedule 21B) shall be used". The terms used in describing this specific type of respiratory protective device are not found in the Bureau of Mines Schedule nor does it appear that any such respiratory protective device is commercially available.

   Subparagraph 3 describes work situations in which exposure to asbestos dust is at higher levels than that provided for in the previous subparagraph 2. However, in subparagraph 3 reference to the required use of a Type C positive pressure supplied air respirator may actually permit the use of a respiratory device which is of lesser certainty of protection than that intended for use in the requirements of Subparagraph 2.

On the basis of the uncertainties in the language of Paragraph C, the Subcommittee suggests that the entire matter of personal respiratory protection be subjected to a thorough review using the nomenclature and guidance of ANSI 288.2 (1969) "Practices for Respiratory Protection" in prescribing the respirators required for the several degrees of asbestos hazard.

2. Paragraph E of Section 1910.93a discussed the requirement for posting warning signs at each location where asbestos dust is present as well as the specifications for and statements required on such placards. However, no guideline appears to be provided for defining the exact site of the dust hazard so that the location of the placard relative to the minimum posting distance is subject to disagreement. It is suggested that the location of an asbestos dust hazard be defined as the source(s) at which the dust is being generated in order to permit a more precise location of the perimeter along which the placards are to be posted. It is further suggested that the word "direction" in the second sentence of the paragraph be modified by the addition of the adjective "approachable" in order that the sign(s) be placed in areas or locations subject to human occupancy.

   The Subcommittee concurs with the format of the statements specified for the warning placard with one major exception. The language describing the hazard includes the medical terms "asbestosis" and "cancers" without a detailed description of these diseases. As used, the terms do not add any significant informative description of the hazard and in some instances may unnecessarily alarm the employees. It appears to us that the placard would have greater benefit if it stressed the importance of hazard control. To that end, it is suggested that the warning statement describing the hazard be revised to read in the following manner:

   > "Excessive exposure to asbestos dust may cause a severe lung disease and is implicated in certain other adverse effects. Control of exposure to asbestos dust protects against these potential health hazards."

3. Paragraph J, subparagraph 3, requires the use of respiratory protection for demolition activities involving asbestos. The respiratory protection is required in accordance with Paragraph (C)(3) of this section which is predicated on the quantity of asbestos dust generated. These two requirements appear to be in conflict, because if the use of respiratory protection for demolition activities is specifically mandatory, there appears to be no sound purpose in carrying out dust quantitative procedure. These analytical procedures are time consuming and laborious.

The Subcommittee feels that the modifications and revisions offered to the Proposed Rule Making will assist in a more effective compliance with the requirements of this regulation and request that these suggestions receive the earnest consideration of the Office of Safety and Health Standards.

Very truly yours,

Lucian E. Renes

L. E. Renes
Chairman, Industrial Hygiene Subcommittee
API Committee on Medicine and

cc: Members, Industrial Hygiene Subcommittee
Wayne Stewart, M. D.

Harold H. Golz, M. D.
c/o Hilton Hotel
Pittsburgh, Pennsylvania 15230

DEPARTMENT OF LABOR

Occupational Safety and Health Administration

[29 CFR Part 1910]

STANDARD FOR EXPOSURE TO ASBESTOS DUST

Notice of Proposed Rule Making

Section 6(c) of the Williams-Steiger Occupational Safety and Health Act of 1970 (84 Stat. 1596; 29 U.S.C. 655) provides that upon the publication of an emergency temporary standard in the FEDERAL REGISTER the Secretary of Labor shall commence a rule making proceeding in accordance with section 6(b) of the Act, and that the emergency standard as published shall also serve as a proposed rule for the proceeding. An emergency temporary standard concerning exposure to asbestos dust was published in the FEDERAL REGISTER on December 7, 1971 (36 F.R. 23207). Accordingly, pursuant to section 6 (b) and (c) of the Williams-Steiger Occupational Safety and Health Act of 1970 (84 Stat. 1593, 1596; 29 U.S.C. 655), 29 CFR 1910.4, and Secretary of Labor's Order No. 12-71 (36 F.R. 8754), it is hereby proposed to amend 29 CFR Part 1910 as set forth below. The proposals include the emergency temporary standard and additional proposed rules on subsidiary issues.

Interested persons are invited to submit, both orally and in writing, data, views, and arguments concerning these proposals.

[illegible] data, views, and [illegible] [illegible] Standards, [illegible] [illegible] within 30 days [illegible] [illegible] views, and [illegible] [illegible] for public inspection and copying at the Office of Safety and Health Standards, except as to matters the disclosure of which is prohibited by law.

Oral data, views, and arguments will be [illegible] by Hearing [illegible] Goldberg, [illegible] beginning [illegible] a.m. on March 14, 1972, in [illegible] [illegible] and Constitution Avenue NW., Washington, D.C. [illegible] [illegible] [illegible] notice of [illegible] [illegible] March 3, 1972. The notice must state the name and address of the person to appear, the capacity in which he will appear, and the approximate amount of time required for his presentation. The notice must also include, or be accompanied by, a statement of the position to be taken with regard to the proposed rules.

The oral proceedings shall be reported verbatim, and transcripts shall be available for inspection to any interested person on such conditions as the presiding

110 asbestos

hearing examiner may prescribe. The hearing examiner shall regulate the course of the oral proceedings, dispose of procedural requests, objections, and similar matters, regulate the conduct of those present at the hearing by appropriate means, and shall exclude to the extent practicable irrelevant, immaterial, and unduly repetitious data or arguments. The hearing examiner shall have discretion to keep the record of the hearing open for a reasonable, stated time to receive written recommendations, and additional data, views and arguments from any person who has participated in the oral proceeding. Upon completion of the oral proceedings, the transcript thereof, together with written submissions on the proposed rules, exhibits filed during the hearing, and any posthearing data, views, arguments, and recommendations shall be certified by the hearing examiner to the Assistant Secretary of Labor for Occupational Safety and Health for his decision. The Assistant Secretary may adopt the proposals with or without changes, or determine not to issue a rule.

Under the authority of section 6(b) (1) and section 7(b) of the Act, the Assistant Secretary of Labor for Occupational Safety and Health will request the recommendations of an advisory committee with regard to the proposed rules. The committee will be provided with copies of these proposals, together with all pertinent factual information which is, or may become, available to the Assistant Secretary, including any information submitted by the National Institute for Occupational Safety and Health. The advisory committee will be asked to submit to the Assistant Secretary written recommendations regarding these proposed rules within 45 days after the publication of this notice. The recommendations will be available for public inspection and copying. No other advisory committee will be consulted with regard to these proposed rules.

Part 1910 of Title 29 of the Code of Federal Regulations is proposed to be amended as follows:

§ 1910.93 [Amended]

1. Table G-3 in § 1910.93 (36 F.R. 15134, August 13, 1971) is proposed to be amended by deleting the following:

Asbestos—12 fibers per milliliter greater than 5 microns in length or * * * 2 Mppcf.

Tremolite * * * 5 Mppcf. $\frac{20 \text{ mg./M}^3}{\%SiO_2}$

If so amended, Table G-3 would read as follows:

TABLE G-3—MINERAL DUSTS

Substance	Mppcf	Mg/M³
Silica:		
Crystalline:		
Quartz (respirable)	250 /	$\frac{\text{mg./M}^3}{\%SiO_2+5}$
Quartz (total dust)		$\frac{\text{mg./M}^3}{\%SiO_2+2}$

Cristobalite: Use ½ the value calculated from the count or mass formulae for quartz.

Tridymite: Use ½ the value calculated from the formulae for quartz.

Substance	Mppcf	Mg/M³
Amosite, including natural mixtures containing	20	$\frac{\text{mg./M}^3}{\%SiO_2}$
Silicates containing less than 1% crystalline silica:		
Mica	20	
Soapstone	20	
Talc	20	
Portland cement	50	
Graphite (natural)	15	
Coal dust:		
Containing more than 5% quartz		2 mg./M³ or $\frac{\text{mg./M}^3}{\%SiO_2+2}$
Containing less than 5% quartz		30 mg./M³
Inert or Nuisance Dust:		
Respirable fraction	15	5 mg./M³
Total dust	50	15 mg./M³

Notes: Conversion factors

mppcf×35.3=number of particles per cubic meter

mppcf×1=mppcc

/ Millions of particles per cubic foot of air, based on impinger samples counted by konimeter techniques.

* The percentage of crystalline silica in the formula is the value obtained from the latest valid analysis of a respirable dust sample collected in the worker's breathing zone in which other materials have been excluded by separation techniques.

As determined by the membrane filter method at 430 × (or greater) magnification.

@ Both concentration and percent quartz for the application of this limit are to be determined from the fraction passing a size-selector with the following characteristics:

Aerodynamic diameter (unit density sphere)	Percent passing selector
2	90
2.5	75
3.5	50
5.0	25
10	0

The recommended procedure for the use of an AEC instrument is the respirable fraction of coal dust is determined with a MRE type gravimetric dust sampler manufactured by the Casella Company of London, England, operated at a flow rate of 1.7 liters per minute with a 10-mm nylon cyclone precleaner. The recommended procedure for counting the fibers collected on the membrane filter is found in the Health Services and Mental Health Administration publication No. 1000, Part D, "Recommended Method for Counting Asbestos Fibers on Membrane Filters."

2. A new § 1910.93a is proposed to be added to Part 1910, reading as follows:

§ 1910.93a Asbestos dust.

(a) *8-hour time-weighted average.* The 8-hour time-weighted average airborne concentration of asbestos dust to which employees are exposed shall not exceed 5 fibers longer than 5 microns per milliliter, as determined by the membrane filter method at 400–450 × (magnification) (4 millimeter objective) phase contrast illumination. Concentrations above 5 fibers per milliliter, but not to exceed 10 fibers per milliliter, may be permitted up to a total of 15 minutes in an hour, but for not more than 5 hours in an 8-hour day.

(b) *Methods of compliance*—(1) *Engineering methods.* Engineering methods, such as, but not limited to, enclosure, vacuum sweeping, and local exhaust ventilation, shall be used to meet the exposure limits prescribed in paragraph (a) of this section. Where such engineering methods are not feasible, or do not reduce the concentrations below the limits prescribed in paragraph (a) of this section, respiratory protective devices shall be provided and used in accordance with subparagraph (2) of this paragraph.

(2) *Other methods.* (i) When the limits of exposure to asbestos dust prescribed in paragraph (a) of this section are exceeded, and engineering controls required by subparagraph (1) of this paragraph are not feasible or do not reduce the concentration of asbestos dust below the limits prescribed in paragraph (a) of this section, the employer shall require the use of respiratory protective devices. The selection of respiratory protective devices shall be limited to those specified in paragraph (c) of this section.

(ii) The employer shall require that each employee test his respirator protective device before each use in order to insure a proper fit according to the manufacturer's instructions. The employer shall further provide for effective training or supervision of employees in the fitting of respiratory protective devices for fit before their use.

(c) *Allowable respirators.* (1) When the 8-hour time-weighted average concentration of asbestos dust is projected to exceed 5 fibers longer than 5 microns per milliliter, but not to exceed 25 such fibers, and when a concentration over a period of 15 minutes exceeds 10 fibers longer than 5 microns per milliliter, but does not exceed 50 such fibers a reusable or single use filter type respirator, operating with negative pressure during the inhalation phase of breathing, approved by the U.S. Bureau of Mines under the provisions of 30 CFR Part 14 (Bureau of Mines Schedule 21B), shall be used.

(2) When the 8-hour time-weighted average concentration of asbestos dust is projected to exceed 25 fibers longer than 5 microns per milliliter but not to exceed 250 such fibers, and when a concentration over a period of 15 minutes exceeds 50 fibers longer than 5 microns per milliliter but does not exceed 250 such fibers, a powered filter positive pressure respirator approved by the U.S. Bureau of Mines under the provisions of 30 CFR Part 14 (Bureau of Mines Schedule 21B) shall be used.

(3) When the 8-hour time-weighted average concentration of asbestos dust is projected to exceed 250 fibers longer than 5 microns per milliliter a type [illegible] positive pressure supplied-air respirator approved by the U.S. Bureau of Mines under the provisions of 30 CFR Part 14 (Bureau of Mines Schedule 19E) shall be used.

(4) The employer shall establish a respirator program in accordance with the requirements of American National Standard Practice for Respiratory Protection Z88.2—1969.

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

(d) *Particular operations and products.* (1) When an employer has employees who are exposed to asbestos dust resulting from the operations or the use of tools described in the remaining subparagraphs of this paragraph (d), the employer shall comply with the requirements of this paragraph. The requirements of this paragraph shall apply at all times, and, in addition, the requirements of paragraph (b) of this section may also apply, according to the terms thereof.

(2) All hand- or power-operated tools which produce asbestos dust such as, but not limited to, saws, scorers, abrasive

wheels, and drills, shall be provided with local exhaust ventilation and dust collectors in accordance with the American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems: ANSI Z9.2—1971.

(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 respiratory protective devices in accordance with paragraph (c) (3) of this section.

(4) Asbestos cement, mortar, coatings, grout, and plaster shall be mixed in closed bags or other closed containers.

(5) Asbestos waste and scrap shall be collected and disposed of in sealed bags or other closed containers.

(6) Accumulation of asbestos dust shall be removed, as soon as practicable, and only by vacuum cleaners.

(e) *Warning signs*—(1) *Posting.* Warning signs shall be provided and displayed at each location where asbestos dust hazards are present. Signs shall be posted at least 50 feet in each direction from the location where the hazard is present, and at intervals of not more than 100 feet along each edge of the area where the hazard is present.

(2) *Sign specifications.* The warning signs shall conform to the requirements for 20" x 14" vertical format signs specified in § 1910.145(d) (2), and to this paragraph. The signs shall display the following legend in the white panel, with letter sizes and styles of a visibility at least equal to that specified in the notation in the following column to the right:

Legend:	Notation
Asbestos	1" Sans Serif Gothic or Block.
Dust Hazard	1" Sans Serif Gothic or Block.
Follow these	½" Gothic.
Safety and Health Rules.	½" Sans Serif Gothic or Block.
1. Avoid breathing dust.	½" Gothic.
2. Wear your respirator.	½" Gothic.
3. Do not remain in area unless your work requires it.	½" Gothic.
Asbestos dust may cause asbestosis, a severe lung disease, and is implicated in the development of certain cancers. Control of exposure to asbestos dust helps protect against these hazards.	14 point Gothic.

(3) *Spacing.* Spacing between lines shall be at least equal to the height of the upper of any two lines, except that the spacing between "Following these" and "Safety and Health Rules" shall be at least ¾".

(f) *Monitoring*—(1) *Personal.* Employees engaged in the particular operations or using the particular tools specified in paragraph (d) of this section, or exposed to concentrations of asbestos dust in excess of the limits specified in paragraph (a) (3) of this section shall be monitored in accordance with this paragraph.

(i) *Method.* Dust samples shall be collected from within the normal breathing zone of the employees in their normal working posture. Employees wearing respiratory protective devices shall have the sample taken from a point located on the exterior of the respirator facepiece.

(ii) *Procedure.* The sampling procedure shall be such as to permit the determinations required by paragraph (a) of this section.

(iii) *Sampling duration.* The sampling duration shall be for a period of not less than 15 consecutive minutes.

(iv) *Sampling frequency.* Sampling periods shall be of such number and pattern as to represent accurately the exposure of the employees over their working period.

(2) *Environmental.* Environmental monitoring shall be conducted in all areas in which employees are exposed to concentrations of asbestos dust in excess of the limits specified in paragraph (a) of this section.

(i) *Method.* Asbestos dust samples shall be collected from areas which are representative of the concentration of airborne asbestos dust which may reach the breathing zone of exposed employees.

(ii) *Procedure.* Sampling procedure shall be such as to permit the determinations required by paragraph (a) of this section.

(iii) *Sampling duration.* Sampling duration shall be for a period of not less than 15 consecutive minutes.

(iv) *Sampling frequency.* Sampling periods shall be of such number and pattern as to represent accurately the exposure of the employees over their working period.

(g) *Medical examinations.* The employer shall provide, or make available at his cost, appropriate medical examinations on a periodic basis to any employee who is exposed to asbestos dust in excess of the limits specified in paragraph (a) of this section.

(h) *Records.* (1) Every employer shall maintain records of the personal and environmental monitoring, and of the medical examinations, required by paragraphs (f) and (g) of this section. Such records shall be maintained for at least 20 years.

(2) The records of monitoring shall be made available for inspection and copying to the Secretary of Labor and to his designated representatives.

(3) The records of medical examinations shall be made available only to the Secretary of Labor, to the Secretary of Health, Education and Welfare, to designated representatives of either of them, and, at the request of the employee or former employee examined, to his physician.

3. A new § 1910.19 is proposed to be added to Subpart R, reading as follows:

§ 1910.19 Asbestos dust.

Section 1910.93a shall apply to the exposure of every employee to asbestos dust in every employment and place of employment covered by § 1910.12, 1910.13, 1910.14, 1910.15, or 1910.16 of this Subpart R, in lieu of any different standard on exposure to asbestos dust which would otherwise be applicable by virtue of any of those sections.

(Sec. 6, 84 Stat. 1593; 29 U.S.C. 655, 29 CFR 1910.4; Secretary of Labor's Order No. 12-71, 36 F.R. 8754)

Signed at Washington, D.C., this 6th day of January 1972.

G. C. GUENTHER,
Assistant Secretary of Labor.

[FR Doc.72-102 Filed 1-11-72;8:45 am]