PLAINTIFF'S EXHIBIT
WV-06384

Ford Manufacturing Guideline	Subject:	Number G3-19
	RECOMMENDED WORK PRACTICES FOR HANDLING ASBESTOS	Date September 1981
		APPLICABLE TO:
		MANUFACTURING ENGINEERING
		X PLANT ENGINEERING
		QUALITY CONTROL
		X Operating Management
☒ New ☐ Revised	Issued by Plant Engineering Office	Effective: Immediately

1. SCOPE

Asbestos is a recognized human carcinogen. The permissible exposure level (PEL) set by OSHA is 2.0 fibers per cubic centimeter for an 8 hour time-weighted-average and 10 fibers ceiling concentration per cubic centimeter of air for fibers longer than 5 microns as protection against asbestosis or scarring of lung tissues. A lower PEL has been proposed. Medical monitoring of employes must be conducted when 8-hour average exposures to dust exceed 0.1 fibers per cubic centimeter.

This guideline outlines a basic approach for limiting employe exposure to asbestos fibers during inspection and repair operations. A slide-tape asbestos training program is available to all components from Employe Health Services.

2. APPLICATION

This Guideline is directed to all Company operations. Manufacturing Guidelines are available upon request to all Company subsidiaries and affiliates.

3. GENERAL

A potential hazard exists wherever asbestos is cut, ripped, drilled, ground, or handled in any way which causes dust to become airborne. The best way to minimize asbestos exposure is to follow good work practices and use equipment designed to protect employes from breathing asbestos.

When asbestos materials are being replaced (i.e. thermal insulation on pipes) or when new facilities or additions are being planned, non-asbestos materials should be utilized. Asbestos materials should be used only when no substitute is available. Some substitutes are listed in this Guideline. Company research projects are presently underway to identify additional substitutes.

CFR 61.20, Subpart B, establishes the requirement that the local EPA Administrator be notified prior to the start of demolition or renovation activities involving asbestos. Contact the Stationary Source Environmental Control Office in order to insure that this requirement is met.

4. WORK PRACTICES

Under the provisions of the OSHA standard, strict work practices and special equipment are required when asbestos is handled in such a way as to cause potential employe exposure to airborne fibers and dust. The following work practices are required when airborne concentrations of asbestos fibers may exceed exposure limits.

* If more than three years old, see Manual Index for latest review date.

COATES V FORD - 3199

PLAINTIFF'S EXHIBIT
31751.0

PRODUCED BY FORD IN COATES

PRODUCED BY FORD IN COATES

SCF-FORD-3146

4.1 Pipe Insulation

Most pipe insulation installed prior to 1960 contains asbestos. Generally maintenance and/or replacement of insulated pipes requires removal of the asbestos covering. To minimize the release of asbestos fibers into the air and decrease potential employe exposure, the following work practices must be followed:

4.1.1 All employes removing asbestos pipe insulation must wear approved respirators and special clothing. This is not only a good work practice, it is a requirement of OSHA regulation 29CFR 1910.1001 (C)(2)(iii). Contact Industrial Hygiene and Toxicology for information on approved respirators.

4.1.2 OSHA regulation 1910.1001 contains explicit requirements and work practices which must be followed when the potential for asbestos exposure can occur. The regulation provides details on: respirator programs, change rooms and clothes lockers, area and personal sampling requirements, caution signs and labels, housekeeping, waste disposal, medical recordkeeping and medical examinations. This regulation must be consulted and followed.

4.1.3 Isolate the repair area to keep other employes as far as possible from the repair operation. The surfaces to be repaired must be wetted down where possible or treated with commercially available dust suppressant to control dispersion of asbestos fibers. Wet methods of dust suppression are most effective in controlling exposure to airborne fibers.

4.1.4 Place plastic sheeting on the floor beneath the repair site so that all pieces of insulation, however small, can be collected when finished. Pedestrian and vehicular traffic can redisperse asbestos into the air if pieces are left on the floor. Pieces of equipment, structures, etc., which are covered with friable asbestos material must be wetted down and must not be thrown or dropped during removal.

4.1.5 If it is necessary to sweep the asbestos, the floor must be wetted down to keep the fibers from becoming airborne. Approved vacuum cleaners must be used to clean the floor of any remaining dried asbestos dust and small pieces of material. Industrial Hygiene and Toxicology can recommend approved, highly efficient vacuum cleaners.

4.1.6 All waste, scrap, and debris, as well as asbestos-contaminated clothing, must be wetted and placed in sealed, impermeable bags or containers for proper disposal. No asbestos-containing insulation should be placed in open trash containers or dumpsters. All waste material containing asbestos or containers into which waste is placed for disposal must be labeled in accordance with OSHA Standard 1910.1001 (G)(2)(i)(ii). See Section 4.4.6 for disposal requirements.

4.1.7 Because asbestos fiber can be dispersed throughout adjacent areas by ventilation systems, air-supply fans in the vicinity of asbestos removal projects should be turned off; exhaust fans should be left on (unless these fans are part of an air recirculation system) to keep the area under negative pressure. Any grinding or cutting of asbestos containing material must be done with local exhaust ventilation which conforms to OSHA Standard 1910.1001.

COATES V FORD - 3192

PRODUCED BY FORD IN COATES

PRODUCED BY FORD IN COATES

4.1.8 When repair operations are complete, if the pipe must be reinsulated, asbestos containing products are not to be used for two reasons: (a) cutting and fitting of asbestos-containing insulation can generate significant amounts of airborne asbestos fiber even though it cannot be seen, and (b) asbestos may be banned from use completely except where suitable substitutes are not available.

4.1.9 Currently, there is not any one material on the market which can be substituted for asbestos in all of its applications. It is expected that manufacturers will produce substitute materials. There are insulation substitutes currently on the market and some are listed in "Mechanical Design and Equipment Standards" (Plant Engineering Office, Manufacturing Staff, Page M9-1, January 1976). Typical substitutes are listed below:

4.1.10 Steam Piping

Inside Boilerhouses

Manufacturer	Acceptable Material
Certain-Teed Saint Gobain (CSG)	Snap-On (to 450 F)
Johns-Manville	Calcium Silicate
Owens-Corning	Kaylo
Celotex Corporation	Careytemp Expanded Silica (1/2")
Pabco	Calcium Silicate

Inside Manufacturing and Office Building*

Manufacturer	Acceptable Material
Certain-Teed Saint Gobain (CSG)	Snap-On (to 450 F)
Johns-Manville	Flame Safe
Owens-Corning	Heavy Density Sectional
Pabco	Calcium Silicate

4.1.11 Condensate Piping - (Inside Building)

Manufacturer	Acceptable Material
Armstrong Cork Co.	FR/Armaflex
Certain-Teed Saint Gobain (CSG)	Snap-On (to 450 F)
Johns-Manville	Flame Safe
Owens-Corning	Once Piece

4.2 Brake and Clutch Repair

Brake and clutch mechanisms on vehicles, presses and cranes utilize asbestos friction materials. Exposure to asbestos dust in the air can occur during inspection and repair operations especially if compressed air is used to blow off debris. To minimize the potential for employe exposure, the following work practices must be adhered to:

* If more than three years old, see Manual Index for latest review date.

COATES V FORD - 0001

PRODUCED BY FORD IN COATES

PRODUCED BY FORD IN COATES

4.2.1 Under no circumstances shall compressed air blowoffs be used to clean parts which may contain asbestos laden dust.

4.2.2 Brake and clutch mechanisms should be cleaned using an industrial vacuum cleaner with a filter system capable of capturing a three micron or smaller particle size. Information on recommended units is available from the Industrial Hygiene and Toxicology Department.

4.2.3 The filters on the discharge ports of approved vacuum cleaners must be disposed of when they become loaded per asbestos disposal procedures (see 4.1.6). Do not attempt to clean these filters.

4.2.4 Disposal of any asbestos laden dust resulting from brake or clutch repair and maintenance or from vacuum cleaning must be carried out by an employe wearing an approved respirator. Such waste material and any vacuum cleaner bags must be placed in sealed containers and labeled as containing asbestos wear debris. Vacuum cleaner bags are not to be emptied by shaking; these bags are not to be reused. It should be noted that brake shoes, clutch plates and other manufactured articles containing encapsulated asbestos need not be specially handled, marked or disposed of. Customary solid waste disposal techniques may be employed for such materials. See Section 4.4.6 for disposal requirements applicable to asbestos containing wastes.

4.2.5 The repair area should be kept clean of all visible dust. Even small amounts become airborne repeatedly as a result of pedestrian and vehicular traffic. If sweeping is practiced, it must be done only after wetting down the floor. Approved vacuum cleaners must be used to clean the dried asbestos dust from the floors. Conventional vacuum cleaners may not be capable of retaining asbestos fibers which may penetrate the filter and be dispersed into the air.

4.2.6 All hand-operated and power-operated tools, which may produce or release asbestos fibers in excess of permissible levels, must be equipped with local exhaust ventilation which conforms to OSHA Standard 1910.1001.

4.3 Other Maintenance Materials

There are other maintenance materials that contain asbestos and may be in use at Company facilities. To the extent that commercially available alternates are available, they should be substituted for any materials presently in use which may contain asbestos. While the following list, condensed from a government synopsis of asbestos-containing products, is not all inclusive, it can be useful in identifying materials for which asbestos substitutes may already be available:

- Paper Products: pipe and boiler covering, sheets for heat insulation, millboard sheet, filtering materials, roofing felt.
- Cloth and Woven Products: seals for high temperature gaskets, valve stem packing, insulation for glass-handling tools.
- Flame Resistant Garments: gloves and mittens, sleeves and arm protectors, aprons, blankets.

* If more than three years old, see Manual Index for latest review date.

COATES V FORD - 02031

PRODUCED BY FORD IN COATES

PRODUCED BY FORD IN COATES

- Asbestos Cement Products: welding shields, siding, mastics, sealers.
- Miscellaneous: acoustical and sprayed thermal insulation, asbestos powder, bulk fiber.

4.4 General Precautions

The work practices listed in Sections 4.1 and 4.2 are intended to help minimize the hazards involved in handling asbestos during insulation removal and brake and clutch repair. In addition, the following general precautions are recommended:

4.4.1 Employes must be trained in the proper use and limitations of respirators. A slide-tape training program is available from Employe Health Services.

4.4.2 Respirators must be cleaned and disinfected after each day's use.

4.4.3 Employes must be evaluated by medical personnel to determine if they are qualified to do required tasks while wearing respirators.

4.4.4 Initial monitoring must be conducted (as prescribed in CFR 1910.1001 (FX1)) to determine if employes exposure to asbestos is below permissible levels.

4.4.5 If an asbestos exposure problem is suspected, the Industrial Hygiene and Toxicology Department must be contacted to measure asbestos levels and advise of other provisions of the applicable standard relating to respirator usage and record keeping. An industrial hygiene survey including air sampling will assure that employe health is protected and that the Company is in compliance with OSHA regulations.

4.4.6 Regulations promulgated by EPA under the Resource Conservation and Recovery Act (RCRA) identify asbestos as a listed hazardous waste. When disposed of as a waste "commercial chemical product," such materials must be disposed of only in a RCRA-permitted hazardous waste landfill. This requirement underscores the need for segregation of asbestos-containing waste from other plant waste. Encapsulated materials and manufactured articles containing nonfriable asbestos are not classified as hazardous wastes under RCRA. Refer to Stationary Source Environmental Control Office for specific federal, state and local disposal requirements for asbestos containing materials.

This Guideline is effective immediately and supersedes Plant Engineering Maintenance Bulletin No. 137, which should be removed from your files.

D. J. McChesney, Director
Plant Engineering Office

2-26-17

* If more than three years old, see Manual Index for latest review date.

COATES V FORD
- 2222

PRODUCED BY FORD IN COATES