DRAFT - GFB - 1/7/76

Second Revision

Copies to: Hudson
Potter
Beshop
Sliney

1/7/76

Opening Remarks - F. J. Fitzgerald Meeting with Russell Train, Administrator of the EPA - Washington, D.C. - Jan. 14, 1976

Good afternoon, my name is Jack Fitzgerald. I am a vice president of Monsanto Company, a member of its Corporate Administrative Committee and managing director of Monsanto Industrial Chemicals Co., an operating unit of Monsanto Company.

Since it is the Monsanto Industrial Chemicals Co. that manufactures dielectric fluids containing polychlorinated biphenyls, John Hanley, our president, has asked me to represent him today and reaffirm to you Monsanto's commitment to work with the EPA and the electrical industry in finding solutions to the PCB issue.

Let me first state that Monsanto agrees wholeheartedly with the EPA in its desire to work toward a goal of eliminating further use of PCBs.

Monsanto has already taken several steps designed to restrict the entry of PCBs into the environment.

First, Monsanto moved to limit the use of PCBs solely to closed electrical systems in 1971. This voluntary action, it should be noted, occurred prior to the completion of the Federal Interagency Task Force study on PCBs that was finished in 1972.

-more-

Secondly, Monsanto has been working for a number of years on non-PCB replacement products. These materials, designed to eliminate PCB containing fluids in capacitors and transformers, are currently being evaluated by the major electrical manufacturers in the United States.

While the PCB issue is a tough one to handle, the difficulty does not or will not arise from any lack of cooperation, particularly from Monsanto. The problems that we face are rather rooted in the unique character of PCBs and the role they have served in our electrical-industrial environment. Replacing that role in an orderly manner without creating another hazard of equal or potentially greater consequence is the problem.

Let me emphasize that we have no desire to remain in the PCB manufacturing business any longer than is necessary to develop an orderly transition to replacement products which meet the needs of the electrical industries which power America.

-oOo-

BRIEF DESCRIPTIONS OF SIGNIFICANT ISSUES ARISING FROM THE PCB CONTROVERSY

Monsanto Progress on Alternate Products

It's important to discriminate between fluids designed for transformer cooling and those designed for capacitor impregnation Because each application has requirements not shared by the other, Monsanto knows of no candidate replacement products which would be applicable to both.

For capacitors, we have studied several alternative technical approaches and have settled on a product which duplicates the electrical behavior of PCBs, yet contains no chlorine. Our testing program has included accelerated life tests on capacitors impregnated with this material. While our results were favorable, the ultimate acceptance must come from our customers. Sample quantities of this replacement are already being evaluated by customers. Should we receive an early favorable verdict from enough of the industry to support an investment, we could get into interim production at a volume sufficient to supply the industry in a relatively short period of time. Initially, the replacement product would be more expensive since the electrical industry would have to be supplied from an interim production facility. A fully dedicated plant could be constructed within two to three years.

In transformer fluids, we are not as far along. PCBs are only used in those applications where a high degree of fire resistance is required. Unfortunately, there is no accepted quantitative

definition of the degree of fire resistance needed in a fire-resistant transformer fluid. We have come up with a candidate product which we will make available for testing by transformer manufacturers. We believe we have a good competitive product that represents our best solution based on our extensive research in this field.

A key issue in the final acceptance of these candidate dielectric fluids is their environmental and toxicological properties. We have approached this question in two ways: first by pursuing chemical structures thought likely to be relatively innocuous from previous experience or analogy; and second by a thorough testing program. A report on our testing to date will be available in a few weeks. While some of the more extended tests are still under way, I can say that we are anticipating very positive results.

Cleanup Action at our Plants

Measurable losses from the Sauget Village treatment plant to the environment are approximately one to two pounds per day, which equates to approximately one to two parts per trillion PCBs in the Mississippi River at average flow rates. While there presently are no formal PCB discharge limits, proposals under consideration call for ambient water concentrations at levels not to exceed one part per trillion.

The level of PCBs in the atmosphere is less than Threshold Limit Values (TLV) using sampling and analytical techniques currently available. TLV refers to airborne concentrations of substances and

represents conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effects. We presently are manufacturing about 80,000 pounds per day of PCBs.

In our manufacturing area we have acted to prevent loss of PCBs in the environment by literally making the department a "concrete bathtub." Drainage is collected in an isolated PCB sewer system with settling basins to insure PCB containment in case of accidental spill or equipment failure with the capability of monitori the effluent from the department.

Storage tanks are blanketed with nitrogen to eliminate tanks "breathing," and mist eliminators have been installed in vapor lines to eliminate the possibility of PCBs leaving the manufacturing area. The key to our continued success in controlling PCBs is in our maintaining a high housekeeping level.

A Monsanto chemical waste treatment facility, to be complet in late 1976, followed by a metropolitan treatment plant in 1982-83 will be further steps in reducing PCB effluents toward a negligibl value.

Steps taken in labeling and transport practices

Monsanto ships PCB fluids in both bulk carriers and in drums. Bulk shipments are made in a Monsanto-owned fleet of tank

cars which is used exclusively for that service, or in customer-owned tank trucks. Drum shipments are made in special reinforced drums which we believe to be the best available.

A multi-lingual warning label is affixed to each package giving a brief description of the nature of the material and appropriate actions to be taken in the event of a spill or leak. We also supply a label to be used on return shipments for incineratio which gives similar information.

The Monsanto Incineration Service

An incinerator was built at our Sauget, Ill., plant for the specific purpose of destroying waste PCB-containing liquids, both from our own operations and from our customers. Firebox temperatures above 2000°F are maintained to completely destroy the PCB compounds, and combustion products are removed in scrubbers. Routine sampling of both the stack and the scrubber effluent has confirmed the effectiveness of the system. During 1975 our incinerator at Sauget, Ill., burned 3.5 million pounds of PCBs.

-oOo-

PCB PREPAREDNESS Q&A -- 1/7/76

Q1. Assuming acceptable replacement dielectric fluids become available from some source, be it Monsanto, Dow or whomever, would Monsanto then voluntarily phase out its PCB production in the absence of any federal mandate?

A1. Of course! When we made the conscious decision back in 1970 to begin restricting sales to closed-system dielectric uses, the main reason we elected to continue supplying the electric industry was that they had no viable alternates to turn to. EPA recognizes this, even today. At the press conference, Mr. Train said he would not ask Monsanto to stop production because that would shut down the electrical power industry and the railroads in short order. He said we must find a way to proceed without shuting down the country. This is precisely the position to which Monsanto has been committed since 1970.

-more-

Monsanto has every intention of eventually phasing out its PCB production (in a planned and orderly manner) as soon as we are satisfied that the electrical power industry's needs for usable, viable alternates have been met.

In the interim, we will continue to work with industry and government to ensure that the restricted measures and controls we voluntarily implemented in the early 1970s remain in force and are diligently pursued. Mr. Train's objectives are aimed at the same results.

Q2. According to EPA, Monsanto makes about 40 million pounds of PCBs per year at its Sauget, Illinois Plant. What does Monsanto know about the effects this large volume has had on its plant workers and the nearby residents? Surely they must be inhaling vapors and being contaminated in other ways. What assurances can you give that this won't become another asbestos, VCM or Kepone situation? How many people are employed in the PCB production/incineration units?

A2. PCBs are considered by our 19 production people and five incinerator operators to be a normal industrial chemical as contrasted to many which are actively toxic. We provide the same safeguards and monitoring program for PCBs as we do for other industrial chemicals. Exposure to the material and its vapors is very limited, protective clothing and related safety equipment is not only provided but required.

Proper ventilation is also provided and standard industrial hygiene practices are vigorously followed. We perform routine maintenance and safety inspections on all the manufacturing equipment and we periodically monitor and sample the workers environment. Each plan employe is eligible to undergo a thorough physical examination ever year at company expense. Several months ago a group from the National Institute of Occupational Safety and Health (NIOSH) visite the Krummrich plant and concluded that employe exposure to PCBs in our operation was too low to be of concern.

NOTE - Any additional questions on this subject or on the subject of animal testing should be referred to Dr. G. Roush, Monsanto's Medical Director.

Q3. The EPA said that from two to five pounds of PCBs per day are discharged into the Sauget waste treatment plant from Monsanto's production facilities. Is this true? And what has Monsanto done to minimize its discharges?

A3. No. Our current measurable losses to the environment are approximately one to two pounds per day. This equates to approximat 1 to 2 parts per trillion in the Mississippi River at average flow rates. Levels of PCBs in the ambient atmosphere are less than Threshold Limit Values (TLV) using sampling and analytical techniqu currently available. Since 1969, we have invested more than 30 man years of work and millions of dollars in this program.

In our manufacturing area, we have taken a number of significant steps to prevent loss of PCBs to the environment. In essence, we have made the department a "concrete bathtub." Drainage is

directed to trenches and piping, and then to one of two 3,000-gallon settling basins. This insures PCB containment in case accidental spill or equipment failure.

We have also installed an incinerator to safely dispose of PCB This is accomplished through incineration at or above 2000° +F Use of the incinerator and other technical assistance is avail to our customers on a continuing basis.

When small quantities of PCBs are collected into the settling basins in the manufacturing area they are later pumped into drums, and eventually incinerated. In the incinerator area itself, drainage is directed to trenches and piping which flow into a 10,000-gallon basin. Recovered PCBs are periodically pumped to storage, or incinerated.

In the manufacturing area, we have also rerouted relief valve lines and atmospheric vents through catch tanks, or redirected them to settling basins.

We also provide nitrogen blanketing on storage tanks to elimin any "breathing" of the tanks and resultant PCB escape.

We have installed mist eliminators in vapor lines - once again to eliminate the possibility of PCBs leaving the manufacturing area through these lines.

Finally, we have replaced underground sewers with above-ground sewers, and repaired or combined others, so that we can monito

the effluent from the department. In addition, this will prevent any unknown buildup of PCBs in our sewer systems or any contamination of PCBs into other sewers.

Much of the success of our efforts also depends on maintaining a high housekeeping level in the department itself. Among the housekeeping responsibilities our operators have assumed are these:

--All pumps are checked for leakage on every shift. Drip pans that collect leaks are emptied into scrap PCB drums.

--All leaks are reported and documented so that corrections can be made and settling basins observed.

--"Floor Dry" is used to absorb any PCBs that have spilled or leaked. If it becomes necessary to flush PCBs to the settling basin, a minimum amount of water is used.

--Sampling drums and scrap-PCB drums are quickly palletized, labeled and transferred to the incineration area.

Through these kinds of programs, we feel we have literally built a "concrete bathtub" to catch and safely dispose of PCBs at our manufacturing location.

Q4. Could you describe disposal policies regarding spent PCBs?

A4. Guidelines for handling and disposal of capacitor and transfor grade PCBs were prepared in 1972 and have been approved by the American National Standards Institute. These guidelines are intended to restrict the release of PCBs into the environment. They provide standards for incineration as well as for disposal by other than burning. Incineration facilities must meet the applicable requirements of the state in which they are located. In addition, certain landfill sites have been classified by state governments and the federal government as suitable for the disposal of toxic and hazardous liquids. Where these "environmental" landfills exist, they may be used for the disposal of liquid PCB wastes.

Q5. How are requests for incineration handled by Monsanto?

A5. Arrangements for all return shipments of PCB containing materi to Monsanto are handled individually. Instructions are forwarded for <u>each</u> consignment to customers to ensure that they are aware of any changes in procedure. Monsanto supplies pre-addressed drum return labels marked "Disposal Only." All drums used must meet DOT 17E specifications as to construction Monsanto supplies an identification number for each shipment to be placed on the bill of lading and on <u>each</u> drum.

Monsanto does not accept solids such as sawdust, rags or sludge. These items can not be handled in the incinerator. A letter is provided by Monsanto to be attached to the driver's copy of the bill of lading. The subject of the letter is to be brought to the driver's attention. Included are instruction to the driver to prevent introduction of the liquid into the environment. Included in the letter are phone numbers of Monsanto Company officials and the shipper.

Q6. Could Monsanto reach the "zero" discharge level being proposed by EPA?

A6. No. "Zero" discharge at a facility producing some 40 million pounds per year would be technically impossible. Measurable losses from the Sauget Village treatment plant to the environment are approximately one to two pounds per day, which equates to approximately one to two parts per trillion PCBs in the Mississippi River at average flow rates. While there presently are no formal PCB discharge limits, proposals under consideration call for ambient water concentrations at levels not to exceed one part per trillion.

The level of PCBs in the atmosphere is less than Threshold Limit Values (TLV) using sampling and analytical techniques currently available. TLV refers to airborne concentrations of substances and represents conditions under which it is believed that nearly all workers may be repeatedly exposed day after

day without adverse effects. We presently are manufacturing about 80,000 pounds per day of PCBs.

In our manufacturing area we have acted to prevent loss of PCBs in the environment by literally making the department a "concrete bathtub." Drainage is collected in an isolated PCB sewer system with settling basins to insure PCB containment in case of accidental spill or equipment failure with the capability of monotoring the effluent from the department. Storage tanks are blanketed with nitrogen to eliminate tanks "breathing," and mist eliminators have been installed in vapor lines to eliminate the possibility of PCBs leaving the manufactur area. The key to our continued success in controlling PCBs is in our maintaining a high housekeeping level.

A Monsanto chemical waste treatment facility, to be completed in late 1976, followed by a metropolitan treatment plant in 1982-83 will be further steps in reducing PCB effluents. toward a negligible value.

Q7. In addition to Monsanto's own incineration service, are there other locations where PCBs can be disposed of properly?

A7. Disposal service companies, meeting American National Standard Guidelines relating to the disposal of PCB containing materials are located in at least nine states and include both incinerati services and environmental landfills. States where these facili

are located include the following: California, Delaware, Illinois, Kentucky, Louisiana, New York, New Jersey, Texas and Washington.

Q8. Mr. Train indicated that Japan had banned PCBs and that EPA will conduct a thorough review of the Japanese experience. If a highly industrial nation like Japan, with widely acknowledged electronic technology can get along without PCBs, why can't the U.S. electrical power industry?

A8. Monsanto and the U.S. electrical industry are often asked this question. In the first place, it should be pointed out that the major uses for PCBs in Japan were not electrical but rather "open applications," particularly for carbonless paper. The Japanese power distribution industry, less advanced than the U.S. technically, had never actually gotten around to taking advantage of fire resistant transformers to the extent they have been used in this country. Most of their transformer were either using mineral oil or were dry-type units. The Japanese capacitor industry on the other hand was only in the beginning stage of converting its equipment to the more reliabl PCB dielectrics when the ban was announced. Reliability standards for capacitors in the U.S. are much more stringent than they are in Japan or anywhere else in the world. So the Japanese ban really did not materially impact that country's electrical power distribution industry.

Q9. Mr. Train has repeatedly said he will never be able to control PCBs effectively without Toxic Substance Control Legislation. What is Monsanto's reaction to this?

A9. We don't really understand his reasoning here. He has said he would not ask Monsanto to stop production because it would shut down the country. We assume this statement would apply equally with or without a new Toxic Substance Law.

If he had imports (which we understand are being used in "open applications") in mind, which according to figures released by Rep. Les Aspin (D-Wis.) earlier this month, are projected to be as high as 385,000 pounds this year -- up 40 per cent since 1972, Monsanto feels he has all the authority he needs under section 504 of the Federal Water Pollution Control Act.

Q10. What is Monsanto's position regarding Toxic Substance Control Legislation?

A10. Monsanto Company's corporate policy supports government actions whenever such actions are clearly in the public's best interest and are needed to protect human health and the environment. We recognize that there are certain gaps in existing regulatory controls, and that safeguards may be needed to fill those gaps. Consequently, we do not oppose enactment of reasonable legislation that would provide for the testing and regulation of chemical substances which present unreasonable risks. At the same time, we object emphatically to any prospective legislation that would impose broad, sweeping controls that overlap and duplicate existing laws.

Q11. Are your replacement products fire resistant? If not, won't this expose the public to some new hazards?

A11. Our replacement capacitor fluid candidate is far from the category of "flammable liquids," but it will burn more easily than PCBs. To give a familiar analogy, it has about the same flash point as the ethylene glycol used in automotive anti-freeze. We hope and expect that capacitor manufacturers can modify designs to minimize any potential fire hazard, but to some degree there will have to be a trade-off between maximum fire safety and environmental compatibility.

Q12. You stated that there is no accepted standard for fire-resistance for transformer fluids. What is Monsanto doing about it?

A12. We feel that the proper agency for establishing such a standard would be an underwriters group or the Bureau of Standards. EPA might be able to focus the attention of appropriate government agencies on this problem.

Q13. Why is Monsanto introducing a replacement dielectric fluid before environmental and toxicological testing is complete?

A13. In a sense, that kind of testing is never really complete, because there are so many different kinds of tests, and some take several years to run. The data we have developed so far encourages us to believe that the new product is better than PCBs: that is - more biodegradable, not subject to biomagnification, relatively non-toxic - and this lends urgency to getting on with a replacement program.