

HISTORICAL SUMMARY OF PCB ENVIRONMENTAL ISSUE

By

W. B. Papageorge

Polychlorinated biphenyls have been commercially available for over 40 years, and, as many of you are aware, are produced world-wide in many of the industrially developed nations.

As with many industrial chemicals, early studies to determine the toxicity properties of these materials were designed to provide the appropriate information to guide the manufacturers and users in its proper handling, storage and shipping. This understanding of the polychlorinated biphenyls resulted, through the years, in a remarkable record of very few incidences of human exposures resulting in observable effects. In each reported instance the existing evidence indicated that improper industrial hygiene practices were being followed.

During the late 1950's and 1960's increased interest in the presence and effects in the environment of chlorinated hydrocarbon pesticides resulted in the development of sophisticated analytical methodologies with capabilities of detecting these substances at extremely low levels of concentration.

In the use of gas-liquid chromatography for the determination of DDT and its metabolites, investigators were puzzled by the presence of response peaks which could not be identified. Generally, these peaks were ignored, and, in some laboratories, they were considered as possible metabolites of DDT.

In late 1966, Drs. Jensen and Widmark, Analytical Chemistry Laboratories, University of Stockholm, identified these peaks as polychlorinated biphenyls and claimed to have found these materials in many foods, human milk, infant hair, pine needles and in feathers from a mounted eagle in a museum. The results of this study were published in 1967.

During 1967 other investigators, using Jensen's method, established the presence of polychlorinated biphenyls in samples from the environment. By late 1967 and early 1968, presence in the environment was fairly well established, but in many instances could not be explained. All of the early reports indicated that the polychlorinated biphenyls being identified represented mixtures of the higher chlorinated isomers.

At this point, Monsanto launched a multi-point program aimed at obtaining more information about polychlorinated biphenyls and their presence and impact on the environment. This program included the following:

1. Develop analytical methodology
2. Conduct biodegradation studies

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EXHIBIT

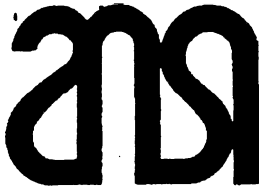
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3. Conduct animal toxicity studies
4. Develop alternative materials for PCB applications
5. Develop a program for the recycle or proper disposal of scrap polychlorinated biphenyls
6. Develop a continuing program of informing our customers of significant developments
7. Cooperate fully with industrial, governmental and academic laboratories

Studies performed throughout the world have resulted in the following findings:

1. The presence of polychlorinated biphenyls in the environment has been confirmed.
2. Some isomers of polychlorinated biphenyls are more resistant to degradation than others.
3. The early claims indicating that PCBs result in widespread thinning of eggshells in wild birds have not been confirmed.
4. Massive fish kills attributed to PCBs have not been confirmed.
5. Biological magnification in the food chain does occur.
6. Some species of marine and wildlife are very sensitive to low levels of PCBs, e.g. brown shrimp, some species of fish, invertebrates, mink.
7. PCBs identified in samples obtained in remote areas represent the higher chlorinated isomers. Samples obtained near a source of the commercial material contain the lower chlorinated isomers.
8. High doses of polychlorinated biphenyls present in rice bran oil resulted in the presence of toxic effects in over 1,000 Japanese.
9. The effects of chronic long-term, low-level exposure to humans has not been established.
10. High levels found in human food and animal feeds are traceable to known sources.

Because of its presence in the environment and indicated effect on some species of wildlife, coupled with the concern regarding



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MINUTES:

MEETINGS OF CAPACITOR AND TRANS-
FORMER WORKING GROUPS; OF THE
ANSI COMMITTEE C107, ON USE AND
DISPOSAL OF ASKAREL AND ASKAREL-
SOAKED MATERIALS

PLACE OF MEETING:

MARRIOTT MOTOR HOTEL
CHICAGO, ILL.

DATE AND TIME:

THURSDAY, MAY 25, 1972

JOINT SESSION

8:30 A.M. - 10:15 A.M.

SEPARATE W.G. SESSIONS

10:15 A.M. - 3:15 P.M.

MEMBERS PRESENT:

Capacitor Working Group

N. R. Clark
A. S. Doty
E. G. Hammer
J. F. Kuzela
R. D. McClain
E. M. Moore
H. A. Onishi
A. Pozefsky
P. L. Rollins

Universal Manufacturing Co.
P. R. Mallory & Co. Inc.
McGraw-Edison Power Systems Div.
Sangamo Electric Company
Westinghouse Electric Corporation
Electrical Utilities Company
Commonwealth Edison Co.
General Electric Company
Jard Company Inc.

Transformer Working Group

W. S. Grogan
E. L. Raab
W. C. Reinhardt

A. L. Rickley
W. E. Shoulders (Rep. for
F. R. Lengefeld)

Allis-Chalmers Corporation
General Electric Company
Central Moloney Transformer Div.
Colt Industries
Doble Engineering Co.

Union Electric Co.

MEMBERS ABSENT:

Capacitor Working Group

NONE

Transformer Working Group

D. M. Crabtree
T. K. Sloat

Department of the Army
Westinghouse Electric Corporation

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of ANSI C107

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OTHERS PRESENT:

*P. G. Benignus
*W. P. Papageorge
*A. M. Salazar

Monsanto Company
Monsanto Company
NEMA Staff

PRESIDING OFFICER:

W. P. Papageorge, Chairman
ANSI C107 Committee

*Attendance shared between all three sessions.

I. APPROVAL OF PREVIOUS MINUTES

The minutes of the February 8-9, 1972 meetings not being available, as yet, no previous minutes were submitted for approval.

JOINT SESSION

II. BRIEF REPORT ON DEVELOPMENTS OF INTEREST

Mr. Papageorge conducted a brief review of recent developments, along the following lines:

1. The Interdepartmental PCB Task Force report was issued on May 14. Copies were given to the Chairmen of the Capacitor and Transformer Working Groups.

The recommendations in the report includes continued use of PCB's in capacitors and transformers, control of PCB's in plant effluents to assure that PCB's in rivers, lakes and streams do not exceed 0.01 ppb, the need for a Toxic Substances Act to provide the Government Agencies with statutes to better control "hazardous" materials and the need for co-operation between countries to control imports of undesirable materials.

2. Monsanto had met with representatives of EPA to discuss the rumored report that regulation was to be based on zero detectable PCB in plant effluents. Consensus was reached that PCB's from unknown sources would continue to be present in plant effluent for some time, even when tight controls are instituted.

3. Copies of a PCB regulation guideline, issued to the EPA administrators from John Quarles office, were distributed for the members' information

4. Monsanto was subpoenaed for the Federal Grand Jury in Los Angeles, to divulge names of customers located in Orange, Los Angeles and Riverside Counties, who purchased PCB's since January 1, 1972. This action

was taken at the request of the San Francisco Regional EPA Office, to help determine the source of PCB's in sewage sludge from the Los Angeles sewage treatment plant.

5. Congressional Hearings were started on the Toxic Substances Act. PCB's are being cited as an example of why the regulatory agencies needed added legislation to control "hazardous" materials.

6. The comment period for the proposed FDA Regulation relating to PCB's in food, food packaging and food processing plants, which was published in the Federal Register on March 18, has been extended to July 16, 1972. The GE representatives indicated their company had submitted comments relating to the continued use of PCB filled capacitors and transformers in food processing plants. Monsanto plans to submit appropriate comments before July 16.

7. An interagency PCB meeting, sponsored by EPA, was held in Duluth, Minnesota, on May 21-22. EPA plans to continue monitoring of the environment for PCB's, will observe fish and other aquatic creatures for evidence of PCB buildup, and will conduct toxicity studies with Aroclor 1016.

After some general discussion on the status of the Working Groups' proposals for the capacitor and transformer guidelines, Messrs. A. Pozefsky and E. L. Raab were requested to combine various parts, such as general, definitions and assemble the various parts into a single proposal for final approval by the parent ANSI Committee C107. In this latter regard, it was agreed that no additional meetings of the Working Groups will be necessary and plans should be made for holding a meeting of the Parent Committee, as soon as possible, after the final proposals have become available.

At a brief joint session after adjournment of the Working Group Committee meetings, it was noted that if it is desirable to make the proposed guidelines available sooner than would be possible through the regular ANSI letter ballot and approval procedures, NEMA could publish it promptly as a NEMA Official Standards Proposal.

It was the consensus that the possibility of taking advantage of this and similar interim standards classifications of other contributing Organizations, such as the EIA, should be explored with the ANSI Committee C107.

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SECRETARY'S NOTE

For completeness of the record, Mr. A. S. Doty's subsequent letter of June 9, 1972 asking EIA to advise if it wants to consider joint sponsorship of an interim document, is attached as EXHIBIT "A", (includes EIA's earlier letter).

SEPARATE SESSIONS OF THE WORKING GROUPS

III. CAPACITOR WORKING GROUP A. Pozefsky, Chairman

The Working Group reviewed the final draft of the capacitor guidelines, as revised at the February 8-9, 1972 meeting and circulated for comment, in advance of this meeting, by the Chairman.

The Chairman was provided with guidance for the next and final draft to be coordinated with the transformer guidelines, along the lines discussed during the Joint Session, under Item II, of these minutes above.

IV. TRANSFORMER WORKING GROUP E. L. Raab, Chairman

The Working Group noted as information the Chairman's report on the results of the questionnaire on askarel transformers, recorded in his letter of March 29, 1972 to all members. A copy of the letter is attached as EXHIBIT "B".

The Working Group reviewed the final draft of the transformer guidelines, as revised at the February 8-9, 1972 meetings and circulated for comments in advance of this meeting by the Chairman.

The Chairman was provided with guidance for the next and final draft to be coordinated with the transformer guidelines, along the lines discussed during the Joint Session, under Item II, of these minutes above.

V. TIME AND PLACE OF THE NEXT MEETING

Left to the call of the Chair.

VI. ADJOURNMENT

There being no further business before the Working Groups, the sessions were adjourned at 3:15 P.M., having recessed for lunch between the hours of 12:00 P.M. and 1:00 P.M.

A. M. Salazar, Secretary
ANSI C107 Committee

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AMS:dk
Atts: EXHIBITS "A" and "B"

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