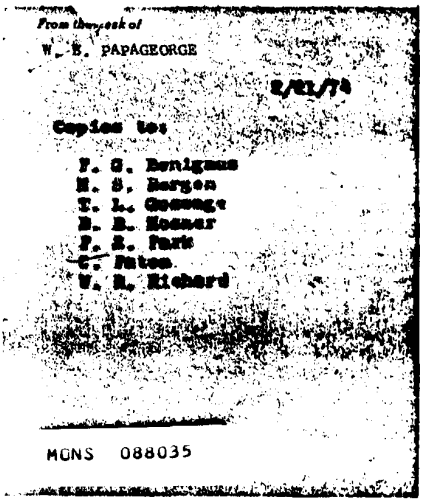

From the desk of

W. B. PAPAGEORGE

2/21/74

Copies to:

F. G. Benignus
M. S. Bergen
T. L. Gossage
B. B. Hosmer
F. E. Park
C. Paton
W. R. Richard

MONS 088035

FEB 19 1974

National Electrical Manufacturers Association
155 East 44th Street · New York, N.Y. 10017 · 212-682-1500

February 5, 1974

TO ALL REPRESENTATIVES OF
MEMBER COMPANIES IN THE
TRANSFORMER SECTION

SUBJECT: FEDERAL ENERGY OFFICE (FEO) PETROLEUM ALLOCATION REGULATIONS AND EPA TOXIC POLLUTANT STANDARDS

Gentlemen:

The purpose of this letter is to bring you up-to-date on progress, with respect to the subject areas, assigned to the Planning Committee's Ad Hoc Committee on the Transformer Oil Crisis. Brief reports on various areas of concern are given below.

A. FEO's Petroleum Allocation Regulations

As you were informed in Mr. W. F. VanWart's letter of January 17, 1974, the Ad Hoc Committee officially confirmed that transformer and switchgear oil falls under "other products", with an allocation of 100% of current usage. At its January 31, 1974 meeting, the Ad Hoc Committee approved another letter to the FEO, resubmitting NEMA's previous recommendation that the definition of "other products" be revised to cover electrical insulating oils, as follows:

"'Other Products' means refined lubricating oils, naptha, electrical insulating oils for apparatus and equipment such as transformers and power circuit breakers used in the distribution of electrical power, and any other refined petroleum products not subject to Subparts D-J of this Part."

Note: Revision is underlined.

NEMA's letter will also indicate that:

1. This revision is desirable considering the specialized nature of the product, the widely dispersed customers involved, and the small number of suppliers.

2. The above change is in the interest of assuring a continuation of an adequate electric supply system.

NEMA's previous recommendation that application for relief in hardship cases should be made to the FEO, on a

Cont'd- - -

MONS 088036

National rather than a State basis, was accepted and now appears in FEO's January 15, 1974 Regulations. A copy of the Regulation is attached for your information.

B. Appointment of a Technical Committee to Develop Recommendations for National Standards on Transformer Oil

The appointment of members of the subject Committee and a scope for its operation was finalized at the January 31, 1974 meeting of the Ad Hoc Committee.

The purpose of this work is to review the several differing company specifications, with the objective of developing recommendations for a single, or as few industry standards as possible, for processing as American National Standards.

The new Technical Committee was requested to meet about once a month, in order to meet the deadline of July, 1974, for completion of this assignment. The Ad Hoc Committee will then meet again and review the recommendations and finalize plans for advancing them to ANS status. One method under consideration is to request that a new subcommittee, with representation from other interested groups and individuals, be formed under ANSI C57.

C. EPA Toxic Pollutant Standards

As you and all Voting Representatives in the Capacitor Section were informed in my January 8, 1974 letter, the development of recommendations for the transformer industry's objections were referred to the Ad Hoc Committee, in view of the very short deadline of January 18, for filing for status as a participant in the Hearings. A copy of NEMA's letter, as approved by both the Transformer and Capacitor Sections, is attached as EXHIBIT "B". Copies of General Electric's, Westinghouse', Monsanto's and Universal Manufacturing's letters are also attached for your information, as EXHIBITS "C" through "F", respectively.

On January 25, 1974, a special Hearing was held to recognize participants who applied in accordance with rules given in another document, 40 CFR Part 10.4. At that time, NEMA, General Electric, Westinghouse and Monsanto were so recognized by the Presiding Officer.

The Presiding Officer made it clear that Hearings will be strictly for cross-examination of participants' testimonies in affidavit form, only. It was also anticipated by the EPA attorney present, that economic data and data on feasibility will be admissible. However, it will be up to the Presiding Officer to decide on the weight that will be put on these factors.

MONS 088037

The Presiding Officer indicated that he will soon issue a memorandum to all participants on the schedule for the Hearings. The Presiding Officer is Edmond Sweeny, a Federal Judge, and he will be assisted by an EPA Attorney. The following are yet unconfirmed dates referred to at the January 25 Hearing:

1. Hearing Dates

March 15 - Testimony in affidavit form, with copies for all who attended the January 25 Hearing. (30 people, mostly attorneys for interested Organizations and Companies).

April 8 - Hearings begin

May 3 - 10 (at the latest) - Closing Hearings

2. Order of Hearings

a. Cyanide

b. Cadmium

c. Mercury

d. (balance to be announced in the Hearing Officer's memorandum).

NOTE

It is estimated that PCB's will be heard on any day from May 8 to May 10.

D. Next Steps for Preparing NEMA's Objections to the EPA Standards

The Ad Hoc Committee unanimously concurred that, in view of the short deadline to prepare the required highly technical and sophisticated data, which involves careful evaluation of available US and foreign scientific information and tests, the preparation of NEMA's formal statement must await the outcome of this work by General Electric, Westinghouse and Monsanto. The General Electric and Westinhouse representatives present at the meeting anticipated that this work would probably not be completed, until a matter of a few days before the March 15, 1974 deadline.

MONS 088038

It was not known at this early stage whether or not the two companies will file a joint statement, through NEMA, or file separately and propose a separate NEMA statement. It was felt, however, that under the circumstances, it may only be possible for NEMA to file in support of the General Electric/Westinghouse and Monsanto statements. Finally, in view of the generally negative tenure experienced at the January 25 Hearing, it may be necessary for participants to take their cases to Court, after the Hearings.

By carbon copies of this letter to all representatives of member companies in the Capacitor Section, they are also being informed on these developments.

Sincerely yours,

A. M. Salazar, Executive Secretary
Power Equipment Division
Secretary, Transformer Section

AMS:dk
Atts:
CC: Ad Hoc Comm. on Transf. Oil Crisis
All Reps. 8-CP
E.L. Dobbins (GE Counsel-Pittsfield)
W. Ferguson (West.-E. Pittsburgh)
B.A. Kerns (West.-W.Bldg.Gateway Center)
J.S. Nelson (G.E. Schenectady)
W.P. Papageorge (Monsanto)
S.N. Richel (GE Counsel-Schenectady)
N.W. Smith (West. Counsel-Gateway Center)
W.J. Smith (Chairman -8SG)
P.N. Wolfe (Dr.) (West.-Gateway Center)

Bernard H. Falk
D.P. Stewart
J.G. Werner
V. Condello
H. Connelley
J.R. Maedler
W.E. Heifner
C.A. Parris
H.C. Smith
W.F. VanWart

MONS 088039

fined petroleum products that may be suitable for processing in a petrochemical plant.

Subpart K—Other Products

§ 211.201 Scope.

(a) This subpart applies to the mandatory allocation of refined lubricating oils, naphtha, and any other refined petroleum products not subject to Subparts D–J of this Part produced in or imported into the United States.

(b) This subpart does not provide for a State set-aside.

(c) General allocation procedures, as specified in § 211.11 shall not apply to this subpart.

§ 211.202 Definitions.

For purposes of this subpart—

"Base period" means the calendar quarter of 1972 which corresponds to the current quarter.

"Other products" means refined lubricating oils, naphtha, and any other refined petroleum products not subject to Subparts D–J of this Part.

§ 211.203 Allocation Levels.

The allocation of other products shall provide for one-hundred (100) percent of current requirements except as herein specified.

§ 211.204 Supplier/Purchaser Relationships.

(a) The FEO may order the sale of other products by a supplier to other suppliers or end-users in order to alleviate imbalances or when necessary to meet current requirements of customers.

(b) The FEO may reassign purchasers, require a transfer of some purchases among suppliers, or make other adjustments as necessary to achieve a more equitable balance of assigned sales among suppliers.

§ 211.205 Method of Allocation.

(a) All suppliers of other products shall meet the current requirements of their current customers or assigned customers under normal business practices.

(b) All suppliers of other products who are unable to meet the requirements of their current customers or assigned customers shall allocate supplies among all their wholesale customers in proportion to each wholesale customer's purchases during the corresponding quarter of 1972.

(c) Any end-user having difficulty securing necessary supplies of other products may petition his appropriate national office for relief.

(d) Any wholesale purchaser of other products who is unable to purchase quantities equal to current requirements may petition to the national FEO in accordance with the provisions of Part 205.

§ 211.206 Procedures and Reporting Requirements.

(a) All matters pertaining to the allocation of other products shall be addressed to the Administrator, FEO, Washington, D.C.

(b) The general record keeping requirements contained in Subpart L of this regulation shall apply to this Subpart. The Initial Report as described in Subpart L of this regulation shall be required. Other reports of Subpart L are not required.

(c) Administrative matters associated with the allocation of other products shall be submitted on a case-by-case basis.

MONS 088040

National Electrical Manufacturers Association
155 East 44th Street · New York, N.Y. 10017 · 212 682-1500

Bernard H. Falk
President

January 18, 1974

The Hearing Clerk
Environmental Protection Agency
Washington, D. C.

Dear Sir:

On December 27, 1973, the Environmental Protection Agency ("EPA") proposed toxic pollutant effluent standards for polychlorinated biphenyls ("PCB's"), and invited persons adversely affected to file objections not later than January 18, 1974. 38 Fed. Reg. 35388. The National Electrical Manufacturers Association ("NEMA") consists, in part, of manufacturers of transformers, capacitors, and other equipment who would be adversely affected by such standards. On behalf of the product Sections of NEMA who would be affected, NEMA submits objections as follows:

(1) To the finding that referenced available data supports categorizing PCB's as toxic material. On the contrary, NEMA asserts that available data does not support such a categorization.

(2) To the finding that Aroclor 1016 should be considered a toxic pollutant. On the contrary, Aroclor 1016 should not be so considered.

(3) To the implied finding that the recommended concentration of .002 PPB of PCB's in fresh water is obtainable in existing plants using PCB. On the contrary, such standard must be regarded as unattainable.

(4) To EPA's apparent failure to consider variants in background levels of PCB's in establishing emission standards. This has resulted in an unnecessarily stringent proposed standard.

(5) To EPA's apparent failure to consider recent modifications in the usage of PCB's which have substantially reduced the exposure of the environment to PCB's.

The Hearing Clerk
Environmental Protection Agency January 18, 1974 -2-

The Summary of the Basis and Purpose of the Effluent Standards Proposed, as set forth in the Fed. Reg. Notice of December 27, 1973, does not fully comply with the requirements for a "Statement of Basis and Purpose" set forth in 40 CFR, Section 104.4, as amended, 39 Fed. Reg. 1027. NEMA, therefore, reserves the right, when a complete statement is received and evaluated, to file further specific objections, as appropriate.

Respectfully submitted,

B. Jerrold H. Field

BHF/jr

MONS 088042

EXHIBIT "B"

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, 1 RIVER ROAD, SCHENECTADY, NEW YORK 12345
Phone (518) 374-2211

CORPORATE
FACILITIES
SERVICES

January 15, 1974

Hearing Clerk
U. S. Environmental Protection Agency
Washington, D. C. 20460

Re: 40 CFR 129 (Subpart I)

Gentlemen:

On December 27 (38 FR 35388), EPA proposed an effluent standard for polychlorinated biphenyls, and made the proposal applicable to capacitor and (we infer) transformer manufacturers. Persons adversely affected by the proposal were instructed to file objections by January 18, in accordance with 40 CFR 104 (39 FR 1027).

The General Electric Company (G.E.) is engaged in the manufacture of industrial and power capacitors, as well as power and distribution transformers. PCBs are widely used as insulating liquids in both categories; hence, our operations will be vitally affected by the final regulations.

The degree of our reliance upon PCBs, their essentiality, and the economic impact of an effective ban on their usage have been addressed in our recent letters to Dr. Martha Sager (Chairwoman, Effluent Standards and Water Quality Information Advisory Committee) and Dr. C. Hugh Thompson (Chairman, Hazardous and Toxic Substance Regulation Task Force). Copies of both letters are attached hereto.

The proposed standard was apparently based solely on toxicological data that appear in EPA's Proposed Criteria for Water Quality (38 FR 29646). If so, we are concerned about the paucity of data upon which the standard was based, the relevance of existing data to the creation of a toxic pollutant standard, and indeed - the validity of EPA's extrapolations from such data. More specifically, we find (1) an unnecessarily stringent standard, (2) a failure to distinguish among different PCB compounds, and (3) a failure to consider the exemption of residual PCBs from the standard.

MONS 088043

EXHIBIT "C"

Nonetheless, we cannot render responsible comments or objections as required by 40 CFR 104.6(d) in the absence of EPA's "statement of basis and purpose." A capsule summary of the statement was presented in 38 FR 35388, along with an acknowledgment "that there may in some cases be inadequacies in the underlying data base." However, the complete text was not publicly available, as of January 11. Federal Regulations (40 CFR 104.4) would seem to have required availability by December 27.

EPA states that "the attached standards are not based upon economic considerations," although its own criteria document acknowledges that such considerations are important in "establishing particular standards and control measures" for pollutants that "may be listed as toxic pollutants under subsection 307(a)." See Proposed Criteria for Water Quality, Vol. I, U.S.E.P.A., October 1973.

EPA then claims that "the impact of the standards upon the economy has been examined and does not appear to be great." We disagree. In our judgment EPA's proposed standards would have a major economic impact. Presumably the rationale of EPA's examination also appears in the "statement of basis and purpose." Our analysis of such examination must await our receipt and review of that document.

For the sake of continuity, we plan to make an economic and feasibility presentation in conjunction with our toxicological comments. At that time, we will address the question of relevance, as required by 40 CFR 104.6(d).

In view of the unavailability of essential data it is unreasonable to require G.E. to formulate detailed objections at this time. Therefore, on behalf of G.E., I hereby file a general objection to 40 CFR 129 (Subpart I) and request that the Presiding Officer:

(1) pursuant to 40 CFR 104.6(a), find that reasonable cause existed for our failure to submit specific objections to 40 CFR 129 (Subpart I) by January 18;

(2) pursuant to 40 CFR 104.6(a), authorize our subsequent submission of specific objections to 40 CFR 129 (Subpart I), said authorization to terminate no sooner than one month after the aforementioned "statement of basis and purpose" is made available to G.E.; and

(3) pursuant to 40 CFR 104.8(a), designate G.E. as a party in the subject proceeding.

Please contact me (AC 518/374-2211, ext. 5-9058) if the Presiding Officer rules adversely on any or all of the above requests. Regardless, you may expect my attendance at the January 25 hearing. I will be ready at that time to assist in laying the groundwork for the future conduct of this proceeding.

Sincerely yours,

Stuart M. Richel

Stuart M. Richel
Attorney-Environmental Protection

SMR:a

Enclosures

MONS 088045

The Westinghouse letter to the Hearing Clerk will be mailed at a future date, inasmuch as a copy of same was not available at this mailing.

EXHIBIT "D"

Monsanto

MONSANTO INDUSTRIAL CHEMICALS CO.
800 N. Lindbergh Boulevard
St. Louis, Missouri 63166
Phone: (314) 694-1000

January 18, 1974

Hearing Clerk
U.S. Environmental Protection Agency
Washington, D.C. 20460

Re: Environmental Protection Agency
(40 CFR Part 129)
Water Program
Proposed Toxic Pollutant Effluent Standards
Federal Register, Vol. 38, No. 247,
Pages 35388-35395
Thursday, December 27, 1973

Gentlemen:

As a major producer and supplier of polychlorinated biphenyls (PCBs) to the electrical industry for fire resistant dielectric fluid applications, we have reviewed with considerable interest the effluent standards for these materials proposed in new Part 129, Subpart I, Chapter I of Title 40, Code of Federal Regulations.

We appreciate and concur with the Agency's intent to control the presence of persistent PCBs in the navigable waters of the United States to prevent environmental damage. We have already taken positive steps toward this end. We strongly support realistic action designed to prevent irresponsible introduction of persistent PCBs into the environment.

We note, however, with considerable dismay that proposals included in Subpart I are, in our considered opinion, unrealistically restrictive, not supported by currently available data and not warranted under the present conditions of manufacture and use.

In accordance with Section 104.6, Part 104, Chapter I of Title 40, Code of Federal Regulations, we offer the following objections. These objections indicate our deep concern for this matter and are in as much detail

EXHIBIT "E"

as available time has allowed. We respectfully request an opportunity to present testimony describing our objections in greater detail at public hearings which we understand will be conducted at a future date.

1. We object to the unavailability of all the information used in the establishment of the proposed effluent standards. The short time available between the publication of the standards on December 27, 1973 and the published filing date of January 18, 1974; the unavailability of new Part 104, Title 40 CFR until January 4, 1974 and of the Statement of Basis and Purpose, Toxic Pollutant Effluent Standards until January 14, 1974, have prevented completion of a thorough evaluation of the proposed standards at this time. Further, a full copy of the EPA Water Quality Criteria dated October, 1973 is not yet available to us to review and evaluate nor is the long heralded report of the National Academy of Sciences and the National Academy of Engineering entitled "Water Quality Criteria, 1972."

2. We object to the proposed definition of polychlorinated biphenyls which implies that all the isomers have similar chemical, physical, toxicological, and degradation characteristics. Significant differences do exist and should be considered in developing a clear definition of those PCBs which affect the environment.

3. We object to the limitation of a maximum flow of 10,000 cubic feet per second in determining the quantity of PCBs which can be discharged into a stream, lake, estuary or coastal water. We find it difficult to understand the rationale which results in the conclusion that a PCB concentration which is acceptable in a slow moving body of water must be proportionately reduced when the flow exceeds an arbitrarily designated rate.

4. We object to the establishment of an effluent level for PCBs based on a concentration level which has been suggested as the threshold for salmon egg mortality. Information supporting the validity of this data is not available. Secondly, we seriously question that salmon truly qualify for the requirement under Section 307(a)(2) of the Act which states that the standard must take into account "....the usual or potential presence of the affected organisms...."

EXHIBIT "E"

5. We object to the establishment of an effluent level for PCBs based on calculations in which a biological accumulation factor of 200,000 was used. Biomagnification observed in environmental samples has been reported as ranging from 1 to 200,000 fold varying with the type of PCBs and wildlife species studied. We question the appropriateness of using the non-typical higher value.

6. We object to the establishment of effluent standards for PCBs before the development of approved sampling and analytical procedures which will assure accurate and reproducible results when performed in qualified laboratories. Further, the proposed critical chronic limit for fresh water streams of 0.0012 µg/l is below the present normal limit of detection with the analysis performed by an experienced analyst using sensitive measuring equipment.

7. We object to the lack of a published statement containing a full and complete assessment of the economic impact of the proposed effluent standards, if adopted, as required by the National Environmental Policy Act of 1969.

8. We object to the establishment of the PCB effluent standards without acknowledgment and full consideration of the presence at point sources of significant quantities of residual PCBs due to past discharges. Because of this inherent background level and because of the extremely low levels which resulted from the use of unrealistic premises, to which we objected in our foregoing comments, the proposed PCB effluent standards are not, in our opinion, practicably attainable.

The Monsanto Industrial Chemicals Company has commented and made recommendations relating to the inclusion of PCBs on the Toxic Pollutants List and to the establishment of an effluent standard for our manufacturing facility to representatives of the Agency and to the Effluent Standards and Water Quality Information Advisory Committee. Copies of our comments are enclosed.

Our purpose in commenting on the proposed standards is to aid the Agency in the development of realistic effluent standards which will achieve the intended objectives without serious technical, social and economic disruptions.

To achieve our purpose we believe we must have access to, and review with Agency representatives, all of the information which was used in the establishment of the basis and purpose of the proposed PCB standard. We, therefore, respectfully request that the time period during which testimony is to be submitted and the dates on which the hearings will be conducted be extended.

Respectfully submitted,

W B Papageorge

W. B. Papageorge
Manager, Product Acceptability
Functional Product Groups

WBP/bt

Enclosure

MONS 088050

EXHIBIT [illegible]

Capacitor Division

UNIVERSAL MANUFACTURING CORP.

902 CRESCENT AVENUE
BRIDGEPORT, CONN. 06607
(203) 336-0161

January 22, 1974

Subject: Comments on List of Toxic Pollutants and Proposed Toxic Pollutant Effluent Standards

Dr. C. Hugh Thompson
Chairman, Hazardous and Toxic Substances
Regulation Task Force
Office of Water Program Operations
U.S. Environmental Protection Agency
Washington, D.C. 20460

Dear Dr. Thompson:

It has come to our attention that you will consider comments relating to the materials on the List of Toxic Pollutants (Federal Register, Vol. 38, No. 173, September 7, 1973) under the Federal Water Pollution Control Act, and on the Proposed Toxic Pollutant Effluent Standards (Federal Register, Vol. 38, No. 247, December 27, 1973) under the same Act.

Universal Manufacturing Corporation is a substantial user of Polychlorinated biphenyls (PCB's), which are included on the List of Toxic Pollutants, and for which Proposed Standards have been published. Specifically, we use Aroclor 1016, purchased from Monsanto Industrial Chemicals Co., in the manufacture of capacitors used principally to improve the efficiency of operation of ballasts for fluorescent lamps and high intensity discharge lamps, and of residential air conditioning equipment.

In addition to the Federal Register publications on this subject, five documents with which you are already familiar are, we believe, particularly pertinent:

1) "PCB's and the Environment", Interdepartmental Task Force on PCB's, May, 1972.

EXHIBIT "A"

2) Letter, subject "Comments on Toxic Pollutant Effluent Standards (38 FR 21342, Sept. 7, 1973)" dated November 21, 1973, from Dr. E. L. Simons of General Electric Company to Dr. C. Hugh Thompson of EPA.

3) Letter, subject: "Effluent Limitations for Items on Toxic Substances List: Economic Impact of a Ban on PCB." dated November 21, 1973, from James S. Nelson of General Electric Company to Dr. Martha Sager of EPA.

4) "Presentation to the Effluent Standards and Water Quality Information Advisory Committee" by Mr. W. B. Papageorge of Monsanto Industrial Chemicals Company, November 29, 1973.

5) Letter re: Effluent Standards and Water Quality Information Advisory Committee Agenda and Notice of Public Hearings, dated July 13, 1973 from Mr. W. B. Papageorge of Monsanto to Dr. Martha Sager of EPA, enclosed with letter dated August 6, 1973 from Mr. W. B. Papageorge of Monsanto to Dr. C.H. Thompson of EPA.

We believe the proposed effluent standards for PCB's are unrealistically low, are unwarranted, and if placed in effect would have the practical effect of a ban on the manufacture and use of PCB's in electrical capacitors and transformers (the only remaining uses) in the United States. Certainly a ban for such applications was not recommended by the Interdepartmental Task Force; in fact, that recommendation was to the contrary. Mr. Nelson's letter to Dr. Sager summarizes the economic effects of a ban on the use of PCB's in the capacitor industry; we agree with and fully support the presentation in that letter and its enclosures. Dr. Simons' letter to you summarized reasons why the proposed standards lack justification, and are unwarranted and unnecessary to accomplish the environmental protection purposes of the Federal Water Pollution Control Act; we agree with and fully support the presentation in that letter. The July 13, 1973 letter and the November 29 presentation by Mr. Papageorge call attention to the biodegradability of the PCB isomers used in capacitors, and to the actions taken within the industry to minimize the entry of PCB's into the environment; we agree with and fully support the presentations in these documents.

PCB isomers which contain five or more chlorine atoms per biphenyl molecule have been present as only a fraction of one percent in all PCB material used in capacitors since the latter part of 1971. To our knowledge, only such isomers have been found in the tissue of any form of life. We believe a distinction should be made in establishing effluent standards, between substances which can reasonably be expected to have an adverse chronic effect and those which by their absence from tissue can be expected not to have such effect.

The quantity of capacitors which are used in fluorescent lamp ballasts probably exceeds 50 million a year. By the nature of the application in most commercial and industrial installations, they are used indoors in large numbers; quantities used in individual buildings range upward into the thousands. We believe the non-flammability of the PCB materials currently used in such capacitors is a major safety factor. Alternative materials known to us (such as a special grade of mineral oil), even if they were available in sufficient quantity, have much lower flash/fire points than PCB's, and would in our judgement present a very real fire safety hazard when used in such concentrations. To our knowledge, this potential hazard has never been seriously evaluated, since capacitors used in this application have been made with PCB's since the beginning of the fluorescent lighting industry in 1938.

Capacitors have been used over the years in increasing numbers, for economic reasons, on electrical distribution circuits, in lighting equipment, and in electrically powered equipment which includes inductive devices such as electric motors. In such applications they not only save electric energy directly by improving efficiency of operation, but they save much more energy indirectly by reducing the amount of material which would otherwise be required to perform the function. Such savings have now passed beyond the purely economic realm, and are increasingly important from the standpoint of their environmental effect. In this connection, we are attaching a copy of a letter dated January 3, 1974 to Mr. William Simon of the Federal Energy Office, from Mr. John R. Hutzler of Aerovox Industries, Inc. encouraging the use of capacitors to save energy. Unrealistic or unjustified effluent standards which would have the effect of forcing a change to non-PCB materials for capacitors, and thus reducing their supply by approximately 50% (see enclosure to Mr. Nelson's November 21, 1973 letter to Dr. Sager), would in our

judgement impose an unnecessary burden on the economy, would impose additional requirements on the already insufficient supply of energy, and would be counter-productive to the objective of improving the environment.

Our purpose in writing these comments has been to add our support to information you already have, and to emphasize our belief that the Proposed Toxic Pollutant Effluent Standards are unnecessarily and unwarrentedly restrictive. We appreciate the opportunity to submit comments, and hope you will find them useful.

Very truly yours,

UNIVERSAL MANUFACTURING CORP.

N. Ray Clark, Vice President

NRC/h
Encs:

Distribution List:

PH Einhorn, Paterson

I Miller, Paterson

GD Rayno, Office

Mr. Fred Stein
Office of Environmental Affairs
U.S. Dept. of Commerce
Room 4424
Main Commerce Building
14th St. & Constitution Ave., N.W.
Washington, D.C. 20230

Mr. T.L. Gossage
Monsanto Industrial Chemicals Co.
800 N. Lindbergh Blvd.
St. Louis, Mo. 63166

Mr. W.B. Papageorge
Monsanto Industrial Chemicals Co.
800 N. Lindberg Blvd.
St. Louis, Mo. 63166

Dr. E.L. Simons
General Electric Company
One River Road
Schenectady, N.Y. 12345

Mr. James S. Nelson
General Electric Company
One River Road
Schenectady, N.Y.

Dr. Al Pozefsky
General Electric Company
John Street
Hudson Falls, N.Y.

Mr. Clifford H. Tuttle
Aerovox Industries, Inc.
740 Belleville Ave.
New Bedford, Mass. 02741

Mr. Ray Hurd
Cornell-Dubilier Electronics
1605 Rodney French Blvd.
New Bedford, Mass. 02741

Mr. Rudy Carlson
Electrical Utilities Company
2429 St. Vincent Ave.
LaSalle, Ill. 61301

Mr. Larry Arsenault
Jard Company, Inc.
P.O. Box 650
Bennington, Vt. 05201

Mr. Wayne Etter
Mallory Capacitor Co.
3031 E. Washington St.
Indianapolis, Ind. 46200

Mr. John D. Washburn
Sprague Electric Co.
149 Marshall Street
North Adams, Mass. 01247

Mr. Harold Dubilier
York Electronics Corp.
104 South 4th Street
Brooklyn, NY 11211

Mr. A.M. Salazar
National Electrical Mfgrs. Assn.
155 East 44th Street
New York, NY 10017

Mr. A.E. Feinberg, President
Certified Ballast Mfgrs. Assn.
C/O Advance Transformer Company
2950 Northwestern Ave.
Chicago, Illinois

Mr. J.F. Kuzela
Sangamo Electric Co.
PO Box 359
Springfield, Ill. 62705

Mr. R.D. McClain
Westinghouse Electric Corp.
PO Box 341
Bloomington, Ind. 47401

Mr. E.G. Hammer
McGraw Edison Company
PO Box 160
So. Milwaukee, Wis. 53172

Aerovox INDUSTRIES, INC.

740 Belleville Ave.
New Bedford, Mass. 02741
617-994-9661

January 3, 1974

Mr. William Simon
Treasury Deputy Secretary &
Administrator of Federal Energy Office
Treasury Dept.
Washington, D.C.

Dear Mr. Simon:

There has been considerable comment in the media relative to your organization's efforts to conserve the consumption of fuel oil, gasoline and other primary energy sources. In addition, it appears that considerable money will be spent to develop other basic sources of energy.

Our purpose in writing this letter is to call to your attention methods by which millions of kilowatts can be more effectively utilized immediately. As long as electrical energy is inefficiently used, any new sources of basic energy will be largely wasted. What I am suggesting is that the Administration should draft a comprehensive package of legislation requiring that a minimum power factor be specified in electrical devices. Power factor can be considered as the ratio of useful power to the delivered power. Another definition is: power factor = $\frac{\text{watts}}{\text{volts x amperes}}$. A power factor of 100% is the ideal where all the power delivered is productive power. Most circuits operate below 100%, many operating as low as 50% power factor in the inductive mode. The power factor can be improved and energy conserved by adding capacitors to the electrical circuit which would balance the inductive effect.

Motors are an example of an inductive device where the power factor is often lower than 50% depending upon design, construction and use. Although some industries, such as the manufacturers of heating and air-conditioning equipment, use capacitors with many of their motors, this industry still uses large quantities (3.5 million per year) of shaded pole motors which do not use capacitors and operate at a power factor in the order of 50%. The addition of capacitors to these motor circuits can raise the power factor above 90% and improve the efficiency so that a saving in power could total 420,000 KW. This is just <u>one</u> type of motor purchased

in one year, used in one industry (heating and air-conditioning) that already purchases large quantities of capacitors for motor run application on their compressors. Larger savings could be obtained if other industries, such as the home appliance industry, were to incorporate more capacitors into their products to improve both the power factor and the efficiency. I realize that there could be a resistance to the requirement for power factor correction on appliances because of the increased cost, although minimal, to the consumer. However, the new energy labeling program would help to indicate to the consumer the advantages of improved design and the long-term savings of efficient products.

In addition to the motor industry, the lighting industry is another source of an inductive load. Gas discharge lamps, such as fluorescent, mercury and high pressure sodium, require a ballast which contains an inductive device to limit the current used by the lamp. Some utilize a capacitor, some do not. Four different circuits are commonly used in ballasts: 1) the constant wattage autotransformer, 2) constant wattage, 3) the high reactance and 4) the reactor. The constant wattage autotransformer circuit is used in fluorescent lighting and high intensity discharge lighting; it contains a capacitor and has a power factor of about 90%. The constant wattage ballast is used extensively in roadway lighting; it contains a capacitor and has a power factor of about 90%. Both of these circuits operate at low current levels, have good voltage regulations but have relatively high initial procurement costs and are sold predominately to industrial users. The high reactance and reactor circuits are used extensively for low wattage lamps, do not contain capacitors, operate at about 50% power factor, have high operating currents with poor voltage regulation but are relatively low in cost and are sold for many applications to the consumer. Capacitors placed across the input power line would raise the power factor of both the high reactance and reactor ballast circuits and lower the operating currents and operating cost. Here again, the energy labeling program would help to indicate to the consumer how to get the most for his money.

Another opportunity to conserve power used in lighting is the selection of the lamp. Gaseous discharge lamps are a more efficient light source than incandescent lamps. Table I lists the efficacy of the various type lamps in lumens per input watt. Examples of the energy savings from discharge lamps can be found in the home where a 32 watt fluorescent lamp gives about the same light as a 100W incandescent lamp for 32% of the power. Although

a power savings of 68 watts may appear small, there were 389,191,000 general lighting incandescent lamps (15 to 150 watts) produced in 1970.

In outdoor lighting where larger, more efficient, long lasting lamps are used, the energy savings obtained from discharge lamps are even greater. A 150 watt high pressure sodium lamp gives about the same light as a 860 watt street lighting incandescent lamp. The rated life of the discharge lamp is 12,000 hours, while the rated life of the incandescent lamp is 3,000 hours. Not only does the discharge lamp give the same light for 18% of the power required by the incandescent lamp for a 82% energy saving, but the replacement labor cost and time is much lower. These examples and comparisons are on a basis of input watts of productive power to the lamp. An efficient high power factor ballast must be used with the gaseous discharge lamps in order to utilize the power most efficiently. Here too, in lamp selection the energy labeling program would help the consumer get the most light for his money especially when the total operating cost over the entire life of the lamp is considered.

These are but a few examples of the energy that can be saved by the proper selection of lighting and the improvement of power factor. The full extent of the ultimate energy savings is extremely difficult for us to estimate accurately but we are convinced that the savings are very large.

Therefore, I strongly suggest that you consider the preparation of legislation, or rules under existing legislation, that would accomplish the following:

1) A minimum power factor requirement be placed on all new electrical machines, such as home appliances, business machines, industrial machines, etc.

2) A minimum power factor requirement be placed on all new gas discharge lighting fixtures and ballasts.

3) Phase out the use of incandescent lights except in the home.

4) Incorporate the concept and use of power factor in the energy labeling program.

I realize that such an undertaking, as outlined above, is of sig-

nificant magnitude, however, if enacted over a reasonable period of time, I do not believe it would be as strenuous as that which is now being attempted by EPA relative to emmission control. Of greater value is the fact that these requirements would not only reduce the electrical energy consumed, but also, in the longer term, would be self-liquidating to the consumer.

Thank you for giving this matter your concerned attention.

Very truly yours,

John R. Hutzler
Vice President-Engineering

JRH/ab

TABLE I

EFFICACY OF LIGHT SOURCES

Light Source	Efficacy Lumens per Watt
Incandescent	
25W	10.5
100W	17.4
1000W	22.
Gas Discharge	
Fluorescent	
Soft white	44.
Day light	53.
Warm white	65.
High Intensity Discharge	
Mercury	63.
Metal Halide	100.
High Pressure Sodium	106.

From the desk of

W. B. PAPAGEORGE

2/26/74

Copies to:

P. G. Benignus
E. S. Bergen
T. L. Gossage
D. E. Hanner
P. S. Park
G. Paton
W. R. Richard

MONS 088061

National Electrical Manufacturers Association
155 East 44th Street • New York, N.Y. 10017 • 212-682-1500

FEB 25 1974

February 19, 1974

TO ALL REPRESENTATIVES OF
MEMBER COMPANIES IN THE
TRANSFORMER SECTION

SUBJECT: FEBRUARY 5, 1974 LETTER ON FEDERAL ENERGY OFFICE (FEO) PETROLEUM ALLOCATION REGULATIONS AND EPA TOXIC POLLUTANT STANDARDS

Gentlemen:

Attached is a copy of EXHIBIT "D", which was not available at the time we mailed the above stated letter.

Attached also, for your information, is NEMA's February 15, 1974 letter to the FEO approved at the January 31, 1974 meeting of the Ad Hoc Committee.

Sincerely yours,

A.M. Salazar
Secretary
Transformer Section

AMS:dk
Att:
CC: Ad Hoc Comm. on Transf. Oil Crisis
All Reps. 8-CP
E.L. Dobbins (G.E. Counsel-Pittsfield)
W. Ferguson (West.-E. Pittsburgh)
B.A. Kerns (West.-W.Bldg.Gateway Center)
J.S. Nelson (G.E. Schenectady)
W.P. Papageorge (Monsanto)
S.N. Richel (GE Counsel-Schenectady)
N.W. Smith (West. Counsel-Gateway Center)
W.J. Smith (Chairman-8SG)
P.N. Wolfe (Dr.) (West.-Gateway Center)

Bernard H. Falk
D.P. Stewart
J.G. Werner
V. Condello
H. Connelley
J.R. Maedler
W.E. Heifner
C.A. Parris
H.C. Smith
W.F. VanWart

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
155 EAST 44TH STREET, NEW YORK 10017 682-1500

BERNARD H. FALK
PRESIDENT

February 15, 1974

Mr. John C. Sawhill
Deputy Administrator
Federal Energy Office

Dear Mr. Sawhill:

By letter dated December 21, 1973 (copy attached), we sought to inform your agency of the special circumstances involving electrical insulating oil, particularly the purpose served by this specialized petroleum product, its source, the quantities used during the past five years and anticipated to be used during the near-term future, and the necessary relation between adequate supplies of insulating oil and adequate availability of electrical energy.

A careful study of the Mandatory Fuel Allocation Regulations which appeared in the Federal Register dated Tuesday, January 15, 1974, convinces us that your office has thoroughly considered our previous representations and agree that the best interests of the country are served by providing for an allocation equal to 100% of current need of electrical insulating oil. We arrive at this conclusion based on our determination that electrical insulating oil can only be covered by 211.201(a) of Subpart K - Other Products, for which the allocation is covered in 211.203. This conclusion is enhanced by the fact of the vital nature of this product, and that it is not consumed in use as are fuels and lubricants, but rather continues to perform its function over the full life of the equipment in which it is used - as long as 20-30 years or more - and even then may be recycled for continued use.

It would help our industry if in the next revision of the Regulations specific reference could be made to this material. This could be done by revising 211.202 Definitions to read as follows:

MONS 088063

"Other Products" means refined lubricating oils, naptha, *electrical insulating oils for apparatus and equipment such as transformers and power circuit breakers used in the distribution of electrical power*, and any other refined petroleum products not subject to Subparts D-J of this Part."

This revision is desirable considering the specialized nature of the product, the widely dispersed customers involved, and the small number of suppliers.

NEMA respectfully urges the above change in the interest of assuring a continuation of an adequate electric supply system.

Sincerely,

Bernard H. Falk

MONS 088064

Westinghouse Electric Corporation Power Systems

Transformer Division
400 Sharpsville Avenue
Sharon Pennsylvania 16146
Telephone (412) 347-1200

January 17, 1974

The Hearing Clerk
Environmental Protection Agency
Washington, D.C.

Dear Sir:

On December 27, 1973, your Agency published a proposed effluent standard for polychlorinated biphenyls ("PCBs"); and it invited persons adversely affected by such standard to file objections not later than January 18, 1974. 38 Fed. Reg. 35388. Westinghouse Electric Corporation each year handles in excess of 10 million pounds of PCBs, and it would be adversely affected by such standard.

The objections of Westinghouse Electric Corporation are as follows:

1. To the finding that " . . . the impact of the standards upon the economy . . . does not appear to be great." On the contrary, adoption of the regulation would severely impair the efficiency of transformers and capacitors and interrupt the availability of such equipment, all of which would restrict the consumable electric power otherwise available to the nation with concomitant loss to all sectors of the economy.

2. To the finding that all 210 possible different PCB compounds possess equivalent toxicity, including their persistence, degradability, the usual or potential presence of the affected organisms in any extent, and the importance of the effect of the toxic pollutants on such organisms. On the contrary, PCB compounds utilized by Westinghouse Electric Corporation do not possess such toxicity as would warrant treating them as pollutants at the maximum levels of emission specified in the proposed effluent standard.

EXHIBIT "D"

MONS 088065

Westinghouse notes that the "summary of the basis and purpose of the effluent standards proposed" does not comply with requirements for a "Statement of basis and purpose" set forth in 40 CFR §101.4, as amended, 39 Fed. Reg. 1027, and in accordance with which the proposed standard was published. Although such a Statement has been issued, it was provided to Westinghouse only on January 14, 1974, and it has not yet reached the Westinghouse technical personnel responsible for its review and analysis. Westinghouse anticipates that, when such review and analysis is completed, further objections may be appropriate.

Respectfully submitted,

s/ Norman William Smith, Jr.

Norman William Smith, Jr.
Attorney for
Westinghouse Electric Corporation

EXHIBIT "D"