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Intra Company

SCIENTIFIC RESEARCH STAFF

August 27, 1971

To: S. Gratch

cc: E. D. Macenka
J. V. Petrocelli

Subject: Proposed Illinois Regulation Banning Asbestos in Brake Linings

On August 26, 1971, I received a telephone call from Dr. Colin Harwood, IIT Research, Chicago, Illinois, telephone: (AC) 312-225-9630. IIT has been retained by the Illinois Pollution Control Board to assess the technical aspects and implications of the proposed regulations for the State of Illinois which would control sources of asbestos and which, as now written, would prohibit the use of asbestos in the brake linings of vehicles manufactured after January 1, 1975 and sold for use in Illinois. Dr. Harwood learned from Joe Somers of the Air Pollution Control Office of the Environmental Protection Agency, that we are doing some work in the area of brake lining emissions sampling, and was referred by Mr. Somers to me. Mr. Somers is involved in the EPA contract for sampling of brake lining emissions recently awarded to Bendix Research Laboratories. Dr. Harwood is in the process of gathering information pertinent to his assignment—what is known about asbestos in brake lining emissions, what is the state of the art relative to substitutes for asbestos composite brake linings, etc. He had already spoken to people at General Motors and at Mt. Sinai School of Medicine of the City University of New York.

I told him what experiments we are doing and what experimental techniques we had used or planned to use, but indicated that we had no results completed as yet. I indicated that in our narrow scope program (compared with the Bendix EPA program), we had collected the airborne wear dust generated on a brake dynamometer under normal stopping conditions, with peripheral experiments under break-in and high temperature conditions, and that we are in the process of examining the samples for asbestos. I mentioned that the method of preparing the samples for electron microscopic examination is not clear but that we planned to use as one technique a method learned through consultation with the researchers at Mt. Sinai School of Medicine. With this technique, the ability of other wear debris in the sample to conceal asbestos fibers is eliminated, so that a true measure of total mass of asbestos fiber may be expected, but the original fiber bundle size distribution is destroyed.

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Dr. Harwood then asked if we were doing any work on brake lining formulations not containing asbestos. I indicated that we were exploring that area, but that to date, I do not know of any such materials which can satisfy the performance requirements under all operating conditions. He asked specifically about ceramic or sintered metals and I had to answer that I had not done enough work with them myself to give him a complete answer, but that I understand that they all have certain performance drawbacks. He asked for the name of someone at Ford who could give him more specific information on these asbestos-free materials and I indicated that I would find out for him whom to contact and see that someone calls him back in the near future.

Roy L. Cooler ✓
Chemical Engineering Department

jcd

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