

1979 CORRESPONDENCE INDEX

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PLAINTIFF'S
EXHIBIT
B&R-65

1979 CORRESPONDENCES INDEX

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See Distribution	Safety Department	11-7-72	OSHA Safety Memo #22 of 7-17-72
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C. L. Crane H. C. Dodd	L. A. Ashley	6-17-77	Asbestos - Cadwelding
Greg Garvin	Carl Richardson	9-28-77	Asbestos Exposure
Carl Richardson	William Bedman	2-6-78	OSHA Asbestos Standard Medical Examination Requirements
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Distribution	J. W. Coe	1-26-79	Safety and Environmental Checklist for the Solution Plant Dismantling -- Revision
	Petro-Chem Construction		Asbestos Program - Job #34-1266, Wynnewood, Oklahoma

OFFICE MEMO

TO: C. L. Crane
H. C. Dodd

FROM: L. A. Ashley

SUBJECT: Asbestos - Cadwelding

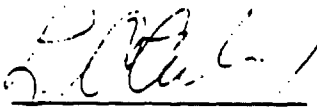
DATE: June 17, 1977

I talked with James Barry, Chief Engineer of Erico, concerning his testing of refrasil rope for cadwelds. One of your projects furnished him a 10 ft. sample.

He told me that they had satisfactory results with the refrasil but were concerned with the release of flouorocarbons since the material was Teflon coated. He is going to send me a letter to this effect.

In addition, beginning August 1, 1977 Erico will no longer furnish asbestos rope but a ceramic type rope. I requested that they send each of you 20 ft. prior to August in order that you might run some tests yourselves. I think we previously tried this material unsatsifactorily but I'm not sure.

In the meantime we will continue to use the asbestos rope. As soon as you can inform me of the results of your testing of the ceramic rope; at the same time I will ask our industrial hygenist to look into the potential flouorocarbon problem.



L. A. Ashley

cc: L. D. Pyeatt
Bert Hale
Carl Richardson



Safety & Training News

Pascagoula Refiner.

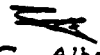
May 19, 1980

DO THE JOB RIGHT - AND IT WILL BE DONE SAFELY

The following is a safety rule reminder:

The following procedure will be followed when removing old line and vessel insulation. Line and vessel insulation installed prior to 1972 may contain asbestos. Please follow all safety precautions described:

1. Before removing insulation, all insulating materials should be wet down.
2. Pick up and bag all asbestos scrap as soon as it is removed.
3. Loose asbestos that collects on the ground should be wetted and cleaned up as soon as possible.
4. Only special plastic bags with the appropriate asbestos warning label are to be used. They are available in the storehouse.
5. The bags containing asbestos wastes should be set aside for disposal by an approved hauler.
6. Employees removing the insulation will wear a 3M 8710 single-use throwaway respirator and paper-type coveralls. The respirators are available from the storehouse. The coveralls are available from the storehouse. After use, the respirators and coveralls should be discarded in the plastic bags.


Charles C. Albritton
Safety Engineer

TO: J. E. Woodward DATE: July 18, 1980

FROM: Ronald Christesson

SUBJECT: Brown & Root - Chevron Safety Meeting

RE: Attachments

(1) Memo of 9 July, 1980: J.E. Woodward to F.W. Bell
"Safety Procedures - Asbestos Insulation"

(2) Brown & Root Asbestos Handling Procedures

(3) Chevron Asbestos Handling Procedures

ATTENDEES: Brown & Root Chevron

Frank Yancy Bob Taggart
Ronald Christesson Charlie Albritton
Marty Bowin

(1) It was agreed that Brown & Root's procedures for asbestos handling are compatible to those used by Chevron and are acceptable for the Project's needs.

(2) Chevron's representatives asserted that monitoring during asbestos handling would be unnecessary based upon results from previous monitoring reports. Brown & Root's representatives recommended monitoring this asbestos work in compliance with the section entitled "Monitoring" within the Asbestos Program of the Petroleum & Chemical Division.

Brown & Root Inc.

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July 18, 1980
Brown & Root-Chevron Safety Meeting

- (3) Regarding the disposal of asbestos waste, Chevron representatives advised Brown & Root that this is not possible within the state of Mississippi due to legal restrictions. It was recommended that Brown & Root contact Mr. James O. Phillips of the Environmental Pollution Control, Inc., P. O. Box 16445, Jackson, Miss. phone (601) 981-9224. Mr. Phillips will assist in the asbestos disposal by coordinating the transportation and permitting necessary to have this done in Alabama. Chevron recommends Brown & Root compile an estimate of the asbestos disposal requested to be submitted to Mr. Phillips in advance.

These things accomplished, this meeting was adjourned with the general consensus that the agreements reached would achieve completion of the asbestos work in a safe manner.

If you have any questions, please contact the undersigned.

Sincerely,


Ronald Christesson

RC/dlb

Brown & Root Inc.

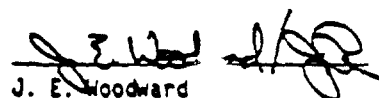
01-448

INTEROFFICE MEMORANDUM

TO: F. W. Bell DATE: July 9, 1980
FROM: J. E. Woodward FILE: 420.800.50-035
SUBJECT: Safety Procedures - Asbestos Insulation

We request permission to send Mr. Ron Christesson to the plant site Thursday, July 17, 1980, to discuss safety procedures pertaining to asbestos insulation.

Mr. Bob Taggart of Chevron has confirmed existing units, particularly Crude Units I & II contain asbestos insulation. We would like Mr. Christesson, Safety Manager of Brown & Root, to discuss procedures for handling, monitoring and disposal of this material with Mr. Taggart and the plant safety manager. Mr. Taggart is aware of the planned meeting.


J. E. Woodward

JEW:JR:ls

cc: R. W. Harrington
R. C. Christesson
J. R. Routt

Brown & Root, Inc. Post Office Box Three, Houston, Texas 77001



April 2, 1980

Mr. E. Lin Longshore
South Carolina Department of Health
and Environmental Control
Solid and Hazardous Waste Management Division
2600 Bull Street
Columbia, Carolina 29201

Dear Mr. Longshore:

On March 26, 1980 I spoke to you in regards to proper asbestos disposal according to your department's regulations. I am familiar with Federal OSHA and EPA regulations but am not familiar with special state regulations pertaining to asbestos disposal.

Brown & Root, Inc. is bidding a contract job in the state of South Carolina and would like to know the steps to be taken, permits needed and approximate costs of such permits to properly dispose of asbestos waste in a sanitary land fill in the area around Columbia.

I would also like to know the names of reputable waste disposal companies in the Columbia area which already possess asbestos permits which could service us.

Also mentioned in our conversation was the possibility of burying the asbestos waste on site. What criteria and/or permits are required for this type of operation?

What is the approximate time period needed by your department for processing such permits prior to our beginning work?

These questions are important to our management and answers are needed before submitting proposals to the client company.

Thanking you in advance for your help in this matter.

Steve Sellers,
Industrial Hygienist
Safety & Health Department

SS/df

OFFICE MEMO

DATE: November 26, 1979

Asbestos insulation tear out was to be performed as part of the job. Per conversation with Mr. Peterson at the Corsicana, Texas office, I was to be notified as to the date of insulation removal at the plant. This would allow the Environmental Health Section time to monitor asbestos exposure in order to comply with the OSHA standard and to document employee exposure levels.

A more unified effort of communication is needed between the jobsite, the division safety office, and the corporate safety office on matters of this nature.

Carl Richardson,
Manager - Environmental Health Services
Safety & Health Department

cc: Bert Hale
Del English
File

Brown & Root, Inc. Post Office Box Three, Houston, Texas 77001



October 10, 1979
35-5019

TO: Carl Richardson
FROM: Charles Tedder
SUBJECT: Sample of Gasket Material

Mr. F. K. Parmely, Assistant Manager, Power Division Safety, asked me to send you two samples of Gasket Material used on Project 35-5019.

Mr. Parmely asked if you could possibly tell how much asbestos, if any is contained within these materials.

Charles Tedder
Charles Tedder
Safety Supervisor

cc: file

Title 29—Labor

CHAPTER XVII—OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, DEPARTMENT OF LABOR

PART 1910—OCCUPATIONAL SAFETY AND HEALTH STANDARDS

Standard for Exposure to Asbestos

Pursuant to sections 8(b) and 8(c) of the Occupational Safety and Health Act of 1970 (84 Stat. 1593, 1599; 29 U.S.C. 653, 657), Secretary of Labor's Order No. 12-71 (36 FR 8754), and 29 CFR Part 1911, § 1910.1001(i)(1) of Part 1910 of Title 29, Code of Federal Regulations, is hereby amended in the manner set forth below, in order to extend the retention period for asbestos exposure monitoring records from three years to twenty years.

On December 7, 1971 (36 FR 23207), OSHA issued an emergency temporary standard on asbestos in response to a petition by the Industrial Union Department of the AFL-CIO, pursuant to section 8(c) of the Act (84 Stat. 1596, 29 U.S.C. 653). This emergency temporary standard was designed primarily to immediately reduce and control occupational exposure to asbestos dust concentrations, and did not contain recordkeeping procedures. However, on January 12, 1972 (37 FR 468), OSHA published a proposed comprehensive standard for asbestos exposure which did include recordkeeping provisions. Paragraph (h)(1) of the proposal (37 FR 468) provided that exposure monitoring records, and records of medical examinations, be maintained for a period of twenty years. After public hearings the Secretary promulgated a new, permanent OSHA standard for asbestos on June 7, 1972 (37 FR 11318), in accordance with section 8(b) of the Act (84 Stat. 1593, 29 U.S.C. 653). This new regulation, which appeared as 29 CFR 1910.93a prior to reodification, contained a three-year requirement for retaining exposure monitoring records. 29

CFR 1910.93a(i)(1) (now 29 CFR 1910.1001(i)(1)).

On July 27, 1972, pursuant to section 8(i) of the Act, (84 Stat. 1597, 29 U.S.C. 653), a petition for judicial review of the asbestos standard was filed with the United States Court of Appeals for the District of Columbia. The principal petitioners, the Industrial Union Department, AFL-CIO, objected to several substantive portions of the standard, including those dealing with recordkeeping. The Court affirmed the Secretary's judgments and the standard's validity except for two provisions, one of which was the retention period for exposure monitoring records, "Industrial Union Department, AFL-CIO v. Hodgson," 499 F. 2d 467 (C.A.D.C. 1974). The Court directed the Secretary to re-examine the standard with respect to the three-year recordkeeping provision and to reconsider whether such time period adequately assured employee protection from asbestos-related diseases.

In discussing this issue, the Court noted that many of the problems facing the Secretary in developing an asbestos standard were directly attributable to the lack of information concerning asbestos-related diseases, and particularly to the lack of reliable data on past exposure levels. Noting the close functional relationship between medical rec-

ords and exposure records, and the fact that the standard required that medical records be maintained for at least 20 years, the Court expressed surprise at the short three-year retention period for monitoring records. After reviewing the Secretary's obligation under the Act to require retention of records necessary for the development of information concerning the causes of disease and the importance of exposure data in establishing this causal relationship, the Court remanded the recordkeeping requirements to the Secretary "for such modification or clarification as may be necessary to ensure that the statutory objective will be fulfilled." 499 F. 2d at 468.

Pursuant to the Court's direction, OSHA has completed its review, and has concluded that the opinion expressed by the Court is an accurate reflection of the record, and that the agency's initial judgment warrants correction.

OSHA believes that extension of the recordkeeping requirement for exposure monitoring from three years to twenty years as originally proposed would be in harmony with the twenty-year retention period now required for employee medical records. 29 CFR 1910.1001(j)(8)(i). As the court noted (499 F. 2d at 468), the two sets of records when read together would provide a more complete record of an employee's history of exposure, a factor vitally important with respect to asbestos-related diseases. The extended period for retention, with resultant data accumulation, will be critical to medical and scientific investigations studying such questions as dose-response relationships in diseases caused by occupational exposure to asbestos. This decision would also be responsive to

the agency's declared concern that the past inadequacy of health and monitoring records have hindered research into the consequences of asbestos exposure at the workplace. 37 FR 11318, June 7, 1972.

The long latency periods associated with asbestos-related diseases, and the consequent need for a standard to take such latency periods into account, were recognized by both the OSHA Advisory Committee on Asbestos Dust (proceedings at pp. 103-105, February 17, 1972) and the NIOSH Criteria Document for a Recommended Standard on Asbestos (generally chapters I and II). In addition, testimony by two witnesses at the OSHA hearings also supported longer retention periods for exposure monitoring records (Tr. at 527, 538, March 17, 1972). A consensus of the evidence in the record indicates that exposure monitoring records should be held for at least 20 years in order to make such a requirement meaningful in view of what is generally recognized as the minimum latency period for many asbestos-related diseases. OSHA is of the view that the interests of worker health would be best served by requiring the retention of exposure monitoring records for a period which reflects an appreciation of this recognized latency factor.

Accordingly, pursuant to the Court's remand for further consideration of the retention period for monitoring records, we have concluded, based on the existing record and for the reasons stated above, that a 20-year retention period is supported by the evidence and necessary for the protection of employees. It is noted that in a new proposal, on exposure to asbestos (40 FR 47652, October 9, 1975), which reflects the most recent scientific and medical developments in the field, a 40-year retention period for the duration of employment plus twenty years for both exposure measurement and medical records has been proposed.

For the reasons stated above, the exposure records provision of the asbestos standard will be corrected to require retention of exposure monitoring records for at least 20 years, effective March 19, 1976. OSHA believes that a delay in the effective date of this requirement is not warranted since this rule only requires that affected employers retain records which they have already compiled and therefore does not impose a new burden of action, and since the initial three-year retention period for such records has now lapsed and these records might be destroyed. Loss of such records would be irreparable. Continued access to such records by all concerned is essential in the public interest, and is an appropriate means of effectuating the goals of improved worker safety and health under the Act. Good cause is found, therefore, pursuant to section 4(d)(3) of the Administrative Procedure Act (5 U.S.C. 553 (d)(3)), for making this rule effective.

Accordingly, pursuant to the direction of the United States Court of Appeals ("Industrial Union Department, AFL-CIO v. Hodgson, supra"), and the above referenced authority, paragraph

(i)(1) of 29 CFR 1910.1001 is hereby amended to read as follows:

§ 1910.1001 Asbestos.

(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.

(Secs. 8, 9, Pub. L. 91-596, 84 Stat. 1593, 1598 (29 U.S.C. 653, 657); Secretary of Labor's Order No. 12-71 (36 FR 8754); 29 CFR Part 1911).

Signed at Washington, D.C. this 12th day of March 1976.

Morton Cohn,
Assistant Secretary of Labor.

[FR Doc. 76-7791 Filed 3-18-76; 8 45 am]

quired during the shift to avoid overloading the filters.

(3) Exposures to asbestos dust with high levels of contamination.

(a) Several samples may be required during the shift to avoid overloading the filter.

(b) Filters should be changed only after a minimum of 1 hour of sampling time for exposures expected to be close to 0.1 fibers/cc. Seven or eight 1-hour samples can be collected during the day.

d. Examples of types of violations:

(1) Where an employer does not provide the required medical examinations, and an employee is exposed to 0.1 or more fibers/cc, it would be considered a "serious" violation of 29 CFR 1910.1001(j)(2), or (3) or (4).

(2) For definitions and guidance on "repeated," "willful," or a "failure to correct" violation, see the FOM, Chapter VIII.

5. Effective Date

This directive is effective immediately and will remain in effect until further notice.

(3) Magnesium arsenate.

(4) Sodium arsenite.

(5) Zinc arsenate.

(6) Zinc arsenite.

(7) Zinc fluorarsenate.

f. Manufacturers of desiccants.

Example: Orthoarsenic acid.

g. Manufacturers of wood preservatives.

Some examples of these products are as follows:

(1) Ammoniacal copper arsenite.

(2) Chromated copper arsenate.

(3) Mixture of chlorinated arsenate, fluoride and phenolic salts in aqueous solution.

(4) Zinc-chromium arsenate.

(5) Copperized zinc-chromium arsenate.

(6) Fluorochrome arsenate phenol.

h. Manufacturers of feed additives.

Some examples of these products are as follows:

(1) Arsanilic acid.

(2) 3-Nitro-4-hydroxyphenylarsonic acid.

(3) 4-Nitrophenylarsonic acid.

(4) 4-Ureido-1-phenylarsonic acid.

i. Manufacturers of pharmaceuticals for use in veterinary medicine.

Some examples of these products are as follows:

(1) Acetarsamide.

(2) Carbarsone.

(3) Dichlorophenarsine.

(4) Lead arsenate.

(5) Melarsenyl.

(6) Neoarsphenamine.

(7) Thiacetarsamide (Caparsolate).

j. Manufacturers of glass that use arsenic trioxide as a refining agent and a decolorizer.

k. Manufacturers of alloys of nonferrous metals and arsenic.

Some examples of products manufactured from these alloys are as follows:

(1) Lead shot.

(2) Cable sheathing (lead and arsenic).

(3) Battery grids (lead and arsenic).

(4) Battery electrodes (lead and arsenic).

(5) Speculum metal.

(6) Boiler tubes (Copper and arsenic).

(7) Arsenic bronze.

(8) Special solders such as used on body joints and seams in the automobile industry.

(9) Arsenic brass.

(10) Arsenical Babbitt.

l. Users of solders that contain arsenic as a component in the alloy.

Example: Automobile and truck body manufacturers.

m. Manufacturers and/or users of arsenic-based flotation reagents.

n. Miscellaneous.

Arsenic and/or arsenic-containing, inorganic compounds are used in each of the following types of establishments. However, every employer does not necessarily use them.

(1) Leather tanneries.

(2) Manufacturers of ceramics and ceramic or vitreous enamel.

(3) Manufacturers of aniline colors.

(4) Manufacturers of pyrotechnics.

(5) Manufacturers of semiconductors.

OSHA PROGRAM DIRECTIVE #300-16

October 11, 1978

TO: REGIONAL ADMINISTRATORS/OSHA

Subject: 29 CFR 1910.1001(j)(2) or (3) or (4). Minimum Airborne Fiber Concentration for Initiating and Continuing Asbestos Medical Examinations.

1. Purpose

The purpose of this directive is to provide uniform inspection and compliance procedures for the medical examination requirement in the asbestos standard, 29 CFR 1910.1001(j)(2), or (3) or (4).

2. Documentation Affected

This directive supplements and provides reference for the OSHA Industrial Hygiene Field Operations Manual (IHFOM) and the OSHA Field Operations Manual (FOM).

3. Background

In 29 CFR 1910.1001(j)(2), or (3) or (4), Medical examinations, the term "... exposed to airborne concentrations of asbestos fibers. ..." has been the subject of considerable discussion and debate as to the meaning or interpretation of "airborne concentrations."

4. Action

a. Definition.

In 29 CFR 1910.1001(j)(2), or (3) or (4), Medical examinations, the term "... exposed to airborne concentrations of asbestos fibers. ..." is administratively interpreted to mean exposed to a minimum of 0.1 asbestos fibers longer than 5 micrometers per cubic centimeter of air, as determined by the sampling method prescribed in section 4.c. of this directive. The phrase "fibers longer than 5 micrometers per cubic centimeter of air" shall hereafter be abbreviated as "fibers/cc."

b. Scope and applicability.

Medical examinations as per 29 CFR 1910.1001(j)(2), or (3) or (4) will be required for any 7- to 8-hour time-weighted average concentration of 0.1 fibers/cc. or for a greater concentration.

c. Sampling information.

(1) Sampling procedures will follow Chapter X of the IHFOM, with the additional guidance of 4.c.(2) and (3) of this directive.

(2) Exposure to asbestos dust with low levels of contamination (e.g., mixed with other minerals).

(a) For exposures to dust that is mostly asbestos and is expected to be below the permissible exposure limit, the same filter should be used for the entire shift, but no longer than 8 hours.

(b) For exposures expected to be at or above the permissible exposure limit, several samples may be re-

rule "is far too restrictive and invalidates alternative dosimeter types which would be equivalently effective," de Bernardo said. Regarding testing booths, the Chamber attorney said that "essentially laboratory conditions" would be required to meet the low frequency noise specifications for the booths, which he called an "impractical and unworkable requirement."

- There is confusion in the standard of the terms "noise" and "dose" which causes "significant ambiguity."
- Training program requirements are excessive and present "the potential for harassment of employers."
- Recordkeeping requirements are "far too excessive and costly," particularly for small and medium-sized businesses.
- The calibration requirements for dosimeters and audiometers are "exhaustive" and require more testing than necessary to ensure accuracy.
- Projections of the number of workers covered by the amendment, the overall cost of compliance, and the cost per worker for compliance are "badly underestimated."
- The requirements that only audiologists, qualified physicians, and otolaryngologists evaluate audiograms and perform certain duties is "excessively costly and an inefficient use of limited professional resources since trained technicians and qualified nurses could adequately perform such responsibilities."
- The agency miscalculated the effect of impulse noise on measurements.

The Chamber has sought to stay the rule since it was issued on Jan. 16 (Current Report, Jan. 22, p. 833). Last month, the Chamber proposed to Reagan's task force on regulatory reform that the eight-hour time-weighted noise exposure to which workers must be exposed to be included in industrial hearing conservation programs under the new rule be raised from 85 dB to 90 dB (Current Report, Feb. 19, p. 1266).

ORC Petition

A similar petition requesting suspension of the effective date of the Occupational Safety and Health Administration's new hearing conservation amendment, full review of the record compiled on the amendment, and a reopening of the record also was submitted March 2 to Secretary of Labor Raymond J. Donovan by the Organization Resources Counselors, Inc.

ORC criticized the amendment for relying on specification rather than performance criteria and for being too technically complex for most employers. "In our view, OSHA can solve the broad problem and many of the specific problems [contained in the amendment] only if it substitutes a performance standard for the excessively specification-oriented amendment," the organization stated.

ORC shares similar concerns with the Chamber of Commerce about a number of issues, including specifications for test booths, recordkeeping requirements, specifications required for dosimeters, whether dosimeters are reliable under the requirements of this program, definitions of significant threshold shift and revised baseline in the program, enforcement and need for the 14-hour quiet period, requirements for audiometer calibration, training requirements, effect of impulse noise on measurements, and limitation of audiogram review to certain physicians.

In addition, ORC requested that several issues, such as the cost effectiveness of the amendment, the number of workers covered and the resulting overall cost of the amendment, the provision for employee monitoring of the program, possible confusion between the requirements of the amendment and those of the old standard, the handling of computer programs, and the requirement that noise levels as low as 80

dBA be included in the time weighted average, receive additional consideration and review before the amendment becomes effective.

Asbestos

OSHA INSTRUCTION GIVES PROCEDURES FOR DOCUMENTING PAST EMPLOYEE EXPOSURE

Procedures for documenting past employee exposure to airborne asbestos fibers when concentrations can not be measured by taking of air samples on the day of the inspection or thereafter were detailed in an Occupational Safety and Health Administration instruction issued Feb. 18.

The instruction, CPL 2-2.21A, sets guidelines for determining whether asbestos had been used or handled regularly at the workplace — or, if it had been used or handled on an irregular basis, whether employees were exposed to "significant amounts" of asbestos-containing dust — for the purposes of the medical examination requirements of the asbestos standard (Reference File, 31-8306).

Compliance officers are instructed to obtain monitoring results from the employer or contractor, or from other sources. Information necessary to document asbestos use or handling is to be obtained through employee, employer representative, or union interviews, and through written employer information if it exists.

The instruction cancels a similar document issued in October 1978 but, except for the addition of the procedures for documenting past exposure, leaves it essentially unchanged (Current Report, Nov. 2, 1978, Reference File, 21-9158).

Text of the instruction follows.

Text of OSHA Instruction CPL 2-2.21A

Subject: 29 CFR 1910.1001(j)(2), (3) or (4), Minimum Airborne Fiber Concentration for Initiating and Continuing Asbestos Medical Examinations.

A. Purpose. This instruction provides uniform inspection and compliance procedures for the medical examination requirement in the asbestos standard.

B. Scope. This instruction applies OSHA-wide.

C. Cancellation. OSHA Instruction CPL 2-2.21, October 11, 1978, is canceled.

D. Action. OSHA Regional Administrator and Area Directors shall assure that enforcement of 29 CFR 1910.1001(j)(2), (3) or (4) is consistent with the guidelines in G of this instruction.

E. Federal Program Change. This instruction describes a Federal program change which affects State programs. Each Regional Administrator shall:

1. Ensure that this change is forwarded to each State designee.

2. Explain the technical content of the change to the State designee as requested.

3. Ensure that State designees are asked to acknowledge receipt of this Federal program change in writing, within 30 days of notification, to the Regional Administrator. This acknowledgement should include a description either of the State's plan to implement the change or the reasons why the change should not apply to that State.

4. Review policies, instructions and guidelines issued by the State to determine that this change has been communicated to State program personnel. Routine monitoring activities (accompanied inspections and case file reviews) shall also be used to determine if this change has been implemented in actual performance.

F. Background. OSHA has determined that generally citations should, as a matter of policy, be issued for

violations of 29 CFR 1910.1001(j)(2), (3) or (4), only when employees are exposed to a minimum of 0.1 asbestos fibers longer than 5 micrometers per cubic centimeter of air, as determined by the sampling method prescribed in section G.2 of this instruction [The phrase "fibers longer than 5 micrometers per cubic centimeter of air" shall hereafter be abbreviated as "fibers/cc."] However, for situations in which sampling of exposure is infeasible, citations may be issued as provided in G.5 of this instruction.

G. Enforcement Guidelines

1. Medical examinations as per 29 CFR 1910.1001 (j)(2), (3) or (4) will be required for any 7- to 8-hour time-weighted average concentration of 0.1 fibers/cc. or for a greater concentration.

2. Sampling procedures will follow Chapter X of the IHFOM with the additional guidelines of G.3 and 4. of this instruction.

3. Sampling for Exposures to Asbestos Dust with Low Levels of Contamination (e.g., Mixed with Other Minerals)

a. For exposure to dust that is mostly asbestos and is expected to be below the permissible exposure limit, the same filter should be used for the entire shift, but no longer than 8 hours.

b. For exposure expected to be at or above the permissible exposure limit, several samples may be required during the shift to avoid overloading the filters.

4. Sampling for Exposure to Asbestos Dust with High Levels of Contamination.

a. Several samples of exposure may be required during the shift to avoid overloading the filter.

b. Filters should be changed only after a minimum of 1 hour of sampling time for exposures expected to be close to 0.1 fibers/cc. Seven or eight 1-hour samples can be collected during the day.

5. Post Exposures. When employees have been exposed to asbestos but air samples cannot be taken on the day of the inspection or thereafter, citations for serious violation of 29 CFR 1910.1001(j)(2), (3) or (4) should be issued according to the following procedures:

a. Determine that employees were exposed to airborne concentrations of asbestos, and that the use or handling of asbestos was performed on a regular basis; or that the use or handling of asbestos was performed on an irregular basis, but employees were exposed to significant amounts of dust containing asbestos.

NOTE. Compliance officers shall obtain monitoring results from the employer (contractor) or other source (e.g., insurance company; company or plant for whom contracting work is being done; building owner/building management; other Federal, State or local agency), and shall indicate exposure levels above 0.1 fibers/cc of asbestos.

b. Document, by employee, employee representative, and union interviews, that this work was performed routinely, on a repeated basis; or that the use or handling of asbestos was performed on an irregular basis, but employees were exposed to significant amounts of dust containing asbestos. In addition, obtain documentation from written employer information on these routine operations, if it exists.

c. The violative conditions must have occurred at least within the previous 6 months to meet the requirements of Section 9(c) of the Occupational Safety and Health Act.

6. Types of Violations.

a. A "serious" violation of 29 CFR 1910.1001(j)(2), (3) or (4) would exist where an employer does not provide the required medical examinations, and an employee is exposed to 0.1 or more fibers/cc.

b. For definitions and guidance on "repeated", "willful" or a "failure to correct" violation, see the FOM, Chapter VIII.

Litigation

COURT RULES GRAIN DUST ACCUMULATION VIOLATES OSHA HOUSEKEEPING STANDARD

An employer that has been cited twice for violation of the Occupational Safety and Health Administration's housekeeping standard, for failure to prevent accumulations of grain dust in its grain elevator, is in repeated, serious violation of that housekeeping standard, the U.S. Court of Appeals for the Fifth Circuit, Unit A, ruled March 5.

This decision in *Bunge Corporation v. Secretary of Labor and OSHA/RRC* (No. 79-1906) affirmed a ruling of the Occupational Safety and Health Review Commission (OSHRC 1325).

The case arose out of the inspection of the employer's Destrehan, La., grain elevator. During that inspection, the OSHA compliance officer found 42 locations where dust and grain had accumulated. The citation charged that this condition was in violation of 29 CFR 1910.23(a)(1) and that it created a fire hazard. This citation was the third such citation issued to the employer for violation of the same housekeeping standard. The first and third citations involved dust accumulations and the second involved material and ropes left in walking areas.

After a hearing on the merits of the case, an OSHA/RRC judge found the employer to be in repeated, serious violation of the housekeeping standard and assessed a \$10,000 penalty. This appeal followed.

The employer did not dispute the existence of the dust accumulations at the grain elevator but, instead, argued that the housekeeping standard had been impermissibly expanded to include fire and explosion hazards. According to the employer, grain dust fire and explosion hazards can only be addressed by promulgating a specific rule covering those hazards. The appellate court rejected that argument, stating, "[w]hile a specific rulemaking may be preferable, OSHA is by no means obligated to countenance dangerous conditions pending the promulgation of a regulation that specifically addresses one of the hazards that the condition generates."

This opinion, which was written by Circuit Judge Sam D. Johnson, who was joined by Circuit Judges Irving L. Goldberg and Henry Politz, will appear in a future Decisions issue.

State Plans

MONETARY PENALTIES AGAINST WORKERS SUBJECT OF OSHA INSTRUCTION TO FIELD

States are not absolutely prohibited from leveling economic penalties against workers who fail to comply with job safety and health standards, but any state considering the inclusion of such sanctions in its state plan should evaluate the action carefully to determine whether it "weakens the effectiveness of the overall enforcement program," according to an Occupational Safety and Health Administration field directive.

The document, OSHA Instruction STP 3-1.8A, dated Feb. 24, also said that a state which includes such penalties in its plans "must show how these sanctions would not reduce the overall effectiveness of the state's enforcement program below that of the federal enforcement program."

► Maximum radiofrequency emissions were 1.4 milliwatts per square centimeter (E-field) and 3.5 milliwatts per square centimeter (H-field), with an occupational standard of 10 milliwatts per square centimeter (208 units measured).

Lab Tests Reported

William A. Herman, of the division of electronic products, Bureau of Radiological Health, Food and Drug Administration, reported on laboratory tests measuring X-ray, radiofrequency, ultrasound, visible, and infrared emissions from video display units with "complete maladjustment of all controls" to produce the worst possible conditions. These tests showed emission values "within existing state, federal, and international guidelines." Herman said he could not see promulgating standards for video display unit radiation emission "in the foreseeable future," adding that "we try to limit standards to things that need standards."

Myron L. Wolbarsht, of the Duke University Eye Center, completed the attack on the theory of video display unit radiation emissions. He said that in conducting measurements, he found background radiation levels often were greater than the radiation from the video display unit itself. He added that a fluorescent light emitted more ultraviolet radiation than a video display unit.

The researchers did not dismiss other potential health hazards from video display units as completely as radiation hazards. Most agreed, however, that these hazards were acute rather than chronic in nature.

Edward J. Rinalducci, of Georgia Institute of Technology, outlined visual problems such as fatigue, glare, color defectiveness, and the effects of adaptation associated with video display unit use.

Marvin J. Dainoff, of the Motivation and Stress Research Section of NIOSH, reported on experimental and field investigations relating visual fatigue and other visual changes to video display unit work. He suggested that poor contrast, glare, and insufficient work-rest breaks may contribute to worker complaints, but he concluded that causal linkages "still require substantiation."

Other reported complaints included postural discomfort and muscular disorders. Robert Arndt, of the University of Wisconsin, attributed these problems to awkward or improper postures, static loading of postural muscles for long periods, and repetitive motions leading to muscle fatigue and disorders involving tendons, muscles, joints, and nerves.

Researchers speculated on several causes for these problems. Most agreed that the workplace was partially to blame for health complaints. Michael J. Smith, chief of the Motivation and Stress Research Section of NIOSH, said there are good video display units on the market, and sound ergonomic principles for their use, that simply are not put into effect. "We can't always go back and try to beat up on the manufacturers," he added.

Smith and others agreed, however, that job content may share the blame for causing worker health complaints. "There are a hell of a lot of complaints out there that we're not hearing" from typists, microfiche viewers, and other clerical workers, Smith said. He blamed the repetitive nature of the work and the influence of the total computer system and its requirements for high levels of job stress and certain types of health complaints.

Smith announced that NIOSH plans to ask the National Academy of Sciences to review requiring vision examinations for all jobs requiring close acuity work.

NIOSH Recommendations

Smith also outlined general recommendations that NIOSH gave to the San Francisco Newspaper Agency, based on a

health hazard evaluation conducted there. The recommendations will be published in two months, Smith estimated. They include:

- Making workplaces as flexible as possible, with adjustable chairs, keyboard height, screen height, screen brightness, and contrast.

- Setting the distance between the video display unit and the operator between 450 and 500 millimeters, or two-thirds of the accommodation range.

- Setting the viewing angle in the 10 to 20 percent range with the top of the screen no higher than operator eye level and the bottom of the screen no lower than 40 degrees below eye level.

- Setting the keyboard height between 740 and 790 millimeters at home row.

- Making keyboards detachable if possible.

- Setting the illumination level between 500 and 700 lux.

- Controlling glare.

- Planning work-rest regimens with a 15-minute break after two hours of continuous video display terminal work for operators under moderate visual demands, and a 15-minute break after one hour of continuous work for operators with high visual demands or repetitive work tasks; and

- Performing comprehensive preplacement visual examinations, with viewing requirements of the operator's job in mind.

Smith concluded that job content factors and video display unit use contribute to the problems observed in video display unit operators "in an interactive way."

Review Commission

OSAHRC REJECTS ECONOMIC INFEASIBILITY AS DEFENSE IN ASBESTOS VIOLATION CASE

An employer may not defend against citations for violations of asbestos monitoring and medical examination standards on the ground that compliance is economically burdensome, the Occupational Safety and Health Review Commission ruled March 31.

This decision, in *Research-Cottrell, Inc., Harmon Cooling Tower Division* (No. 11756), affirmed an administrative law judge's decision finding that the employer violated the standards by failing to monitor a worksite and provide medical examinations for employees exposed to airborne concentrations of asbestos fibers.

This case arose after an inspection of the employer's worksite in Russellville, Ark., where the firm was engaged in constructing cooling towers for a nuclear power plant. The towers consisted of concrete columns which were filled with asbestos sheets. As part of their duties, employees drilled and cut the sheets prior to installing them in the columns.

After monitoring the employer's worksite for presence of airborne asbestos fibers, an industrial hygienist for the secretary of labor found that employee exposure to asbestos was 0.32 to 1.37 asbestos fibers, measuring greater than five microns in length, per cubic centimeter of air on an eight hour time-weighted average basis. Although exposure levels did not exceed those limits set by the asbestos standard at 29 CFR 1910.1001(b), the evidence showed that the employer had failed to conduct its own monitoring of the worksite to determine whether employees were exposed to asbestos fibers or to give medical examinations to its employees.

On the basis of this evidence, an administrative law judge affirmed a citation issued against the employer for violations of asbestos monitoring and medical examination standards 29 CFR 1910.1001(f)(1) and (j)(1). Research-Cot-



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
CENTER FOR DISEASE CONTROL

NATIONAL INSTITUTE FOR OCCUPATIONAL
SAFETY AND HEALTH
1600 FISHERS LANE
ROCKVILLE, MARYLAND 20852

August 8, 1975

Dear Colleague:

This communication is intended to alert you to recently gathered information indicating a potential health hazard for persons exposed to asbestos during the servicing of motor vehicle brake and clutch assemblies.

On July 21, 1975, the National Institute for Occupational Safety and Health convened a meeting of government and university scientists, industry representatives, and labor union officials to discuss the present state of knowledge with respect to this problem. Data was presented by investigators from the Mount Sinai School of Medicine in New York City indicating that workers engaged in the maintenance and repair of automobile and truck brake linings are exposed to potentially hazardous levels of airborne asbestos dust. Specific brake servicing operations studied included blow-out of automobile drum brake assemblies, grinding of used truck brake linings, and bevelling of new truck brake linings. Average peak asbestos air concentrations for these three activities based on personal samples taken within ten feet of the operator were, respectively, 10.5, 3.75, and 37.3 fibers (>5 microns in length) per ml. An analysis of samples of brake drum dust revealed that almost all of the asbestos fibers found were shorter than 0.4 microns in length.

Previous studies of the extent of asbestos emissions from automobile brake lining wear showed that only a very small fraction of the original asbestos content of the brake lining is found in brake drum dust (Ref. 1-3). It was presumed that this is due to thermal degradation of the fibers during braking. The present findings indicate that enough asbestos is preserved to produce significant exposures during certain brake servicing procedures.

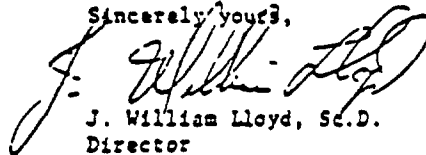
The full extent of asbestos-related disease in brake servicing personnel is not known at present because this particular occupational group has not been studied systematically up to now. However, a review of the scientific literature on the association between asbestos exposure and mesothelial tumors of the pleura and peritoneum has revealed at least four cases of these rare tumors in persons who were employed in jobs involving automobile brake servicing (Ref. 4-6).

Page 2

For your information and guidance, we are enclosing pertinent references, estimates of the population at risk, a NIOSH interim recommendation for brake and clutch servicing procedures, and a copy of the Department of Labor standard covering exposure to asbestos in the work place.

The environmental studies of brake lining servicing operations outlined above together with observations of mesothelial tumors in persons so employed affirms the necessity for instituting and maintaining recommended control measures in this industry so that the health hazards of asbestos are minimized.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "J. William Lloyd", is written over the typed name.

J. William Lloyd, Sc.D.
Director
Office of Occupational Health
Surveillance and Biometrics

Enclosures

REFERENCES

1. Lynch, J.R.: Brake Lining Decomposition Products. J Air Pollution Control Assoc, 18:824-26, 1968
2. Hickish, D.E. and Knight, K.L.: Exposure to Asbestos During Brake Maintenance. Ann Occup Hyg, 13:17-21, 1970
3. Jacko, M.G. and DuCharme, R.T.: Brake Emissions: Emission Measurements from Brake and Clutch Linings from Selected Sources. EPA Report 68-04-0020, 1973
4. Newhouse, M.L. and Thompson, R.: Mesothelioma of Pleura and Peritoneum Following Exposure to Asbestos in the London Area. Brit J Ind Med, 22:261-69, 1965
5. McDonald, A.D. et al.: Epidemiology of Primary Malignant Mesothelial Tumors in Canada. Cancer, 26:914-19, 1970
6. Greenberg, M. and Lloyd Davies, T.A.: Mesothelioma Register 1967-1968. Brit J Ind Med, 31:91-104, 1974

ESTIMATES OF THE WORKFORCE POTENTIALLY EXPOSED TO ASBESTOS
IN THE MANUFACTURING AND SERVICING OF BRAKE LININGS AND CLUTCHES

Auto Mechanics	833,535
Garage Workers	67,679
Manufacture (original and rebuilding)	<u>6,657</u>
TOTAL	907,871

SOURCE: Adapted from 1972 Census of Manufacturers, 1972 County Business Patterns, and Census of Population: 1970 Occupation by Industry (all are Department of Commerce, Census Bureau publications)

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

CDC, NIOSH

Minutes of Occupational Exposures to Asbestos Dust From
Brake Linings Meeting

July 21, 1973

Attendees

See Attached

Proceedings

Dr. John F. Finklea, Director of NIOSH, welcomed the attendees. He stated that the purposes of the meeting were (1) to consider preliminary data on asbestos exposure among brake lining workers and (2) to discuss a future course of action based on this preliminary information. Dr. Finklea then turned the meeting over to Dr. Irving Selikoff of Mount Sinai for presentation of some of his work on this problem.

Dr. Selikoff described the background for our current concern. The health effects of asbestos are well known. However, the health hazard associated with asbestos in brake linings until recently has received little attention. It was thought that the intense heat generated from braking modified the asbestos and that brake lining dust contained insignificant amounts of asbestos fibers. Dr. Mancuso in 1973 did describe asbestos-related health effects in the manufacturing of asbestos for brake linings but apparently this caused little concern. In 1971, a case of mesothelioma was reported in a brake repair worker. This stimulated a re-examination of the problem. Dr. Selikoff consulted with Mr. Meyers of EMM, Dr. Cefalo of IRI and the Ford Motor Company and the group at Mt. Sinai initiated a study to determine if brake lining workers were exposed to significant levels of asbestos.

Dr. Selikoff introduced Dr. Langer of Mt. Sinai who reviewed the composition of brake linings and the breakdown products thought to come from "heat generated" during braking. Previous studies did not demonstrate asbestos fibers in the amounts or prevalence as indicated by the current studies at Mt. Sinai. However, recent studies at Mt. Sinai demonstrated typical chrysotile asbestos fibers along with a wide range of other forms of crystalline and fibrous materials. He emphasized that the composition of brake linings may differ, for example, brake linings in the U.S. and Great Britain and products here in the U.S. may have undergone many changes over the years. This is particularly important since recent data show that 10% of the new car market is made up of these imports. Further research is needed to characterize the asbestos

content of past and present dust exposures. It should be recognized also that the health effects of other materials in brake dust have not been studied.

Dr. Rohl from Mt. Sinai reported on studies of asbestos dust exposure in automobile repair shops in New York City. Peak exposures from 5-8 minutes duration were measured. Fiber counts, using the OSHA method, were from 6 to 37/ml at 3-5 feet from brake drums cleaned with compressed air. At 5-10 feet, counts ranged from 2 to 4 ml; at 10-20 feet 0.4 to 4.3/ml. Drums cleaned with a brush generated less airborne asbestos, 1.3-3.6 fibers/ml in the operators breathing zone. Eighty to 99% of the fibers as observed by electron microscopy were less than 1.4 microns in length, indicating a much higher exposure to asbestos fibers than indicated by optical microscopy. Workers engaged in grinding operations to renew brake linings were exposed to 2-7 optically visible fibers/ml. Those beveling linings had high exposures ranging from 32-72 fibers/ml. Dr. George Wright pointed out that earlier studies show that 1 to 3% of brake dust is fibrous asbestos.

Dr. Lorimer of Mt. Sinai reported on medical examination of 13 brake repair workers with 10-40 years of exposure. A substantial number were reported to have X-ray and ventilatory function abnormalities. Further studies need to be done in this area before any conclusions on health effects can be drawn. However, it was pointed out that at least four cases of mesothelioma have been reported nationally among automobile repair workers and this lends urgency to the problem.

Dr. Finkler asked for comments and recommendations for addressing the problem.

Mr. Meyers suggested that several practical control measures are feasible now. Indeed, these measures have been instituted in several shops. His union alerted its members via its newsletter and developed posters to alert workers to the problem. Mr. Meyers emphasized that the employers with whom he worked were most cooperative. Employers were encouraged to use vacuum cleaning of brake drums and, where necessary, masks to reduce exposure. His union has made arrangements for continued medical evaluation of its members. He emphasized the importance of union representatives having access to workplaces for observation of sanitary practices.

Dr. George Wright, an industrial consultant, emphasized that manufacturers have a responsibility to ascertain that asbestos in their products after being sold to others. This problem represents a difficult problem for the manufacturer and for their industrial customers. Dr. Wright stressed belief that the asbestos industry would cooperate in every possible way. Dr. Wright was not totally surprised by the other counts reported and expressed the belief that one might subsequently encounter the full spectrum of asbestos-related disease among workers. Dr. Wright expressed concern that conditions might be worse and

exposures higher among some smaller businesses. Dr. Wright cautioned that the influence of fiber size should be considered and that any extrapolation to the general population be made with caution. He urged that any subsequent investigations utilize the OTC classification and the inclusion of negative controls. Dr. Wright cautioned against over-interpreting the occurrence of four mesothelioma cases.

Mr. Samuels of IUD urged that NIOSH:

- Notify the Department of Labor about this problem;
- Make minutes of this meeting available to public along with a suitable press release;
- Notify other involved unions;
- Institute an appropriate national sampling program;
- Institute a program of surveillance and intervention.

Other unions involved include:

- United Auto Workers
- Teamsters
- American Federation of Government Employees
- Allied Industrial Workers
- Laborers International
- International Association of Machinists
- American Postal Workers Union
- United Rubber Workers
- Amalgamated Transit Union
- Transport Workers Union of America
- United Transportation Union

Mr. Samuels of IUD urged that everyone be informed of existing, easily applicable control measures. Mr. Meyers suggested any research on control technology be built upon their asbestos safety bulletin.

Mr. Angelo Defalo of IAW discussed the need to inform affected locals and union members in an orderly fashion. Mr. Defalo stated that

the needed research program should be planned and funded. He offered his assistance in obtaining any needed support for this program.

Dr. Mancuso of the University of Pittsburgh at the request of the International Association of Machinists conducted a pilot study of death records and identified in 1973 a mesothelioma case (proven by autopsy) of a garage mechanic and another case of pleural mesothelioma in a millwright who was blowing out asbestos, friction-type clutches, with compressed air at a paper company. Dr. Mancuso felt the nature of the death records was such that other cases of mesothelioma may exist but are unrecognized. He spoke of the need to use this opportunity to develop an effective industrial medical surveillance system.

Herb Northrop of Ford asked that any alert bulletin place this problem in perspective — pointing out other recognized exposures to asbestos.

John Dement of NFSCI presented preliminary data from a NIOSH study showing peak exposures of up to 5 fibers/ml during brake drum blowing. He also showed peak lead levels of approximately 1.5 µg/ml during blowing operations. NIOSH electronmicroscopic studies of brake drum dust also showed a predominance of small asbestos fibers with most fibers being less than 1 micrometer in length. At a plant removing lined brake shoes, exposures of 20 fibers/ml (during grinding) and peaks of up to 10 fibers/ml during emptying of a drum containing old linings were observed.

Dr. Weaver of API offered to communicate with gasoline stations and he supported further studies of the problem and emphasized the need to use appropriate controls of NIOSH film reading techniques.

Ed Albaugh of International Harvester urged preparation of a joint release. Paul Toth of Ford offered to help with suggestions on control technology and in disseminating information from NIOSH on this matter to appropriate Ford Motor Company dealer relations personnel.

John Moran of EPA pointed out that disc brakes release more asbestos into the general environment than shoe brakes. He stated that the EPA expressway roadside study could look at asbestos levels along a gradient away from the expressway. Dr. Selikoff pointed out that braking, itself, may be important and that roadside studies should consider the effect of braking.

Dr. Mancuso was asked to comment on the needed health studies. He suggested an epidemiology study of the mortality experience of a cohort of unionized workers and their families. He emphasized need for extra care in the experimental design. He thought such a study would look for other cancers and occupational respiratory disease as well as asbestos-related disorders.

It was emphasized that workers were exposed to metals, plastic dusts (body shams), solvents and toxic gases like carbon monoxide. Dr. Mancuso recommended clinical studies in the same population of workers. He especially requested evaluation of so-called "nuisance dusts" which he claims may be more harmful than now realized. He emphasized need to look at workers who left the industry as well as those who are still employed.

Mr. Toth stressed the need to ascertain the role of tobacco smoking in any studies. Others agreed with him. Dr. Mancuso took exception to the undue emphasis on the smoking aspects, to the exclusion of proper recognition of the magnitude of inherent health risks due to the chemicals in dusts of the working environment.

Dr. Selikoff suggested seven areas for urgent study:

- Analysis of brake materials utilized since 1940 using literature survey and laboratory analysis (EPA/NIOSH).
- Broad based national industrial hygiene survey to assess exposures for various occupational tasks (NIOSH/OSHA).
- Epidemiologic studies of mortality experience of exposed workers from several sources (NIOSH). He suggested this receive the highest priority.
- Further clinical studies of 1,000 workers including suitable controls (NIOSH).
- Autopsy survey of lung asbestos burden of exposed workers in auto maintenance industry (NIOSH).
- Industrial hygiene measures to better control exposure (Joint effort of unions, industry and NIOSH).
- Education of workers to hazard and to use control measures (DOL/NIOSH).

Dr. Selikoff suggested that there be no delay in getting this program underway.

Dr. Joe Wagoner of NIOSH generally supported the discussed research program. He emphasized need for careful characterization of exposures to agents other than asbestos and the need to assure that limited research funds are used to answer some of our major remaining scientific questions about the effects of exposure to relatively low levels of short asbestos fibers. William Best of NCI offered his assistance and asked whether or not a case-control study might be of some help.

ATTENDEES

<u>Name</u>	<u>Affiliation</u>
Edward Alpaugh	International Harvester Company
Edward J. Baier	NIOSH
Otto A. Dessey, M.D.	Mr. Sinai
William Best, M.D.	National Cancer Institute
Hector Blejer, M.D.	NIOSH
Kenneth Bridbord, M.D.	NIOSH
Jack Butler, M.D.	NIOSH
Angelo Cafalo	International Association of Machine
John M. Dement	NIOSH
John F. Finkles, M.D.	NIOSH
Arthur Langer, M.D.	Mr. Sinai
William Lorimer, M.D.	Mr. Sinai
Thomas F. Mancuso, M.D.	University of Pittsburgh
Samuel Meyers	Local 250, IAW
John Moran	EPA
Herb Northron, M.D.	Ford Motor Company
Arthur Rohl, M.D.	Mr. Sinai
Sheldon Samuels	FWD/ATL-CIO
Irving J. Selikoff, M.D.	Mr. Sinai
Paul E. Toth	Ford Motor Company
Joseph Wagener, S.D. Hyg.	NIOSH
Neill Weaver, M.D.	American Petroleum Institute
George W. Wright, M.D.	Johns-Manville

1910.1001 ASBESTOS

A. Definitions

1. Asbestos - includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, actinolite.
2. Asbestos Fibers - Longer than 5 μ

B. Permissible Exposure to Airborne Concentrations

1. July 7, 1972 - 5 fibers/cc 8 hour TWA
2. July 1, 1976 - 2 fibers/cc 8 hour TWA
3. Ceiling Concentration - 10 fibers/cc

C. Methods of Compliance

1. Engineering Methods

- a. Engineering Controls - isolation, enclosure, exhaust ventilation, dust collection.
- b. Local Exhaust Ventilation - ANSI Z9.2-1971
- c. Particular Tools - All hand-operated and power-operated tools shall be provided with local exhaust ventilation systems.

2. Work Practices

- a. Wet Methods - use when feasible
- b. Particular Products and Operations - No asbestos cement, mortar, etc., shall be removed from containers without being either wetted, enclosed or ventilated to prevent release of fibers above standards.
- c. Spraying, Demolition or Removal - Employees involved in these processes shall be provided with respiratory equipment and with special clothing.

D. Personal Protective Equipment

1. Compliance may not be achieved by the use of respirators or shift rotation of employees, except:

- a. During time period installing engineering controls and to institute the work practices required.
 - b. Where work practices are not technically feasible or feasible to an extent insufficient to reduce the airborne concentration below the limits.
 - c. In emergencies.
 - d. Where the above three are allowed person rotation shall be used before respirators.
2. Respirators shall be NIOSH/MESA Approved.
- a. Air purifying respirators - use when levels are no more than 10 times limits.
 - b. Powered air purifying respirators - 10 times 100 times limits.
 - c. Type C supplied-air respirators - 100 times limits.
 - d. Establishment of a respirator program
 1. ANSI Z88.2-1969 1910.134
 2. Where to get ANSI
 3. No assignment if physician determines employee cannot function normally wearing a respirator or health impaired must rotate him to another job.
3. Special Clothing - shall provide and require use of special clothing (coveralls, head coverings, gloves and foot coverings) to employee which exceed ceiling level.
4. Change Rooms
- a. At any fixed place of employment exposed in excess of limits, the employer shall provide change rooms for employees working regularly at the place.
 - b. Clothes Lockers - shall provide two separate lockers or containers for each employee separated to prevent contamination of work and street clothes.
 - c. Laundering
 1. Shall be done so as to prevent release of fibers in excess of limits.
 2. Shall inform the laundress of asbestos presence and limits.

3. Contaminated clothes transported in sealed bags or containers and labeled.

E. Method of Measurement - All determinations shall be made by the membrane filter method at 400-450X (magnification) (4 millimeter objective) with phase contrast illumination.

F. Monitoring

1. Initial Determinations - Every employer shall cause every place of employment where asbestos fibers are released to be monitored in such a way to determine whether every employee's exposure is below the limits.
2. Personal Monitoring
 - a. Breathing zone samples on membrane filters of 0.8 µ mounted in an open face filter holder. Determine 8 hour TWA and ceiling values.
 - b. Sampling frequency and patterns - In no case shall sampling be done at intervals greater than 6 months for employees whose exposure may reasonably be foreseen to exceed the limits.
3. Environmental Monitoring
 - a. Areas representing exposure which may reach employees.
 - b. 6 months limits
4. Employee Observation of Monitoring - shall be allowed to observe monitoring and records.

G. Caution Signs and Labels

1. Caution Signs
 - a. Posting - Provided and displayed in area where concentration may be in excess of limits. Must give employee time to protect himself. Signs shall be posted at all approaches to areas containing excessive exposure.
 - b. Sign Specifications - Shall conform to the requirements of 20" x 14" vertical format signs 1910.145(d)(4)
2. Caution Labels
 - a. Labeling - Caution labels shall be affixed to all raw materials, wastes, etc., containing asbestos fibers not bonded.

b. Label Specifications.

H. Housekeeping

1. Cleaning - All external surfaces shall be maintained free of accumulations of asbestos fibers.
2. Waste Disposal - Asbestos waste consigned for disposal which may produce through handling concentrations of asbestos fibers in excess of exposure limits, shall be collected and disposed of in sealed impermeable bags or containers.

I. Recordkeeping

1. Exposure Records - Every employer shall maintain records of monitoring for at least 3 years. Available to OSHA, NIOSH.
2. Employee Access - Employee shall have reasonable access to records.
3. Employee notification - any employee found to have been exposed at any time to asbestos above the limits shall be notified in writing of the exposure not later than 5 days of the finding. Also, notified of the corrective action being taken.

J. Medical Examinations

1. General - Employer shall provide medical examinations relative to exposure to asbestos.
2. Preplacement - Employer shall provide to each of his employees within 30 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 (post-ant 14" x 17"), a history of respiratory diseases, and pulmonary function tests to include force vital capacity and forced expiratory volume at 1 sec.
3. Annual Examinations - Annually, 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. Shall include the minimum of a chest roentgenogram (14" x 17"), history of respiratory diseases and pulmonary function tests to include force vital capacity and forced expiratory volume at 1 sec.

4. Termination of Employment - within 30 days before or after termination of employment shall have the same minimum tests as above.
5. Recent Examinations - No medical exam is required of any employee if adequate records show that the employee has been examined within the past 1-year period.
6. Medical Records
 - a. Maintenance - maintain complete and accurate records of all medical examinations. Records shall be retained by employers for at least 20 years.
 - b. Access - records shall be made available to OSHA and NIOSH.

September 27, 1976

Mr. Barry White
Associate Assistant Director
Regional Programs
Occupational Safety & Health Administration
200 Constitution Avenue, NE
Washington DC 20210

Dear Mr. White:

I would very much appreciate an official interpretation of the following questions:

1. At what point is medical monitoring required when working with asbestos?
2. Does air sampling have to be done or is the mere fact that the employee is working with asbestos sufficient?
3. Would this apply to an employee who is working with an asbestos glove around a hot furnace?
4. When a company stops using asbestos and begins using fiberglass, are they required to continue medical monitoring for the asbestos exposure? Does the company have to show that there is no asbestos residual from previous operations?

Your expedient interpretation will be greatly appreciated.

Sincerely

Roger D. Tankersley 202-277-6111
x 5092

RETR:SR

11-11-76

*Added with official interpretation. See
with Mr. Barry White for further
information. (1) Response letter was
11/11/76 - 11/11/76*