ENVIRONMENTAL PROTECTION AGENCY

BEFORE THE ADMINISTRATOR

In Re:	)	
	)	
Proposed Toxic Pollutant	)	
	)	
Effluent Standards for	)	FWPCA (307) Docket No. 1
	)	
Aldrin/Dieldrin et al.	)	

TESTIMONY ON BEHALF OF THE GENERAL ELECTRIC COMPANY AS AN OBJECTOR TO THE PROPOSED TOXIC EFFLUENT STANDARDS FOR PCBs - 40 CFR 129

Section 1 - Social and Economic Impacts

- presented by Mr. George B. Farnsworth, Vice President and General Manager of General Electric's Electronic Components Business Division.

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Mr. George B. Farnsworth deposes and says:

I am a Vice President and General Manager of General Electric's Electronic Components Business Division, headquartered in Syracuse, New York. My testimony is on behalf of the Electronic Components Business Division and the Transformer & Distribution Equipment Business Division, and addresses the major social and economic impacts of EPA's proposed effluent standard for polychlorinated biphenyls (PCBs).

Two years ago five Federal agencies, including the Environmental Protection Agency, concluded a joint six-month study by issuing a report entitled, "Polychlorinated Biphenyls and the Environment."* This study was conducted in a relatively free atmosphere of inquiry, without the legislative or court-imposed deadlines that are features of the current effort to produce a standard. Among the findings of the Interdepartmental Task Force are two of particular relevance to the subject matter of the current hearings:

> "(1) The sole domestic producer of PCBs, Government agencies, and key user industries are taking appropriate steps to cut off further introduction of PCBs into the food supply and to reduce the current levels of PCBs as food and environmental contaminants.
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> "(2) The use of PCBs should not be banned entirely. Their continued use for transformers and capacitors in the near

* Polychlorinated Biphenyls and the Environment, Interdepartmental Task Force on PCBs, May 1972, published as Report No. ITF-PCB-72-1, Recipient's Accession No. COM-72-10419, 20 Mar. 72, distributed by the National Technical Information Service, U.S. Department of Commerce; pages 131 and 168.

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future is considered necessary because of the significantly increased risk of fire and explosion and the disruption of electrical service which would result from a ban on PCB use. Also, continued use of PCBs in transformers and capacitors presents a minimal risk of environmental contamination. The Monsanto Company, the sole producer, has reported voluntarily eliminating its distribution of PCBs to all except manufacturers of electrical transformers and capacitors."

Less than a year ago, the Food and Drug Administration acted to restrict the presence of PCBs in animal feeds, foods, and food-packaging materials. However, the final FDA order exempted "the safe use of PCBs in electrical capacitors and transformers" from the requirement that PCBs no longer be permitted in food-related establishments (38 FR 18096).

In view of the above actions of the Federal government, and in view of direct representations to the same effect by EPA staff, we had every reason to anticipate that the proposed effluent standards for PCBs would be "attainable", and that they would permit industry to continue to operate plants producing PCBs and plants producing PCB transformers and capacitors.

Instead, we were confronted on December 27, 1973, with a proposed standard which, if promulgated, would not be "attainable" and would therefore require shutdown of operations involved with these important products. To illustrate, our engineers tell me that the application of the proposed standard to one of our plants would mean that they would be allowed to discharge into the river one-half of one drop of PCB per day. A single

employee, washing his hands at a sink connected to our plant drain, could thus place the entire operation in violation of the law!

It is important to remember that we are not dealing here with some new, highly toxic, military nerve gas or the like, but with a well-known, stable engineering material, with which we have been building safe and reliable electrical equipment for the past forty years. We have found no evidence during all these years that any employee was made seriously ill by exposure to PCBs or that any fish kills occurred because of same. We are forced to conclude that, somewhere in the process of developing the proposed standard, perspective has been lost and priorities have become confused.

For example, in establishing a list of toxic pollutants (Sec. 307 (a) (1) and in publishing proposed effluent standards (Sec. 307 (a) (2), the Administrator is required to take into account "the toxicity of the pollutant, its persistence, degradability, the usual or potential presence of the affected organisms in any waters, the importance of the affected organisms and the nature and extent of the effect of the toxic pollutant on such organisms..." (underlining added). In assessing the importance of the affected organisms, we feel it is incumbent upon the Administrator to weigh the relative importance of the social and economic values which may be placed in jeopardy by the nature of the control measures proposed for the protection of the affected organisms, and to compare these social and economic values with the social and economic value of the threatened organisms. We believe that this comparison of values is especially important in consideration of the proposed standards for PCBs.

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We see no evidence in the document promulgating the list of toxic pollutants (38 FR 24342), in that proposing effluent standards (38 FR 35388), or in the Statement of Basis and Purpose that any attempt has been made to assess either the importance of the affected organisms or the social and economic values affected by the proposed standard for PCBs.

I shall leave it to my colleagues to develop the scientific and engineering basis for our objection to the standards, but in the remarks to follow I should like to invite your attention to some of the social and economic effects which will ensue from the promulgation of a standard so rigorous as to cause the cessation of the manufacture of PCB transformers and capacitors.

TRANSFORMERS

Most transformers are sealed electrical devices that are filled with an insulating liquid, usually mineral oil. Under conditions of sudden power surges, high current electric arcs can be produced that can cause fires or incendiary explosions arising from such oil-insulated transformers. Because PCBs are non-flammable liquids which, when decomposed by the electric arc, evolve only non-flammable gaseous mixtures, transformers filled with PCBs are used in or near public, commercial, or industrial buildings where oil-insulated transformers would present a potential danger to life and property. This safety factor is the only advantage that PCB-insulated transformers have over their primary alternative, transformers insulated with mineral oil. It also accounts for the fact that a considerable number are installed on electric railway

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passenger commuter cars serving major metropolitan areas, and in locomotives.

In all applications, these transformers are used to distribute electric power reliably without risk of fire and explosion, and to meet the requirements of specific laws, codes, and insurance regulations mandating non-flammable liquid content.

The value of the annual production of PCB transformers in the U.S. is approximately $45 million. However, this figure represents only a very small part of the economic effect of regulations resulting in their unavailability. PCB transformers have no readily-available alternative for many applications where construction is under way or plans are complete. For example, there might not be room or adequate structural provision for alternative fire-protection means, such as containment vaults for oil transformers. We estimate that as much as $1 billion of construction projects could be seriously delayed, involving schools, factories, office buildings, apartment houses, and commuter trains, if the subject proposed regulations are promulgated as proposed.

CAPACITORS

Whereas PCB transformer applications are limited to those situations where safety is a controlling consideration, PCB capacitors form the dominant portion of the served capacitor market. PCB-filled power and industrial capacitors are significantly smaller, more reliable, more durable, electrically more efficient and safer than oil-filled capacitors. As a result, they have supplanted mineral oils in more than 90% of the power and industrial capacitors made today. The annual value of the production of PCB capacitors is approximately $140 million.

An important application of PCB capacitors is to improve the power factor of the electrical systems or equipment to which they are connected. This means that they enable a higher portion of the current generated to do useful work than would otherwise be the case. Thus, the capacitors produced in the U.S. annually have a major effect in reducing the electric current which would otherwise have to be generated to serve industrial and public needs. If the capacitors were not available, generators would have to be built in larger sizes so that they could handle larger currents. Similarly, other portions of the transmission and distribution system contain components whose size is determined by the total current passing through them, not merely the portion of the current useful in doing the work of the end application. If power factors are lower, these components, as well as the generators, must be built larger. Industry figures indicate that approximately 44 million kilovars of new capacitors are installed annually. If none of these capacitors were available, the increased cost of generators and transformers and other equipment required to handle the resulting higher system currents would amount to approximately $1 billion per year.

Oil-impregnated designs could be substituted for a portion of the requirement. However, because of the lower design efficiency of such capacitors, the output of the industry would be limited by the scarcity of the insulating paper, plastic film, aluminum foil, and other materials required in their manufacture. We estimate that the industry could only produce about half of the required kilovars in non-PCB designs, thus jeopardizing about half of the billion dollars per year in equipment costs now being saved by the use of the PCB capacitors.

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In addition to the equipment costs, there would be important energy losses. It has been calculated that the difference in energy losses between today's system and a system without capacitors is approximately 42 million kilowatt hours per year. If these losses are made up by burning more fuel oil, it will take an additional 68 million barrels per year. At 1970 rates of consumption, this equals the oil usage of the entire country for five days. Here again, the actual loss would be less than this figure, in an amount determined by the industry's ability to supply substitute non-PCB capacitors, and the ingenuity of electric utility engineers in changing system designs to meet the new conditions.

Additionally, there would be serious dislocations in the lighting and air-conditioning industries due to shortage of capacitors for ballasting fluorescent lights, and for starting and running electric motors. There would be difficulties in making substitutions due to size mismatches, code requirements, and the like.

SUMMARY

Considerable documentation of the economic and social impact of a cessation of the production of PCB transformers and capacitors was communicated to the EPA last November. Yet the economic impact statement distributed in February of this year by counsel for EPA states that the economic impact "is expected to be minor." We can only conjecture whether this expectation derives from a lack of understanding of the major role played by PCBs in the economy or a failure to appreciate that the proposed standards were not likely to be judged attainable by the affected manufacturers.

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(Signed) George B. Farnsworth

George B. Farnsworth

Sworn to before me this 14th

day of March 1974.

Gertrude C. Froio

NOTARY PUBLIC

GERTRUDE C. FROIO
Notary Public in the State of New York
Qualified in Nassau Co. No. 34-1336800
My Commission Expires March 30, 1975