UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF TOXIC SUBSTANCES

Aug 10, 1977

Monsanto Co.

attn: Mr. Easley

Enclosed is the copy of July 15, 1977 Transcripts which your requested re: PCB Public Meeting

Joan V. Repasch
Record Hearing Clerk

DSW 360793

*From the desk of*

K. WARREN EASLEY

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U.S. ENVIRONMENTAL PROTECTION AGENCY

INFORMAL HEARING

ON THE DISPOSAL AND MARKING
OF POLYCHLORINATED BIPHENYLS (PCBs)

Room 3906
EPA Headquarters
Washington, D. C.

Friday,
July 15, 1977

The informal hearing was convened, pursuant to notice, at 10:00 a.m.

PANEL MEMBERS

MR. WARD FILGO, Tennessee Valley Authority
MR. BLAKE BILES, General Counsel
MR. DAVID WAGNER, Toxic Substances
MR. HAROLD SNYDER, Enforcement
MR. KEN JOHNSON, Acting Assistant Administrator for Toxic Substances
CHAIRMAN GEORGE F. WIRTH, Toxic Substances
MR. JOHN LYON, General Counsel
MS. MARIANNE THATCHER, Legislation
MR. KENT BALLANTINE, Water Planning & Standards
DR. EDWIN SHYKIND, Department of Commerce
DR. STEPHEN WEIL, Planning & Management

APPEARANCES

CHAIRMAN GEORGE F. WIRTH, Toxic Substances
MR. WARD FILGO, Tennessee Valley Authority
MR. BLAKE BILES, General Counsel
MR. DAVID WAGNER, Toxic Substances
MR. HAROLD SNYDER, Enforcement
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APPEARANCES

MR. JOHN LYON, General Counsel
MS. MARIANNE THATCHER, Legislation
MR. KENT BALLANTINE, Water Planning & Standards
DR. EDWIN SHYKIND, Department of Commerce
DR. STEPHEN WEIL, Planning & Management
MR. PETER P. PRINCIPE, Toxic Substances



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PROCEEDINGS

MR. JOHNSON: I think you can all hear at the back o the room; can you not? I am Ken Johnson, the Acting Assistant Administrator for Toxic Substances and I would like to welcome each and every one of you that are here to give you our advice and counsel regarding a continuation of rule development under the Toxic Substances Control Act for polychlorinated biphenyls.

Several months ago I spoke I believe in the same room before a group which contained I think a lot of these people that are here today and talked about the fact that a rule development at that time regarding the labelling and disposal methods for PCB's would be precedent setting in that we were talking about really the first action under the Toxic Substances Control Act applicable what had been deemed a toxic substance.

I think this public meeting and the testimony that we will hear today will also be precedent setting because we are talking about taking the next step as required by section six of the Act. We are talking really about what amounts to a phase-out of the manufacturing and distribution and commerce of PCB's.

It is precedent setting because the issues that we will be discussing today and which we will be discussing the next several months are going to be very similar to



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issues which will be discussed for almost every chemical substance for which regulatory action might be taken under the Toxic Substances Control Act.

We will be talking about what is an unreasonable risk; what exemptions can be made; what do we mean when we talk about manufacturing only in a closed manner. Important issues -- again, I emphasize, not only for PCB's but for all chemical substances that we will be going into in the future, because what we decide now is going to be setting a precedent for the future.

It might appear to some people that read the Toxic Substance Control Act, especially the section which talks about PCB's, that the issue has already been decided. There is a phased approach, there is a schedule which starts with disposal and labelling regulations and it goes on to regulations governing the closed manufacturing of PCB's. It goes on to prohibitions on manufacturing itself and distribution in commerce.

But in my estimation it is not a totally determined schedule because there are exemptions provided for both for the action to be taken in 1978 and 1979. We want to hear from every concern about the risk associated with PCB's with regard to manufacturing, distribution and commerce and use, what can be deemed unreasonable, what exemptions could possibly be made.

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We want to hear from all sides and to give a fair opportunity for everybody to make their comments so that it can be taken under consideration by the Environmental Protection Agency.

These are very important meetings to us, as I am sure they are to you.

I want to close by raising an issue which was raised during the discussions with regard to the first rule having to do with disposal because it is going to come up again and again and again. And that has to do with the fact that PCB's for themselves in consumer products appear very often in small but widely distributed packages. -- which are used with fluorescent lights, for example.

We did raise an issue when we were talking about the disposal of PCB's under the first rule about what means could be devised to assure that when small products containing PCB's that were widely distributed were to be disposed of, how could there be assurance that they would be disposed of in a sound, environmentally safe manner.

We recognize that the normal inspection enforcement practices which have been applied to pollutant materials in the -- simply won't apply when you are talking about a fluorescent light which might be in every building and every home in the United States.

We have to talk about something which really would



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instill within every citizen a recognition of their responsibility to dispose of toxic products which might be in their homes or work place in a manner which is consistant with the protection of the environment and protection of human health.

I want to raise that issue again and ask that if there are people here that want to discuss that issue in these public meetings, feel free to do so. That is not a closed issue simply because we propose rules for disposal.

And everytime that we have a public meeting dealing with any toxic material, I want to allow an opportunity for anybody who wants to speak to that issue, the disposal of widely distributed products containing toxic materials, to be able to address that issue.

I will close now by turning this meeting over to George Wirth of the Office of Toxic Substances who will chair this public meeting from this time forward.

We solicit whatever opinions you have on the issues at hand dealing principally with PCB's, the so-called ban regulations which are to be adopted and put into place in 1978 and 1979 and to assure you that everything I have said here today will be said onto the future months as we are considering proposed and final regulations; that the words will be examined carefully by representatives of this agency and given full consideration before our conclusions



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are drawn.

Thank you very much. I will turn it over to George. Thank you.

CHAIRMAN WIRTH: Thank you, Ken. I appreciate your time very much and I apologize again to you and the audience for the delay in starting this hearing. I want to assure everyone that none of that delay will come out of your speaking time since we have ten people signed up today, and I am sure we can get them all in and get -- allow adequate time for everyone to say what he wishes.

Let me start by reiterating the procedure and the rules of this particular meeting -- I say rules. They are really procedures.

This is the fifth such public meeting that we have now held, so I presume if we do it five times it becomes somewhat of a rule or institutionalized.

These are the general meetings prior to proposal of regulation. Fundamentally I think we can describe this meeting as very informal. The witnesses will be called in the order in which they signed up and to make whatever statement they wish.

And then we will go up and down the panel with questions directed to that individual testifying and then the floor will be open for any question from the audience. We ask that you submit your questions to the chair in writing



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and that at any time during the talk or the questioning, if you will just hold your hand up, our record and hearing clerk, Mrs. Joni Repasch will collect your question and bring it to the panel.

At the end of all formal statements and questioning, let's say preplanned statements and questioning, if time allows we will open the floor for general statements or questions of any kind that you may wish.

The subject today is PCB's manufacturing bans. That is a term that we have put on it to put on the requirements beginning January 1st, 1978 to ban all manufacturer processing use and distribution of PCB's in other than an enclosed manner.

The banning of manufacturing in January 1st, 1979 and the banning of processing and distribution of PCB's, July 1st, 1979. So all of the issues in question surrounding regulation to implement and further define terms specified in the law relative to those three ban dates are the items that we include under the general -- of manufacturing bans.

The calling of witnesses, as I said previously, will be done in the order that they are listed. When you are called we basically allow four options: you can stand up and speak; you can yield your time to anyone else that you wish; you may pass, at which time you will be called later; or you can cancel your time.



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If you pass, we will go down through the entire list and then start back on the passes and when everyone has either spoken or canceled, we will end the meeting and open it up for general discussion.

I will just take one minute now to introduce the panel. Every member on this panel is a member of the work group on PCB's, that is the larger group roughly twice this size that has prepared the labelling and disposal regulation and will prepare this regulation on manufacturing. distribution, processing bans.

Start on my far left is Mr. Ward Filgo who has been the representative from the work group of the Tennessee Valley Authority. And,Ward, I guess you can move over here so you are not joining the witnesses and assisting them.

Next to him is Mr. Blake Biles from the Office of General Counsel. Mr. Dave Wagner from the Office of Toxic Substance, primarily resposible for economic issues. Mr. Harold Snyder from the Office of Enforcement, formerly from the Toxic Substance Office and pretty much the author of the labelling and disposal regulations.

To my immediate right is Mr. John Lyon, Office of General Counsel. Marianna Thatcher from the Office of Legislation. Mr. Kent Ballantine from the Water Planning and Standards Office under the Water Act who has primarily been responsible for the 307A Toxic — Standard on PCB's.

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Dr. Edward Shykind of the Department of Commerce who represents that Department's interest in this regulation. And Shykind is also a member of the -- fluorocarbon workgroups so I am sure that his face is familiar to all of you involved in these issues.

And next to him, Mr. Steve Weil from the Office of Planning and Management, responsible for economic consideratio on the regulation.

Mrs.--Joni Repasch-- if you will raise your hand, Joni, so that everybody knows who you are, is the record and hearing clerk for the Office of Toxic Substances. Any submissions or statements that you have to submit today for the record, please be sure that they are laid in her hands, if no one elses. That insures that they get in the record.

With that, I think we will call the first witness, unless anyone on the panel has any statement they would like to make.

Okay. The first witness scheduled for today is Mr. Borsel of the Edison Electric Institute. Is he here?

Okay. Mr. Borsel is not here? We will assume he passes and we will move on down to Mr. James Petrie of the Mining Enforcement Safety Administration in the Department of the Interior. Is he here?

Okay. The microphone is here, sir, to make whatever statement you would like.



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MR. PETRIE: I don't have a statement to make. I do have several questions to ask the panel concerning the use of PCB's in the mining industry. Appropriate at this time to raise those questions.

CHAIRMAN WIRTH: Why don't you have a chair? I think it will be difficult to ask the panel a question unless we all huddle for a consensus. Could you phrase your questions in the form of a statement of concern to the mining industry, let's put it that way, without necessarily trying to get a consensus or an answer from the panel.

MR. PETRIE: Well, one is the use of PCB cooled electric motors used on several models of underground mining equipment and I am concerned over whether this use is considered totally enclosed under the Toxic Substances Act and whether this use will be banned as of January 1st, 1978.

CHAIRMAN WIRTH: Excuse me. I think that they are having a hard time hearing. If you could direct that larger microphone. That is the application one. The smaller one is the recording and place that in front of you.

Can the recorder hear okay?

I will ask -- and I will ask everyone -- could you state your name and your position and organization specifically.

MR. PETRIE: My name is James Petrie. I am a health specialist with the Mining Enforcement and Safety



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Administration. I have several questions concerning the use of PCB's in the mining industry and the first question I wish to put forth is whether PCB cooled electric motor is used on several models of underground mining equipment are considered totally enclosed and, if not, whether they will be banned as of January 1st, 1978 under the Toxic Substances Act.

CHAIRMAN WIRTH: I think it is fair to say that that is one of the questions that we are trying to answer by this meeting, as to whether they should be.

Could you elaborate for us specifically how these motors are used and any details you know concerning the releas of PCB's from these motors? Are they completely sealed and no release of it other than accidental or is there some release --?

MR. PETRIE: These motors, they do have a blow-off valve, a release valve on them. When the motor overheats, they will emit some PCB's into the atmosphere, but it would be a fairly small quantity.

The total PCB content of these motors is only four or five gallons, I believe, and right now these motors are not manufactured. They are limited to what is now in use which would be about four or 500 units.

CHAIRMAN WIRTH: Okay. Can you explain for our general understanding on how these motors are used and on



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what type of mining -- is it all mining or --?

MR. PETRIE: They are used primarily on underground mining equipment. Your continuous miners and your shuttle cars which transport material from the face to the load-off point in underground mines. They are used to power the cutting heads on these equipment or to power the mechanical drive on these equipment.

It is limited to what is now in use since they are not made anymore. There is about, oh, 200 of these shuttle cars and about 50 of these continuous miners now in operation.

MR. FILGO: Mr. Chairman, may I ask --?

CHAIRMAN WIRTH: Yes.

MR. FILGO: -- you say they are no longer being made -- try to get a feel -- on how with respect to five years, ten years?

MR. PETRIE: Not quite that long. The equipment is used fairly heavily, the motor will probably burn out within a year. Then it is my understanding that only on the shuttle cars can these motors be replaced with a substitute other than a PCB motor. On the continuous miners, the -- as far as location of these motors would not allow a non-PCB motor to be substituted for it.

Although the motor is not made anymore, the manufacturer does have a reserve supply of these motors so we



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can replace them.

MR. FILGO: --

MR. PETRIE: No, I have no idea how extensive it is.

DR. SHYKIND: If I recollect correctly, those motors are rebuilt once a year --

MR. PETRIE: Well, the motors themselves are made by Reliance Electric. It is utilized on Joy equipment only.

DR. SHYKIND: And I thought that they could be retrofitted.

MR. PETRIE: The ones on the shuttle cars can be retrofitted. I believe the ones on the continuous miners cannot. One of the motors on the continuous miner goes actually into the cutter head of this machinery and it is very limited as far as space is concerned. To my knowledge, it cannot be substituted with the non-PCB motor.

DR. SHYKIND: Well, if we ban the manufacture and the use, even though it may be considered a semi-sealed system and we ban the import, what are you going to do? You are going to run out of PCB's --

MR. PETRIE: Right. My question is whether this would be exempt under the January 1st, 1978 ban?

DR. SHYKIND: But ultimately you are going to run out of PCB's.

MR. PETRIE: Yes.



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DR. SHYKIND: What are you going to do after that?

MR. PETRIE: When we do run out of PCB's the mining equipment will not be utilized unless the motors can be replaced with non-PCB motors. The shuttle cars, these motors can be replaced and retrofitted with the non-PCB motor. But the continuous miners, they cannot.

MR. FILGO: What is the life of a continuous miner?

MR. PETRIE: It depends on the situation that they are used in. It can be up to five to ten years.

CHAIRMAN WIRTH: I will go back a little farther on this. As I understand what you are talking -- we are talking the coal mining industry primarily. We are not talking metals or any other -- what we call hard rock mining or gravel or sand or quarrying or any kind of operation there?

MR. PETRIE: There are several continuous miners and shuttle cars used in, I believe, the potash industry, but I am not sure of this. I think it is very limited.

CHAIRMAN WIRTH: So that the general use that we are talking about is coal mining and we are talking undergroun is that correct? Not strip mining.

MR. PETRIE: Yes. Strictly underground.

CHAIRMAN WIRTH: Strictly underground coal mining. And there are PCB motors, I presume, used because of their non-flammability characteristics?



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MR. PETRIE: Non-flammability and their small size.

CHAIRMAN WIRTH: Small size. In a continuous cutting machine, this is something that goes to the face of the coal underground and cuts the coal, I presume, underneath and it drops either from its own weight or an explosive charge; is this correct?

MR. PETRIE: Well, either that or it will actually grind up the material in the facing. You don't have to allow it to drop. It will -- you can transfer this material onto a loader or shuttle car.

CHAIRMAN WIRTH: Okay. Now, this cutting machine uses this motor. Is this its main form of power or this auxilliary?

MR. PETRIE: It is auxilliary. On the one cutting machine it is used to drive the cutting head. On the other one, I believe, it is used to drive the traction of the machine.

CHAIRMAN WIRTH: Okay. What is the main source of power for the cutting? Is that an electric motor also?

MR. PETRIE: Yes.

CHAIRMAN WIRTH: But it does not use a PCB motor?

MR. PETRIE: No.

CHAIRMAN WIRTH: Could you explain why the main cutting head doesn't use PCB motor but the auxilliary, you know, forward motion and pressure do?



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MR. PETRIE: Well, I am not that familiar with it myself, but I do believe it is because of the non-flammability in the life, the additional life that this PCB cooling give your motor, because for the cutting head this motor takes extremely hard use. It has got to be pretty durable and I believe PCB coolants give you this advantage as far as extending the life of the motor is concerned.

To my knowledge, air/water cool motors only last about half the life of the PCB cooled motors in this specific situation.

CHAIRMAN WIRTH: Okay. Are there are other motors on this machine or are there just --

MR. PETRIE: Yes, there are other motors on this machine. They are larger and they are used to drive the wheels in the one case and I guess in the other one they are used also to drive the cutting head.

There are two separate models of continuous miners in use that have these PCB motors.

CHAIRMAN WIRTH: Two separate models. And they all have PCB motors?

MR. PETRIE: Yes.

CHAIRMAN WIRTH: No one has --

MR. PETRIE: PCB motors in addition to the larger electric motor.

CHAIRMAN WIRTH: In addition to a larger electric



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motor which is the main power driving for the actual cutting or grinding of the coal?

MR. PETRIE: Yes.

CHAIRMAN WIRTH: And no one has substituted for the PCB motors in any of these cutting machines; is this correct?

MR. PETRIE: There are other manufacturers that make cutting machines that do have non-PCB cooled electric motors, but I imagine Joy Manufacturing several years back used these PCB motors, which they found they had a longer life and all the qualities that would be advantageous to the use in a mining environment.

CHAIRMAN WIRTH: But you are saying that there are competitive machines or other machines in there that do not use a PCB motor, so that substitutes are basically available and proven in use --

MR. PETRIE: Yes.

CHAIRMAN WIRTH: And that about 50 of these machines have PCB motors.

MR. PETRIE: Yes --

CHAIRMAN WIRTH: How many machines are there overall in the mining industry. Would you have any estimate of that?

MR. PETRIE: Anywhere from 250 to 500 at the most. We haven't made a study of actually how many are in use, but I believe there is around 50 continuous miners and 200 plus of these shuttle cars.



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CHAIRMAN WIRTH: I am talking just the continuous miners. You would say there is fifty of these that have PCB -- how about non-PCB?

MR. PETRIE: I would say approximately several hundred in use now.

CHAIRMAN WIRTH: So that roughly 20 to 25 percent of the continuous miners are PCB motor driven?

MR. PETRIE: Yes. There may be more --

CHAIRMAN WIRTH: In any case, there is a substantial number of non-PCB type equipment out there.

MR. PETRIE: Yes.

CHAIRMAN WIRTH: Okay. Now on the shuttle cars, I take it these are the vehicles on which the coals are loaded into that shuttle out of the mine tunnel to the shaft or --

MR. PETRIE: Yes. Load-out point.

CHAIRMAN WIRTH: Load-out point. They are self-propelled? I mean why do they have a motor on them?

MR. PETRIE: THey are electrically operated, too. Usually they will have a long trailing cable through which it gets its electric power and the distance they travel is fairly limited because of this so travel may be 100 yards at the most.

CHAIRMAN WIRTH: So the continuous cutter cuts or grinds the coal. Is it loading conveyor also directly into



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these cars?

MR. PETRIE: Either directly onto the cars or they can use a conveyor belt and move it out to the end of this mining machine.

CHAIRMAN WIRTH: And it is moved into these shuttle cars then which are usually cabelled or on a drum which is run by PCB motor out to, I presume, a larger tunnel under which it can be loaded into bigger cars or hauled out.

MR. PETRIE: Yes.

CHAIRMAN WIRTH: And there is about 200 of these cars in existence?

MR. PETRIE: Yes.

CHAIRMAN WIRTH: And roughly what percentage would that represent of the overall total?

MR.PETRIE: I would say it probably would be about ten percent and that is just a guess on my part.

CHAIRMAN WIRTH: Okay. So about 2,000 cars all toll, somewhere in that number, over the entire coal mining industry in this country.

MR. PETRIE: Yes.

CHAIRMAN WIRTH: Okay. Is there any particular reason that the PCB motors are used in this ten to 20 percent of these two operations because of conditions in the mine? My question is does this use which is, of course, not the majority of all the use, represent a particular operation



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where safety is critical for one reason or another or that the explosion hazard is higher than one put in these particular operations, as opposed to just the fact that this equipment is currently in use and one wishes to utilize it until his -- throughout the amortization period or maintenance schedule of that particular -- lifetime of that particular equipment?

MR. PETRIE: I do believe that PCB motors are probably better-suited for use in the mining industry than a non-PCB cooled motor because of the reduced flammability and longer life that it gives a motor. I believe if you have a motor burning out fairly often, it could present a possible hazard whereas one that would last longer would -- exactly how good the non-PCB motors are, I don't have a feel for that myself.

CHAIRMAN WIRTH: Let me be a little bit more direct, I guess, with that question. I guess my question is that are there unique mining situations whereby one could identify criteria under which a PCB motor was absolutely necessary or should be from a safety standpoint as opposed to other more general cases?

MR. PETRIE: Not absolutely necessary. They can be substituted and other motors can be used equally as effective, I believe.

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Tape II

CHAIRMAN WIRTH: Ed, did you have a question?

DR. SHYKIND: I was trying to clarify the thrust of his question. Actually you're really asking us if we consider it to be a sealed system, where we let you use the motors for a certain length of time, or do you want to use it permanently.

THE WITNESS: I'd like to know if it could be used after January 1st, 1978.

DR. SHYKIND: Well, what --

THE WITNESS: And that means --

DR. SHYKIND: -- why do you want to know that?

THE WITNESS: The definition is totally enclosed now.

BY DR. SHYKIND:

Q What --

A If it's considered totally enclosed, then it could be used after January 1st, 1978; if it's not considered totally enclosed, then perhaps it would have to be exempt under the ban, or it would be banned.

Q Well, I see really two issues. One is the immediate banning of the machine, or the use of that--

A Yes.

Q The second issue is how long do you run those machines before we allow you to rebuild them, or do you retrofit them after a certain period of time.



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Now, Joy says that the PCB's, if they can be used until 1981, and I assume there's enough that seems to be floating around for that, they can retrofit the rest. Two different motors.

So under that circumstance, if the committee would say it is a totally enclosed system, it would have to waive an exemption somewhere in 1979 to allow it to continue for a year or two longer.

But it looks like the question you're really asking is, it could be stopped in '78 and what happens after that.

A Well, it was my knowledge that such an exemption was being considered for PCB's, electric motors, and regulations have been drafted. I've talked with EPA technical support on this, and they have gone on to Joy Manufacturing and to Alliance Electric and they have looked into it.

Q We do have a Bureau of the Mines representative on the PCB committee, and this has been discussed. What we haven't discussed yet is the issue of what's called we feel, and what's not.

But obviously this is one of those questions where it has to be brought out.

CHAIRMAN WIRTH: Okay, why don't we go up the panel.

Steve, do you have any questions?



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MR. WEIL: No, I don't.

CHAIRMAN WIRTH: Ed?

DR. SHYKIND: No, I have nothing further.

CHAIRMAN WIRTH: Okay. Marianne.

MS. THATCHER: Yes, I do.

He's talking about those blow off valves.

MR. PETRIE: Yes.

MS. THATCHER: And you talk about small amounts of PCB's that are emitted.

MR. PETRIE: Yes.

MS. THATCHER: What small amounts, I mean, have you read --

MR. PETRIE: No, I have not.

MS. THATCHER: You have not?

MR. PETRIE: Perhaps --

MS. THATCHER: Well, I was wondering why you needed small amounts if they hadn't been mentioned.

MR. PETRIE: Just in talking with EPA's technical support division.

MS. THATCHER: I see.

MR. PETRIE: They have mentioned they will blow off PCB's when it overheats. I imagine it is a small quantit

CHAIRMAN WIRTH: Okay, John.

MR. LYON: Have you looked into ways that could blow off or emission could be limited?



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MR. PETRIE: No, I have not.

MR. LYON: Do you have any thoughts or views as to whether there would be any way to limit further the discharge?

MR. PETRIE: Oh, I wouldn't think so, if you should seal off the blow off valve and the motor should overheat, it may rupture the casing. I don't know exactly what damage it would do but you should have some type of release mechanism if this should overheat and expand.

CHAIRMAN WIRTH: Harold?

MR. SNYDER: One question, it's somewhat related to John's question. You talk about these motors lasting only a year, or failing after a year, and I'm interested in the nature of the failure with respect to things like case ruptures, what have you, that would then directly relate to the loss of the PCB's.

MR. PETRIE: Joy has reported they've never had a case rupture, but I imagine the linings burn out on the motor, bearings fail, which would require it to be replaced. It never has had one lose its content PCB's entirely. We've had some PCB's come out of this blow out valve, but that hasn't been the extent of PCB's leakage into the environment.

CHAIRMAN WIRTH: Dave. Blake.

MR. BILES: Your original question was what is



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total enclosement enter, whether or not --

MR. PETRIE: Yes, --

MR. BILES: Whether or not it constitutes.

MR. PETRIE: Right.

MR. BILES: Total enclosure. Obviously that's one of the issues we have to resolve in this rulemaking, and it's something that I know a couple of other industries are very concerned about.

I have had a couple of discussions with people from Joy, also, obviously, our technical people have talked to them, and they've been obviously concerned about it. I don't see one of them here but I think they're going to be in Chicago, also representating their position.

I have gotten a general impression that without the agency having said what is totally enclosed manner, that they themselves seem to believe that what they're doing is not constituted to open and close manner operation.

Now, I'm saying that is the understanding I've gotten from them, although it doesn't mean that they would take a contrary position, depending on what we say is totall enclosed.

If that is the case, then they would not be allo to manufacture any more of these during '78 unless they've had an authorization to do so, and the same goes for other activities.



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The thing that I guess would be helpful for us either today or subsequently is if you have any comments on what you consider to be totally enclosed manner, perhaps taking what Marianne asked in elaborating on that, and secondly, if this is not totally enclosed, certainly after '79 it's even a more difficult to get an exemption even if it is totally enclosed.

Why do you think they should be allowed to contin in these conditions, given the safety factors you cited, what are the economic costs of retrofitting. Joy has said that they do have some conversion kits available for all but the 50 continuance.

MR. PETRIE: Right.

MR. BILES: Loaders, I think. Those kind of issues could go to if you wanted to authorize under certain conditions to continue the manufacturing or use of any pieces of equipment, what would those conditions be? I'd like some kind of information, we'd appreciate it, it would help us in the decisions.

MR. PETRIE: Okay, I don't have at this time a feel for how to answer, but I will certainly look into that.

CHAIRMAN WIRTH: Ward?

MR. FILGO: No questions.

CHAIRMAN WIRTH: George.

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DR. SHYKIND: If you will look at the definition of totally enclosed, it also talks about exposure, significant to human beings of the requirement. If you go back and find out how much is -- at least see if any measurements are to be made in the mine.

There's an OSHA standard pending PCB's.

MR. PETRIE: Okay.

DR. SHYKIND: Actually, OSHA doesn't give masons but mason has its own standards below that, what has been measured, you may have a case where we're asking for an exemption, the fact that they may release it but it's not significant.

MR. PETRIE: But there are no regulations being considered concerning an extension on the PCB pool motors themselves.

DR. SHYKIND: Maybe you've brought up an issue and we'll have to consider it.

MR. BILES: I think that's what we're considering in this room, it is what we we've been.

CHAIRMAN WIRTH: Okay, are there any questions from the floor?

Okay, thank you, Mr. Petrie.

MR. PETRIE: Yes.

CHAIRMAN WIRTH: Next on the list is Mr. Joseph Furr of the Continental Forest Industries, is that correct?



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MR. FURR: Yes, sir, I'd like to yield to Mr. Robert Magruder.

CHAIRMAN WIRTH: Okay.

MR. MAGRUDER: I happen to have a few copies here. That you can share.

CHAIRMAN WIRTH: Okay, fine.

Okay, will you start, Mr. Magruder, with your name and representation.

MR. MAGRUDER: Mr. Chairman, and members of the work room, I am Robert S. Magruder, manager of Environmental Protection, Continental Forest Industries, CFI, a division of the Continental Group, Incorporated, formerly Continental Can Company.

Today I am representing the interest of the CFI, Hopewell, Virginia, paperboard mill, in the matter relating to the use of waste motor oil. The Hopewell mill manufactures approximately 1150 tons per day of liner board and corrugating medium.

These materials are generally classed as paper board and constitute the components of corregated boxes. Approximately one half of the mill steam generated electrical requirements, and all of the process steam requirements, are supplied by 16 generating units, three power voltages of fuel oil, two Kraft recovery boilers used in waste, pulp mill liquor, and one bark boiler.

The fuel oil used in the power boilers is a mixtu of 48 percent imported number six oil, 38 percent decanted refinery oil, and 14 percent waste motor oil. Total annual usage of oil is 846,700 barrels, including 125,700 barrels of waste motor oil.

The waste motor oil supplements the number six oil. The problem we are addressing today relates to the fact that frequently the waste motor oil is contaminated in small amounts of PCB's, (5 milligrams per liter, or .0005 percent.)

Our purpose in appearing before you today is to urge that adequate consideration be given to the rule for implementing the phase bans on PCB's, which will not prevent the use of PCB's, contaminated oils, as a supplementary fuel

There are several advantages to using waste motor oil to supplement the number six oil normally used. These are, one, the use of waste motor oil that will reduce the need for imported foreign oil on a one to one basis.

Two, provide the safe method for the disposal of PCB's, which might be present in the oil. Three, because of a slightly lower price, there is a distinct economic advanta to the user.

On the other hand, should PCB contaminated motor oil be classed as "distributed in commerce" and subsequently banned to prevent its use, we will be confronted wi

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several problems.

One, someone will be faced with the problem of collecting these oils and providing for suitable incineration. Two, waste motor oil will not offset foreign imports. Three, since reprocessing will not remove PCB's, this cannot be considered as an acceptable alternate.

We believe that our continued use of PCB contami motor oil is consistent with the intent of the act, PL 94469. The act provides that PCB's may not be distributed in commerce in other than a totally enclosed manner. Furth totally enclosed manner is defined as that which will assur that any exposure to human beings or the environment for PCB's will be insignificant.

This provision is effective from January 1st, 1978, until July 1st, '79. Since the waste oil is transpor to the Hopewell mill in tank truck, stalled at the mill sit in storage tanks, and pumped under pressure to burners on the power boards, we consider this as totally enclosed.

The oil does not at any time come in contact with humans or the environment, barring unforeseen accident. We urge that a broad minded approach be taken to the term totally enclosed manner, as indicated previously, and not be limited to the concept of an enclosed container such as the barrel.

After July 1st, 1979, the act bans the distribu

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and commerce of PCB's except for the one year exception may be granted if there is not evidence of unreasonable risk.

Our handling of PCB contaminated waste motor oil would certainly satisfy this requirement. The ultimate solution beyond July 1st, 1979, or July 1st, 1980 if the one year exemption is applicable, is to define the "resale of PCB's" to exempt the distribution and commerce of PCB's contaminated motor oil.

Additionally, the sale of contaminated motor oil to the waste oil collector, and subsequent resale to CFI, should not void the exemption. As time passes, the PCB contaminant level of waste motor oil will decrease as the impact of the manufacturing ban is felt.

We and others who burn waste motor oil need the assurance that for this indefinite period of time, regulation will be provided to protect the use of waste oil as a supplementary fuel.

The environmental advantage to this situation is that this is a cost free method for the disposal of at least some of the PCB's now in circulation in the environment. We need now to direct your attention to the impact of burning PCB contaminated waste motor oil on the atmospheric environment.

In early 1976 it was called to the attention of EPA region three that some of the waste motor oil being burn-

by Continental contained PCB's. Following a meeting between Continental, the state of Virginia, and EPA region three, EPA requested the assistance of the national enforcement investigation center, NEIC, in Denver, Colorado.

The NEIC designed a two pronged investigation. They first analyzed samples of waste motor oil to confirm the presence or absence of PCB's. This work continued over a period of several weeks and ultimately confirmed the presence of PCB's at levels ranging from low of 3.2 milligrams per liter to a high of 19.4 milligrams per liter on composite truckloads.

The second phase of the NEIC program involved running staff analysis on the power boilers to determine the effectiveness of the incineration of PCB's in boilers designed for fossil fuel.

These tests were run July 12th through 23, 1976, with a report being filed in October of 1976. Their conclusions were that the power boilers, 'provided an excess of 99 percent destruction efficiency for the PCB's present in the fuel."

The average emission rates for the two boilers that ran for one-tenth of a gram per hour to two tenths a gram per hour under normal operating conditions.

As a result of the test program, we concluded the incineration of power boilers of waste motor oil contamina-



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with PCB's is an effective method of disposal and can be accomplished without unreasonable risk to help in the environment.

We have recently concluded an agreement with EPA region three defining the conditions under which we are permitted to burn PCB contaminated motor oil. Although not specific to the PCB problem, we also considered the impact of lead contained in waste motor oil and the environment.

Tests run by an independent contractor confirmed that the increase in the ambient level of lead as a result of burning the oil, is minimal and certainly does not constitute an unreasonable risk to health in the environment.

In summary, regulatory provisions under PL 94469, should be established the use of waste motor oil, which may be contaminated with PCB's as a supplementary fuel. Thank you.

CHAIRMAN WIRTH: Thank you, Mr. Magruder. I'm sure there are some questions. Steve.

MR.WEIL: I don't have any.

CHAIRMAN WIRTH: Kent.

MR. BALLANTINE: I'm interested, you indicated that once the manufacturing ban of PCB's would take hold, that you expect a decline in the waste oil. To make that statement you must suppose some pathway of how the PCB's get



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in the well. How --

MR. MAGRUDER: Really, we do not know how the PCB's get in the well. We're not in a position of setting ourselves up similar to Monsanto incincerating them on a commercial basis. We have issued written instructions to our collectors that we simply don't want the PCB's. We've told them if we found any PCB's we would reject the load.

Well, now, of course, from an analytical standpoint, that is not simply valid, but that heat is such that we couldn't reject truckloads on that basis. But I'm emphasizing the fact that we don't want the PCB's.

Presumably our collectors are attempting to avoid the collection of PCB's. Now, how they get in we don't know, but PCB's are put forward ubiquitous, spread -- they'r every place, and as a result this waste all, somehow or other they get in.

We were, frankly, quite surprised to find the PCB.

CHAIRMAN WIRTH: Along that same line could I ask what's the source of the waste oil, from what type of operation?

MR. MAGRUDER: Well, generally speaking from the service stations, but we have collectors throughout Maryland Virginia, North Carolina, that go around any place where there is oil, of this type, and they pick it up.

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CHAIRMAN WIRTH: Basically this is used crank case oil?

MR. MAGRUDER: Yes, basically it's used crank case oil.

MR. BALLANTINE: Apparently there's some hydraulic fluid, getting into it.

MR. MAGRUDER: Without question, that's probably true because we've confirmed that it's them. Now, we don't know on an individual, truck by truck basis. The sampling work that the Denver lab did, unfortunately we sent to them individual truck samples that they composited on a weekly basis, so we lost the identity.

MR. BALLANTINE : The second question I have, can you give us some idea of what the operating conditions are in the boiler, temperature, something like that, so we could --

MR. MAGRUDER: Yes, in the flame it's roughly 2700 degrees farenheit, and the residence time, a theoretical calculation of perhaps 1.5 seconds, something of that sort.

MR. BALLANTIN: I was just wondering because we had --

MR. MAGRUDER: It was just about marginal, the conditions for disposal set up in our boilers --

MR. BALLANTINE: Yes.



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MR. MAGRUDER: -- it's just about that.

MR. BALLANTINE: In other words you almost quali. as a PCB incinerator under our --

MR. MAGRUDER: Yes, almost.

MR. BALLANTINE: That's all I have.

CHAIRMAN WORTH: John.

MR. LYON: What is the price differential on the PCB contaminated waste oil burning other kinds of oil? Approximately.

MR. BALLANTINE: Approximately, two or three dollars a barrel?

MR. FURR: Four cents a gallon, the waste oil and the number six imported fuel. It varies depending on how far the supply, I'd say about 4 cents.

MR. BALLANTINE: It's like any waste paper, the price varies tremendously.

MR. FURR: Actually, the price of number six varies. I think four or five cents a gallon is a pretty good estimate.

MR. LYON: Thank you.

CHAIRMAN WIRTH: So what is the overall price, roughly?

MR. FURR: I think it's 21 cents a gallon.

CHAIRMAN WIRTH: Twenty-one cents a gallon of the waste fuel.



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MR. FURR: I think that's it.

CHAIRMAN WIRTH: Okay. Harold.

MR. SNYDER: You talked about the broad nature of your collection process in Maryland and Virginia for this particular mil,do you have any knowledge as to how many other competitors there are for this waste oil, in other words are you a fairly major industrial user of this compared to other companies?

MR. MAGRUDER: Yes, my opinion is that we are a fairly major user because we do have other than competitors I know there's one, particularly the operation in Denver, in the Delaware area. I know the Denver collection people tend to meet, you know, halway.

I know that there's one, and I believe there are collectors in Georgia.

MR. SNYDER: We're probably talking about maybe only half a dozen maybe in the east coast, maybe in the mid-Atlantic area, major industrial operations that are making heavy use of waste oil.

MR. MAGRUDER: That's possible but I really don't have statistics, it's sort of speculative.

MR. SNYDER: In your testimony you indicated, based on the tests that NCI did, a high of 19.4, milligrams per liter of PCB's. Do you have any other indication as to an upper limit of PCB levels that might be in waste oil



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that --

MR. MAGRUDER: That is the highest figure that we have seen, and recognized that is a composite sample of several kinds.

MR. SNYDER: Do you have any kind of a regular monitoring program for checking PCB levels?

MR. MAGRUDER: One of the provisions, I mentioned that EPA in region three has given us permission to continue to burn waste oil under a set of conditions. One of the conditions is that the waste oil will be monitored on a periodic basis.

Now, this will be tested, evaluated, in outside laboratories. We don't have the capability of conducting that.

MR. SNYDER: Do you have any other kinds of air pollution control equipment, with particular reference to scrubbers, with particular reference to HCL controls?

MR. MAGRUDER: Not on these power boilers. These are old power boilers, the newest one dated 1953, one from 1937, and the third from 1945.

So, we're in compliance with Virginia regulations as long as we burn oil.

MR. SNYDER: Okay, was there any HCL monitoring at the time --

MR. MAGRUDER: To my knowledge there was none.

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MR. SNYDER: That's an important parameter of PCB incineration. Now, --

MR. MAGRUDER: To my knowledge there was not, and in the report we received from the agency there was no indication of HCL.

CHAIRMAN WIRTH: Okay, Blake.

MR. BILES: Okay, I have a few questions.

Obviously we're going through another rulemaking of disposal, and I assume part of your concern is rulemaking is that you are using PCB's.

MR. FURR: Yes.

MR. MAGRUDER: That's right,but under the phrase distribution in commerce, and if we buy these waste oils on the outside and move them to the mill and purchase them, you know, they would be distributed.

MR. BILES: Okay, the other thing that these regs apply to, though, is the use of PCB's, and I assume your activity at the plant would constitute the use in the sense of the heating oil, that's what you're doing with this kind of commercial use.

MR. MAGRUDER: Well, of course, our use of the heating oil is that it generates steam.

MR. BILES: That's right.

MR. MAGRUDER: The presence of the PCB's was incidental. We have no use for it.



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MR. BILES: Your use of the heating oil.

MR. MAGRUDER: That's right.

MR. BILES: The other question I have is that this provision that allows us in a sense to banning in distribution and commerce, has a requirement that you must -- that the PCB's must have been sold prior to July 1, '79, for other than resale.

Now, you have a statement in your testimony that says you would ask that we consider any resale after that to certain people not be considered in effect sales.

MR. MAGRUDER: My wording, perhaps, was not the best and when I used the word resale I meant the resale of the collector to ourselves.

MR. BILES: Okay, so that would then require you to have, before July 1, '79, accumulated all that you're going to burn after that date.

MR. MAGRUDER: Yes, if the regulation is written in that fashion, what we're urging today is consideration be given to waste oils to make the exemption such that we can continue to burn beyond that date.

MR. BILES: Okay. The provision I'm raising is that the statute itself says, though, that they must have been pulled prior to July 1, '79 so is that going to be a problem for you to purchase prior to that date, everything you're going to use after that date.



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MR. MAGRUDER: My interpretation of the sale, sale from the original manufacturer, I assume that has been banned, from Monsanto to, you know, whoever.

MR. BILES: Okay. You'd say once Monsanto has made and sold it before that date --

MR. MAGRUDER: That's right.

MR. BILES: -- then everything that's in the environment has already been sold.

MR. MAGRUDER: We aren't adding anything more, what we're trying to do is to collect, and this is a procedur for disposal.

MR. BILES: Okay, thank you.

CHAIRMAN WIRTH: Ward.

MR. FILGO: Mr. Magruder, I understand your fuel here, you use a blend.

MR. MAGRUDER: Yes.

MR. FILGO: And this is all mixed in, one --

MR. MAGRUDER: We have --

MR. FILGO: -- to four --

MR. MAGRUDER: No, we have two storage tanks, one storage tank is isolated to number six fuel oil, the other storage tank is a blend. Now, when we unload it the PCB's are the waste motor oil is discharged in the one tank which contains a blend, and then we monitor, we load to the -- we bleed from both tanks in an attempt to control the

amount of waste oil to the boiler.

Waste oil is difficult to burn, it varies tremendously. It's a headache to burn, really. You've got to blend it with a substantial amount of number six.

Our total usage, as I indicate there, is about 14 percent.

MR. FILGO: All right, --

MR. MAGRUDER: I wish it was closer to Tennesse, I'd sell you this for eight cents a gallon.

MR. FILGO: Well, we've got mills in Georgia, maybe that's close enough.

MR. BALLANTINE: One other comment. That doesn't really qualify, that's only five milligrams per liter, or even 20, it wouldn't qualify as a PCB liquid, right, by your addition.

CHAIRMAN WIRTH: Labelling and disposal.

MR. MAGRUDER: That's less than the mixture.

MR. FILGO: Right, the other comment is, on the amount that you burn, does that vary on availability or do you have -- do you try to keep it less than a certain amount of motor oil because of operating difficulties?

MR. MAGRUDER: The total availability burns, the receipt varies, the receipts per month vary considerably, ye know, by a factor of two, perhaps.

MR. FILGO: But what I'm getting at, would

you burn more if you could get?

MR. MAGRUDER: Well, if you talk to our power plant people, they say not. But management, you know, if we could get a little more, maybe we'd burn a little more.

MR. FURR: I think the market is such that you might go at it and work very hard to get 10 or 15 percent increase. I think the main problem is that 15 percent presents such operational problems.

CHAIRMAN WIRTH: Go ahead.

MR. FILGO: Mr. Magruder, do you know whether your supplier is a waste oil selector, in any way processes this waste oil before he brings it to you, or is it brought to you as he selects?

I'm thinking now of sludge and water, which may give you problems.

MR. MAGRUDER: Joe, maybe you'd better answer that. We have quality restrictions which relate to moisture And I suspect that some of the collectors do, in fact, settle it out. It's not a process -- I think some settle it out, others, I don't believe, touch it.

Joe, is your --

MR. FURR: Correct. There are about six or eight different suppliers, they vary from a guy that owns a truck that might sell us a truckload of one, or an



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individual that might sell us 1000 gallons. Basically all they have is collection for settling of water. After you have a water restriction on, it happens.

CHAIRMAN WIRTH: I'll finish with the panel, are there any other questions from the panel?

MR. SNYDER: I have one.

CHAIRMAN WIRTH: You have one more?

MR. SNYDER: You have indicated the study program done by NEIC in region three on this particular boiler. If you were considering some point in the future, this same level of use of waste oil at some other facility, hypothetically somewhere else in the country, and there was a requirement that you do some kind of initial study or monitoring to determine the effectiveness of those particula boilers who adequately destroyed PCB's that might be in that waste oil, would you consider paying for such study, conducting such a study, a strong deterrent to undertaking use of waste oil?

MR. MAGRUDER: No, no, we'd be willing to conduct the study, that would be no problem.

No, we're interested -- we're as much interested in this as anyone else.

MR.SNYDER: Well, the implication in my question was not -- don't take it defensively. It was trying to get a sensing that if a program in the use of waste oil

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were worked into a set of regulations, we need some kind of a control mechanism --

MR. MAGRUDER: Oh.

MR. SNYDER: -- to make sure that we don't in effect allow some environmentally undesirable practice to occur. So then put in those checks and balances in the system, we need to have some idea as to whether we totally discourage the process rather than come up with a tool. That is the nature of my question.

CHAIRMAN WIRTH: Okay, any other questions on the panel?

I have just one more and that is, would you elabo a little further on EPA conditions that were set down by region three. You mentioned that they were --

MR. MAGRUDER: Yes.

CHAIRMAN WIRTH: -- monitor the waste oil.

I realize we could also ask our region three, but if it's convenient it would be nice to have it in the record right here.

MR. MAGRUDER: We -- EPA suggested some conditions, we studied them and replied, and I will quote from the letter which we submitted to EPA which they have accepted. One, we will confine the burning of waste oil to our power boilers.

If the Federal Energy Administration is successfu



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in prohibiting oil from being burned in these power boilers, we must reconsider our position and contact your office. Now, to elaborate on that somewhat further, in the past we've also been burning this oil in a lime kiln.

Now, during the test that was run, they ran one test on the line, and it indicated that the efficiency of incineration was somewhat less than the power boilers. So EPA suggested that we not burn it on the lime kiln, and this is the point that we're making here.

That if we're required to convert to coal, and some of you may or may not realize, we recently issued a prohibition order at the Hopewell mill, which may mean that we will reconsider this, but we can still burn oil in the bark boiler for starting up in the recovery boilers, starting up and shutting down, we still have a use of oil, we have a use of oil on the lime kiln.

Our issue of prohibition order and effectiveness today, requires that we convert the coal on two of these power boilers. We still have one more power boilers which we have other uses for, we'll renegotiate our position with EPA.

The second condition. We will keep number 6 oil in a separate tank from the waste oil. We will agree that during mill start up and shutdown of a boiler we will use number six oil from that isolated tank.



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Your statement concerning periods of malfunction is not completely clear. We agree that if significant difficulty occurs on the boilers, we will isolate the boilers with number six oil only. I'm sure you understand that small malfunctions occur from time to time, which will not permit us to have sufficient response time to accomplish the objective.

However, we agree to comply with the spirit of your statement.

And the third condition, we agree to periodically sample waste oil by vendors. These composite samples will be sent off quarterly as a test for PCB's. Based on this information, offer us control as to which vendor might bring us a contaminated product, if any, so that we may take constructive action.

Now here once again we're not interested in incinerating PCB's, we're interested in burning the waste oil.

CHAIRMAN WIRTH: Okay, thank you, very much. Any questions from the audience. Will you state your name and position.

MS. PARKS: My name is Marian Parks, I represent the Rachel Carson trust for the living environment. I think that this question raises another concern in the management of toxic substances with regard to the control and regulation



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of the waste collectors.

And I will merely bring to your attention the experience in Missouri which many of you may be familiar, of the collection of waste oil. A small collector simply went out and put waste chemicals along a point, and then sold them, the waste oil, in this case not for burning but for dust control, in two horse arenas.

It so happened that this was called hexachlorophine waste, and 75 splendid horses died, and so two childre were made ill, and adults were made ill. This is a very serious case, and I think that EPA is even now investigatin that for a number of years, the waste pit where the excess was left.

We also put our emphasis in what happened to the tank trucks themselves because they do accumulate in these cases of mixture, dangerous chemicals that don't get out of them.

And this can be transferred, put to different use. I mention this as something that we have been thinkin about a great deal in the regulation of the toxic substance regulation.

CHAIRMAN WIRTH: Do you think that the collectio of oil, at least as far as this particular operation has go whereby there's a monitoring of the material as it comes into the plant, and I presume rejected, if it does fall

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within certain criterion, then the burning of that oil and destruction of it a relatively safe or preferred way to handle some of these waste materials?

MS. PARKS: Well, I'm not critical at all of this presentation, but I am raising the point that the purchaser of waste oil, the small operator, and perhaps has too large a burden to make an analysis of the contents.

I think the lack of regulation over the collection is question that should be considered. In other words that they would be prohibited from deliberately mixing the chemical waste with waste oil.

And that there should be a regulation on what they do use with any of their loads that they pick up.

CHAIRMAN WIRTH: Okay, thank you, very much. Any other comments from the floor.

MR. FILGO: If I may call you Mariam --

MS. PARKS: Yes, sir.

MR.FILGO: -- we appreciate your comments. All of us here share those concerns.

CHAIRMAN WIRTH: Thank you, Mr. Magruder.

MR. MAGRUDER: Thank you.

e tape 2 CHAIRMAN WIRTH: For an interesting presentation.



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CHAIRMAN WIRTH: W. E. Kelly of Con Rail Corporati

VOICE: We have no prepared comment.

CHAIRMAN WIRTH: You have no prepared comment. Do you wish to pass?

VOICE: Yes.

CHAIRMAN WIRTH: Joanie Rickaush (ph), am I corre in assuming Dow Corning has cancelled?

MS. RICKAUSH: That is correct, Sir.

CHAIRMAN WIRTH: Is Dow Corning here?

MS. O'BRIEN: I am Eileen O'Brien. Dow Corning has cancelled for today, but Bill Page will be presenting comments in Chicago.

CHAIRMAN WIRTH: Okay. Mr. Richard Wiechmann of the American Paper Institute. Would you state your name?

MR. WIECHMANN: Yes, my name is Richard Wiechmann. I am Director of Environmental Affairs for the American Paper Institute. For the purpose of the record, my name is spelled W-i-e-c-h-m-a-n-n.

I will start this out with an assumption, which I hope is correct, and that is in reading Paragraph 5 of the PCB acitivities of the Notice in the Federal Register, that the adjective in the third line of that paragraph, contaminated modifies paper, as well as soil and rags. I hope so. It is a little obscure in the punctuation.

The reason I say that is that we do not in paper

manufacturing utilize PCB's nor have we. Although, we have seen some articles to the contrary in the press occasionally when PCB's were mentioned.

Our problem with PCB in the paper industry has basically been a problem of contamination in a recycled paperboard due to the fact that carbonous copy paper, forms, business forms made by NCR back prior to May of 1971, I belie get into the waste stream.

Obviously, at that time, May, 1971, and I think that is the year, when the PCB's had been discovered, first of all, Monsanto stopped making the type of PCB's which were utilized by NCR as an encapsulating agent for the ink in business forms and they utilized something different.

However, business forms being what they are, they tend to stay around in files and on shelves. They are print up sometimes in the millions and they still are a source of contamination, a lessening one.

Our industry, going back when we first discovered the fact that we had PCB of contamination in food board, the FDA published a tolerance of 10 parts per million -- Our industry initiated prior to FDA's taking action a quality control system throughout our mills to check the waste paper coming in, to notify all waste paper dealers we dealt with that we didn't want certain types of office waste paper, we would get business forms, ledgers and so forth.



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This quality control program was relatively successful, recognizing that there is always the chance for a little waste drift or the carbonous copy paper to get into a bale of waste paper, which is a large bale. If you have ever seen one, it stands six feet high. One sheet can contaminate a whole batch of paper because there is 30,000 parts per million in NCR paper.

We have run for FDA -- Our industry has run for FDA a control quality assurance program. Our product now is running considerably less than FDA's requirements. We are probably doing it about two parts per million or something like this, with an occasional peak found, going up five, six seven parts per million and a very low incidence of rejectin through the board.

However, there is a problem. The problem is still there and it is a problem we would like to see controlled. The problem is basically with the Government. They are the ones who have these business forms still in their files. It is a Government ruling that needs control by the Government.

IRS, for example, their W-2 forms, these come in and I guess they are supposed to be held for seven years or something like that. I don't really know what it is, but there was a big shipment that was received in one of our mil recently that had to be rejected. Our quality control progr worked, but these W-2 forms at 30,000 parts per million, the



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are hazardous waste under your definition and should be controlled. They should never be permitted, if you will, to get into the position of being waste paper for recycling.

That is the message I came to bring. Thank you.

CHAIRMAN WIRTH: Thank you, Mr. Wiechmann. Any questions, Steve?

MR. WEIL: No questions.

CHAIRMAN WIRTH: Kent?

MR. BALLANTINE: The question I had was, you said just -- I wasn't sure what the product was, just the -- I am talking about the manufactured product. It is just a --

MR. WIECHMANN: Recycled paperboard.

MR. BALLANTINE: Paperboard.

MR. WIECHMANN: Yes, recycled paperboard is basically the material which has had the PCB's in it. Some of the other recycled papers, printing papers may have it, although I don't think so. They use a different type of waste paper, which did not have the -- It is a contamination problem.

We are trying to keep business forms out of the waste that we use, but unfortunately they do creep in from time to time.

MR. BALLANTINE: It doesn't get into newsprint or something like that?

MR. WIECHMANN: Oh, no, no.

MR. LYON: Mr. Wiechmann, let me ask you, what



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exactly are you proposing here?

MR. WIECHMANN: Merely that you are controlling PCB's. First of all, PCB's in the paper industry are a contaminant. All we are suggesting is we would hope that something could be done to keep our product from being less contaminated.

MR. LYON: Do you have any specific recommendation

MR. WIECHMANN: No, no. Let me say this, that it should be -- W-2 forms or any other business forms which go back before 1971 -- I would think these could be identified, but I don't know how. I would suggest that as something tha you might want to think about.

CHAIRMAN WIRTH: Harold?

MR. SNYDER: You may have made this comment in your testimony. I may have missed it, but have you noticed a decline in PCB contamination?

MR. WIECHMANN: Oh, definitely.

MR. SNYDER: Do you expect it to keep going?

MR. WIECHMANN: Yes, we do. I think it is working itself out of the system. I am just saying, you are lookin at it and there are still occasional shipments of forms, mainly Government forms.

MR. SNYDER: And the NCR forms that you mentioned you mentioned 30 parts per million --

MR. WIECHMANN: 30,000 parts.

MR. SNYDER: 30,000.

MR. WIECHMANN: About 3 percent, NCR.

CHAIRMAN WIRTH: Dave?

MR. WAGNER: I just have one question. Is that quality control program only for the Food Board?

MR. WIECHMANN: Yes, because we are controlled by FDA on the food paper or paperboard packaging materials. It is subject to a tolerance now of 10 parts per million for PCB

MR. WAGNER: What kind of difficulty would there be in extending that quality control program to other product It seems like we are recycling PCB's in grocery bags and other things.

MR. WIECHMANN: I don't think -- Grocery bags are made out of Kraft, which is a virgin material.

MR. WAGNER: Okay.

MR. WIECHMANN: And you wouldn't have PCB's in there. You might -- Let's put it this way, if there was a dump of PCB's in the river or the stream for Kraft mills, close upstream, you know, you might get a peak, but I even doubt that. That would be significant.

MR. LYON: How many plants are you talking about?

MR. WIECHMANN: Recycling mills?

MR. LYON: Yes.

MR. WIECHMANN: Paul, can you help me out on that?

VOICE: It is the total paper recycling industry.

MR. WIECHMANN: About 200 or something like that.

MR. LYON: You assume that they all have the same quality control that you are talking about, you know, the example you gave -- We heard you say you think the industry is pretty uniform and everybody is doing it.

MR. WIECHMANN: Well, we hope everybody is doing it.

MR. LYON: Is NCR's paper covered by FDA?

MR. WIECHMANN: No, no, they cover food packaging materials.

MR. LYON: Right.

MR. WIECHMANN: That is under a Food, Drug and Cosmetic Act as a food additive.

MR. LYON: So you wouldn't be catching that kind of --

MR. WIECHMANN: NCR stopped using PCB back in 1971. I am sorry. I am not sure I understand your question.

MR. LYON: Your quality control program is catching things which you are not required to catch because of FDA requirements. Is that an irrelevant question?

MR. WIECHMANN: Well, a mill will make -- Let's put it this way. A mill will make both food packaging board and non-food packaging board.

MR. LYON: Right.

MR. WIECHMANN: But it has to run -- This quality



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control program doesn't want the stuff on the premises.

MR. LYON: Do you know what percent of the problem in your mind -- You talked about the Government having a lot of the problem itself. Do you have any idea which agencies, which forms where those things would be?

MR. WIECHMANN: I would assume IRS would be a big problem.

MR. LYON: Okay.

MR. WIECHMANN: That is just an assumption. I am not an expert.

MR. LYON: Do you have any experience with PCB's turning up in printer's ink? We, in fact, have heard of that on occasion.

MR. WIECHMANN: Printers' ink?

MR. LYON: Yes, being an ink in newspapers. Vario newspapers have used ink that have had traces of PCB's in it and it has turned up and getting to the recycling plant.

MR. WIECHMANN: Well, we have just recently, working with another branch of EPA, where the question came up whether there were PCB's in the printing inks used in converting paper operations. We have gone back to the ink manufacturers. We have gone back to the converting operatic With the exception of one company that did some experimenta work back in the 60's, there has absolutely been no usage o PCB's.



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MR. LYON: Okay, thank you.

MR. WIECHMANN: I had to give out affidavits to that point.

CHAIRMAN WIRTH: Ward?

MR. FILGO: No, thank you.

CHAIRMAN WIRTH: A couple of questions just to clarify the industry structure here. Did I understand correctly that the entire recycling business is about 200 mills? Out of what -- What proportion of all the paper would they --

MR. WIECHMANN: 700.

CHAIRMAN WIRTH: Out 700.

MR. WIECHMANN: That is a rough estimate. I can't give you exactly.

CHAIRMAN WIRTH: Okay, that is -- My understanding was that there was always about 30 percent of the paper in this country recycled, recycled paper. 30 percent of the paper --

MR. WIECHMANN: The number of mills would not be a good measure of that because a recycling mill generally is a much smaller mill.

CHAIRMAN WIRTH: So you are saying that the recycle amount would be lower.

MR. WIECHMANN: The recycling rate right now is about 23 percent.

CHAIRMAN WIRTH: Okay, thank you. Most all of this in liner boards, is that correct?

MR. WIECHMANN: No, it is recycled paper board.

CHAIRMAN WIRTH: Paper board. Basically this type of material here and let's include packaging.

MR. WIECHMANN: Yes, cereal boxes and cracker boxes

CHAIRMAN WIRTH: Okay, it is a no Kraft product. Those are all virgin products.

Okay, I think that was all I had. Are there any other questions of the panel, audience? Thank you very much, Mr. Wiechmann.

I think we will take one more witness before lunch and then we will probably adjourn and reconvene at 1:30.

The next one scheduled is Mr. Gilkey of Air Conditioning and Refrigeration Institute, is that correct?

MR. GILKEY: My name is Herbert T. Gilkey. I am Director of Public Affairs for the Air Conditioning and Refrigeration Institute.

The Institute is a trade association whose members are manufacturers of air conditioning and refrigeration equipment. Within our product scope are such things as drinking water coolers, air conditioning equipment of types and sizes which would be used in central residential installations and all sorts of larger applications. Also within our scope would be commercial refrigeration, but not



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room air conditioners or household appliance type refrigera products.

Capacitors are used in a great deal of air conditioning and refrigeration equipment. These are motor capacitors. They may be starting capacitors. They may be start and run capacitors. Generally, they fall within the small capacitor category, which is -- includes capacitors containing three pounds or less. I believe that is the ANSI ASTM definition of a small capacitor.

The problem we have with the proposed rules and with the Toxic Substances Control Act is not specifically that PCB's would be banned, but it would have a concern with the resale provisions of the Act. I think the panel has the same concern. The Legislative history doesn't speak to this issue at all.

Sections 6(e) came into the Act as a result of floor amendments in both houses of the Congress and finally, of course, it was considered by the Conference Committee, bu the Conference Committee Report doesn't say a thing about it about this resale provision, at least.

We wonder when you stop selling PCB's and start selling products which might contain PCB's. Two of the othe speakers this morning have spoken really to the same issue. They were thinking in terms of the contamination.

Our thought would be that in recognizing the prob



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you have with disposal and control and all this sort of thin but our thought would be, when you stop selling PCB's, when you start selling something else. Perhaps you could take it down as far as a small capacitor. You are not going to wonder, selling in Congress PCB's when you sell a capacitor.

To use the language of the proposed rule on labeling, if you want to say that when you sell a PCB article, you are selling PCB's, that wouldn't bother us too much. When you get to PCB equipment, we should think you are no longer selling PCB's. A capacitor is a very small part, a very important part, but a very small part of an air conditioning unit.

It would be our suggestion that selling an air conditioner which contained a capacitor, which in turn contained PCB, after July 1, 1979, we would not be selling a PCB for resale.

Manufacturers have pipeline problems, as you well know and I suspect we will hear more of this in Chicago from one of our sister trade associations who will be appearing there and they have even worse problems in this regard than we do. That is, something that is manufactured today may not finally be sold to its ultimate user until sometime next year.

Consequently, we would urge that on this question for resale of PCB's that the rule not consider the sale of



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PCB articles or PCB equipment, again go back to the previous jargon, that the rule not consider that to be a sale of PCB as such. Thank you.

CHAIRMAN WIRTH: Thank you, Mr. Gilkey. Questions Steve? John?

MR. LYON: Could you just take us through, maybe you have already done it in capsule form, just how PCB's are, say, in air conditioning units?

MR. GILKEY: PCB's had been used as a dielectric in capacitors, small capacitors -- well, also large capacitors of course. These capacitors are used in air conditioning equipment in conjunction with the electric motor circuits. Some of them are used to assist the motor in starting. Others are used as a sort of, well, let's just call them power factor correction. That is not completely accurate. So that the motor runs more efficiently.

MR. LYON: Thank you.

CHAIRMAN WIRTH: Harold? Dave? Hal? Blake, I am sorry. That is Blake.

MR. BILES: Do you consider that there are substitutes for PCB flow capacitors for air conditioning uni

MR. GILKEY: We understand that there are.

MR. BILES: Okay.

MR. GILKEY: We know that a number of our members have established programs to phase out the use of the PCB



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capacitors and phase in the use of the others.

MR. BILES: So, is that to say then that the problem that you all face is mainly a time problem?

MR. GILKEY: Mainly a time problem and probably a time that is in some respects beyond the control of the equipment manufacturer because the equipment may actually be in his distributors' warehouse or a distributor's warehou It would then have to be sold to a contractor and then for sale to a consumer.

MR. BILES: I see. From what you know about the ability to have substitutes, do you have any feel for the economic impact on air conditioning industry, of a change from PCB flow capacitors to some other -- I say in particula in terms of if you had to do it immediately or two years fro now or three years from now. What is what I mean by time.

MR. GILKEY: I don't view the given time for a smooth transition. I don't expect that there would be significant economic impact.

MR. BILES: Do you have any idea of what that time could be?

MR. GILKEY: For manufacturers it would be of the order from now to a year and a half, perhaps two years. Tha is, if they have already started their planning and many of them have.

There might be problems with the servicing of air

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conditioners in the field. Contractors might be looking for an exact replacement of an existing capacitor. They might have problems finding, identifying an adequate replacement and even that might be of a size, physical dimensions, which would make it difficult to fit in place or the equipment.

MR. BILES: Do you know how many suppliers of small capacitors there are to your industry, approximately?

MR. GILKEY: No, I don't. I suspect that -- I don't have any idea, no.

MR. BILES: Do you have any idea whether your industry is importing capacitors with PCB's in it for use in your air conditioning?

MR. GILKEY: I have no idea. I would be surprised if they did.

MR. BILES: Along that line do you have any idea whether air conditioners are being imported with PCB's in them that are competing with yours?

MR. GILKEY: There are not a significant number of air conditioners within the scope of ARI that are imported. Now, that may not be true of residential freezers or refrigerators or room air conditioners. I don't know.

MR. BILES: My last questions go to your discussion about when you were talking about how far you go to find PCB's in resale. If we went so far as, you suggested at one



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point, maybe far enough to include what we would call articles like your small capacitors, as being subject to that resale provision. The effect would be -- If we didn't grant any exemptions, it would mean that your industry must have purchased its capacitors before the middle of 1979.

MR. GILKEY: Yes.

MR. BILES: Do you consider that to be a reasonabl period of time for you to get all the small capacitors with PCB's in them? In other words, after that date you may not need them?

MR. GILKEY: We might not need them after that date, that is true, but there might still be products in the stream of commerce where they would have retained them.

MR. BILES: Right. I am just saying, if the requirement was, you must have purchased your small capacito for your use prior to that date, do you think that is adequate for your industry to get all the small capacitors you need?

MR. GILKEY: I would think it would be adequate, y

MR. BILES: Thank you.

MR. GILKEY: Some of my members may shoot me for saying that.

CHAIRMAN WIRTH: Ward?

MR. FILGO: No.

CHAIRMAN WIRTH: I have one question. Is there a



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I guess this is a judgement question. Concerning the amount of space surrounding the location of a capacitor in most of the types of equipment within your organization, home air conditioners and large commercial stuff, would there be a space problem that would make a significant problem to introduce a different capacitor, say as long as it was within 10 percent of the size of the existing one?

MR. GILKEY: Generally speaking, no. The only manufacturing problem would be redesigning the bracket that held the capacitor in place.

CHAIRMAN WIRTH: Bracket, okay.

MR. GILKEY: There is plenty of room.

CHAIRMAN WIRTH: There is plenty of room in most of your type of equipment, as opposed to electronics.

MR. GILKEY: That is correct, yes.

CHAIRMAN WIRTH: Any other questions from the Panel? Any questions from the audience? Okay, thank you very much, Mr. Gilkey.

With that statement we will adjourn for lunch and reconvene at 1:30. The next witness called will be Mr. Joseph Highland of the Environmental Defense Fund.

(Whereupon, at 12:05 p.m. the hearing was recessed to reconvene at 1:30 p.m.)



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A F T E R N O O N  S E S S I O N

1:30 p.m.

CHAIRMAN WIRTH: We will reconvene the public participation meeting on the second phase of the polychlorinated biphenyl regulation.

We have one additional member to the panel who I will introduce as a substitute, Mr. Peter Principe, on my extreme right down here. He is a member of the Office of Toxic Substance and assigned to assist in the preparation of the second phase of the PCB regulation.

If there are no questions on procedure or logisti we will proceed with the next witness, which is Mr. Joseph Highland of the Environmental Defense Fund.

MR. HIGHLAND: My name is Joseph Highland. I am with the Toxic Chemicals Program in the Environmental Defen Fund in Washington.

I would briefly like to respond to a couple of th issues raised in the Federal Register Notice, the 27th of June, 1977 and specifically to the first, I guess really three points being raised, which relate to the possible continued use of PCB's.

It appears that the Administrator may either perm the further use of PCB's, if it is used in a totally enclos manner, will result in a level of exposure deemed to be insignificant to human beings or the environment or if the



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Administrator finds that such manufacture, process and distribution in commerce or other uses will not present an unreasonable risk to injury or health to the environment or human beings.

I would suggest that the first option, which is to say that a totally enclosed manner can yield a level of exposure which is insignificant, is almost by definition impossible. Mainly because of my knowledge of the extreme chronic toxicity of PCB's, their carcinogenicity and their co-carcinogenicity, their effects leading to mental retardation and learning disabilities in the non-human primate and their very wide reaching toxic effects on a various number of animals, fish and bird species; their persistence in the environment and their ability to bioaccumulate at very high levels, in some fish up to several million fold.

There is simply absolutely no way that exposure can be deemed insignificant to human beings and the environment. Consequently, no further use should be permitted under the guise of a totally enclosed system that results in an insignificant exposure. All exposure must be considered significant and therefore, any further use after the date specified by TOSCA (ph), should only be permitted where such use does not present an unreasonable risk of injury to health or the environment.

Now, simply quickly I can't think of uses which



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meet these criteria, although some clearly may exist. However, I think in any consideration of such cases, the Agency must take a very careful evaluation of the facts before reaching any conclusion. I think each case must be considered both on its individual merits and the prospective to all the other of such cases. Clearly, many exemptible activities may individually appear to pose no threat, but their combined effect may pose a very real and significant one.

I think that the individual evaluations must be done in a very thorough way and that one can simply not judge whether an apparently insignificant discharge will or will not present an unreasonable risk of injury.

For example, I think we only look at the 307(a) affluent discharge limitations recently promulgated by the Agency, as a good example. If I recollect correctly, the initial limitation proposed was a one part per billion affluent limitation, which the Agency suggested would be diluted to effective level of one part per trillion in the water; a level which sounds low at first thought.

However, after a careful review of all the facts, that apparently infinitesimal level of discharge was judged to be too great to provide the ample margin of safety, which was statutorily required.

When the bio-cumulation of PCB's by fish was



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carefully and properly considered and the resulting health effects for humans evaluated from the consumption of contaminated fish, it was evident that the proposed affluent discharge level, although apparently low, was unreasonably high. Consequently, a zero limitation was promulgated.

In a similar manner, each proposed exemption must be evaluated. For example, this morning we all listened to a gentlemen from the Continental Forest Industries discussing the possible continued use of contaminated waste oils as a source of energy for various process boilers.

On the surface the case may seem simple, levels of contaminations of PCB's are low, 5 miligrams per liter. 99 percent of the PCB's which contaminate the oil are apparently destroyed, leaving only an emission of .1 grams per hour to .2 grams per hour. There are few manufacturers who burn this oil.

However, this may be an analogue situation to the 307(a) case. One must carefully determine what the effe would be of a continued .1 to .2 grams per hour air emission How many people will be exposed? To what levels will they be exposed? With what resulting health effects and how will these PCB's, which are emitted be redistributed in the environment? Obviously, there are many more questions.

Only when these questions are answered, can a determination be made whether or not such a use presents an



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unreasonable risk to health and the environment.

I think this type of approach is equally valid for the use of PCB containing products, such as the mining motors described earlier this morning, as well as the escape of PCB's from the manufacturing process. There need be no distinction here. Anything less would be, I think, inconsistent with the regulations already promulgated under 307(a) and insufficient to deal with the magnitude of the PCB problem.--

I only offer two other small points for your consideration; one dealing with the question of the Existing Stockpiles and the other under what the heading is termed, Other PCB Activities.

With respect to Existing Stockpiles, we would be opposed to any further sale of stockpile PCB's which exceed the amount required to fill or service existing PCB equipmen and feel that the only responsible action would be to requir the proper disposal by a high temperature incineration. Further distribution of PCB's into the environment is just unacceptable.

With respect to Other PCB Activities, I would only like to reiterate the points I have previously made that are concerned that strict limitations be placed on the use of PCB contaminated sludge on agricultural lands, in areas wher ground water can be contaminated. Further contamination of



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soils, food supplies and drinking waters must be prohibited.

If you have any questions with respect to what I have tried to say, I will be glad to answer them.

CHAIRMAN WIRTH: I am sure we do. Harold, do you want to come up before we -- Okay, let's start with question Blake?

MR. BILES: Yes. What factors do you think we should consider, given some finding that there are things which are performed in a non-totally enclosed manner; whether we take any exposure of non-totally enclosed or some finite member? What factors do you think the Agency should consider in responding to requests for authorizations for exemptions, balancing against the risks that would be certainly postulat with the activities?

MR. HIGHLAND: Well, I think you will -- In the Federal Register you will notice that South (ph) suggested a number of factors, such as employment, economic ramifications, etc. I am sure that those applying for the exemption will offer a whole series of those. I am not saying they are invalid.

I guess what I am saying is that I think it is important that any further use go under an exemption. In other words, clearly stating that this is not an insignifica use, but rather for certain factors outweighing the risks in your judgement that this use can be permitted.



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I think you have to look at, for instance, -- it is only one example, the question of the mining notice that was brought up this morning. I think you have to question whether substitutes are available, whether things can be retrofitted, whether this represents a small part of the total industry or a whole industry and what the effect would be to not grant the exemption.

In other words, and this is in my judgement, if in this case, there are ways in which the industry can function and the amount of PCB's as was indicated, were being lost was small -- I don't know what small means -- and I would argue that even if these emissions led to something less than the OSHA standard, that that may still be significant; that where you would obviously not close that industry and where you can have effective substitutes or retrofitting, that that should weigh very heavily in your decision-making against the risks which you know oppose by the use of PCB's.

On the other hand, if you are dealing with a situation where there simply is no substitute, it would be available in nine months or the conversion will have occurred in nine months and to stop something that simply would put people out of work and there is just no alternative, I think that is a different situation.

The factors may be the same, but the weight they are given, I think depends on what part of the industry you



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affecting, how great the economic impact is, what alternati
are available, etc.

MR. BILES: One other question. You alluded to these regulations covering losses associated with the manufacturing process.

MR. HIGHLAND: Right.

MR. BILES: It has certainly been suggested to us by industry that this Act was not intended in 1978 to affect the capacitor manufacturers, for example, insofar as they have PCB's released other than to ensure that they get into the capacitors themselves. As long as they are making seale capacitors, this Act was not intended in 1978 to reach any dissociated discharges. Why do you think it is the other way?

MR. HIGHLAND: Well, I guess it would just be a different interpretation of the legislative history and the Act itself. I think the Act was clearly put forth to precl the further release of PCB's in the environment and I don't think that that simply means from the manufactured product.

Clearly, TSCA clearly does not preempt, but regulations under other sections, for instance the 307 (a) regulation, TSCA doesn't preempt it. I think TSCA goes to control all those, especially where those other regulations haven't come in effect.

So, it is a difference of interpretation. I don't



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know really more what to say.

CHAIRMAN WIRTH: Dave? Harold? John?

MR. PRINCIPE: I would just like to ask to clarify in my own mind what I think you said and forgive me if you repeat yourself.

I believe you said that you feel that any exposure at all to any local of PCB is not insignificant.

MR. HIGHLAND: That is correct.

MR. PRINCIPE: Okay, now, to grant an exemption we have to find that a particular use is not an unreasonable risk to health and the environment. Now, how do you define an unreasonable risk?

MR. HIGHLAND: Well, I guess the distinction, the first distinction I was trying to make is, I think that any exposure is significant, as I said. I think that is based on the knowledge we have of the various toxic effects, as well as the knowledge we lack about what other effects can be.

Based on the knowledge we have I think you have to make a judgement and it is a value judgement of what is considered unreasonable and what is reasonable. Clearly if the further -- As an example and I don't mean that this is a fact, but say you have an air emission which is apparently low. If that air emission level is going to be in a very populated area and a number of people are going to be exposed and you have some ideas about those exposure levels, you may



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be able to judge some degree of health consequence, if you will. That may be judged to produce an unreasonable risk.

You may also have a situation in which the surrounding conditions are different; whether populationwise whether weatherwise or whatever. The effect of the PCB's and the amount released may produce a risk to the human health, you know which is very, very small.

You may be dealing with a situation where if you did a projection, for instance on cancer risks, that you hav a risk of one in a hundred billion and you may deem that something which is not unreasonable. On the other hand, you may be dealing with risks which are 200 in a million and you may deem that to be an unreasonable risk.

So, I think you have to evaluate, has this been done before by the Agency, what the effects are going to be and set some judgements in terms of reasonableness or unreasonableness.

MR. PRINCIPE: In the specific instance of the waste oil, to use that as an example.

MR. HIGHLAND: Right.

MR. PRINCIPE: The levels of PCB ambient emissions were relatively low. Now, I am not sure how those levels compare to what is required in the disposal regs.

MR. HIGHLAND: The implication this morning was th the disposal process came close to, but not equivalent to.



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I don't know if that is correct or not.

MR. PRINCIPE: The design specs --

MR. HIGHLAND: Right.

MR. PRINCIPE: I guess the question I have is given that we have someway to use something like waste oil as a heating product and the fact that even though it may result in the ambient emissions, if we choose to say well, that particular use isn't acceptable, we still have to deal somehow with the waste oil.

MR. HIGHLAND: Sure.

MR. PRINCIPE: So, I guess --

MR. HIGHLAND: I guess what I am saying is that at this point I simply don't have the facts as to what the air emissions levels are and other ways to control. I think I heard that this is 10 times less than what will be permitted out of a disposal stack, for instance. That is on factor. If it is 100 times more, that is another factor.

Again, all I am saying is that you have to careful evaluate it and simply looking at apparently low numbers, is not sufficient to make a judgement. Things that appear to be low can be very signficant, depending on how they enter the environment, how people are exposed to them.

All I guess I am urging is a kind of careful analysis that was done for the 307(a) case be done here to try to understand the ramifications of each one of these.



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Simply saying there are few manufacturers, few producers, no levels is not sufficient. Moreover, if you have enough of those in the same area, you may have a very significant problem.

So what I am saying is you have to -- One of the questions asked in the Register Notice is, is any level of exposure insignificant. I would argue, no, every level of exposure is significant based on the knowledge we have of the hazards of PCB's. Therefore, you switch to a question of whether it produces an unreasonable risk and that is a different type of judgement.

CHAIRMAN WIRTH: Okay, any other questions? I hav one or two. You stated in the early part of your statement, mental health effects associated with PCB's, did you say in non-primates or primates?

MR. HIGHLAND: Non-human, the monkey, Jim Allen's work.

CHAIRMAN WIRTH: I wanted to explore that a little further. As I understood Allen's work, it was really suspected and basically an observational notation that the monkeys appeared to have some sort of learning disability. Maybe it is my own ignorance, but as I recall in the work th it was only a suspicion and not very much of a confirmed suspicion in the sense that you are looking at psychological effects. I don't know nor am I aware that in Jim Allen's



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work there was really any basis for determining a psychological analysis of a monkey.

It was a suspected type thing or a thing that was visible -- and not even certainly visible. Do you have any more understanding of that?

MR. HIGHLAND: Perhaps I have a different understanding. My understanding is that although it may be harde for one to, at least me, to think of how you quantify those kinds of effects. It is my understanding that Allen was working with a psychologist who had done that kind of quantitation, that they were very real effects which were being observed.

I believe there is a paper which the last time I spoke to Allen was in press. I don't know if it would be ou by now and I think -- I mean I don't want to speak for his research, but my understanding was that this was not a hypothetical possibility, but rather an observable scientifi fact and that is what he was reporting on.

That is at least what he testified to for the Agency in the 307(a) hearings.

CHAIRMAN WIRTH: Okay, are you aware of any simila type of effects, where any observed anywhere in humans that you know of anywhere in the world? I don't recall such fact on the --

MR. HIGHLAND: I think the simple fact is that the



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proper kind of studies simply haven't been done with humans. Under certain situations, the results reported from Japan that I have read have obviously some very sketchy and very rare of the series of things reported, but there has not been a good epidemiological follow-up on the children, for instance, who were exposed to utero that I have seen. You may have other information, but there appears to not have been a good follow through on the children exposed either in utero or from contaminated breast milk.

CHAIRMAN WIRTH: I am not aware of anything. Is anybody on the panel? Anybody in the room aware of any follow-up information on the children, offsprings of the people exposed to the PCB's in Japan?

On use, you made this statement of something to the effect that there really was no totally enclosed use. That was a hypothetical type of concept, correct me if I misunderstood that. I guess my question follows on, do you not consider a sealed capacitor a totally enclosed use?

MR. HIGHLAND: Well, the point I was trying to make I can't answer your question, but the point I was trying to make was I was trying to say that I didn't think that any, as the words say, totally enclosed manner can lead to an insignificant human exposure. In other words, I don't think you can have any exposure from a totally enclosed use that can be judged to be insignificant.



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In other words, if you postulate that there would be an exposure, in other words, a totally enclosed manner would result in a level of exposure deemed to be insignifica I am saying that if there is any exposure, it is significant So, therefore, whatever that system is defined as, totally enclosed manner, if it in fact produces an exposure, that exposure is significant. Is that clear?

CHAIRMAN WIRTH: Yes, that is clear.

MR. HIGHLAND: That is the point I was trying to make.

CHAIRMAN WIRTH: I guess I am going to go on and say --

MR. HIGHLAND: Now, if you are asking whether that particular enclosed manner can produce a exposure, the answer I would give is yes and therefore that exposure is significan Clearly I don't mean by handling the sealed capacitor, but it is a question of its total production use and disposal. I guess that is not very clear.

CHAIRMAN WIRTH: Yes, a sealed capacitor in my mind does not give an exposure, unless it ruptures.

MR. HIGHLAND: There is no question. I am not suggesting that PCB's are leaking out of a sealed capacitor and if I were holding it, I would be exposed. All I am suggesting is that in its production, as well as its disposal that item could yield an exposure and that exposure is



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significant.

CHAIRMAN WIRTH: Okay, but that is not in its use.

MR. HIGHLAND: No, unless it as you say, ruptures or something of that effect.

CHAIRMAN WIRTH: Okay, and one of your points, if I understand it correctly is that you would favor only utilizing existing PCB's to service current equipment and not allowing those PCB's to roll into production for any new products even though they may be stockpiled PCB's.

MR. HIGHLAND: That is correct.

CHAIRMAN WIRTH: Or they should be incinerated.

MR. HIGHLAND: That is correct.

CHAIRMAN WIRTH: Any other questions from the Panel?

MR. BILES: I have one other. If we, assume that we want to allow transformers to be used up for their useful life and say that that took 30 years and we postulated it took -- this has no relationship to reality, but say 10 million pounds of PCB's and we determined right now there is only 5 million pounds available, do you think we should allow either production in the U.S. or imported PCB's to be stockpiled for that purpose?

MR. HIGHLAND: I think --

MR. BILES: The other trade off would certainly be that at some point you are going to have to pull transformer

out even though they may have a useful life remaining.

MR. HIGHLAND: I think if there are substitutes which are available, substitute fluids, the answer to the question is no. I think you would lose on the use of the transformer. I don't think you should produce more PCB's to be stockpiled for the theoretical lifespan of each transformer.

MR. BILES: All right.

CHAIRMAN WIRTH: Let me ask a hypothetical questic along that same line. In disposal of PCB's, even in incineration, there is some loss of PCB's in the environment I think that is fair to say, that some small amount is going to go up the stack.

Would you still favor incinerating current stockpi of PCB's even if that incineration were to distribute more PCB's than possibly utilizing them in some other manner? For instance, if we had manufactured and filled capacitors and lose less that way in that process over the life of that transformer in hopes that you essentially buy yourself anoth 30 years, 30 or 40 years and look to incineration or decomposition technology to do something different over the years, would you still favor incinerating them now?

The point I am trying to allude to is that do you see any value in a 30 or 40 year utilization with a more min loss to the environment than actual destruction for the basi

of just buying time for another 30 years and the assumption that decomposition technology could improve, at least you are not going to be any worse off.

MR. HIGHLAND: Well, I guess the general supposition I would have to disagree with. I think the initial and you may argue -- again, we would have to see the quantities.

Let's take, for example, that incineration yielded X amount of PCB's in the atmosphere as pollutant and that th use of those PCB's in the production of capacitors initially yielded less of a pollutant, something less than X or at lea into the environment, I think that the supposition that the rest of the PCB's which have gone into use will be properly disposed of and will not be released into the environment is too great a supposition.

I think that the chances are in many cases that yo will have excessive loss from these, especially even under t proposed disposal regs currently. I for one would not want to take a chance at releasing millions of more pounds of PCB' out into commerce and into the environment on the hope that i the future they may be properly disposed of. That is what the supposition is.

CHAIRMAN WIRTH: Yes.

MR. HIGHLAND: I just don't have any reason to beli that that would be the case. I think that the hazards you st



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the chance of contamination is too great with the chemical which is too great a hazard right now.

If you want to do that, then you should stockpile the PCB's without their use. Save them for 30 years and dispose of them when you have a better form of incineration, if you really believe that would be the case, whether there is technology development that will come along. But to produce the use of those PCB's into commerce, I think almost by definition will incur significant losses in terms of their proper disposal, just based on our knowledge today.

So, if you are significantly worried about the disposal of those quantities through the current technology, it would seem to me you might make a judgement to hold and subsequently dispose of them by the best manner, but not release them into commerce.

CHAIRMAN WIRTH: There is a gut feeling on the part of some of us that stockpiles of PCB's setting around, either waiting for disposal or use or just waiting to see what happens because a lack or capacity to do something with them, can probably in the long run present a greater environmental risk than utilization of them, particularly in capacitors and transformers where we have had a relatively safe use industry. I am not talking about manufacturing or anything else, but a relatively safe use industry of the capacitor or transformer, at least the machinery is relatively failsafe.



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MR. HIGHLAND: But we have to also consider the disposal of those capacitors and transformers and maybe a difference of understanding or opinion -- I am not disagreei with you while in use the amount being lost may be very, very small or nil. I would perhaps disagree with you that on their disposal that they are not contributing to the environmental contamination.

An indication would be if you stick it into a sanitary landfill, you will have a release from those capacitors and transformers eventually. I think that that is the trade-off you are seeking.

If you really believe that storage would be a problem, then I would opt for their incineration, as opposed to their use in commerce with the hope that we will be able to dispose of them properly in the future.

CHAIRMAN WIRTH: Any questions from the floor? Any other questions here? Okay, thank you very much, Mr. Highland.

MR. HIGHLAND: Thank you.

CHAIRMAN WIRTH: Okay, the next witness is Mr. H. Thomas, Attorney representing himself.



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MR. THOMAS: My name is Hugh Thomas. I am sorry I am not representing myself although I suppose to some degree I am, but I am an attorney representing Outboard Marine Corporation of Waukeegan, Illinois. That is today, but I am also Chairman of the Environmental Affairs Committee of the Illinois State Chamber of Commerce.

In my role of representing Outboard Marine Corporati by way of background, OMC, as it is often referred to principally manufactures outboard motors and lawn and garden equipment and employs approximately 15,000 people.

One of our facilities which forms a key part of our entire worldwide operations is an aluminum die cast plant which I believe is the largest die casting facility in the country. Die casting, for your general information, is the process of injecting molten aluminum into a die and thereby forming under pressure basic parts of our various products.

Until late 1971 PCB bearing hydraulic fluid was used in all of our die cast machines, but since that time all of the machines have been drained and flushed and new non-PCB bearing fluid put into use. It is worth noting that until last year we were not aware that we had ever used PCB hydrauli fluids, and certainly it is also worth noting that none of our products, end products have ever contained PCBs.

Despite the fact that we have not purchased PCB bearing fluids for almost six years and have flushed and

cleaned each die cast machine, all of the machines still contain PCBs even though in relatively small quantities. Our current die casting plant was constructed about four years ago and the entire facility is a closed system with no water discharged to the environment.

At this point I would like to address your apparent concern with, and I quote from your announcement in the June 27 Federal Register, "Escape of PCBs from the manufacturing process. As you hopefully are aware OSHA has an effective standard which they have stated covers PCBs that might be encountered in the manufacturing process and reconsideration of this standard has been in a review process by NIOSH for about one year. We must respectfully submit that any inquiry by the EPA into PCBs in the manufacturing process except as to their possible escape to the environment is inconsistent with the spirit if not the rule of Section 9 of TSCA and Section 4 of OSHA. As you know Section 9 establishes that other applicable federal laws are to take precedent over TSCA. We realize that Section 9 does not prohibit inquiry and advice by the USEPA if a risk is recognized, but we strongly suggest that when another law and agency such as OSHA has already recognized the risk and has taken measures to protect against it you appear to be disregarding the primary desire of Congress to avoid regulatory duplication."

Our operation has been fully tested under the OSHA

OSHA standard and found to be in full compliance. As a matter of fact any PCB levels in the plant air are a small fraction o the standard.

I would like to mention at this point that similar to several of the testifiers this morning I don't want to leave the impression that we desire to continue using PCBs, that is not at all the case. They are there.

In addition NIOSH is in the process of reviewing our facility and several other facilities in terms of its current reconsideration of the OSHA standard. It has been our intent to give you some general information as to an area or type of PCB "use" you may not be aware of to raise the inconsistency of parts of your current inquiry as it relates to OSHA authority and action and to advise you at least in our case any prohibition of PCB use, even though as I stated we would prefer an absence of PCBs, would be highly unrealistic and economic impact could be substantial.

A couple of concluding notes. We have developed a process of vacuum distillation which reduces the PCB content of our hydraulic fluids by fifty percent each time the fluid is recycled. However, neither this nor any other known process or means will ever rid, and I stress ever rid, our machines of PCBs entirely.

As mentioned earlier this facility is a key to our entire manufacturing operation and the livelihood of our



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15,000 plus employees and untold thousands of supplier, dealer and distributor employees. Thank you for your time and I would be happy to try and answer any questions.

MR. WIRTH: Thank you very much, Mr. Thomas. Peted, do you want to start the questioning?

MR. PRINCIPE: The levels that you are speaking of in your machines, do you have any idea what they are?

MR. THOMAS: Yes we do, we have sampled every machine and instead of running over the number of machines let me just state that they range from as low as nine one thousandths percent to as high as six tenths of one percent of the machine capacity, fluid capacity. That would be the PCB level. So no machine over six tenths of a percent, some as low as nine one thousandths of a percent of PCBs.

MR. PRINCIPE: This is in the hydraulic fluid, it is used to cool or --

MR. THOMAS: To apply the pressure pump by which the molten aluminum is formed in the die.

MR. PRINCIPE: Is there any exposure to -- In other words, at what point would you find worker exposure, in leak in the system or --

MR. THOMAS: Vaporization at the point of operatic Molten aluminum is heated to 2,000, I think, or 1800 plus degrees and hydraulic fluid by its basic nature leaks so there can be some degree of vaporization at the point of

operation, and this is where it has been tested in terms of the OSHA standard.

MR. PRINCIPE: Have you ever experienced a major breaking in some part of your hydraulic system which has created a large spill of any sort, or -- Well, let me -- I really don't want to know that so much as do you have measures available to contain such a leak?

MR. THOMAS: Any spill, be it normal or accidental would be collected on the floor through trenches and completely recycled, put through the distillation process and reused. So, there is no -- except for nonrelated point of operation accidents and cooling or, going principally in cooling there really is no possible escape of the PCB in the environment other than by some degree of vaporization at the point of operation.

MR. PRINCIPE: On the distillation process, now you said that distillation process removed half of the PCBs in each batch that went through?

MR. THOMAS: Well, it is a bit preliminary. The system was developed about a year ago after we found that there really was no way to accomplish this, no way first of all to get rid of the PCBs, yet we have a strong desire to reduce even the remaining small percentage of PCBs. Our experience in the last year, and we are in the process now after a year's experience of reconfirming this, but our



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general experience has been a fifty percent reduction. Of course then the eliminated PCBs are disposed of either in a chemical land fill or by extermination.

MR. PRINCIPE: Now the fifty percent reduction, I am trying to find out exactly what that is. In other words when the six tenths of a percent stuff goes through you drop down to three tenths of a percent?

MR. THOMAS: That has been our experience.

MR. PRINCIPE: How often do you recycle the fluid? In other words, how often does a given batch of fluid go through this distillation process?

MR. THOMAS: That really is impossible to predict and we haven't had enough experience with the process to really know tonnage wise or poundage wise, but I think we will find that, and as I say we are in the process of completing analysis of the first year's operation, in this first year and then on a yearly basis that all of the fluid will be recycled.

MR. PRINCIPE: In the space of one year?

MR. THOMAS: In the space of one year. I don't have facts and figures to bear that out but that is our anticipation.

MR. PRINCIPE: Okay. If you could provide us any information on those lines I think it would be appreciated.



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MR. THOMAS: When you say any information along those lines --

MR. PRINCIPE: Well, I mean --

MR. THOMAS: Follow-up?

MR. PRINCIPE: Specifically, in other words when you get information about how frequently fluid is recycled or how often, you know, a given batch would go through. I assume that different machines are isolated and how often the fluid in the machine is sent through this process, if it is once a year, twice a year or once a month.

MR. THOMAS: Well, I would be happy to do that as we generate the firm data. But please understand that it is as the fluid leaks, as it might leave the machine that it is recycled. Now we have considered, and I think after we have the results of our first year of operation with the distillation, we will be going on machine by machine basis to recycle the entire fluid in each machine.

MR. PRINCIPE: I see. How much fluid does each machine contain?

MR. THOMAS: On the average about 500 gallons.

MR. PRINCIPE: How many machines do you have?

MR. THOMAS: In excess of 100 machines. Each machine being -- I have tried -- I am an attorney, I am not an engineer. I have tried to think of a good comparison. Each machine in total size being perhaps the equivalent of

two full sized automobiles.

MR. PRINCIPE: You have -- Do you only have this one plant or do you have several plants?

MR. THOMAS: We have several plants but this is our only die casting operation.

MR. PRINCIPE: Do you have any idea as to how many other such facilities there might be?

MR. THOMAS: No, I do not. I am sure that our people do, but I do not. I notice that -- I mean I have heard at one time or another that several companies have them so I don't think we are talking about a small number. I have also heard as I stated in my testimony that I think we are the largest in the country and perhaps the largest in the world single plant die cast operation.

That is not to say that we have more die cast machines than any other company, but this, once again as an attorney, not as an engineer, is one of the principal ways of using aluminum in the manufacture of anything, this is the way of forming aluminum, molten aluminum under pressure into a die cast whether it be automotive or our type of application or what have you.

So, I think there are numerous die cast operations throughout the country. Not only on a manufacturing basis but on a shop by shop basis as die casting by its basic nature is a high intensive capital business and so there

are a lot of small two or three or four or one machine type facilities.

Now whether or not some or all or none of them other than us have ever used PCB fluids, I do not know. I only know about our situation.

MR. PRINCIPE: Thank you.

MS. THATCHER: I am not a lawyer, are you?

MR. THOMAS: Yes, I am.

MS. THATCHER: Okay. Here is a question I have. I may be way out in left field and maybe I just don't understand. We are very mindful on this panel I think of the question of regulatory duplication. It is a very lively issue in Congress and the top officials of this agency have recently issued a few orders in that direction.

So, we are not unmindful of Section 9 of TSCA is what I am really saying. But by the same token it is clear by Section 6E that Congress specifically set out PCBs for special action and this one section does refer to regulating the manufacturing process in some way.

How would you resolve that dilemma or do you see that as a dilemma at all?

MR. THOMAS: Well, what I was trying to point out in my direct testimony and I don't know, for one I haven't researched it, I don't know if there is any specific law on the subject; but I see, in Section 9, I see two specific



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purposes, Congress. The one I think is clear and that is the one you have just stated which is hopefully avoiding duplication, perhaps putting TSCA in a back seat at least as a, on a regulatory basis compared to an advisory or recognizing basis to another agency which has jurisdiction, or which has exercised jurisdiction.

I also see curiously 9 (c) (2) or 9 (c) which deals with the Occupational Safety and Health Act in particular. I think the situation -- I think maybe the point I can bring to bear from my thinking and I have given a lot of thought is that if OSHA in this particular situation didn't have a standard I think no one could really argue that there is duplication because I think you have a, USEPA has a responsibility under TSCA to consider risks and advise agencies that have the authority and if they don't act then for the USEPA to act themselves.

But, I think this is being carried one step further in this situation because the agency which does have authority, and I think Congress has specifically reserved that in Section, or Sub part e of Section 9. The agency has acted and not only has acted but is re-considering in terms of recent information.

My feeling under that situation and to carry forward with further consideration by this agency is duplica I hope you follow me, but I think the fact that the other



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agency, OSHA in this instance, does have a standard. To me then even the consideration by the USEPA is duplication. If they didn't have that standard I don't believe there would be any duplication and consideration, but, of course, if as a result of the consideration by the USEPA both OSHA and the USEPA adopted standards then there would be duplication.

I think the latter is what people would normally interpret Section to mean and I am not so sure that it doesn also apply to the first part, first consideration.

I think your attorney's are anxious to ask a question.

MR. LYON: I would like to just go over where OSHA stands. Now you said that OSHA is altering its standar or is preparing to propose a different standard?

MR. THOMAS: Well, I know even if you knew you would still ask me. So, I will just tell you what I know. As of yesterday in a conversation that our prime consultant had with OSHA it was my understanding that NIOSH is concluding or is about to conclude reconsideration of the applicable OSHA standard.

The general feeling, and certainly this is informa because NIOSH hasn't completed, the general feeling seems to be and I am not saying it is right or wrong because I don't know, I am not scientifically oriented; but it looks like



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the standard will remain the same after NIOSH's consideration. So nothing has been concluded but there is in fact a standard.

MR. WIRTH: You are talking about an effective air emission or ambient air level standard in the work place?

MR. THOMAS: Exactly.

MR. LYON: How does your -- Perhaps you would also discuss this. Your plant is being remonitored, did you say, or is being monitored as part of a study for OSHA?

MR. THOMAS: By NIOSH.

MR. LYON: By NIOSH. Would you comment on that, progress of that or --

MR. THOMAS: Well, it is my understanding -- we have been contacted by NIOSH in terms of the pos-- a few months ago in terms of looking at our facility, we had discussions, looking at our operation, they indicated they had looked at several other operations and at first glance felt that the levels we were talking about on our operation were so insignificant that they might not in fact review ours.

We do have a meeting, further meeting, scheduled early next month and how it will proceed at that point I do not know. Of course, I am not -- you know, I haven't had access to the NIOSH studies on other company plants.



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MR. LYON: How did they select your plant for consideration, do you know?

MR. THOMAS: Oh, they heard, I think, by word of mouth that we had PCBs.

MR. WIRTH: Dave?

MR. WAGNER: Yeah, I wanted to know just what parts of this machinery are contaminated with PCBs, just exactly what segments of the machinery? I mean, I presume you have hydraulic lines and you have fluid reservoirs and some piping and so on and so forth, but it is not the entire machinery that is contaminated.

MR. THOMAS: It would be the -- perhaps you are more familiar with die cast machines than I am but certainly it would be any and all of the internal parts including lines and reservoirs that have ever come into contact with the PCB bearing fluid.

MR. WAGNER: I guess what I am driving at is why could they not be replaced?

MR. THOMAS: The machines?

MR. WAGNER: No, the parts that are contaminated with PCBs. What is the technical feasibility of replacing parts and what is the cost?

MR. THOMAS: We have, to date have not been put in a position of having to consider that and I hope that we don't have to. Because we are talking about a lot of



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machines and I am not here today really saying that --

MR. WAGNER: But how difficult a job?

MR. THOMAS: I guess I am trying to say ineffectiv that I really don't know.

MR. WAGENER: I mean it could well be that replacing some pipes and lines would take care of the problem a little bit more expeditiously than all this flushing --

MR. THOMAS: No, we have considered it and certain in terms of -- we would be talking about many millions of dollars or several million dollars to replace all of the contaminated parts of the machine if in fact all of them could be replaced. If in fact -- Once again I am speaking only from a lack of knowledge not being an engineer, never having taken apart a die cast machine --

MR. WAGNER: Okay, but you are telling me you studied the cost of doing that?

MR. THOMAS: We have on a general basis. I say general because we have not recognized or found ourselves in a position of having to seriously consider that. Now that is not to say we wouldn't but we did consider it to the degree of determining that recycling, distillation; considering the very low levels that we have and the fact that our consultants have said that you will never get rid of all the PCBs, so presumably they are saying even if you did

replace every part of the machine you could replace you would still have PCBs.

MR. WAGNER: No, they -- I don't see how that is possible. But, okay, you don't have any information what it would take to --

MR. THOMAS: No.

MR. WIRTH: Blake?

MR. BILES: Well, first on your issue of where you are talking about work place standards. If the way in which the PCBs, in this case in hydraulic fluids, were handled in the work place presented a risk not only to workers or that any PCB exposure was not only to workers but possibly presented a risk to the outside public or environment, then would you consider it appropriate for EPA at least to address that part which OSHA/NIOSH could not address?

MR. THOMAS: Oh, highly appropriate.

MR. BILES: Okay.

MR. THOMAS: Surely.

We are as concerned or more concerned if that is possible than anybody about PCBs and we wish that we had never heard of them or had them or what have you and anything that can be done or anything that comes along or what have you. So I think it is certainly reasonable.



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MR. BILES: Do you know what happened to the distillate from the distillation process? That is such an insignificant problem.

MR. THOMAS: No, if by distillate you mean the residue, what is left?

MR. BILES: Yes.

MR. THOMAS: As I indicated earlier it is either disposed of in a chemical landfill or is incinerated properly by Monsanto or someone else.

MR. BILES: I think the issue you are raising is one that is not unique to your company. It may be unique to your particular application of hydraulic fluid but hydraulic fluids until '71 were a huge use of PCBs in this country and possibly more of a problem to the environmer in the long run than transformers and capacitors in the sense that they were much more open system. How many people would doubt that that is open system --

The question I have goes along the lines that Dave is raising. If we are going to do something generally about pipes, and I believe you had some out poles that had been plugged since then and so forth, what are the kinds of things that EPA ought to consider, not just for your facility but for facilities in general that had hydraulic fluid and have either had discharges, are still maintaining the equipment and so forth. Do you think flushing is



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generally adeuate and then say properly dispose of the pipes once you tear out the pipes? Or what?

MR. THOMAS: Well, I can't say flushing is adequate, draining and flushing is adequate, if as a result you still end up with a level that somebody is going to be concerned about. Now we don't know what level we are concerned about, but we have gone in a matter of six years from 100 percent PCBs to the highest machine having at the highest level six tenths of a percent of PCBs.

Now to me that is quite an improvement. Now what could be done if we had to get rid of the six tenths --

MR. BILES: No, my question is, we are writing a general regulation of applicability that possibly could reach everybody else that has pipes that have been impregnate with hydraulic fluid, given that they are no longer even using that fluid. Now, your company in that facility has reached a lot of attention by EPA and you are obviously a big corporation.

If we put out a reg of general applicability that tried to deal with the problem of impregnated pipes do you, for instance, think that flushing and some kind of distillation process is a reasonable thing to require of all people who have used hydraulic fluids?

In other words, if we stop short of saying take the pipes out of your facilities; certainly that



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represents a huge economic burden for some companies I suppose depending on where the pipes are. Is there anything we should do other than just say don't use hydraulic fluid? Should we say do something about the pipes in the meantime? Should we require that flushing?

MR. THOMAS: Well, I really can't answer you. I certainly -- I don't want to -- I enjoy my own role. I don't want to assume your role and tell other people what they should do, if you understand what I mean.

MR. BILES: Well, I mean does it appear that flushing --

MR. THOMAS: Perhaps it is up to each individual or each company and perhaps there are other ways and perhaps some die cast machines the parts can be replaced. I wish I could have been more specific in answering question. My inclination is that we would be talking about the greatest percentage of the cost of these machines if we had to eliminate the machines, so I guess I can't answer your question but what I am saying, number one, it would depend on the level that you had to obtain and certain things would be necessary to obtain that level. I think everyone -- If I had to say one thing that should be applicable to everybody is that they should have a reasonable choice as to how they get to that level.

MR. BILES: What I am hypothesizing is that



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maybe we don't prescribe a level to get to but we prescribe, we just prescribe that at least you should do the following with your equipment.

MR. THOMAS: Well, that would be somewhat -- If you took us for example. If you came out with a regulation that said everyone should flush and drain their machines and start -- Well, let's just say that, flush and drain their machines. It would be absurd, of course, because we have already done that and maybe other companies have done that.

MR. BILES: What we would say is, except if you have already done it. That may be the kind of thing we can consider.

MR. THOMAS: I don't know. Trying to look at it from the broad picture, if your goal is no use then forget flushing and draining. That doesn't get you the no use. You will still have PCBs.

MR. BILES: Okay.

MR. THOMAS: That is the point I am trying to make.

MR. BILES: Yeah, thank you.

MR. WIRTH: I have a couple of questions. The range as I understood it was .009 to .6 percent.

MR. THOMAS: Point 0009.

MR. WIRTH: Yes, .009.

MR. THOMAS: That is not nine thousandths.

MR. WIRTH: That is nine thousandths,

MR. THOMAS: I guess -- That is right, I am sorry.

MR. WIRTH: That comes out, converted over into numbers that we have talked about in disposal regulations and of course the same context that we talk about this, it is a range of 90 parts per million to 6,000 parts per million. That is about 500 times, I think, and even a little more.

MR. THOMAS: I am sorry, say that again ?

MR. WIRTH: The range would be -- Well, either nine thousandths of a percent to six tenths of a percent or 90 parts to 6,000. It is quite a range. Is there any reason that that range is so big?

MR. THOMAS: In parts per million that doesn't real seem like a big range to me. It is luck of the draw perhaps, I --

MR. WIRTH: Well, I guess I am saying this from a disposal standpoint. We will propose the number 500 and --

MR. THOMAS: Well, let me just say, most of them are in the one thousand, in between one thousand and two thousand parts per million. I wanted to give you the highest and the lowest. So, we are looking at extremes.

MR. WIRTH: Well, maybe I am incorrect but I think most of us would probably consider that a relatively high



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level "contamination". It is not, you know, not product use but for contamination and I think we consider that relatively high and I guess the question is -- my guess would be that that could be brought down considerably with, you know, additional draining and flushing.

MR. THOMAS: Let me just indicate. This was as of -- These results were in September of 76, almost a year ago. We are in the process as I stated, we have been in distillation since that time, there has been some additional draining and cleaning and we are in the process of reanalyzing each of the machines.

The point earlier was that we are only about to learn the results of the distillation so I don't want to present these as the current levels, but those were levels in August and September of last year.

MR. WIRTH: All right, let me present the question more general. Does the company feel that they have exhausted the possibilities of reducing the levels from a technical standpoint, technical standpoint being, you know, additional flushings and distillations? I take it your going to vacuum distillation, your answer is no.

MR. THOMAS: No, our desire is to -- I hate to say almost regardless of the law, but certainly so far that is really what we have done. We were almost a year ago at one tenth of the applicable standard and we are still doing



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something such as developing vacuum distillation and testing. Our desire is to get rid of PCBs if we can. So, if something can be developed tomorrow or was developed yesterday and we are not aware of it we are going to be continually looking at it and interested in it.

I can't say for a fact and I can't say the opposite either, that we have done everything within our power to date. What we have done is what I have told you. We have drained and flushed every machine. We have been in the process of vacuum distillation which our preliminary figures indicate on original test runs would reduce it by 50 percent each time the fluid went through, also that all the fluid would be put through the vacuum distillation in one year and we have done this really without an applicable regulation since we are talking about a closed facility from an environmental point of view.

I am not sure that answers your question. I can't say there is more that can be done on the other end --

MR. WIRTH: My conclusion is that you could reduce the levels of the upper machines further. You apparently believe that you can't reduce all the levels further in the fact that you plan within this year to go through the vacuum distillation.

MR. THOMAS: Well, distillation serves other purposes also in cleaning out the fluid so it is reusable.



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I could not say -- I will answer this way. I could not say that we anticipate or hope or think that all of the machines through vacuum distillation will get down to the lowest level I have mentioned which is 90 parts per million.

For all I know, for all we know it may and it may get even lower. But, at this time we just don't know.

MR. WIRTH: Vacuum distillation is not designed primarily to remove PCBs?

MR. THOMAS: Is not?

MR. WIRTH: Yeah, is not. It is for other purposes, to clean out the fluid?

MR. THOMAS: No, I would say it was -- the primary purpose was to reduce the amount of PCBs. Certainly if -- yeah, we will stand on that.

MR. WIRTH: My next question is, can you give us any idea of the number of ambient air levels of PCBs around the machines? In other words the numbers that you are measuring in your plant?

MR. THOMAS: One tenth -- You mean other than in terms of the OSHA standard?

MR. WIRTH: Yes. What are you actually measuring in your work place?

MR. THOMAS: In and around one tenth of .5 milligr per cubic meter.

MR. WIRTH: One tenth to .5 --

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MR. THOMAS: No, no, no. Of, one tenth of. You see the standard, the OSHA -- related to that.

MR. WIRTH: Oh, okay.

MR. THOMAS: Being a mathematician.

MR. WIRTH: OSHA standard is .5 milligrams per leader.

MR. THOMAS: Per cubic meter, or one depending on the percent of --

MR. WIRTH: .5 milligrams per cubic leader --

MR. THOMAS: No, cubic meter.

MR. WIRTH: Meter. All right, cubic meter or one milligram per cubic meter depending on the degree of coordination of the PCB.

MR. THOMAS: And we are at --

MR. WIRTH: And you are measuring?

MR. THOMAS: One tenth, and this was also one year ago at the time, you know, before an additional ten or eleven months of distillation.

MR. WIRTH: Okay. Have you measured any PCBs in the ambient air outside of the plant fence?

MR. THOMAS: I am sorry, outside of the?

MR. WIRTH: Outside of the plant fence? I would like to direct a series of questions to determine whether you have measured any or attempted to measure any PCB levels beyond the plant boundary either in your water -- You said



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you had no water discharge, but let's say have you measured any in streams nearby or ground water nearby or has anyone looked at your -- I presume you have sanitary discharges to, I believe you call them sewage systems --

MR. THOMAS: Let me interrupt you at that point. I think it would be a little inappropriate because I think as Mr. Biles has already mentioned, we --

Let me remind you that this is a new facility which was installed or was constructed about four years ago and it is a closed facility and we have been and are in significant discussions with both the USEPA and Illinois EPA on the topics that you raised but not in terms of this facility, in terms of the prior facility.

So, I think really to go into any of those details would be inappropriate. I am really not trying to avoid -- I could have just said no, but that -- As an attorney I would feel uncomfortable talking about those topics.

MR. WIRTH: You stated that it is a closed facility. Can you descriptively tell us what closed means? I mean is the building entirely sealed or --

MR. THOMAS: It is closed from an environmental point of view. I am not trying to be evasive but I am not sure exactly what you are after.

MR. WIRTH: Well, I mean --

MR. THOMAS: There would be the exhaust fans on the roof and as far as the new facility is concerned and in answer to one of your prior questions it is my belief that we have tested at the vents and the levels would be, and I don't have numbers or figures, but would be significant lower than the -- I think totally insignificant and I think that is why I don't have any figures on it, that we basically showed no, and I hate to use significant because I know what is significant to one is insignificant to the other or the opposite but let me just say that I don't have any results but my recollection is that we were talking about very small fractions of even that fraction figure that I was talking about at the point of operation.

MR. WIRTH: I am trying to search for an answer to the question of whether there is any PCB emission to the soil, air, water iota surrounding the plant? I think the answer to that question you said would be inappropriate because of permit negotiations that you currently --

MR. THOMAS: Exactly.

MR. WIRTH: Is that correct?

MR. THOMAS: Exactly.

MR. WIRTH: Any other questions from the panel?

MR. SHYKIND: I would like to just say something here. The problem that Mr. Thomas brings up is going to be replicated thousands of times. He is dealing with a



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very complex hydraulic pressure system with rams thrusting hot metal against dies and to take -- the only way to get rid of all the PCBs is to take the machine apart and clean it completely because what they will probably find is they have gone up slightly from what they distilled last time because the crevices and the nooks and crannies will dislodge this material.

But I don't think it -- It may not be unreasonable to look at regulations which say if you have got PCBs or suspect it, have it tested and if so drain it and then flush it two or three times as we recommend, as Versar recommends for transformers. They will have a much easier time in fact because you get more of it out and then go to some sort of maintenance system at a level specified for the fluid below so many parts per million.

If you are not going to get it out of the machines unless you completely take them apart then you might as well buy new ones because of the labor involved.

MR. THOMAS: Our consultant would say that even if you took them apart to clean them you would still have PCBs.

MR. SHYKIND: Some.

MR. THOMAS: Presumably lower than we are talking about here, but I would agree with you that as long as there was no expectation, which I think is clear what you



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have said, that this -- all of that process will eliminate the PCBs because it won't.

MR. SHYKIND: I think your .505 micrograms per meters probably comes from vaporization of the fluid against the metal, probably, and that is why it is better to locally read areound the machine as opposed to in the atmosphere. It might even condense before it gets out.

MR. THOMAS: Once again I am an attorney. I am not sure I understood what you said but it sounded, it sounds good.

MR. SHYKIND: I have been through the plants similar to that at Outboard Marines, so --

MR. WIRTH: Are there any further questions of this gentleman? Are there any questions from the audience? Okay, thank you very much, Mr. Thomas.

MR. THOMAS: Thank you. I think some one -- Not that I am anxious for more questions --

MR. WIRTH: Oh, I am sorry. I am sorry, I did have a question submitted from the floor. Now this question is from Versar, Mr. Robert Westin representing Versar who is the EPA contractor. How many dollars to get all machines below 500 parts per million? I presume the question is do you have any idea what the cost would be to put it below that point?

MR. THOMAS: No, I do not.



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MR. WIRSH: Okay. I would like to ask Mr. Thomas, would your company be available on request to provide us, if needed, some cost information on what it takes on the expense of flushing a machine or removing the pipes or something of that sort, can we feel free to at least make a request?

MR. THOMAS: My prior statement is that we are sincerely interested and at least as -- here. Perhaps not more working on the PCB problem with the U.S. EPA any way that we can be of assistance we are more than happy to but we feel to a large degree that we are a victim of circumstanc and we are more than happy to share information.

On the other hand please do realize that as I indicated we are and have been in serious discussions with both the Illinois and the U. S. EPA, so if we have any hesitation it is only because of that and until those matters are resolved there might be some hesitancy but hopefully not.

MR. WIRTH: Okay, fine. Thank you very much, we appreciate it. Okay, that completes one go through of the witnesses signed up and I will go back and call -- we had two passes. We have Mr. Thorsell of the Edison Electric Institute who was the first name on the list this morning who was not here. Are they here now?

VOICE: No.



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MR. WIRTH: Okay. Then the -- I have a cancel, Mr. William E. Kelly, is that correct with the Conrad Corporation, are they here? I see they have written cancel, someone has written cancel here so I presume they cancel. I believe then that completes all of the witnesses that have signed up or requested time at the meeting.

That means then that the meeting is open to any general statement that anyone wishes to make or any question that anyone wishes to ask. Yes, sir? Would you state your name?

MR. WILLS: I am Roger Wills and I would like to ask a question --

MS. THATCHER: Are you associated with some company?

MR. WILLS: Yes, Westinghouse.

MS. THATCHER: Oh, okay.

MR. WILLS: I would like to ask you a question with regard to a question you asked Mr. Thomas with respect to the fact that total enclosed manner includes the manufacturing facilities. Considering Senator Nelson's statements on the floor of the Senate and Congressman Dingel statement on the floor of the House and the terms of their proposed amendment to total enclosed manner, how do you arrive at that?

MS. THATCHER: I said I was not a lawyer.



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MR. WILLS: You are a Legislative representative?

MS. THATCHER: That is true. I am sort of a go-between the Agency and the Hill. There are other words for that but I won't use them right now. No, my basic concern was this, and as I said I am not a lawyer, but what I was wondering of Mr. Thomas was the fact that Section 6 (e) is there and it is obvious that Congress wanted us to zoom in on PCBs.

That being the case would Section 6 (e) represent an exception to Section 9 in other words and I am merely asking a question. I would enjoy having your opinion on that.

MR. WILLS: I was asking you for your basis since you made that proposition.

MS. THATCHER: Well that is the only thing I was thinking since it was very clear that Congress wanted us to do something in that area.

MR. WILLS: You have no explanation then why Congress or Senator Nelson referred to open uses such as copy paper, et cetera, paints to be phased out in one year as opposed to capacitors and transformers being phased out in two and a half years?

MS. THATCHER: No, I don't. Maybe Blake could answer that.

MR. WILLS: The only question I had was the basis



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for what -- the statement you made and apparently I get that you do not have a basis.

MS. THATCHER: No it wasn't a statement. It was a question I was asking, really, seriously.

MR. WIRTH: Mr. Wills, may I respond to that?

We have read those same statements by Senator Nelson and Senator Dingell. The law also talks to the banni- of manufacture, processing, use, distribution and commerce in other than in an enclosed manner and it goes on to state an enclosed manner shall be no significant risk. The direct words of the law do not specifically exempt manufacture from that or say that, you know, totally enclosed does not include the manufacturing process.

Now we have made -- We have not made a determination I think at this point among the work group as to which it includes or which it doesn't. We are exploring the question at this time and I would like to say I think as far as EPA we have not made a determination as of this moment in which direction it goes but I think it is most certainly a valid question and most certainly an issue in the sense that I -- we are aware of the position of your group and, against all of the industry group on this and yet on the other hand the Environmental Defense Fund says another thing, so all we are saying is that it is an issue and we think it is a subject for discussion.



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MR. WILLS: Well, I asked as an issue when both versions of the amendments indicated that totally enclosed manner was to be defined as something other than an insig-- or it should be an insignificant leak from the container as opposed to the final wording in 6(e). In other words, totally enclosed manner in both amendments that were passed in both the House and the Senate defines totally enclosed manner in a somewhat different way than finally came out in 6(e). So, I assumed that the stature had different reason for the change in the statutory language.

MR. WIRTH: I am not quite sure I --

MR. WILLS: The language introduced in both the House and the Senate indicated leakage from enclosure or container as opposed to the language presently contained in 6(e).

MR. WIRTH: That is correct, what is the conclusion then?

MR. WILLS: That seems to go to a use as opposed to manufacturing, therefore, I wondered if she had some information that would indicate a more significant change from a use to a broader use and production and distribution.

MS. THATCHER: I didn't know that I was going to get the whole panel in trouble.

MR. WIRTH: I think the answer to that question is that the final language in the bill came out differently.



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So, now we have got an interpretation problem. Do either one of our attorneys want to bury that question any further?

MR. LYON: We obviously have different ways that a law can be read. We have discussed this before.

MR. WIRTH: Thank you. Any other questions? Any other statements?

MR. FILGO: Mr. Wirth, I am speaking now as a — employee, an engineer.

MR. WIRTH: Will you sit down and state your name and affiliation, please, so we can get it on the record?

MR. FILGO: Thank you. My name is William W. Filgo. I am an engineer with the Tennessee Valley Authority, Chattanooga. Background material; we have enjoyed our work with this team and as a work group member we have submitted a work group paper.

Counsel says that we should present a TVA official statement. This at this time has been given to me to dispatch. It is not signed, Mr. Wirth, but a signed official copy will be provided to you.

I will read just briefly perhaps TVA's position.

Gentlemen, this letter constitutes comments of Tennessee Valley Authority on the issues relevant to developing ban on the use of polychlorinated biphenyl pursuant to Section 6 (e) (2) of the Toxic Substances Control Act as requested in your June 27, 1977 Federal



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Register notice.

TVA recognizes the need to prevent contamination of the environment from PCBs and strongly supports EPA's efforts in this regard. Any PCB regulations should minimize the risk of injury to health or the environment while striking a meaningful balance between the additional needs for environmental protection and a cost for providing that incremental protection.

Accordingly, we recommend that the regulation promulgated pursuant to Section 6(E)(2) of TSCA allow continuation of activities related to PCB transformer repair including reclamation of PCB fluid. Continued use of PCB transformers and capacitors through their normal equipment life. Use of replacement PCB fluids warehoused as of January 1, '78 and transfer of PCB transformers and capacitors between locations within a utility service area and between utilities as needed.

The rest, some four or five pages of material, Mr. Wirth, is supporting information.

MR. WIRTH: So it is a 12 page document that we have here. Admitted to the record. Okay, thank you. Are there any questions we want to take up with Mr. Filgo?

MR. BILES: What was your first recommendation?

MR. FILGO: Okay, repeating. Accordingly we recommend that the regulation promulgated pursuant to



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Section 6(e)(2) of TSCA allows continuation of activities related to PCB transformer repair including reclamation of the fluid.

MR. BILES: Does that mean using the fluid again in other situations, taking it out and using it?

MR. FILGO: This to me means, Blake, that we take it out, filter it, increase its dielectric strength which has something to do with transformers, put it right back in the same transformer.

MR. BILES: Do you have any idea how you draw the line between saying that we are maintaining a transformer and we are really rebuilding it and making a new one?

MR. FILGO: Blake, I am speaking strictly from TVA's standpoint. We do not rebuild them. We service them. This implies service.

MR. BILES: I am sure that in the future one of the issues that may be raised if we attempt to permit the continued maintenance of repairs is, what is maintenance as opposed to essentially rebuilding and making something new, you know, how far do you go before you are in effect making a new transformer?

MR. FILGO: That could be -- A transformer, of course, has many parts and there are transformer repair shops as you well know. We have one ourselves in house. This could be absolutely just like a rebuilt part on an



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automobile.

MR. SHYKIND: Ward, have you ever calculated the system reliability, if you would, to building a PCB transformer with silicone alternatives?

MR. FILGO: Ed, we -- Our power production people tell me we would probably do that, try it on an experimental basis. I think if it came to that our people would probably prefer to just pull the PCB transformer out and put a different type in.

Plainly they are a little concerned abou this dielectric strength type thing. They are a little bit concerned that they would never get all of the PCB out because of the poor components in the transformer itself.

To answer your question, Ed, of whether we could evaluate reliability of a retro-build silicone against that, I do not know.

MR. SHYKIND: What about --

MR. FILGO: However, in answer to your question, Ed, my experience with transformers, very good reliable equipment. We have not had a pleasure of this type of equipment.

MR. PRINCIPE: I have a question. I read somewhere that it is possible to use trichlorobenzine to dilute the PCB solution and in fact you can dilute the PCB solution up to a branch of 60 percent trichlorobenzine to



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40 percent PCB. It would seem that if that was possible you could do quite a lot of maintenance work on a transforme without using the PCB fluid as a replacement. Has TVA done any experiments along this line?

MR. FILGO: No, this part of TVA is pretty straight forward power production type operation, Peter. Here the key is we have got to maintain the system reliability. In other words we are doing everything that we have to do in New York in the last few days. This overrides most other concerns.

Now going a little bit further, we have two processes of reclaiming fluid. One they call continuous flow and this simply you pour it cut of the transformer on the site, put it through dillation type filter, you check your dielectric and you keep running it to a certain level and you put it right back in.

Another point we are making is our ware house stock has been there for many years, it either indicates that we have a good process for reclaiming the fluid then we are pulling any out of the warehouse and this indicates reliability toequipment.

That may not have answered your question as you wanted but that is about the best I could do with it.

MR. PRINCIPE: Has TVA ever used trichlorobenzine as a dillutent?



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MR. FILGO: Not to my knowledge.

MR. WAGNER: Does anybody else have a question? Okay, there is a question submitted from Bob Westin, Versar, on -- you will like this -- Section 6(e) establishes a ban on the processing of PCBs. Would not the filtration process be "processing"?

Have you considered a definition --

MR. FILGO: My friend Bob Westin has the ability to ask some very interesting questions. Knowing Bob as I do, I believe he would have a better answer to that than I would. I would not consider this, however, Bob, to be really in the context of TSCA as I understand it.

Now I am talking like Wastinghouse, he wan't a lawyer, which one was the lawyer? I am not a lawyer so I don't know, understand these things too clearly. Strictly speaking as an engineer this is a maintenance procedure. That would be what I would call it.

MR. BILES: Ward, do you -- Given dillution or not dillution and given the use of trichlorobenzine or not using it, how would you judge this, about what should be used? Do you know -- Do you have any idea how much PCBs you are going to require for the use of a -- transformer or is that difficult to project?

MR. FILGO: No, Blake, it is not for us. We have

MR. BILES: Well do you think --



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MR. FILGO: I could answer you real specifically with the information at hand, but let me talk just in general terms.

MR. BILES: What I am saying is it difficult for you or the utility industry in general --

MR. FILGO: Well that is two questions.

MR. BILES: I know it.

MR. FILGO: Let me address the first one, TVA first. We have some 500 to 600 gallons of PCB liquids in warehouse inventory. All right, that has been there for several years. Last year we removed from inventory only six gallons which to me as an engineer implied or indicated, as I have told Peter, that this equipment is good or our process for reclaiming it is good. You normally would think that that ratio of inventory to use, that something is not valid there, I know. Maybe we inventoried too much, I don't know.

MR. BILES: Without asking you to represent the total utility industries, do you think it is a reasonable thing for us to do to try to project how many PCBs are going to be needed for the usable -- transformers in this country, at least for the utility industry and maybe for other large industries?

MR. FILGO: Blake, we may be able to give you some information better on that -- I am speaking now as a



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member of the work group which we are trying to get back through Mr. Thorsell's group and unfortunately he was not here today. I really didn't feel comfortable speaking for him. This, my friends, is the Edison Electric Institute who represents many private utilities. We try to work together with these people since we are in the utility business also. I really couldn't speak for him and I am disappointed that he was not here today.

We did run this work paper by them very quickly. To be perfectly honest with you they are tied up with the labeling and disposal regulation now and probably didn't have the time to devote to this, but I don't know.

Now, let me also speak -- This utility business is funny. We run about 3,000 or over utilities. Believe me they run from a little bitty distribution utility having probably one man serving less than one hundred customers. Now that is a utility. We also run to people like TVA, the largest probably generating capacity in the United States, we run to Commonwealth Edison out of Chicago, Con Ed out of New York. So we've got the little bitty small, still a service utility, and the tremendous utility with many capabilities.

We are a little bit different in TVA, point this out. We are generally in the production distribution business, esentially a wholesaler. Now this is different



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from Commonwealth Edison and Con in that they have all three points, distribution — production distribution, service and transmission.

Our use of PCB transformers is frequently related to in-house service type transformers in the production facility itself, not in the switch yard you see outside of a production facility. Those transformers are oil filled.

Maybe you want me to tell them, John, we have in TVA maybe 1277 PCB transformers. For this large a utility that doesn't seem to be too many to me.

MR. WAGNER: Any other questions? Are there any more questions from the floor? Is there anybody else that would like to speak? If not we will adjourn this public meeting. Thank everybody for coming.

(Whereupon, the hearing was adjourned at 3:10 p.m.)

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