PLAINTIFF'S EXHIBIT
UC-3609

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DEC 16 1983

UNION CARBIDE CORPORATION
Silicones & Urethane Intermediates
PERSONNEL SAFETY AND HEALTH
SOUTH CHARLESTON, WEST VIRGINIA

MEMORANDUM

December 15, 1983

To: T. G. Swanson

cc: W. E. Ballard
C. E. Fry
R. W. Holland, Jr., M.D.
D. G. Moshier
Maintenance Area Superintendents
Maintenance Department Heads
W. E. Williams

Subject: Amended Asbestos Standard

From: W. C. Young

Salient points of OSHA's emergency temporary standard on asbestos exposure most likely to impact on plant operations are listed below. The amended standard became effective November 4, 1983. At the end of a six-month period OSHA intends to adopt the new provisions permanently.

Please call me if there are any questions or if I can assist in compliance which, incidentally, may be achieved by any feasible combination of engineering controls, work practices, and personal protective equipment according to OSHA.

	CHANGE	PLANT STATUS
1.	Reduction of 8-Hr permissible exposure limit from 2 to 0.5 fibers per cc of air.	Plant exposure monitoring data appear substantially low and agree with the estimated range by OSHA (see attachment).
2.	Information/training for all employees exposed $>$ 0.5 f/cc.	Although not required on the basis of exposure monitoring, this is an on-going 327 Dept. activity. (A recommendation for consideration is that future training include elements of the amended standard. Outline attached.)
3.	The ETS limits use of our disposable respirators to airborne concentrations "not to exceed 5 f/cc or 10 x PEL." (This is a reduction from 20 f/cc, TWA_8.)	The magnitude of most asbestos-related jobs and relatively short duration of exposure potential are primary reasons that measured concentrations are within limits. (To ensure compliance in all cases will, in my judgement, require strict adherence to established procedures, especially use of effective wet methods for removal/demolition work. The latter practice is not consistently followed.)

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Table 1 (Cont.)

OSHA Estimate of Employee Exposure to Asbestos

Industry Segment	Number[a] of Exposed Workers	Number[a] of Plants	Current Exposure level f/cc
Repair and Maintenance			
Drywall removal, renovation, and demolition[e]	12955	1296	20.0
	38866	3887	0.2
Repair and maintenance involving asbestos removal	14845	1465	0.15
Maintenance workers in schools, chemical plants electrical generating plants and foundries	N/A	N/A	0.15
TOTAL WORKERS EXPOSED ABOVE 0.5 f/cc[f]			48,644
TOTAL EXPOSED WORKERS			375,399

[a] Population and facility estimates were based on the RTI report (Ex. 84-009) and updated to 1983 employment levels by JRB Associates.

[b] The number of plants in the SIC codes making up Secondary Fabricators (2451, 3357, 3523, 3531, and 3842) was derived by JRB Associates by taking the number of establishments with 20 or more employees, as listed in the Economic Information Systems data base for 1983, and expanding that number by the percent of establishments with fewer than 20 employees, as listed in County Business Patterns, 1980. Not knowing exactly how the 17,204 Secondary Fabrication (SF) workers and 4,304 SF plants were distributed among the 4 types of SF facilities, OSHA assumed that the workers and plants were distributed equally among the 4 types of SF facilities.

[c] Assumed that 20% of 3045 shipbuilding/repair workers are not in compliance with current respirator requirements. Hence, the number of workers was adjusted to reflect the 20% of exposed workers.

[d] Assumed average firm employs 9-10 workers as is true of SIC 17 (construction, special trade contractors).

[e] Assumed that 25% of 51820 drywall removal, renovation, and demolition workers are not in compliance with current respirator requirements. Hence, the number of workers was adjusted to reflect the 25% of exposed workers.

[f] This figure excludes segments that are in compliance with 0.5 PEL such as floor tile, brake repair, roofing felts, and repair and maintenance.

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respirators, and to assure that all such employees participate in the program and are informed of specified categories of information. OSHA considers this provision to be "necessary" within the meaning of section 6(c) of the Act, to reduce the grave danger faced by asbestos exposed employees. The absence of a training program requirement in the asbestos standard has been pointed out as one of the serious deficiencies of the current standard. OSHA believes that participation in an adequate training program is essential for the protection of employees because most protective provisions enlist the employee as an active participant. For example, many employees handling asbestos depend on effective work practices. Without training in applying these work practices, employee protection would be inadequate. Where the employee plays a more passive role in his protection such as where engineering controls are relied on, training is also essential, because the employee must know the sources of workplace asbestos contamination, and the health hazards of asbestos exposure, in order to assess his own exposure situation and to help recognize when engineering controls are not operating properly. Certainly where housekeeping plays an important role in control, instruction about housekeeping methods, for example, frequent vacuuming, is essential. Perhaps most importanly, where employee protection depends upon respirator use, OSHA's experience shows that training employees in the use, fitting and limitations of respirators is critical to the effectiveness of respirator protection. Accordingly this requirement applies where airborne concentrations are reasonably expected to exceed 0.5 f/cc, even if employees use respirators to reduce breathing zone concentrations and thereby comply with the ETS.

As set forth in paragraph (k)(4) the employer must inform the employee of the health effects of asbestos exposure; the relationship between asbestos and smoking in producing lung cancer; the operations exposing employees to asbestos fibers and necessary protective steps to minimize exposure; the purpose, proper use, fitting instructions and limitations of respirators, and the contents of all the provisions of the Asbestos Standard at 1910.1001.

5. *Paragraph (k)(5) Respiratory protection during the ETS.* The ETS adds a new paragraph (k)(5) which includes a table which ties respirator selection to the 0.5 f/cc PEL. Under the ETS, the concentration cut-offs for various kinds of respirators are multiples of the reduced PEL of 0.5 f/cc, rather than multiples of the previous 2 f/cc permissible limit. For example, approved air purifying respirators may be used only where asbestos concentrations are not expected to exceed 5 f/cc (10 x the PEL). Before the ETS, because the PEL was 2 f/cc, such respirators could be used where asbestos concentrations would not have exceeded 20 f/cc (10 x the PEL of 2 f/cc).

Similarly, powered air purifying respirators may be used where asbestos concentrations do not exceed 100 times the PEL, which at the new level of 0.5 f/cc is 50 f/cc. Previously, employers could have used such respirators at concentrations up to 200 f/cc.

It is likely that the main impact of the reduced PEL on respirator choice will be in operations and industries where exposure levels are between 5 f/cc and 20 f/cc. Formerly, employees exposed in this range could use half-mask air purifying respirators; now they must be protected by a powered air purifying respirator or a full facepiece respirator, or they may use a supplied air respirator.

6. *Paragraph (k)(6). Warning signs during the ETS.* The ETS requires that legible signs warning of the health hazards of asbestos be displayed at locations where airborne concentrations of asbestos fibers exceed the reduced exposure limit of 0.5 f/cc. No specific legend is required signs for newly posted during the ETS. OSHA wishes to make as practicable as possible the rapid posting of signs, especially in workplaces where there has been previous non-compliance and in areas where asbestos concentrations were formerly below the 2.0 f/cc PEL.

XI. Public Participation

Interested persons are invited to submit written data, views and arguments with respect to the revisions to the asbestos standard made by the ETS. These comments must be postmarked on or before January 3, 1984 and sent to the Docket Officer, Docket No. H-033C, Occupational Safety & Health Administration, U.S. Department of Labor, 200 Constitution Avenue, NW., Room S-6212, Washington, D.C. 20210.

The data, views and arguments that are submitted will be available for public inspection and copying at the above address. All timely written submissions will be made a part of the record of the proceeding.

List of Subjects in 29 CFR Part 1910

Occupational safety and health Asbestos, Health, Emergency temporary standard, Cancer.

Authority and Signature

This document was prepared under the direction of Thorne G. Auchter, Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, 200 Constitution Avenue, NW, Washington, DC 20210. Pursuant to Sections 6(b), 6(c), 8(c) and 8(g) of the Act, 29 CFR 1910.1001 is amended by adding a new paragraph (k) as set forth below.

(Secs. 6(b), 6(c), 8(c) and 8(g), Pub. L. 91-596, 84 Stat. 1593, 1596, 1599, 1600; 29 U.S.C. 655, 657; Sec. 107, Pub. L. 91-54, 83 Stat. 96 (40 U.S.C. 333); 29 CFR Part 1911; Secretary of Labor's Order No. 9-83 (48 FR 35736))

Signed at Washington, D.C., this 2nd day of November 1983.

Thorne G. Auchter,

Assistant Secretary of Labor.

PART 1910—[AMENDED]

Section 1910.1001 of Part 1910 of Title 29 of the Code of Federal Regulations is hereby amended by adding a new paragraph (k) reading as follows:

§ 1910.1001 Asbestos.

* * * * *

(k) *Emergency temporary standard effective November 4, 1983.*—(1) *Scope.* This emergency temporary standard is issued pursuant to section 6(c) of the Act and applies to all workplaces where employees may be exposed to asbestos in all industries covered by the Act, including, general industry, construction and maritime. Except to the extent modified by this emergency temporary standard all provisions of § 1910.1001 remain in effect.

(2) *Permissible levels of exposure.* The 8-hour time-weighted average airborne concentration of asbestos fibers to which any employee may be exposed shall not exceed one-half (0.5) fiber, longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in paragraph (e) of this section.

(3) *Methods of compliance with the emergency temporary standard.* Notwithstanding any other requirements of this section, compliance with the reduced exposure limit of 0.5 f/cc shall be achieved by any feasible combination of engineering controls, work practices, and personal protective equipment and devices.

(4) *Employee information and training.*—(i) As soon as possible, but not later than thirty (30) days from the effective date of this emergency temporary standard, the employer shall institute a training program for all employees exposed to airborne concentrations of asbestos in excess of

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0.5 f/cc. without regard to the use of respirators and shall assure their participation in the program during the effective period of this emergency temporary standard.

(ii) The employer shall assure that each such employee is informed of the following:

(A) The health effects associated with asbestos exposure;

(B) The relationship between asbestos and smoking in producing lung cancer;

(C) The nature of operations which could result in exposure to asbestos and necessary protective steps to minimize exposure including, as applicable, engineering controls, work practices, respirators, housekeeping and protective clothing;

(D) The purpose, proper use, fitting instructions and limitations of respirators permitted by the standard; and

(E) A review of all the provisions contained in 1910.1001.

(5) *Respiratory protection during the ETS.* Notwithstanding any other requirement of this section, where respirators are used to achieve the permissible exposure limit of 0.5 f/cc they shall be selected according to Table 1.

(6) *Warning signs during the ETS.* In addition to the requirements of paragraph (g)(1) of this section, legible signs warning of the health hazards of asbestos shall be provided and displayed at each location where airborne concentrations of asbestos fibers may exceed 0.5 f/cc.

TABLE 1

Respiratory Protection

For Airborne Concentrations of Asbestos

Airborne Concentration of Asbestos (TWA)	Required Respirator[1]
Not in excess of 5 f/cc (10 X PEL)	Reusable or single use air purifying respirator
Not in excess of 50 f/cc (100 X PEL)	Full facepiece air purifying respirator, or a powered air purifying respirator
Greater than 50 f/cc	A type "C" continuous flow or pressure demand, supplied air respirator.

[1] Respirators specified for high concentrations may be used at lower concentrations of asbestos.

(Secs. 6(b), 6(c), 8(c) and 8(g), Pub. L. 91-596, 84 Stat. 1593, 1599, 1600; 29 U.S.C. 655, 657; Sec. 107, Pub. L. 91-54, 83 Stat. 96 (40 U.S.C. 333); 29 CFR Part 1911, Secretary of Labor's Order No. 9-83 (48 FR 35736))

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