FILE NAME: Brown & Root (BR)

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OFFICE MEMO

BROWN & ROOT, INC.

TO: Bill Lynch
FROM: Carl Richardson
SUBJECT: OSHA Asbestos Standard

DATE: April 5, 1978

As per our telephone conversation on April 4, 1978, I am enclosing a summary of the OSHA 1910.1001 Asbestos Standard.

In this standard, there are two items that must be done initially upon employee exposure to asbestos materials. First, air monitoring to determine employee exposure is a requirement. This sampling requires breathing zone sampling and area sampling to establish a Ceiling Level and a Time Weighted Average of exposure. The cost of this monitoring is expensive and the amount depends on the magnitude of exposure to our employees.

The charge to your jobsite for the Industrial Hygiene Department to sample would be approximately $150.00 per day plus expenses for travel. A minimum of a week of sampling time would be required, again depending on the number of employees and the operations involved. Also, laboratory fees for analysis are approximately $20.00 per sample with usually (2) 4-hour samples required per employee exposed in a given operation.

The second point I would like to emphasize is the medical surveillance requirements. The initial examination is required upon the employees' assignment to any exposure to asbestos fibers, whether it be above or below the Threshold Limit Value. This is substantiated by the Brown & Root Legal Department indicated in the enclosed Memo from Bill Bedman. The costs for such examinations and follow-ups would cost approximately $80.00 per man per year.

As you can see, the costs would be enormous for initiating such a program. Also, if monitoring showed exposure levels above the 2 fiber per cc limit, costs would be even higher to comply with the shower facilities, disposable clothing and change rooms requirements.

You can see why we recommend using a substitute material for asbestos. Also, it would be better for our clients to substitute because in future maintenance operations, employee's exposures would be eliminated.

If I can be of further assistance, please feel free to call.

COPY

Carl Richardson

Carl Richardson, Industrial Hygienist
Safety and Health Department

CR/db.

Enclosures

bcc: Fred J. Salmon
Bert Hale
File ✓

PLAINTIFF'S EXHIBIT
B&R-13

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 seperate lockers or containers for each employee seperated 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 u 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.