1 xc C.P.
W. Covey

December 24, 1975

Ms. Linda Asay
Office of Senator Charles Percy
Senate Office Building
Washington, D. C. 20510

Subject: Proposed Toxic Substances Act, S.776, and Environmental Concerns over the use of Polychlorinated Byphenols (PCB)

Dear Ms. Asay:

I appreciated your phone call, and the opportunity to prepare some thoughts for your consideration. My basic concern has to do with preventing one kind of safety hazard - fire - from being overlooked because of another safety hazard - hazardous chemicals. I am suggesting some kind of "indemnification" procedure be incorporated in S.776 to encourage consideration of all safety hazards.

Please allow me to give you some background. A bill like S.776 is probably necessary to assure us that hazardous chemicals can be controlled. My opinion, of course, is that of a user of a chemical and not a manufacturer. There seem to be arguments important to the chemical industry regarding the expensive implications of pre-market testing which I am unqualified to discuss. As a user of a chemical which has been identified as potentially hazardous - PCB - I have reviewed the Senate Bill and have tried to form an opinion regarding its implications with respect to the continued use of PCB in capacitors.

Capacitors are electrical components which are the only products of our company. Capacitors are consumer products found in fluorescent lights, air-conditioners, television sets, welders, and many other home appliances. The PCB's used in capacitors are manufactured by only one company in the Western hemisphere - The Monsanto Industrial Company of Sauget, Illinois. PCB's (there are 209 different species) were used in many different applications until Monsanto's voluntary restriction to capacitors and transformers imposed in 1971.

PCB's are special fluids which have some very unique properties desirable in the manufacture of capacitors. One characteristic

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which is critical to the safe operation of a capacitor is its fire resistance. PCB's do not have a flash point below the boiling point of the fluid. That is, if the vapors are in the presence of a flame or electric arc, flame will not be supported by the fluid. Capacitors are used in electrical circuits where electric arcs can be present during component failure. Capacitors are also used in appliances where electric arcs or fire occur for other reasons. It is therefore very necessary for us to exercise care before we give up the fire resistant capabilities of PCB.

A number of chemical companies besides Monsanto have been seeking alternatives or substitutes for PCB since we learned of the potential environmental problems. The substitutes identified by Monsanto, Dow Chemical, Dow Corning, and Exxon are all fluids which are considered combustible. They possess flash points which allow these materials to support fire. The Electrical Utilities Company has tested a number of the alternatives in an attempt to find an environmentally suitable fluid for capacitor manufacture. The material that we and many of our competitors find acceptable for capacitors is a fluid which has a flash point which will support fire and can be dangerous. In August of 1975, we had a fire in our factory with this material which, fortunately, was not serious. This did emphasize the potential problems of manufacture or use of PCB substitutes.

Our customers and the end consumer are accustomed to a capacitor which presents no fire hazard. If PCB's are effectively banned for use in capacitors, there will be a gradual transition in the appliance industry to capacitors which present a real fire hazard. This, plus the public's lack of appreciation for the change from a fire resistance capacitor to one which is a fire hazard, could cause untold deaths and property damage.

At a time when the Consumer Protection Agency is trying to reduce the fire hazard in television sets and other appliances, it would seem that in some very special cases, such as this one, the end effect of a good bill to control environmental damage could have the effect of creating more danger.

Since I am discussing threats to human safety due to fire, let

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me also mention the physiological threats PCB's may present to humans. As of this date, we know of no adverse health effect which PCB's has caused in humans except those associated with the "Yusho" incident in Japan. In the 1968 "Yusho" incident, approximately 1000 persons ingested large amounts of PCB contaminated rice oil. PCB leaked from a heat exchanger into the rice oil; an occurence which certainly supports Monsanto's ban in the use of this material in heat exchangers. Although severe acneform, dermatitis, and loss of weight resulted, no deaths were reported. Dr. Kuratsune, who has observed these patients for a number of years, reported his findings at the National Conference on PCB's held in November, 1975, in Chicago. It is my interpretation of his findings that long term carcinogenic studies are inconclusive.

Studies have certainly shown that PCB's can be harmful to certain marine and wildlife species. The recent studies which showed harmful effects in rats and monkeys were discussed at the National Conference. It is my understanding that significant evidence was presented which indicates the harmful substance may not be PCB used in capacitors, but other PCB's or trichlorinated dibenzofuran, TCDF. The disturbing possibility presented at the National Conference, using layman's interpretation, is that there may be a metabolic path in certain humans which can produce TCDF. In either case considerable work needs to be done to determine whether in fact PCB's do pose a real threat to human health.

Because PCB's may not be the problem, and because known substitutes possess this fire hazard, I believe Senate Bill S.776 needs to be considered in a different light. You could summarize my feelings by saying that I believe S.776 should contain some procedures for determining the impact on <u>all</u> human safety issues, and not only the environmental and health aspects covered in the bill. I also believe we should consider some provisions in S.776 to indemnify manufacturers who are forced to use an environmentally acceptable material which creates unreasonably large liability for other kinds of personal injury or property damage: e.g. fire.

Senate Bill S.776 could take care of this "indemnification" issue in a number of ways. One way would provide monetary indemnification for users of environmentally acceptable materials who create

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Other kinds of personal injury or property damage risks. Another way would provide a procedure to make certain that other safety hazards were considered at the same time environmental regulations were being considered. It is possible that Section 25 of S.776 could be amended to allow for such procedures.

I would guess that the most serious objection to providing these procedures for analyzing the hazards of substitutes, and indemnification, would be the added complication of the bill. As a small employer, our employment varies from 220 to 350, I find it increasingly difficult and prohibitively expensive to adequately and conscientiously integrate the many effects of recent legislation. Making this integration a required part of the legislation would help. Including some of the ideas I have proposed would immeasurably help the Electrical Utilities Company reach the desirable goals in environmental control, and possibly prevent a serious fire hazard from occurring.

I appreciate this opportunity to give you my rather lengthy thoughts in this matter. I would be happy to make myself available for further discussion with you. Thank you for your consideration.

Very truly yours,

ELECTRICAL UTILITIES COMPANY

Richard L. Hauser
President

MONS 094050

bcc: W. B. Papageorge
G. J. Levinskas

November 7, 1975

Dr. Michael Nodan
Manager, Venture Programs
General Electric Company Hudson Falls
One Plastics Avenue
Pittsfield, Mass. 01201

Dear Mike:

I enclose the data concerning polychlorinated biphenyls which you discussed with Dr. Richard. The enclosed data consists of the following documents:

1) Toxicity Information on Aroclor 1016.

2) The Degradation Of Polychlorinated Biphenyls By Micro-organisms- R. A. Baxter, P. E. Gilbert, R. A. Lidgett, J. H. Mainprize and H. A. Vodden.

3) Identification of chlorinated dibenzofurans in American polychlorinated biphenyls.- R. W. Risebrough

4) Polychlorinated Biphenyls - Storage, Distribution, Excretion, and Recovery: Liver Morphology After Prolonged Dietary Ingestion - Virlya W. Burse, Renate D. Kimbrough, Ellen C. Villanueva, Ralph W. Jennings, Ralph E. Linder, G. Wayne Bovocool.

5) Laboratory Model Ecosystem Studies of the Degradation and Fate of Radiolabeled Tri, Tetra, and Pentachlorobiphenyl Compared with DDE - Robert L. Metcalf, James R. Sanborn, Po-Yung Lu and Donald Nye.

6) A Comparative Study of Two Polychlorinated Biphenyl Mixtures (Aroclors 1242 and 1016) Containing 42% Chlorine on Induction of Hepatic Porphyria and Drug Metabolizing Enzymes.

7) Biodegradation of Polychlorinated Biphenyls - E. Scott Tucker, Victor W. Saeger and Orville Hicks.

8) Tissue Residues From Subacute Oral Feeding of Polychlorinated Biphenyl Dielectric Fluids - Robert G. Kaley, Orville Hicks, William M. Mees, E. Scott Tucker, James P. Mieure, Frederick R. Johannsen and George J. Levinskas.

9) Migration of Polychlorinated Biphenyls in Soil Induced by Percolating Water - E. S. Tucker, W. J. Litschgl, and W. M. Mees.

10) Acute Toxicity Studies with MCS (Aroclor) 1016.

11) Presentation To The Interdepartmental Task Force on PCBs, Washington, D. C. - Monsanto Company.

Yours sincerely,

David Wood
Market Manager
Dielectrics

/deb
Enclosures