Nov 16 10 35 PM '73

Inter Office

General Services

November 16, 1973

F-20 — 89.50
F-26 — 147.00
F-27 ↔ 73 184.00

880 cubic feet room
Sealed 0" air cover

Mrs. L. Bates
Mr. J. K. Harrison
Mr. R. W. Harvey
Mr. J. D. Scheff

cc R. U. Oberinger

Subject: Controlling Asbestos Exposure

Paragraph 1910.93a of the Occupational Safety and Health Act concerning asbestos (copy attached) limits the amount of airborne dust exposure. We have found that one potential source of exposure involves air blow-off of brake linings during automotive brake maintenance.

Garage type repair functions are performed in areas under your jurisdiction. We are therefore seeking your assistance in establishing new safety regulations as follows:

Cleaning or "dusting" of brakes and brake components by means of compressed air is to be discontinued and prohibited as soon as possible. To accomplish this any future dust removal from brake assemblies is to be done by use of a "shop" vacuum available from Sears Roebuck and Company, Craftsman 45-gallon Heavy-Duty Industrial Vac with dolly and nozzle, Part No. 99KT 17831N. Accessory set, Part No. KT 16973, must be provided to afford proper and efficient removal of dusts. The entire cost is slightly less than $100.00. This unit has been thoroughly checked for effectiveness and is approved for vacuuming of asbestos by Industrial Hygiene Section and General Services Safety Activity. The attached procedure must be followed when the unit is emptied and contents discarded.

Henry Lick 22630
Paul Toth 22021

Should it become necessary to "dust" or clean brakes prior to receipt of the vacuum unit, each employe so involved must wear an approved dust respirator regardless of length of exposure to asbestos dust. Minnesota Mining and Manufacturing respirator, Model 8710, should be used for this purpose.

Your attention is directed to OSHA Paragraph 1910.93a (j) 1 through 6 of the attached Regulations concerning Medical Examinations and Records. Full compliance with this paragraph must be met.

Our Safety Activity will be happy to work very closely with you in effecting these changes in your maintenance procedures. If there are any questions you may have, or if we can be of assistance, please contact us.

PLAINTIFF'S EXHIBIT FD-14

Dale Gray

Jack R. Knauss 30367

J. R. Knauss

2110

TABLE G-2

Material	8-hour time weighted average	Acceptable ceiling concentration	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hour shift.	
			Concentration	Maximum duration
Benzene (Z37.6-1971)	10 p.p.m.	25 p.p.m.	50 p.p.m.	10 minutes.
Beryllium and beryllium compounds (Z37.29-1970)	2 µg./M.³	5 µg./M.³	25 µg./M.³	30 minutes.
Cadmium fume (Z37.5-1970)	0.1 mg./M.³	0.3 mg./M.³		
Cadmium dust (Z37.5-1970)	0.2 mg./M.³	0.6 mg./M.³		
Carbon monoxide (Z37.3-1968)	50 p.p.m.	400 p.p.m.	800 p.p.m.	Do.
Carbon tetrachloride (Z37.17-1967)	10 p.p.m.	25 p.p.m.	200 p.p.m.	5 minutes in any 4 hours.
Ethylene dibromide (Z37.31-1970)	20 p.p.m.	30 p.p.m.	50 p.p.m.	5 minutes.
Ethylene dichloride (Z37.21-1969)	50 p.p.m.	100 p.p.m.	200 p.p.m.	5 minutes in any 3 hours.
Formaldehyde (Z37.16-1969)	3 p.p.m.	5 p.p.m.	10 p.p.m.	30 minutes.
Hydrogen bromide (Z37.28-1969)	do.			
Fluoride as dust (Z37.28-1969)	2.5 mg./M.³			
Inorganic lead compounds (Z37.11-1972)	0.2 mg./M.³			
Methyl chloride (Z37.18-1969)	100 p.p.m.	200 p.p.m.	300 p.p.m.	5 minutes in any 3 hours.
Methylene chloride (Z37.20-1969)	500 p.p.m.	1,000 p.p.m.	2,000 p.p.m.	5 minutes in any 2 hours.
Organo (alkyl) mercury (Z37.30-1969)	0.01 mg./M.³	0.04 mg./M.³		
Styrene (Z37.15-1969)	100 p.p.m.	200 p.p.m.	600 p.p.m.	5 minutes in any 3 hours.
Trichloroethylene (Z37.19-1969)	do.	do.	300 p.p.m.	5 minutes in any 2 hours.
Tetrachloroethylene (Z37.22-1969)	do.	do.	do.	5 minutes in any 3 hours.
Toluene (Z37.12-1967)	200 p.p.m.	300 p.p.m.	500 p.p.m.	10 minutes.
Trichloroethylene (Z37.19-1969)	50 p.p.m.	75 p.p.m.	300 p.p.m.	10 minutes once only if no other measurable exposure occurs.
Mercury (Z37.8-1971)	1 mg./10M.³			
Carbolic acid and carbolates (Z37.7-1971)	do.			

TABLE G-3—MINERAL DUSTS

	Impinger	Midget
Silica:		
Crystalline:		
Quartz (respirable)	250 ÷ (%SiO₂+5)	10mg/M.³ ÷ (%SiO₂+2) mg./M.³
Quartz (total dust)	80 ÷ (%SiO₂+5)	3mg/M.³ ÷ (%SiO₂+2) mg./M.³
Cristobalite: Use ½ the value calculated from the formula for quartz.		
Tridymite: Use ½ the value calculated from the formula for quartz.		
Amorphous, including natural diatomaceous earth	20	80mg/M.³ ÷ %SiO₂
Silicates (less than 1% crystalline silica):		
Asbestos	5	
Kaolin	250	
Talc (non-asbestos form)	20	
Talc (asbestos): Use asbestos limit		
Tremolite (asbestos, fibrous)	5	
Portland cement	50	
Graphite (natural)	15	
Coal dust (respirable fraction) less than 5% SiO₂		2.4mg/M.³ ÷ %SiO₂+2
Portland cement		10mg/M.³ ÷ %SiO₂+2
Inert or Nuisance Dust:		
Respirable fraction	15	5mg/M.³
Total dust	50	15mg/M.³

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

The measurements under this note refer to the use of an AEC instrument. If the respirable fraction of coal dust is determined with a MRE the figure corresponding to that of 2.4 Mg/M³ in the table for respirable dust is 4.3 Mg/M³.

Notes: Conversion factors—
mppcf × 3.5 = million particles per cubic meter
mppcf = million particles per cubic foot

¹ Millionths of inches per cubic foot of air, based on impinger samples counted by the konimeter method.

² Percentage of crystalline silica in the formula is determined by the highest value obtained by any of the analyses listed in the standard, except that in those instances in which a mineral is present in excess of 1% and has been shown to be nonsilicated, it has been excluded.

³ As determined by the membrane filter method at 430 × dry (4 mm objective) magnification.

⁴ Unit conversion and percent quartz for the application of this limit are to be determined from the fraction passing a size-selector with the following characteristics:

⁵ Containing < 1% quartz; if > 1% quartz, use quartz limit.

§ 1910.93a Asbestos.

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

(2) "Asbestos fibers" means asbestos fibers longer than 5 micrometers.

(b) *Permissible exposure to airborne concentrations of asbestos fibers.*—(1) *Standard effective July 7, 1972.* The 8-hour time-weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed ten fibers, longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in paragraph (c) of this section.

(2) *Standard effective July 1, 1976.* The 8-hour time-weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed two fibers, longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in paragraph (c) of this section.

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

(c) *Methods of compliance.*—(1) *Engineering methods.* (i) *Engineering controls.* Engineering controls, such as, but not limited to, isolation, enclosure, exhaust ventilation, and dust collection, shall be used to meet the exposure limits prescribed in paragraph (b) of this section.

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

(b) See § 1910.6 concerning the availability of ANSI Z9.2-1971, and the maintenance of a historic file in connection therewith. The address of the American National Standards Institute is given in § 1910.100.

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

(2) *Work practices.*—(i) *Wet methods.* Insofar as practicable, asbestos shall be handled, mixed, applied, removed, cut, scored, or otherwise worked in a wet state sufficient to prevent the emission of airborne fibers in excess of the exposure limits prescribed in paragraph (b) of this section, unless the use of such wet methods would damage or render dangerous the product or cause unacceptable discomfort to employees if used thereby.

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

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

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

(i) During the time period necessary to install the engineering controls or to institute the work practices required by paragraph (c) of this section;

(ii) In work situations in which the methods prescribed in paragraph