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PLAINTIFF'S EXHIBIT
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INDUSTRIAL HYGIENE | **BULLETIN No. 126**

January 09, 1987

OSHA ASBESTOS STANDARD

On June 20, 1986, the Occupational Safety and Health Administration (OSHA) published its final standards on asbestos. The first, the General Industry Standard, deals with asbestos in the workplace. The other standard addresses asbestos encountered on construction work. Under both standards, the Permissible Exposure Level (PEL) for asbestos has been reduced from 2.0 fibers/cc to 0.2 fiber/cc, a ten-fold decrease. The new standards also incorporate an action level of 0.1 fiber/cc for asbestos exposure which triggers duties involving monitoring, medical surveillance, and employee training. The Reynolds policy on asbestos provides that:

1. No new asbestos-containing products should be purchased where there are feasible substitutes.

2. Asbestos-containing materials already in place, and in good repair, should be properly maintained to avoid employee exposure.

3. All asbestos-containing products in poor repair, or those likely to generate employee exposure, should be replaced with feasible substitutes, in accordance with approved asbestos removal procedures.

4. If there are no feasible substitutes, (or if asbestos removal would generate unacceptable levels of exposure,) appropriate engineering controls, maintenance procedures, and work practices shall be implemented to prevent employee exposure when handling asbestos-containing material.

Since Reynolds Metals Company no longer purchases asbestos, except in cases where there are no feasible substitutes, such as brake shoes and clutch linings, our primary concern is the asbestos that is in place, i.e. pipe and furnace insulation, etc.

Recently, a memo from Bill Strain of Central Engineering was sent to plant engineers, asking for a status report and a cost/time estimate for work that will be required to ensure compliance with the new regulations. Whenever this information is completed, priorities will be established regarding the removal and/or repair of asbestos at each of our facilities. In addition, asbestos contractors are being identified by Corporate Purchasing, to facilitate future asbestos related projects.

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For the most part, asbestos related exposure within Reynolds will fall under the Construction Standard for asbestos, which pertains to projects related to the installation, construction, alteration, repair, maintenance, transportation, and demolition of asbestos-containing materials. The Construction Standard becomes effective January 20, 1987.

For your information, attached is a comparison of the old asbestos standard with the new Construction and General Industry Standards. The following is an explanation of the Construction Standard, where exposures exceed the 0.1 f/cc action level:

1. EXPOSURE MONITORING - Any construction or maintenance operations where asbestos is present could cause asbestos exposure in excess of the action level. (Monitoring is required whenever asbestos fibers may be released.) The Engineering Estimating Sheet, accompanying Bill Strain's Dec. 22, 1986, memo, will be used by Industrial Hygiene, to determine whether monitoring will be necessary during removal/repair. In addition, certain plants may be targeted for a follow-up audit, based on information gained from that survey.

2. EMPLOYEE NOTIFICATION - If exposures exceed the action level, the OSHA standards require that affected employees be notified. The notice obligation can be fulfilled by posting exposure results at an appropriate location or by sending employees individually-addressed letters with exposure results. Notice to employees should be issued as soon as possible. Enclosed is a sample letter which can be constructed to meet the requirement for employee notification. A record of the employee notification should be retained in Personnel, with a copy sent to Plant and Corporate Medical.

3. SAMPLING AND MEASUREMENT - The sampling and analytical procedures in the new OSHA asbestos standards have been extensively modified to provide better precision and accuracy. If it is necessary to monitor, Industrial Hygiene should be contacted, to initiate these new procedures.

4. EMPLOYEE INFORMATION AND TRAINING - All employees who will be exposed above the action level must receive training prior to assignment to the affected jobs. Employees must have annual refresher training, thereafter, as long as they are exposed above the action level. Industrial Hygiene should be contacted, for the training aids to meet these requirements.

5. PERSONAL PROTECTIVE EQUIPMENT - Employees exposed at or above the action level must be provided with appropriate respiratory protection and protective clothing. Air-purifying respirators are required to have high efficiency filters. No single-use disposable respirators are allowed.

6. MEDICAL SURVEILLANCE - The Construction Standard requires that employees exposed above the PEL must be offered preplacement and annual medical examinations. Employees exposed above the action level for 30 or more days per year must be offered a medical examination within 10 working days after the 30th day of exposure, and annually, thereafter.

   The General Industry Standard, however, requires that all employees exposed above the action level be offered preplacement, annual, and termination medical examinations.

   a. Preplacement Examination - Preplacement examinations refer to examinations prior to placement on jobs having asbestos exposure above the pertinent levels. Preplacement examinations should not be confused with preplacement physicals, which are given as part of the hiring process. The preplacement examination offered to affected employees must include a medical and work history; a complete physical examination of all systems, with emphasis on the respiratory, cardiovascular, and digestive systems; a respiratory disease questionnaire, which appears in Appendix D, Part I; a chest x-ray (posterior/anterior, 14" x 17"); a pulmonary function test, including forced vital capacity (FVC) and forced expiratory volume at one second (FEV 1.0); and any other additional tests deemed appropriate by the examining physician. Interpretation and classification of chest x-rays must be performed by a Class B radiologist.

   b. Periodic Examination - The periodic medical examination must be offered to affected employees annually and must include all the items listed in the preplacement examination. However, chest x-rays for periodic examinations should be scheduled in accordance with the following table:

Frequency of Chest Roentgenograms

Years Since First Exposure	Age of Employee 15 to 35	35+ to 45	45+
0 to 10	Every 5 years.	Every 5 years.	Every 5 years.
10+	Every 5 years.	Every 2 years.	Every 1 year.

c. Termination of Employment Examination - Termination examinations are not required for employees operating under the Construction Standard; however, those employees previously identified as having asbestos exposure must be offered a termination of employment examination. This termination examination must include all items listed in the preplacement examination as indicated in Item "a."

d. Record Keeping - A list of employees determined to have asbestos exposure at or above the action level must be maintained by Medical, in order to ensure adequate follow-up for medical surveillance. This list should be continually updated and a copy should be sent to Corporate Medical.

e. Physician's Written Opinion - When employees are given preplacement, periodic, or termination examinations in accordance with the OSHA Asbestos Standards, the examining physician must advise the employee about his findings and provide a written opinion regarding any medical condition relating to asbestos exposure.

Removal/repair projects which would be expected to produce asbestos exposures greater than the OSHA limit of 0.2 f/cc will require regulated areas, enclosures, engineering controls, work practices, and personal protective equipment. It is obvious that working with asbestos-containing materials will be extremely costly and compliance with the OSHA standard for removal/repair projects quite extensive and burdensome.

Given the restrictions as outlined above, it will be preferable to utilize outside contractors to perform any work where the exposures may exceed 0.2 f/cc. For those situations where an outside contractor is being used, Industrial Hygiene has developed a Contractor Asbestos Audit Form, to ensure the contractors' compliance with OSHA and RMC guidelines. The form should be used by the individual (i.e., the engineer) at the plant who is responsible for monitoring the contractor's progress.

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In order to ensure that all employees are informed of the presence of asbestos in the workplace, all insulation (pipe, bulk, etc.) containing asbestos is to be labeled. The label shall contain the following information:

DANGER

CONTAINS ASBESTOS FIBER

AVOID CREATING DUST

This label will be available from Corporate Creative Services. (Order #R-342-58.) Labeling should be applied where confusion may occur, such as close to valves or flanges and adjacent to changes in direction, branches, and where pipes pass through walls, floors, or ceilings. Labeling is to be applied at the beginning and end of continuous pipe runs and every 75 feet where runs are longer.

This Industrial Hygiene Bulletin incorporates the new OSHA Asbestos Standards into the Reynolds policy on asbestos and outlines the procedures that should be followed to implement the new OSHA standard. Attached is a copy of the OSHA standards on asbestos.

If you have any question regarding this information or its application, please contact Industrial Hygiene.

Homer M. Cole

Homer M. Cole
Director
Industrial Hygiene

Attachments
Distribution: EH-1
Division Engineers
Plant Engineers

SAMPLE LETTER

FOR EMPLOYEE NOTIFICATION

OF ASBESTOS MONITORING RESULTS

(Date)

To: (Employee Name)
(Plant)

On (Date), we monitored you for asbestos exposure. Results of that evaluation indicate the following:

_____ Less than 0.1 fiber/cc.
Therefore, no OSHA limits were exceeded.

_____ Greater than 0.1 fiber/cc, but less than 0.2 fiber/cc, 8-hour time-weighted average.
Therefore, the OSHA "action level" was exceeded.

_____ Greater than 0.2 fiber/cc, 8-hour time-weighted average.
Therefore, the OSHA Permissible Exposure Limit was exceeded.

In keeping with our policy of protecting our employees' health, it should be noted that, during this project, you were adequately protected from asbestos exposure by use of personal protective equipment (i.e. disposable protective clothing and a NIOSH-approved respirator).

Should you need further information, feel free to contact me.

_____
Personnel Director

COMPARISON OF OSHA ASBESTOS STANDARDS

SUBJECT	OLD OSHA STANDARD	NEW OSHA GEN. INDUS. STD.	NEW OSHA CONSTRUCTION STD.
SCOPE:	General Industry and Construction	All industries covered by OSHA, except Construction.	All construction work.
DEFINITIONS:	Asbestos: Chrysotile, Amosite, Crocidolite, Tremolite, Anthophyllite, Actinolite	Same, plus these minerals that have been chemically treated or altered.	Same definitions as General Industry, including additional terms for construction.
	Asbestos fiber: Longer than 5 micrometers	Same, plus 3:1 length/diameter ratio.	Area, demolition, renovation.
		Action level: 8-hour TWA of 0.1 fiber/cc.	
		Authorized person: Anyone authorized by employer and required to be in regulated area.	
		Employee Exposure: Exposure if employee was not using respirator.	
		High efficiency filter: Traps and retains 99.97% of 0.3 micrometer dia. particles.	
		Regulated Area: Area where airborne levels can reasonably be expected to exceed PEL.	
PERMISSIBLE EXPOSURE LIMITS (PEL):	2 fibers/cc 10 fibers/cc, ceiling	0.2 fibers/cc	0.2 fibers/cc

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COMPARISON OF OSHA ASBESTOS STANDARDS

SUBJECT	OLD OSHA STANDARD	NEW OSHA GEN. INDUS. STD.	NEW OSHA CONSTRUCTION STD.
MONITORING:	Initial determination: Personal. Environmental, not less than 6 mos., if above PEL or if process changes. Employee observation.	Same, except no environmental monitoring. Frequency not less than 6 mos., if exposure exceeds action level. Employee observation. Employee notification of results (15 days).	Initial monitoring, exception previous job results. Periodic - Daily, unless supplied air used or less than action level. Employee notification, ASAP. Employee observation.
REGULATED AREA:	Caution signs, if PEL exceeded.	Regulated area above PEL. Must be demarcated. Access limited to authorized persons. Must use respirator. No eating, smoking, etc.	Same - additional requirement for demolition and removal. Shall use negative pressure enclosures, where feasible. Designate competent person to supervise area.
METHODS OF COMPLIANCE: (Engineering)	Engineering controls used when PEL exceeded. Power tools. Work practices: Wet methods. Removing from bags. Employee rotation is allowed (Personal Protective Equipment under some conditions).	Engineering controls used when PEL exceeded. If not feasible, controls shall be used to reduce to lowest possible level and supplement with respirators. Power tools, same. Wet methods. Spray methods of asbestos shall not be used. Compressed air shall not be used to remove asbestos, unless ventilation used to capture dust. Establish and implement written program. Employee rotation not allowed.	Employer shall use one or combination. Local exhaust ventilation (with HEPA filters) dust collection. General ventilation. Vacuum cleaner w/HEPA. Enclosures or isolation. Wet methods. Disposal in leak-tight container. Prohibitions: High speed saws without appropriate engineering controls. Compressed air without ventilation. Spray methods. Employee rotation.

COMPARISON OF OSHA ASBESTOS STANDARDS

SUBJECT	OLD OSHA STANDARD	NEW OSHA GEN. INDUS. STD.	NEW OSHA CONSTRUCTION STD.
PERSONAL PROTECTIVE EQUIPMENT:	Allowed during installation of engineering controls, when engineering controls are not technically feasible, in emergencies.	Same as old standard.	Same as old standard.
	Respirators: Establish program. Must be physically capable. Approved respirator: Single use, less than 10 x PEL. Powered air-purifying respirator, greater than 10 but less than 100 x PEL. Supplied air, greater than 100 x PEL.	Respirators: Establish program. Physician approval. Change filters. Allowed to wash face. Required fit testing. Approved Respirator, No single use (Disposable). At less than 10 x PEL: 1/2 face, with high efficiency filter (See Table 1 in Standard.) Employer must supply powered air-purifying respirator, when employee chooses and protection level is adequate. Above PEL: All appropriate personal protective equipment.	Respirators: Same as General Industry Standard.
	Clothing: If ceiling level exceeded: Laundry-sealed containers. Notification to person.	Clothing: Removal, only in change rooms. Stored in closed containers. Clean or replace weekly. No shaking or blowing. Must notify launderer. Must be in sealed container.	Clothing: Same, except: Demolition and removal operation. Competent person shall periodically examine for rips or tears, and mend or replace.

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COMPARISON OF OSHA ASBESTOS STANDARDS

SUBJECT	OLD OSHA STANDARD	NEW OSHA GEN. INDUS. STD.	NEW OSHA CONSTRUCTION STD.
HYGIENE FACILITIES:	Fixed locations must provide change rooms with two separate lockers, when greater than PEL.	Same as old standard. Additionally, showers are required. Employees must not leave wearing contaminated clothes.	Same, except: Specific requirements for demolition removal projects (exception for small-scale, short duration operations).
		Greater than PEL: Must provide lunchrooms. Positive pressure, filter air. Employees wash hands and faces, prior to eating and smoking. Employees must clean by vacuuming or other non-dust-producing method.	Greater than PEL: Employer shall provide lunch area where asbestos is less than action level.
SIGNS AND LABELS:	Signs shall be displayed where asbestos may exceed PEL. Post at all approaches. Be able to take necessary precautions before entering. Specific size and lettering.	Same as old standard. No size requirements, if signs are large enough to properly warn employees. Language change now contains cancer and lung disease.	Same as General Industry Standard.
	Labels shall be affixed to all raw materials, scraps, etc., unless modified by bonding agent. Label specifications listed.	Labels: Same as old standard. Language change.	

COMPARISON OF OSHA ASBESTOS STANDARDS

SUBJECT	OLD OSHA STANDARD	NEW OSHA GEN. INDUS. STD.	NEW OSHA CONSTRUCTION STD.
HOUSEKEEPING:	Maintain free of accumulation which might cause overexposure.	Same as old standard, plus: Spills or releases cleaned up ASAP. May not use compressed air. Vacuum using HEPA filter. Shoveling, sweeping, dry cleanup may be used only where wet or vacuuming not feasible.	Use HEPA vacuum and empty in manner that minimizes re-entry of asbestos.
	Waste disposed in sealed impermeable bags or containers.	Waste disposal, same.	Same.
MEDICAL EXAMS:	Preplacement: Shall provide or make available within 30 days of first employment exposed to asbestos greater than 0.1 f/cc. History. X-ray. Pulmonary function. Annually, provide or make available. Termination: Provide or make available, unless employee has been examined in past year.	Same, except: Preplacement exam shall be provided or made available, before assignment. Frequency of x-rays is less in accordance with Table 2 in Std. Employer provide M.D. with standard and appendices, job duties, exposure level, Preplacement Exam to be used, previous medical info not otherwise available. Physician's written opinion with regard to asbestos exposure. (Signed.) Limitations on Personal Protective Equipment use. Statement that employee has been informed of results and any asbestos condition. Shall not reveal in writing unrelated diseases. Copy to employee within 30 days.	Generally same, except: Greater than 30 day/year above action level or wears an air-purifying respirator. Prior to assignment where negative respirators are used. Within 20 working days after 30th day above action level. Annually or more frequent, if physician prescribes. No physical, if adequate records show examination in past one year. Content: Pulmonary, Cardiovascular, Gastointestinal. Info to physician same as General Industry Standard.

COMPARISON OF OSHA ASBESTOS STANDARDS

SUBJECT	OLD OSHA STANDARD	NEW OSHA GEN. INDUS. STD.	NEW OSHA CONSTRUCTION STD.
RECORDS:	Shall retain for 20 years.	Exposure: 30 years. Medical: Duration of employment plus 30 years. Training: 1 year beyond last employment date.	Same as General Industry Standard.
	Employee access: Through OSHA access regulation.	Same as old standard.	Same as old standard.
EMPLOYEE INFORMATION AND TRAINING:	None.	Employees exposed above action level must be trained prior to or at the time of initial assignment in all aspects of asbestos. Employer must have MSDS. Training generally consistent with OSHA Hazard Communication Standard.	Generally the same, except: Training not required prior to initial assignment, if employee has received equivalent training within previous 12 months.
COMMUNICATION AMONG EMPLOYERS:	None.	No requirements, except as required by OSHA Hazard Communication Standard.	On multi-employer worksites: Employer who is required to establish a regulated area shall inform other employers of the nature, existence, and requirements of asbestos regulated areas.

COMPARISON OF OSHA ASBESTOS STANDARDS

SUBJECT	OLD OSHA STANDARD	NEW OSHA GEN. INDUS. STD.	NEW OSHA CONSTRUCTION STD.
APPENDICES:	None.	A - OSHA reference method (ORM). - Procedure for analyzing air sample (mandatory).	A - Same.
		B - Detailed procedure for sampling and analysis (non-mandatory).	B - Same.
		C - Qualitative and Quantitative respirator fit testing (mandatory).	C - Same.
		D - Medical Questionnaire (mandatory).	D - Same.
		E - Interpretation and classification of chest x-ray (mandatory).	E - Same.
		F - Work practice and engineering in auto brake repair (non-mandatory).	F - Work practice and engineering for major asbestos removal (non-mandatory).
		G - Technical asbestos information (non-mandatory).	G - Small scale, short duration asbestos removal (non-mandatory).
		H - Asbestos medical surveillance guidelines (non-mandatory).	H - Technical asbestos information (non-mandatory).
			I - Asbestos medical surveillance guidelines (non-mandatory).

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