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Inter Office

Car Engineering Group



May 8, 1980

To: J. W. Durstine

cc: G. F. Bolling
T. J. Feahenv
G. O. Keutgen

Subject: Carcinogens Task Force Report

You requested comments on the subject Carcinogens Task Force Report.

The general tone of the report is that strategies, work plans, programs, and timetables are in place in Engineering, to develop substitutes for asbestos, chromium and benzene. Although efforts have been started in these areas and you note some cautions and uncertainties I think the risks and timing problems associated with these efforts should be more greatly emphasized to company management.

Another important point is that each of the 145 applications noted for asbestos, chromium, and benzene will require Engineering funding. The total will be substantial. Without additional funding or directed prioritization over other Engineering efforts this work cannot be done, particularly under the present economic and budgetary conditions.

A final point is that while the company's obligation, insofar as carcinogens, is recognized, it is imperative that we do not over-react. A measured reaction is provided by CEPL-10 on asbestos. This was designed to provide substitute materials on an orderly basis, with the provision that engineering limitations might make some substitutions impractical (assuming we would continue to meet existing regulatory controls). Your strategy "...to proceed to eliminate these three carcinogens by Job 1, 1985, ..." appears to be too rigorous or inflexible. A more extensive and detailed analysis of the implication of the strategy is warranted.

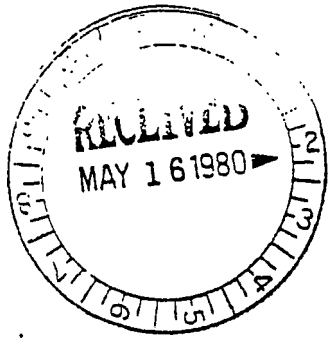
S. M. Frey

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General Services

May 14, 1980

To: Mr. G. O. Keutgen

cc: Mr. J. W. Durstine

Subject: Carcinogens Task Force Report to E&R and M&S Sub-committees

General Services comments on the subject Report are:

- While the Report focuses on engineering materials usage, its conclusions and recommendations must apply to the broad range of product and non-product materials used in General Services operations. Our major need is for better communication of available information on carcinogens and other toxic and hazardous materials to the operating level. We require greater awareness of problem areas, assistance and information on possible solutions and to be kept up to date on new regulations. In particular, regular communication with and education for our safety personnel who are often the first to see the problems must have high priority.

- The Report correctly identifies the need for "an integrated approach throughout the Company and a sustained effort over a number of years" to carry out the recommended strategy for carcinogens. It appears that this might be a wise approach for the Company to all of its toxic and hazardous materials problems.

- We agree that Directive B-101 with its distributed responsibilities is now inadequate to carry out the strategy and should be re-drafted. In particular, the functions of compliance and compliance reporting must be more closely aligned.

- Because complete elimination of useful materials like asbestos may not be in the best interests of the Company, it might be more prudent to stress awareness of the dangers and control measures than attempt to eliminate usage by fiat.

D. R. Learned
Director

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May 27, 1980

010976

Subject: Asbestos-Free Lining Development Program

Chassis Engineering, Brake Department, has initiated a program to evaluate asbestos-free brake lining materials. The objective of this program is to develop asbestos-free disc and drum lining materials that have the performance characteristics of present asbestos-containing organic and semi-metallic materials, and meet the requirements of toxic substance regulation.

Attachment I outlines a recommended lining evaluation program. The currently released lining materials will be used as baselines for relative performance comparison; TP1353M for organic non-asbestos disc materials, D7161A for semi-metallic disc materials, and H3198/3199 for drum materials. An asbestos-free organic material offering performance improvements, relative to the baseline, in the areas of increased fade resistance and a higher average coefficient of friction is desired. Likewise, an asbestos-free semi-metallic material offering performance improvements, relative to the baseline, in the areas of increased cold effectiveness and reduced rotor wear is desired.

Submissions to Ford should be accompanied with your test results for both your proposed asbestos-free material and the corresponding baseline material. Ford will conduct structural and performance evaluations in the laboratory and on the dynamometer, and will review all performance data submitted by the supplier. Promising candidates will then be subjected to vehicle evaluations.

It is recommended that all dynamometer and vehicle evaluations be run with Ford test procedures on the 1980 Thunderbird brake system to ensure that the final comparison is as fair as possible. System parameters for the 1980 Thunderbird are given in Attachment II, test procedures will be supplied as requested.

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May 27, 1980

If you are interested in participating in this program as outlined, please confirm your intention with a brief letter. Material and performance data submissions should be made to the Brake Department at your earliest convenience.

We are looking forward to your participation in this program, as your expertise and cooperation are instrumental in making this a successful program.

Very truly yours,

W. W. Boddie

HPM/my

attach

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ATTACHMENT I

ASBESTOS-FREE BRAKE LINING DEVELOPMENT

1980 CALENDAR YEAR WORK PLAN

Project Objectives

Develop asbestos-free brake lining material, both semi-metallic and organic, to meet requirements of toxic substances regulation.

Technical Approach

1. Inform potential suppliers of program intent

   - Corporate policy to reduce asbestos usage
   - Wish to evaluate both non-asbestos semi-met and organic linings for front disc and rear drum applications
   - Supplier will conduct preliminary tests and present data to Ford
   - Ford will conduct preliminary laboratory and dynamometer evaluations then vehicle test promising candidates

2. Submission of candidate material(s) should be accompanied with the following performance data for both submission and relative baseline:

   - PGC, FAST, Cogan Hardness, Specific Gravity
   - Dynamometer Temperature - wear
   - Dynamometer Effectiveness and fluid displacement (Simulated FMVSS 105-75)
   - Static friction test for rear drum linings
   - Vehicle City Traffic and effectiveness performance (Optional)

3. Work with Scientific Research to evaluate candidates using the following tests:

   - FAST
   - Susceptability of corrosion bonding to cast iron
   - Tensile strength - transverse and longitudinal
   - Shear strength
   - Rivetability
   - Thermal expansion coefficient - transverse and longitudinal
   - Dynamometer - wear procedure and FMVSS 105 simulation
   - Contaminant sensitivity

4. Provide feedback to suppliers on test results of their submissions, identify properties which need improving

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5. Install promising candidates on vehicle

- Supplier Evaluation
  - City Traffic (Detroit, Los Angeles, Minneapolis)
  - Fleet Build
  - FMVSS 105-75 simulation

- Ford Evaluation
  - City Traffic (Detroit, Los Angeles, Minneapolis)
  - Fleet Build
  - Mountain Effectiveness
  - FMVSS 105-75
  - Combined Durability FI-37

Brake Department
May 27, 1980

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ATTACHMENT II

1980 THUNDERBIRD SYSTEM PARAMETERS

. Weights	Front	Rear	Total
GVWR	2306	2058	4364
2 Passenger	2149	1491	3640
Brake Test Weight	2204	1905	4109

. Wheel Base 108.5 in

. Rolling Radius 12.4 in

. Vertical center of gravity 6.2 in from ctl of spind

. Rear wheel cylinder 13/16 in

. Proportioning valve 300/.36

. Line pressure at 150 lbs pedal effort 1500 lb/in^2

Brake Department
May 15, 1980

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