A BRIEF ON U.S. PCB REGULATION

Effects on Human Health, the Disposal Dilemma; and Economic Impact

Presented To:

John F. Seiberling

Member of Congress
14th District, Ohio

City Hall
Cuyahoga Falls, Ohio

By:

S. D. Myers, Inc.
Akron, Ohio 44310

March 28, 1981

MONS 016350

Wednesday, December 26, 1979

Losses from Montana PCB spi...

...pegged at whopping $10 million

...ments name ... in road dumping

RALEIGH, N.C. (AP) — Federa... and state grand juries have re... turned indictments against two fir... ...ich men in the dumping of a ... ic chemical along roadsides in ... North Carolina counties last ...

EPA approval required

River cleanup to cost $150 milli...

Deer Park firm seek... PCB dumping permi...

PCBs spread by waste-oil us...

...federal and state environmen... ...is are focusing on waste-oil ... ...jor source of widespread ... ...rinated biphenyl) con... ...dwest waterways.

...Investigators have ... ...e waste oil and s... ...areas, such as ... ...ipment ... ...soils, are co... ...daily ... ...rsons. C... ...waste-oil dea... ...aterial they ...

Mothers' milk contains PCBs

...WASHINGTON (AP) — A study ... ...indicates suspected cancer-causing ... ...chemicals called PCBs have so far ... ...infiltrated the nation's food supply ... ...that they will show up in the milk of nearly ... ...all mothers who breast-feed ... ...In announcing the study, ...Environmental Protection ...

Sharptown tank owner arrested

Will face 7 charges of storing, moving harmful chem...

Another PCB suit

...Outboard Marine Corp. ... ...Waukegan, ...Ill., is being sued by Illinois Attorney ... General William J. Scott, who is seeking ... to have the company remove soil ... containing polychlorinated ... (PCBs) ...

PCB destroys plant life EPA asks $64,800 fine

...vital to marine food chain over toxic wastes here

...New York (NYT) — PCB, the tena... ...ursal chemical that is ... ...world's ocea... ...believed to ... ...and subtle ... ...ish and marine ... ...warmer food ch... ...The chemical, ...

Amtrak fined $46,800; PCB abuse charged

...ed by Wilmington, Del. (AP) — Fines to... ...s. Also as a ... ...Broad rooms. Dealers $46,800 have been levied ... ...ent forms of wast... ...ainst Amtrak by federal inspec... ...tors ... ...ment ... ...ozen ... ...Fish and plants ... ...ersal Press... ...DDT.

...eating food on the basis of ... species. Thus, if there are ... ...fe-size plants for those ... ...them, the number of preda... ...will decrease, affecting ... ...chain.

...ncreasing of the food chain ... ...to possibly decre...

The federal Environmental Protection Agency is seeking to assess $64,800 in fines against a Houston firm for the al... leged improper marking, storage, record keeping and disposal of toxic PCB chemi... cals.

A complaint reportedly the firs... ...of the ... ...by the immediate Houst... ...Gulf Pla... ...ing Inc. of ... ...with violations of the Toxics ... ...trol Act, agency spokesm... ...said.

...eliminate ... ...pollutants ...

PCB chemica... and cancer danger linked

...Washington Post Service ...

SPRING HARBOR, N... ...industrial chem... ...is found in the ... ...7 nursing moth... ...linked to liver ... ...a Japanese s... ...), polychlorina... ..., is believed ... ...

EPA Says PCB Disposal To Cost $58 Million In '78

...require every mayor ...

Cancer-causing chemical nearly spread on roads

WASHINGTON—Utilities face a big... ...and probably expensive—task in poli... ...cting operations and disposal of trans... ...formers and capacitors containing PCB ... ...under regulations proposed by th... ...Environmental Protection Agency. ... The proposed regulations would r... ...h PCB transformer to have ...

DES MOINES, Iowa (AP) — A ... solvent containing enough of a ... highly toxic substance to kill or ... cripple almost everyone in Iowa ... ...ent nearly spread on some of the ... ...state's gravel roads, according to a ... ...Department ...

...would have been spread on dusty ... gravel roads, he said.

Hamlin said the Environmental ... Protection Agency in Kansas City ... informed him Thursday of the ... 800 gallon shipment containing the ... PCB and he located the truck ... ...day.

...stable ... ...vertical ... ...and mistakes ...ting ...

MONS 016351

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I. PURPOSE OF S. D. MYERS, INC.

As you know the Environmental Defense Fund (EDF) has successfully sued the U.S. EPA on Oct. 31, 1980 concerning the March 31, 1979 PCB ban regulation. One key aspect of the settlement agreed to by both sides was an 18 month stay on the May 31, 1979 rule. During the interim EPA is requesting input from all views of the PCB issue. Our purpose is to provide to Congress and EPA the facts. Since Congress initially sought the ban on PCBs, as an amendment to The Toxic Substances Control Act (TSCA) 1976, only Congress can change that position. We are seeking to convince Congress to evaluate the evidence of the PCB issue and to reconsider their initial action taken through TSCA by subsequent EPA regulators.

We do not seek to reinstate the use of PCBs (or reverse the PCB ban). But we do consider the 1979 regulation as "unreasonable" in light of the actual human health effects of PCB. Therefore, we are asking Congress to remove Polychlorinated Biphenyls from the Toxic Substances Control Act Section 6e (P.L. 94-469). On the basis of evidence we will present, PCBs are not classified as "toxic" either by EPA or known scientific data or personal experience. In addition, we are asking Congress through EPA to modify the May 1979 regulation in several areas, particularly in regard to the disposal of PCB contaminated mineral oil and PCB capacitors.

EPA can only enforce the PCB ban passed by Congress. Thus, we first presented this information to Congressman John F. Seiberling, Akron, Ohio (14th District), and a well-known environmentalist. Significant remarks from four perspectives follow. These areas of expertise consist of manufacturer, user, transformer maintenance contractor and environmentalist.



A DIVISION OF S.D. MYERS INC.

II. CREDENTIALS

Paul G. Benignus - Chemist (The Monsanto Chemical Co., St. Louis, MO - Retired)

Currently (and since 1975) P. G. Benignus has been a consultant to Monsanto and to industry on PCB (askarel) dielectric insulations for power transformers and other electrical equipment.

He is a member of Institute of Electrical and Electronics Engineers (IEEE) Transformers Committee Insulating Fluids subcommittee; past subcommittee chairman and honorary member American Society for Testing and Materials (ASTM) D-27 on Electrical Insulating Fluids; past chairman, International Electrotechnical Commission (IEC) Committee on Dielectrics; and past chairman of the steering committee of American National Standards Institute (ANSI) C-104 which published guides for handling and disposal of PCB dielectric fluids and PCB type electrical apparatus.

Mr. Benignus worked for The Monsanto Chemical Co., St. Louis, Mo., for nearly 40 years, first, in charge of the Development Department Laboratory assigned to determining PCB's physical and chemical properties and application use data for publications to develop non-electrical markets; then, Marketing-Development Technologist for PCBs, primarily to develop non-electrical markets and to monitor and assure dependable high PCB quality and purity demanded by electrical use standards; and eventually world-wide Marketing Manager for PCBs, primarily to the electrical industry.

Paul Benignus, a graduate of Illinois College, Jacksonville (B.A. in Chemistry) and Washington University, St. Louis (Master of Science in Organic Chemistry), has become a recognised authority on PCBs, as he has authored numerous articles for trade magazines and technical societies.



A DIVISION OF S.D. MYERS INC.

Edward L. Raab - Chemist (The General Electric Co., Pittsfield, MA - Retired)

Currently, E.L. Raab is a consultant on liquid and solid insulations for power transformers. He is a fellow of ASTM; a member of D-27 Committee on Electrical Insulation Liquids and Gases and its past chairman; member D-9 Committee on Solid Insulating Materials; senior member of American Chemical Society and IEEE; past chairman of the Insulating Fluids Sub-Committee of the Transformers Committee; past chief U.S. delegate to International Electrotechnical Commission (IEC) Committee 10 on liquids and gases; past chairman of National Electrical Manufacturers Association (NEMA) Technical Oil Committee and ANSI C-107 on askarels, and G.E. representative to the Doble Engineering Company client conferences.

Mr. Raab worked for the General Electric Company, Pittsfield, Mass., for 40 years on research, development and application of liquid and solid insulations for transformers; first, as a development chemist and eventually as manager of the materials laboratory. Ed Raab, a graduate of Wesleyan University with a BA and MA in chemistry, has thus become a recognised authority, as he has authored more than 50 technical articles concerning insulating materials, especially liquid insulations.

Ed first worked at GE with Frank Clark, who first developed and patented the application of PCB for use as a transformer insulating fluid.

TMI

A DIVISION OF S D MYERS INC

Stanley D. Myers - President, S. D. Myers, Inc.

S. D. Myers, a graduate electrical engineer, University of Akron (1944), is founder, President and Chief Executive Officer of S. D. Myers, Inc.

Mr. Myers has been in the electrical maintenance field over 34 years. During this time he has had extensive experience and been able to accumulate a very impressive array of articles, literature and books dealing with transformer maintenance procedures.

He began his study of the conflicting theories of transformer operation and maintenance with the question in his mind "which is best." Experience and sound engineering practice have shown the answers.

He personally has designed six different types of oil handling equipment used to process oils in energized transformers, and to remove sludges from heavily sludged units. Years of research, development and testing have resulted in many new concepts now considered to be the industry standards in the transformer maintenance field.

Mr. Myers is an active member of the Institute of Electrical and Electronic Engineers, Inc. (IEEE), Power Engineering Society, a working member of the American Society for Testing and Materials (ASTM), D-27 Committee on Electrical Insulating Fluids and Gases and a member of the Doble Client Oil and Transformer Committees, Doble Engineering Co., Watertown, Massachusetts.

Mr. Myers has written and presented numerous articles and papers for trade magazines and before technical societies over the years, culminating in co-authoring the 836 page A Guide to Transformer Maintenance. (c) 1981 (LC# 81-50169).



A DIVISION OF S.D. MYERS INC

Robert H. Parrish - *Senior Technical Writer, Transformer Maintenance Institute, Div. S. D. Myers, Inc.*

R. H. Parrish who holds a BSEE from the University of Akron (1962), is an active member of IEEE Power Engineering Society, American Association for the Advancement of Science (AAAS), as well as a charter member of the Association of Energy Engineers as one interested in conserving oil.

Mr. Parrish with TMI since 1976, has been a writer for 17 years, with 11 years in the electrical/electronics field. He was employed as an aerospace circuit design engineer by Lear Siegler, Inc., Jack & Heints Div., following graduation from Akron University.

Bob has also written and presented many technical articles and papers for trade magazines and technical societies, as well as co-authoring A Guide to Transformer Maintenance. His 1978 article entitled "Warning: TSCA May Be Hazardous to Your Professional Health" was voted as the top rated article of that year by Plant Engineering magazine.

Though an engineer by training, Parrish is a research scientist and environmentalist by temperament. He has been publicly commended for his involvement in initiating area-wide environmental legislation while a councilman for the City of Stow in the early 1970s and continues working in these areas.

Stan Myers, Paul Benignus, Ed Raab and Bob Parrish concerning the PCB dilemma--remarks which will be given to Congressman John Seiberling.

STAN MYERS: March 28, 1981, meeting with John Seiberling at 11:15 A.M. We have several gentlemen with us and they will introduce themselves as we go along.

After I introduce all of the men I would like to say, Congressman Seiberling, first of all I would like to assure you that our being here as a group of people is not because we have individual axe to grind; we're not part of any lobby; we are not being paid by any lobby; we're here on are own expense to present to you some information regarding the chemical PCB. Now, the present laws, the way they are constituted, really would work to my benefit as an individual. I'm a business man and I employ about 160 people. We work in the area of energised transformers, transformer oils, and testing so we are completely involved in the PCB problem. If our meeting today would result in the action I would like to see, it would hurt my company financially because for the last year and a half our invoicing has increased a million and a half dollars, just in testing transformer oil for PCB. We are very close to signing an agreement with a gentlemen that has the patent pending on a service to completely destroy PCBs in transformer oil. We envision that market to be over a five billion dollar market. If our company can just wrap its arm around any part of that business that we want, then we estimate that over the next five years we can invoice as high as $25 million dollars in this particular field. So I am saying all that to say this, that we are not here to encourage you to do something that is going to help us beneficially. We believe that we are here for the purpose of the good of our particular country. While the present PCB laws as they are constituted would definitely work in my advantage as a businessman, it would cost the taxpayers over a trillion dollars to solve this problem. We are here with three purposes in mind. I will remind you of these as we go along.

1) We want to show you what the truth is about this chemical called PCB, that has been called a "deadly", "toxic", "carcinogenic" poison chemical.

2) We want to show you that the ban on PCB as in the law passed by Congress (TSCA)

was based upon false information, was based upon erroneous information, and was based upon what has been proven to be unscientific information. Because of all this and the pressures brought about, an arbitrary decision was made concerning this problem.

3) Congressional action is the only place where this problem can be solved. In order to acquaint you with some of these points, I brought along several men and I will have them introduce themselves as they give their testimony concerning their experience with this material.

The first man is a man by the name of Paul Benignus. Paul will give his educational background, his work background and share with the Congressman his experiences with PCBs.

IV. TESTIMONY

PAUL BENIGNUS: Congressman, I have worked with PCBs for 36 years. In 1934 I recieved a Masters degree in chemistry at Washington University of St. Louis, Missouri and then joined Monsanto. In 1929, PCBs were first produced by Swann Chemical Company in Anniston, Alabama. PCBs are a very large family of compounds. They have a wide range of physical properties and fire resistance is one of their most interesting features. The first uses were to plasticize nitrocellulose used in lacquers, as wood finishes on furniture, floors and doors. PCBs were also used early to plasticize strips of nitrocellulose used to make liners and hatbands for strawhats. They were used to plasticize rubber base cement and asphalt sealers. In 1930, General Electric Company discovered PCBs as a fire resistant dielectric. This important discovery is documented in the World Almanac as one of the great discoveries of the century. Years later when the Russian's rediscovered PCB dielectric they proclaimed that their industrial revolution could not succeed without using PCB capacitors. In 1935, Monsanto acquired Swann Chemical.

I worked with PCBs in the research laboratory determining physical properties and compatability. During 1940-45, the war years, PCB was allocated for military use in connection with the war effort, mainly transformers. In 1941, at the

governments insistence Monsanto built a second PCB producing plant in Sauget, Illinois in order to provide two independent services to supply this critical material. After the war in 1947, I was made Developmental Manager of PCBs to promote specificly non-electrical uses. We were successful. PCBs are probably the most widely used family of chemical compounds. In 1953, I was made World Marketing Manager of PCB dielectrics. Over the 47 years (1929-1977) Monsanto produced about 1.1 billion pounds of PCB. Production terminated in 1977 in the United States, although PCBs continued to be manufactured and used in other major countries.

About 50 workers operated the PCB plants. About 100 people were in the vicinity of these operations. No special handling precautions were used. No gloves, no masks. In the early days, the plants were relatively sloppy. There were PCBs spills on the floors, filter presses were open and various tanks were open. Workmen wore their street clothes. They changed these as they saw fit. In later years, as better hygiene was adopted by the chemical industry the workmen used uniforms and changed clothes once or twice a week as laundried and supplied by the company. PCBs were made to meet very high quality and purity standards - specifically General Electric requirements specifications. PCBs were advertised as "99.44% pure" like Ivory soap and claimed purity exceeding that of many materials supplied to the food industry. Prior to the Yusho incident in 1968, advance samples had to be sent to General Electric and others in the electrical industry for their analysis before shipments could be made. Monsanto remained the sole supplier. Others did not wish to compete with such quality requirements. Throughout the 47 years of production, there was only one incidence of chloracne in the plant. This arose abruptly in 1936 at Anniston. It was isolated to one product batch.

Relative to my marketing activity I was chairman of the subcommittee on PCB dielectrics as ASTM. I was active at IEEE, NEMA and ANSI to establish PCB specifications and handling guides. I was chairman of the subcommittee of the PCB dielectrics at the International Electrotechnical Commission (IEC) to offer the same guidance worldwide. Students of the PCB dilemma believe that some PCBs made overseas may have deviated from the very high quality standards adhered to in the United States.

STAN MYERS: Why Paul, that was quite an array of titles you seemed to assume as worldwide marketing manager and head of all of those committees and so forth. Did you at any time, or were you at any time approached for your input into the PCB problem in the informative stages of the investigation by Congress?

PAUL BENIGNUS: No, I was not.

STAN MYERS: Have you ever been contacted for your input into this situation?

PAUL BENIGNUS: Not by the EPA and federal people.

STAN MYERS: The next gentlemen that I would like to introduce to you is a man by the name of Ed Raab. Ed, would you do the same thing? Give us your background and experiences.

ED RAAB: I started off by receiving two degrees from Wesleyan University (Bachelors and Masters, both in Chemistry) and that was way back in 1935-37. I spent a year running a laboratory at the State Water Commission in the State of Connecticut on Spring and Stream pollution. In 1937 in July I joined General Electric Company in Pittsfield, Massachusetts. I worked under a man by the name of Frank Clark who has been called "the father of the development of application for electrical apparatus." He held all the initial patents for PCB applications. They were primarily boiled down to application to both capacitors and transformers. In the early years, Congressman Seiberling, I was involved in the development of PCB's various forms - liquid and solid insulations for transformers. In fact, I was soaked with the material. Shortly after I was married in 1939, we had a standing rule around the household when I came home to take my shoes

and socks off out in the hall. Yet, here I am 68-69 years old, no physical impairment, two very lovely children and they don't have two heads and no malformation. I also have a grandchild who is a very lovely little girl with no problems.

Getting back to experience in later years, around 1948, I progressively became supervisor, then a manager and much of my work was to do research and development of applications of various types of formulations with capacitors and transformers. It is interesting to note that back in the late 30's and the early 40's, transformer and capacitors were all made in Pittsfield, Massachusetts. That's where the electrical applications started. During that period, some 750 people would be working around PCB containing apparatus, PCB shipment and so forth. And other then a few skin rash cases and which you might term temporary chloracne cases most with lightly complected people, there was no lost time due to accident or physical impairment or no association with any type of major maladjustment in anyone's body or bodily function. The later years as this business grew, the Fort Edward and Hudson Falls plants were established in New York for capacitors; the Rome, Georgia plant for transformers. Upward of several thousand people were involved and still there were no incidences of any difficulties with PCB in humans other than the skin rash problem. A good friend of mine Dr. McClure was the medical director in the 70's when this problem received much publicity. I had him search all the records for all four plants and he could also find no case of a lost time accident, no case of any physical impairment and certainly no association with cancer.

Now a little bit more on the background and common relationship to Mr. Benignus. From the late 50's to the late 70's when I retired from General Electric Company I became progressively more involved with national and international technical society committee work. Much had to do with PCBs and their application. For example, for some 18 years I was chairman of the Insulating Fluid Subcommittee of IEEE one of whose purposes was to write maintenance guides for askarel and application of transformers. I was also associated with ASTM D-27 for some 25 years, serving 2½ terms as chairman of this group. Their function was to write specifications and write test methods and other things for electrical type PCB application material. I also served as Chief U.S. delegate to the International Electrotechnical Commission (IEC) Committee 10 and again

their purpose was international writing specifications and test methods for PCB type material. In addition, I was associated with the NEMA Technical Oil Committee and also in the early 70's I was co-chairman of ANSI Committee C-107 (American National Standards Institute) who took on the job of writing a maintenance, handling and disposal guide for transformer type PCBs and also for capacitors.

Let's divert to another subject for the moment. In the late 70's with all these associations worldwide there was an increasing evidence that all PCBs worldwide were not alike. That the U.S. variety was considerably purer than some varieties from various countries. This brings up the episode which attracted much attention in the 60's, that is, the so called Japanese Yusho incident. There have been a lot of false claims made as to what happened in this case. The more recent evidence indicates that it wasn't the PCB which was the culprit and the difficulties in Yusho, but a contaminate known as dibenzofurans which is considered worldwide to be an extremely toxic type of material. Dr. John Brown of General Electric Company recently sighted this among other things in the conference that was held in Hartford, Connecticut (September 1979). The chairman, U.S. Representative Anthony "Toby" Moffett, has a copy of this paper that was presented there. You will hear more about this from one of the other speakers today.

STAN MYERS: Now Ed, that is also quite an array of activities in the PCB area. Were you at any time contacted for your input to the PCB problem?

ED RAAB: I was never contacted by the EPA or any governmental agency.

STAN MYERS: Before I introduce the next gentlemen I would like to substantiate a little bit about what Paul and Ed have said. I have been in the electrical repair business since 1946. I have had my own company since 1965 and I have been involved with PCBs almost from day one. As a matter of fact, about twelve

years ago I swallowed a half a teaspoon of PCB. Certainly I did it by mistake not by design, but when I got a mouthful of it, half of it went out and half of it went down. Since then I have been in excellent health. I have been saturated with the material; I have had it in my face; I have had it on my clothes without any discomforts whatsoever other than getting it into my eye where it burned about three days. Now, we have another gentlemen that works with me in the company by the name of Bob Parrish who is an electrical engineer and he is also an environmentalist. Bob would you share with the Congressman your comments?

BOB PARRISH: Mr. Seiberling, I am going to approach the subject of PCBs a little differently. I am going to approach you as an environmentalist from an environmentalist. I can say that since I have been involved in this area for some 20 years back, when we were then called conservationists. As you know, much has been in the press and one article that symbolizes this the best is one that was in the January '81 Readers Digest "PCBs: The Poison That Won't Go Away". We want to present the facts today that dispute these claims of the media.

But first we want to look at what the latest court decision (October 31, 1980) concerning the law brought about by the Environmental Defense Fund (EDF). Their point had two objectives. They want to lower the present level of PCBs from 50 down to zero ppm because the EPA set level was "arbitrary" and "not based on scientific evidence". It just so happens that if EDF would be successful in their court suit to even bring it down to 10 ppm, everyone of us in this room would have to put on a "yellow PCB label" because it was stated in November '79 on Public Broadcasting's NOVA that each of us has 10 ppm of PCB in us right now! That's where we are. Now, let's look at some of the facts as presented by EPA themselves.

First, terminology. What does EPA say PCB is. It is not a poison; it is not a toxic substance. EPA says it is a priority pollutant. DOT says it is a hazardous substance when there is at least ten pounds of it or three quarts, (following the Clean Water Act Standard), but that is the extent of it. At this point (1/12/81) PCB is not regulated under the Resource Conservation and Recovery Act (RCRA). The second EDF objective is to remove the current exemption that

transformers can remain indefinitely in service since they are not "totally enclosed" items (as they leak and can rupture).

Next, let's consider the 1979 National Academy of Science (NAS) report. This report was not considered by EPA when they made their May 31, 1979 regulation because they did not want to wait for it because of public pressure to act immediately because of the supposed hazards of PCBs and so on. The essence of that report (a nearly 200 page book) made important conclusions. First, that all studies up through 1978 concerning animal studies are "questionable". They are based on FIFRA standards, that is, The Federal Insecticide Fungicide and Rodenticide Act (1972). These studies are now held as questionable. Secondly, and probably even more important, NAS concludes that if the use of PCBs had been limited to transformers and capacitors and other sealed equipment, PCB would have passed the toxic substance classification. And we wouldn't even be having this meeting today. That's significant!

Now, Ed has already referred to the Yusho incident in Japan and that's primary evidence according to EPA today. But back in February 2, '77 Federal Register you can read that EPA stated themselves that it is "inappropriate to use the data from the Yusho incident because of the involvement of contaminated PCBs with dibensofurans up to 500 ppm." And then EPA in their own Support Document with the May 31st regulation also says that because it is the high concentration of dibensofurans it is "difficult to develop precise conclusions." And again they refer to the same Register of '77. But yet, December of '79, EPA presented this short document, "An Alert to the Food and Feed Industry". One of the statements on page 3 says that the primary knowledge of PCB toxicity of humans is based upon the Yusho incident. Exactly contradictory to what they had already stated earlier in '79 and in '77.

Needless to say, there is need for further study. And that is what has been happening. A number of experts now believe that the dibenzofurans are really the culprit and particularly the change mentioned by Dr. Kolbye who is associate director at FDA for Science, Bureau of Foods, who also spoke at the same PCB Health Seminar in Hartford, Connecticut chaired by Congressman Toby Moffett at which Dr. Brown spoke. Dr. Kolbye stated that he thought at one time it was

normal PCBs that caused the problem, but now he doesn't think so. He believes it is the dibensofurans. And again I mention that up to 500 ppm of the dibensofurans in the Yusho incident is really the culprit. Now, why this difference?

Well, it is a matter of Congressional pressure which is something you are very familiar with, when your constituents get on your back to get action. What happened was, Congress, as you know, way back in '72 was presented the evidence that alledgedly normal PCBs were a problem. EPA was assigned to do the job and along came 1975 and nothing had happened. So Congress was uptight; they wanted to get something done, if the allegations were true, and as a result Senator Nelson on March 26, '76 added an amendment to the Toxic Substances Control Act banning PCBs. Then, to give another illustration of the pressure which was brought to bear, FDA in their June '79 decision on two parts per million acceptable level for fish acknowledges in an extended paper that their decision was "arbritary" and "subjective". They were forced into the situation, again by an EDF court suit.

All we're asking is that you reconsider: You, Congress and your congressional colleagues take all these facts and all the facts that Ed and Paul have given from some 80 years of experience in the PCB field. To reconsider that the Toxic Substances Control Act and in particular the area of disposal, which has been called by the EPA's Region Four Director - "a political pollutant." Why? On the one hand it is banned, and on the other hand, you can't get rid of it.

The solution is very simple to start with - education - something we tried to start right here in Akron in writing to the newspaper. As we can look at the Beacon Journal account of February 15, 1980, it says "Toxic PCBs Found in Deerfield Dump;" "highly toxic" chemical, and in making the statement that levels over 500 ppm are a poison (recalling that EPA and DOT do not call it a poison). O'k, I presented these same facts to Bruce Larrick who is the environmental reporter for the Beacon and he was willing to listen. As a result, less then a month later, March 4th, he writes, "PCBs are considered a hazardous chemical". Quite a change! You'll note up to this point anything written by the Beacon Journal on PCB was considered "toxic" or some of the

other terminology but now it is only hazardous or no subjective tag in a story is given.

My final point as an environmentalist, if Congress does not reconsider this difficult situation with the economic impact in solving the disposal issue I personally feel and I would predict that because of the negative reaction, all the progress thus made in the environmental movement will be lost and eventually the movement will be destroyed.

STAN MYERS: Congressman Seiberling, you have heard the testimony of three men here, Paul and Ed stating they have worked with this material for an extended period of time. Bob summarized that these two men had some 80 years of experience and know of thousands of people working with PCBs under what have now would be considered less than desirable conditions in that the material was abundantly spilled on the floor, on the walls, on hands and on clothes. In over 80 years and a matter of fact over 50 years in which PCBs have been around, there has never been a death caused by it; there has never been a sickness caused by it; there has never been any cancer caused by it. We are really looking at a substance that definitely is not the problem. If you don't have any questions that you want to ask these men at this time, I would like to bring your attention to the economics of the problem that exists right now. If the laws continue the way they are at the present time and if in fact the Environmental Defense Fund does make EPA conform to this congressional ban on PCBs, let me outline to you the problem that we are going to have. In this country we have 35 million oil filled transformers. These oils are going to be contaminated with PCB because there was a cross of contamination in there and if Environmental Defense Fund wins and we are down to zero, now 80% of those 35 million transformers are going to have to be disposed of in a landfill. Now, of the 80% of 35 million transformers, what would be the replacement cost of those transformers alone? I worked out a very conservative figure that it would take 150 billion dollars to replace those transformers. Let me tell you the magnitude of the problem they are trying to solve by banning PCB. Right now, all I am interested in is the transformer oil aspect of it, because the problem is so huge we can't comprehend all of it. So let's take the one very important point and that's the one with transformer oils. Now, the EPA Support

Document states that there are 1.7 billion gallons of transformer oil in use in the United States. If we were to assume that this oil has 50 ppm of PCB contamination and we believe that this is a very accurate estimate with the information that has been printed. This means in transformer oil in the United States there are 106 thousand pounds of PCB in that oil. Now if legislation were to bring this down to zero, then we are concerned about 106 thousand pounds of PCB. But in the environment today, according to the Federal Register, there are 300 million pounds of PCB in landfills, 50 million pounds degraded or incinerated, and 150 million pounds of it unaccounted for not in electrical uses. That means in our ecology today there already are 500 million pounds of PCB. If we would dump 1 billion 700 million gallons of oil with 50 ppm we would only be adding to the ecology that percentage of PCB to the existing problem. We are really majoring in minors at this particular point. Now to do this, if we must dispose of this transformer oil according to the EPA regulations then it would take us 106 years to burn 1.7 billion gallons of transformer oil to get rid of 106 thousand pounds of PCBs. It is an incredible thing! Just because, for example, the EPA regulation says on the 1st of March 1981 all PCB capacitors must be incinerated. Now you know the date has passed. What is the full magnitude of trying to solve that problem?

PAUL BENIGNUS: There is one incinerator now in Eldorado, Arkansas that is equipped to incinerate capacitors. There was some question whether the shredder needed to shred large capacitors will be effective. But there is only this one place where capacitors can be incinerated. At one utility this would involve 120,000 of these capacitors. By taking a number 50 times this one utility covers the total amount that might be reasonable total amount. This would involve 6 million power capacitors or 100 times the seating capacity of a 60,000 seat football stadium. Pounds of PCBs involved is nearly 216 million pounds or the equivalent of 2400 railroad tank cars, 8,000 gallon capacity. The cost would be 3 billion dollars. Disposal time would be 150 years based on the present manufacturing capacity to meet the needs of power capacitors. (The 150 years also includes the time to remove the old units and replace with new non-PCB capacitors).

STAN MYERS: You heard Congressman Seiberling, there are three things we believe must be done. (1) Congress must reconsider the PCB ban in the light of the overwhelming evidence now in existence concerning this material. (2) The present laws and the EPA regulations as they are now written prevent disposal and destruction of PCBs. This legislation is not getting the job done; in fact, it would be impossible to get this job done. (3) If what we have presented is true, (a) What is our next step, (b) How can we help you get this job done?

V. RESPONSE BY CONGRESSMAN SEIBERLING

We believe Rep. Seiberling showed a sincere interest as we shared the PCB dilemma with him. He was very willing to listen, he took extensive notes, and asked pertinent questions during the various presentations. These included:

1. Are you saying that the impurities (PCDF) in normal PCB were the real culprit in the Yusho incident? (Paraphrase) of course, our answer is definitely "yes".

2. Extended question/comment concerning PCB production conditions.

3. Sought elaboration concerning the only acknowledged problem with PCB, that is with vapors from hot PCB (>1250F), or from severely arced transformers (hydrogen chloride gas), either of which was temporarily irritating to eyes. Proper ventilation must therefore be provided.

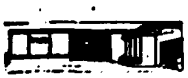
4. Sought out the specific case of chloracne-only one incident in 47 years of PCB manufacture. The only other problem was temporary skin rash associated with light complected people.

5. Acknowledged his unawareness that much of the PCB problem since TSCA involved PCB contaminated oil-filled transformers. Asked how PCBs got into oil-filled units; common hoses, topping off, filtering, etc.

6. Asked concerning the praticality of Goodyear and other PCB "transformation" processes that remove or destroy PCB. He thought that basic problem was already solved, but in fact much work still has to be done.

7. Asked for clarification on 150 years time period to replace current PCB capacitors. The total time included time to remove old units and replace with new, as well as to manufacture the new units.

At the close of the meeting we felt Mr. Seiberling would indeed follow-up our meeting with contacts with Rep. Toby Moffet of the House Interstate and Forcign Commerce Committee, Health and Environmental Subcommittee and EPA itself. Inshort, we felt he will be in contact with us in the future.



VI. EFFECT OF PCBs ON HUMAN HEALTH

I. Introduction: Popular (but Erroneous) PCB Mythology

Typical media articles concerning PCB (Collage) - mis-statements or incorrect info; inconsistencies, emotional remarks, etc.[1-8]

II. The PCB Dilemma - Seeking Our Way Out of PCB Woods.[9]

A. Latest Court Decision - 1½ year stay on the 1979 rule.[10,11,12] During the interim EPA is requesting input.[13] Our purpose - "food for thought and action.[4] We seek to have Congress evaluate and reconsider the action taken through TSCA by EPA regulators.

B. U.S. Hazardous Classification - One of the most abundant but not one of the most toxic substances.[8]

PCB is far from being one of the most toxic substances such as arsenic, cyanide, sulfuric acid, DDT, etc.[14,15,16,17] PCB is not a "highly toxic" or a "deadly poison". PCB is not included in DOT's Class A or Class B poison list. PCB is listed by EPA solely as a "priority pollutant".[18] DOT lists PCB as an Other Regulated Material-E substance (>10# or 3 quarts).[19]

A major problem is that the media convey incorrectly the idea that as a "highly toxic" liquid it is more than just a suspected carcinogen[3,5] and as a result the public reaches its own obvious emotionally-charged conclusion.



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An example of educating the media concerning the facts: Akron Beacon Journal (Bruce Larrick, Environmental Reporter).[6,7]

C. Latest Scientific PCB Studies

The fact that PCB is bioaccumulative in the food chain in itself does not demonstrate toxicity. Conceivably, it could accumulate and not cause any serious problems. There is no supportive evidence today that PCB is a human carcinogen or a mutagen.[15,17]

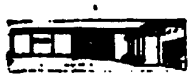
"An analysis of PCB data....leads to the conclusion that PCBs are persistent, and are likely to accumulate. PCBs do not appear particularly toxic for short-term exposure, but results are subject to interpretation...." (p. 113).

"The conclusion reached regarding the potential hazard posed to the environment by PCBs based on FIFRA requirements is QUESTIONABLE. Acute toxicity is observed only for some aquatic invertebrates, but these species are not required test animals in the FIFRA guidelines... If the anticipated use had been limited to heat exchangers and closed electrical equipment, (such as capacitors and transformers) the testing data might not have suggested potential hazard to human health or the environment. In such case PCBs might have 'passed' the toxic substance evaluation." (p. 117).[20]

This study was NOT included in the 1979 Final PCB Rule.[21]

The only consistent findings from 1968 to 1980 are industrial chloracne eruptions on the skin.[22,23,24,25,29]

We really don't know (no documented evidence now) or may not know for 20-30 years.[15,17,26,27,28] Since we acknowledge this unknown factor, we do recognize the need for some PCB control regulation.



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D. *Japanese "Yusho" PCB Incident (1968): Turnabout in "Scientific" Evaluation of Cause of Incident.*

1976 - Polychlorinated dibenzofurans (PCDF) ruled out as a possible cause of extensive PCB effects on humans.[29,30]

1977 - "Because of the relatively large exposure of the Yusho victims to PCDF it is probably inappropriate to use the data from the Yusho episode to make quantitive estimates of the toxic hazard posed by PCBs to humans."[31]

1979 - "....it should be noted that the Yusho incident involed exposure to high conentrations of chlorinated bibenzofarans and other chemicals which make it difficult to develop precise conclusions."[32]

Yet, EPA now says: "Knowledge of PCB toxicity in humans is based primarily on (the Yusho incident.)"[33]

1977-1980 - Turnabout in which "many experts favor the theory that it was actually contaminants (dibenzofurans) in the PCBs that caused many of the symptoms."[34,35] *Included among these authorities are...*

Dr. Frank Whitmore, Versar, Inc. November 15, 1979, North Canton, Ohio public hearing for PCB incinerator application. The dibenzofurans came about as a byproduct of overheated PCB (500-600°F).

E. *Congressional Pressure - Push rule publication. Primary NAS Research Study not included in 1979 Final PCB Rule; FDA Rule-Making Procedure as "arbitrary" and "subjective".*[36]

Congressional insertion of PCB in TSCA has created the false impression that the chemical is extremely dangerous, (it must be terrible!). Actual reason for inclusion rests on PCBs great abundance;[8] *congressional pressure "acting in large part because of EPAs waffling" (3-4 year delay) in light of extensive non-technical media attention.*[37,38]



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Foregoing items demonstrate that PCBs being uniquely singled out in TSCA, as it was, has proven to be unwarranted!

III. *Causes of Cancer - "Fact" or opinion blown out of proportion; not always presented in objective matter.*

Several authorities believe that the incidence of cancer caused by industrial chemicals (occupational environment) "is less than 5% of all cancers,"[39,40] in contrast to those caused by dietary fat, alcohol, smoking, and other life-style environmental factors.[17,41,42]

Yet, many "results (used by E.P.A. to support the 1979 "PCB Ban Rule were not corrected for age or smoking habits and are only preliminary.[23,24] Yet...

"Cigarette smoking and lung cancer are unmistakeably related..."[15] However, as a fact of life, it is simply easier for legislators and regulators to go after chemical manufacturers than heavy smokers.[11,14]

IV. *1979 PCB Final Rule as Unreasonable. Use of incomplete info (such as from manufacturer and user); so-called "facts" which were no more than opinions, some of which have already been refuted or at least questioned. Needed: Inductive not deductive reasoning.*

V. *Acknowledged willingness of regulators to change policy - In light of new info;[43] (2/16/81) Channel 8 Report made by form Rep. Charlie Vanik of Ohio. Request a similar willingness of Congress to exercise intellectual courage. (To remove PCBs from the Toxic Substances Control Act Sec. 6(e) PL94-469.) It's not easy, but the alternative choice because of negative reaction may be destroying the environmental movement, where reasonable regulation is clearly justifiable (prevention of future Love Canals, for example).*

MONS 016374

R. N. Parrish



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