Business Plan [redacted]

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U.S. PCB SHUTDOWN PROGRAM

This was RGP/CP submission to FitzG.

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I. Current PCB Program

A. Current Program Evolution

1. The PCB Business Plan was developed between December 1975 and February 1976 with a target shutdown date between mid and late 1978 with periodic updates since that time.

2. Shutdown urgency was increased by G.E.'s Hudson River pollution problems and Russell Train's December 1975 press conference call for an orderly PCB termination without "shutting down the country."

3. Monsanto responded in January 1976 and again in May that we wanted to shut down as soon as we responsibly could on a timetable consistent with our customer's earliest ability to switch to alternate fluids. The target for shutdown had moved forward to late 1977/early 1978.

4. The shutdown program was initially structured to best balance the following major considerations:

   a. Our responsibility as a good corporate citizen, both from an environmental as well as from a human health and safety standpoint.

   b. Our desire to fully cooperate with the government in general and EPA in particular.

   c. Our obligation to Monsanto's long time PCB customers in the U.S. to which we have been sole supplier.

   d. Our efforts to cover our shutdown costs and consequent write-offs while maintaining a reasonable level of profitability during phase-out.

B. Key Elements of the Current PCB Program

1. The program calls for a planned, orderly phase-out of PCBs in the U.S. with the following key dates:

   a. By 9/15/76 give our customers details of our shutdown program including final pricing and termination date of production.

   b. 9/30/77 cease Krummrich PCB operations and commence dismantling and decontamination.

   c. Prior to 12/31/77 have completed all shipments of PCB inventories to our customers.

2. Our customers have been consulted on a continuing basis to help ensure a demanding but realistic conversion program away from PCBs at their earliest possible date.

3. The program is designed to cease PCB production in accordance with the abilities of our customers to convert to replacements as rapidly as possible.

4. Transformers are expected to have switched away from PCBs by early 1977 while capacitors, due to less satisfactory alternates and more complicated fire-risk considerations, are not expected to have completed their switch until early-to-mid 1978.

II. Status of Customer Conversion Programs

A. Capacitors

1. Of the 14 U. S. capacitor manufacturers using PCB's, G. E. (40% of the industry) and Sprague are farthest along in field testing of industrial motor-run units. In power factor correction units, McGraw-Edison and G. E. are farthest forward. Our best information is that G. E. will begin major conversion to non-PCB in 3rd quarter 1977 with a target date for completion of year-end 1977. Sprague and McGraw-Edison are estimating conversion in the 3rd quarter 1977 as is Westinghouse.

2. Of the 10 customers still forecasted to be manufacturing PCB capacitors in 1978, all but two are targeting completion of conversion by the end of the 3rd quarter 1978.

3. Industry Problems - The industry still has not solved all the technical problems involved with a conversion to non-PCB's including:

   a. Lack of Underwriters Laboratory certification of non-PCB units. At this stage only G. E. appears optimistic that they have a solution to the fire hazard posed by PCB replacements.

   b. Re-design and satisfactory field testing of all the many types of capacitors using PCB replacement fluids is not yet complete.

   c. None of our capacitor customers has proven out a system of decontaminating capacitor manufacturing equipment that will ensure against cross-contamination of the PCB replacement fluids.

B. Transformer Manufacturers

It now appears very likely that the demand for fire-resistant, liquid-cooled transformers will be satisfied by a combination of mineral-oil, dry and silicone fluid units. Of 14 askarel (PCB) transformer manufacturers, 8 will have ceased purchases of PCB by year-end 1976. In addition, Westinghouse have announced they will deliver no new askarel transformers after January 1, 1977 although they have not yet resolved the need for PCB to handle certain essential repairs and servicing of existing units in 1977/1978. G. E. have not announced their policy on askarel units, but their forecasts indicate a phase-out in 1977. Production shut-down by 9/30/77 and a sales cut-off of 12/31/77 should pose no major problem among our transformer fluid customers.

III. Alternatives

The August 1976 publication of a Mobil Oil Company study which pointed towards PCBs as a potential carcinogen coupled with Toxic Substances legislation which passed the House with a PCB shutdown amendment have both served to heighten concern about Monsanto's continued production of this product.

Alternate A: 12/31/76 Production Shutdown

Capacitors

1. MIC could produce only 5M lbs. of Aroclor 1016 for 1977/1978 customer needs versus an industry forecast of 17M lbs.

2. Due to stress-corrosion problems in T/C fleet, we lack sufficient T/C's to maintain orderly shipping schedule of current customer needs for September/October. This could prevent us from storing/shipping all the 5M lbs. the plant could produce for 1977/1978 customer usage.

3. Of our 14 U.S. capacitor customers, six are small, privately-owned companies almost totally dependent on capacitor sales. The disruption could possibly put three or four of them out of business.

4. At least half of our U.S. capacitor customers supply capacitors for appliances such as air conditioners. The production season for air conditioners traditionally runs from September to May so they are already locked into contracts for the 1977 season. A cut-off in U.S. supplies of PCB in mid-season would likely lead to lawsuits from the appliance manufacturers, many of whom, e.g. Whirlpool, are major Monsanto customers for plastics.

5. A December, 1976 shutdown would violate Monsanto's repeated public statements to EPA, news media and customers that our exact timetable would be consistent with and in a large part dictated by our customers' ability to convert to alternate products.

6. The reason that several customers (EUC, Jard, Mallory and Sangamo) trail other capacitor manufacturers in field testing non-PCB units is that they relied exclusively on MIC to remain the industry supplier of a PCB replacement. Their volume needs, however, were insufficient to make our replacement product economically viable in the face of the commodity approach adopted by others. This meant that they only seriously began evaluating other alternatives in April/May 1976. Even on a crash basis, these customers are likely to need 12-15 months for conversion.

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Transformers

1. Four U.S. customers are unprepared for a 12/31/76 sales cut-off. The most seriously affected would be G.E.

2. G.E. has been awarded a contract by the Atomic Energy Commission to repair and renovate a large number of askarel units in 1977-1979 in anticipation of a PCB phase-out. We feel we can make shipments of fluid in 1977 to handle the contract, but we could not supply G.E.'s need before year-end 1976. We will face both G.E. and U.S. government pressure. (In 1972 A.E.C. successfully got Monsanto to breach our 12/15/71 sales cut-off in PCB heat transfer fluids to supply their facility in Kansas).

3. Hooker Chemical has just informed us they may not be able to supply more TCB for our transformer fluid formulations because of a plant shutdown. We can probably cope with 1976 needs and believe we can solve our 1977 requirements, but maybe not in time to allow production in 1976.

4. In the 4-month period before year-end, we lack the storage and tankcars (complicated by our current repair program) to achieve an acceptable balance between both capacitor and transformer users in shipping material for their 1977/1978 needs. If we maximize help to transformer users we penalize capacitor users even more severely and vice-versa.

Alternate B: 9/30/77 Production Shutdown (no sales after 12/31/7

Capacitors

1. MIC can produce the volumes required by industry prior to their conversion to non-PCB.

2. By a combination of customer storage and our tankcar fleet we will be able to accommodate the needs of the capacitor manufacturers who will be unable to convert before 1978. (Customers would take title to the material in the tankcars in 1977 and store on their premises.)

3. MIC would cease production of PCBs at least one year before the Dingell-Gude amendment to the Toxic Substances Bill goes into effect.

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4. This program would be consistent with our recent public statements and would be consistent with our position that our actions would be guided by industry's conversion timetable.

Transformers

1. To free-up tankcars to supply capacitor customers, we will have to supply more askarel fluid in drums than those users prefer, but we feel this is not a major problem.

2. We anticipate no adverse customer reaction to a sales cut-off on 12/31/77.

Evaluation of Alternatives

1. MIC Law Department continues to support the current planned withdrawal (Alternate B: Production Shutdown 9/30/77) as the best balance between fulfilling our various responsibilities while minimizing our legal liabilities. Another 12 - 14 months of production does add a degree of risk as more product could find its way into the environment and add to the statute of limitations by that same length of time.

   However, this is believed to be more than off-set by the possibility of lawsuits from a "precipitous shutdown" (Alternate A: 12/31/76 Shutdown) both by customers who could not fulfill their contract commitments plus the possible interpretation that such a "panic" shutdown is evidence of an admission of negligence and thus inherent liability by Monsanto.

2. Alternate A carries a distinct risk that three or four capacitor manufacturers could be forced out of business.

3. Faced with Alternate A, one option open to our customers is to import PCBs. While it may be feasible for Bayer and Rhone-Poulenc to supply the PCB volumes needed by U.S. customers, several problems can be foreseen:

   a. It does nothing to improve the concerns on health and environment.

   b. It could make EPA control of the PCB situation more difficult.

c. Logistics may prevent supplies arriving in time to prevent disruption of customer capacitor production.

d. In the short run shipments would have to be in drums significantly increasing the risk of environmental contamination in transit and usage. (G.E.'s Brazilian subsidiary and Monsanto Ltd. were involved in a PCB incident aboard ship in December, 1974. A storm at sea caused drums of Aroclor to leak and contaminate other cargo. The vessel put into another U.K. port and had to unload the contaminated cargo.)

IV. Summary

A. Economic Impact

1. The PCB Business Plan calls for a fourth quarter 1976 write-off of $2M in the U. S. for estimated retirement loss and decontamination/dismantling expense plus another forecasted $0.8M write-off for Europe. Some additional expense could occur in 1977/1978 as this is actually carried out.

2. The current plan targets a 1977 Performance Income goal of approximately $3.5M to be generated by producing all 1977 and 1978 volumes prior to plant shutdown 9/30/77.

3. A 12/31/76 shutdown would cost Monsanto this $3.5M P/I plus additional costs of $2M against other products based upon this same polyphenyl family tree. The after-tax loss per share (basis 36.5M shares outstanding) would be about 8¢ per share.

B. Recommendation

1. It is recommended Monsanto stay on its current U. S. PCB shutdown program of 9/30/77 production termination.