Inter Office

Engine Engineering

June 1, 1977

All Design Managers and Supervisors

cc R. M. Campau
T. J. Foley
J. C. Gagliardi
D. F. Hagen
M. J. Streven
F. A. Veraldi
M. M. Whitney

Subject: Asbestos Usage

Reference: Key Issue Report dated April, 1977 from Vehicle Materials Engineering - Same Subject

Background:

A significant number of asbestos containing components are purchased from outside suppliers. Many suppliers are becoming increasingly alarmed at the changing OSHA regulations and have already expressed an inability to meet the proposed OSHA limit of 0.5 fibers/cc which is expected to pass by late 1977 or 1978. Suppliers who can comply predict severe problems with any further restrictions. Discussions are currently going on in Washington to further restrict the limit to the lowest measurable level-estimated timing 1979, 1980. The driving force for these projected OSHA changes stems from various studies which indicate that there is no "safe" level of exposure. If there further restrictions are enacted into law a serious supply problem will occur at Ford.

Actions:

A comprehensive company work plan with timing has been developed by Staff organizations to assess current asbestos usage and to determine the abilities of the suppliers to comply with the proposed 0.5 fiber/cc OSHA regulation.

In order for Engine Engineering to comply with the above company plan, the following information must be supplied to G. A. Schley, Engine Design and Materials Engineering Department, by June 15, 1977.

- A complete part number listing including suppliers of all 1978 released, new, proposed, and future model year advanced components containing asbestos fibers in their make-up.
- Your estimated timing required to develop, test, and release substitute materials for all asbestos applications.

P. A. Martel

Attachment

JAS:bbw

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PRODUCED BY FORD

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Product Engineering Office
Engine Division

PRODUCT PLEDGE

Date April 27, 1977

To:

Mr. P. A. Martel cc F. A. Veraldi M. M. Whitney

From:

J. D. Kalmbach

Subject

Asbestos Usage

Problem Description

The latest communication from Vehicle Materials Engineering assigns three areas of responsibility to Engine Engineering with completion dates of 5-15-77, 5-30-77, and 7-15-77 respectively. We do not know who in Engine Engineering committed to these dates and if anyone is answering the latest document or establishing Project Orders. Complete DVS testing requirements will prohibit the implementation of any short-lead substitutions and thereby negating the 5-15 and 5-30 due dates; however, the approval of development programs for long-lead substitution (with carline introduction targeted) due 7-15-77 still needs area of responsibility direction.

Action Plan:

In order to accomplish this objective direction should be given to Materials Engineering and every Product Engineer (including advanced concepts) to review the requirements of each application and recommend a substitution plan with testing requirements. The Project Engineers would then have to write Project Orders to implement this program.

Effectiveness:

We do not believe that Engine is in a position to accept this task without revising the projected dates. Model year 1980 would be the earliest date for at least partial model substitution. It should also be noted that the list of components using asbestos fibers submitted by us to the Vehicle Materials Engineering Office is not necessarily complete.

J. D. Kalmbach

JAS:bbw

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PQ

Reference Information

1. Asbestos Usage -1 Vehicle Materials Engineering April, 1977
2. Asbestos Usage Engine Materials Engineering March 15, 1977
3. Asbestos Usage Vehicle Materials Engineering February 1977
4. Parts Containing Asbestos Engine Materials Engineering

(10)

ASBESTOS SUPPLIER POSITIONS

COMPLIANCE TO STANDARDS

		a/	b/	c/	
KELSEY-HAYES	Brake Pads Linings & Drums	YES	NO	YES	.Bonding instead of riveting .Eliminate Grinding-Molded approach being consider .Industrial Hygiene Measures .No immediate plans for automation .$300,000 to comply plus $110,000 annually
THIOKOL	Front Disc Pads Rear Disc Pads	YES	NO	YES	.Process change from compression to injection molding-$1.2 million investment-would require requalification .Non-asbestos substitute presently available-one year lead time for vehicle testing required
RAYBESTOS	Clutch Facings	YES	NO	NO	.Industrial Hygiene measures to approach 1 fiber/c .Alternative Raw Materials being considered-glass, mineral wool, combination of fiber .All R&D focused on non-asbestos products
ALMA	Clutch disc ass'y friction facings	YES	NO	YES	.All personnel wearing head hood filters 100% of the time
GENERAL INDUSTRIES	Washers	NO	NO	NO	.Will cease operations if forced to accept standar
DICKTEN and MASCH	Reactor	YES	NO	NO	.Will stop manufacture of asbestos products if forced to accept standard
H K. PORTER THERMOID DIV	Clutch Disc Shoe Lining Ass'y-Front and Rear	YES	NO	YES	Fall 75 presentation on non-asbestos clutch facing to Ford-negative response-cost equivalent .Ability to cost facings to reduce fiber/cc level at no extra cost .Standard of .1 will prohibit asbestos usage Brake substitutes increase weight and cost-one year lead time
BENDIX	Shoe + Lining	YES	NO	YES	1 [illegible] million to meet 1 Fiber/cc limit .$.5 million and 1-2 yrs to meet .5 fiber limit .Impossible to meet .1 level .Semi-metallic disc brakes asbestos-free backing to be completed by fall cost increment 1.2-1.6 x weight increment 1.8 x .Fiberglass linings on drum-good in lab, not so good on road .Critical issue-no product for drum brakes-1980-81 model year projection .Wet sanding & grinding could be instituted
ARVIN	Muffler Wrap Catalytic Converter Seal	YES	NO	YES	.Compliance to .5 fiber/cc level thru elimination of asbestos in the muffler wrap assembly .Planned change to fiberglass by 1978 .No present alternate for Converter Seal
JOHNS-MANVILLE	Raw Material Asbestos Fiber	NO	NO	NO	.In almost all operations 5 fiber/cc .By January 1979 2 Fiber/cc in all but 10 stations .Guidelines in effect in Quebec not as severe as U. .Studies indicate 2 fiber/cc to be a safe level

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a/ compliance to present 2 fiber/cc std.
b/ present compliance to proposed .5 fiber/cc std.
c/ ability to meet .5 fiber/cc level

JUNE, 1977

ASSESSMENT (continued)

The foregoing can be compared with the different results expected if the standard is abruptly set at .5 fiber/cc by January 1, 1979. This is judged unlikely.

- Court challenges delay implementation for at least a year.
- Investments in new or old mines curtailed, but supply not immediately affected.
- Prices rise on related components—some parts suppliers inform auto industry of impending curtailment of production.
- Costly crash programs on substitutes initiated in auto industry, target Job 1, 1980.

Even less likely is a standard of .1 fiber/cc because it is very near background level.

IMPACT ON FORD

A study of the engineering uses of asbestos has shown that Ford is directly concerned only with the friction materials segment of the asbestos industry (as outlined in Attachment 3). Ford purchases transmission bands, brake and clutch friction materials that contain asbestos, and thus would be affected by the impacts of regulatory action. These impacts are of two types: internal, and in the supply chain. Ford has no internal compliance problems because purchased parts contain only bound asbestos fibers that do not contaminate the environment.* Supply chain compliance problems were recently investigated by NAAO Purchasing (Materials Planning Department). This study assumed an orderly tightening of the standard and concluded that:

- Major parts and materials suppliers are just now reaching compliance with the 2 fiber/cc standard and have plans or active programs to meet the proposed standard.
- The severity of the problems depends on the standard.
- Nearly all suppliers wish to continue to supply Ford with asbestos-containing products.

Our assessment of the supply situation is that asbestos products will continue to be available for the next several years, but that costs will rise as suppliers install control equipment. Ford should continue to rely on suppliers to solve their compliance problems and supply parts to Ford.

RECOMMENDATIONS

The above assessments predict an orderly tightening of the asbestos standards and a resulting cost increase in asbestos-containing parts. It is concluded that the Company must respond to this situation with programs in the following areas to ensure that it remains cost competitive.

* Wear debris from brake and clutch friction pads are nonfibrous and therefore noncarcinogenic. Some monitoring of brake and clutch repair areas for loose asbestos fibers may be necessary.

RECOMMENDATIONS (continued)

1. Continue to monitor supplier compliance programs and results. Responsibility: VMD&P and MAAO Purchasing.

2. Continue to monitor costs of asbestos-containing components and compare these with those for alternate materials. Responsibility: MAAO Purchasing and VMD&P.

3. Initiate first-stage Advanced Engineering projects for [redacted] in Chassis and Transmission and Axle Engineering Offices to assess the costs and problems associated with alternate materials for clutch and brake linings and transmission bands. These projects would rely on significant supplier input coordinated through Supplier Research. (The suppliers are interested.) They need not be targeted for specific model years but may be seen as insurance projects to protect against costly crash programs later. They should include studies on friction materials compatible with aluminum drums, discs and clutch plates. Responsibility: PEO's (Advanced Engineering).

4. Support the engineering effort with parallel projects within the already-existing friction materials study group within Research Staff. Responsibility: Engineering and Research Staff.

5. Review supplier asbestos compliance and engineering programs, cost comparisons, and Ford programs prior to the 1979 advanced budget allocations to determine course of action for 1979. Responsibility: VMD&P.

Vehicle Materials Development & Planning
August 26, 1977

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