RGP

MASTER

DIELECTRICS PRESENTATION TO CAC - JUNE 7, 1976

SLIDE 1 INTRODUCTION

GENTLEMEN, THE PURPOSE OF THIS PRESENTATION IS TO UPDATE THE CAC ON IMPORTANT EVENTS WHICH HAVE TAKEN PLACE IN THE DIELECTRICS BUSINESS WITH PARTICULAR EMPHASIS ON OUR PHASEOUT OF PCB PRODUCTION AND SALES -- AND OUR ATTEMPT TO CAPTURE THE REPLACEMENT PRODUCTS MARKETS WHICH ARE CREATED BY OUR WITHDRAWAL FROM THE PCB BUSINESS.

OUR PRESENTATION IS DIVIDED INTO TWO PARTS --
FIRST, I AM GOING TO SET THE STAGE FOR A MORE DETAILED EXPLANATION OF OUR CURRENT POSITION BY POINTING OUT TO YOU KEY -- SELECTED EVENTS WHICH HAVE TAKEN PLACE, ESSENTIALLY OVER THE NOVEMBER, 1975 TO CURRENT TIME FRAME AND WHICH ARE IMPORTANT TO AN UNDERSTANDING OF OUR PRESENT SITUATION.

FOLLOWING THAT, MR. POTTER, FUNCTIONAL PRODUCTS BUSINESS GROUP DIRECTOR IN THE SPECIALTY CHEMICALS DIVISION, WILL FILL IN THE ESSENTIAL DETAILS OF OUR PRESENT SITUATION.

[redacted] SUMMARY

I BELIEVE IT WILL BE MORE MEANINGFUL TO YOU IN FOLLOWING OUR DISCUSSION IF I OUTLINE FOR YOU THE SEVERAL KEY ELEMENTS OF OUR CURRENT SITUATION AND THE COURSE OF ACTION WE ARE PURSUING.

OUR FURTHER EXPLANATION WILL FLESH OUT THAT POSITION.

THE POINTS I WOULD BRING TO YOUR ATTENTION ARE THESE:

Slide 2A

1. CONTINUING ITS PAST PRACTICES AND IN FURTHERANCE OF ITS REPUTATION AS BEING A RESPONSIBLE CORPORATE CITIZEN, MONSANTO DECIDED IN DECEMBER 1975 TO TERMINATE PRODUCTION AND SALES OF POLYCHLORINATED BIPHENYLS (PCB'S) IN A MANNER WHICH WAS AS SWIFT AND RESPONSIBLE AS CONDITIONS WOULD ALLOW.

   . SUCH A MOVE CONTINUES OUR POLICY, UNDERTAKEN FIRST IN 1970 WHEN SCIENTIFIC INVESTIGATIONS CONFIRMED THE PRESENCE OF PCB'S IN THE ENVIRONMENT IN THE U.S. AT THAT POINT IN TIME WE WENT OUT OF ALL BUSINESSES USING PCB'S OTHER THAN SUPPLYING THE CAPACITOR AND TRANSFORMER INDUSTRY OF THE U.S.

2. ON JANUARY 14, 1976 MR. FITZGERALD TOLD RUSSELL TRAIN, ADMINISTRATOR OF EPA, THAT MONSANTO HAD NO DESIRE TO REMAIN IN THE PCB BUSINESS ANY LONGER THAN NECESSARY FOR OUR CUSTOMERS TO SELECT ACCEPTABLE, ALTERNATIVE DIELECTRIC FLUIDS -- WHETHER PRODUCED BY MONSANTO OR NOT.

3. WE HAVE OFFERED NON-PCB REPLACEMENT FLUIDS FOR USE IN CAPACITORS AND TRANSFORMERS AND THESE REPLACEMENT PRODUCTS HAVE BEEN EVALUATED BY OUR CUSTOMERS. THEY HAVE BEEN REJECTED.

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OFF

COURSE OF ACTION

IN LIGHT OF THE ABOVE SITUATION, THE SPECIALTY CHEMICALS DIVISION IS PURSUING THE FOLLOWING COURSE OF ACTION:

1. WE ARE TERMINATING OUR TECHNICAL PROGRAM ON PCB REPLACEMENT FLUIDS SINCE OUR PRODUCTS HAVE BEEN JUDGED NON-COMPETITIVE WITH THE COMMODITY CHEMICAL ALTERNATIVES SELECTED FOR USE BY OUR MAJOR CUSTOMERS.

2. WE WILL ESTABLISH BY NO LATER THAN AUGUST, 1976, A DATE FOR PCB SHUTDOWN WHICH WILL BE CONSISTENT WITH OUR CUSTOMERS' OBLIGATIONS IN PERMITTING THEM A SUITABLE RETROFIT PERIOD.

3. RESOURCES CURRENTLY DEDICATED TO THE DIELECTRICS BUSINESS WILL BE PROPOSED FOR REALLOCATION TO MORE SUITABLE GROWTH.

4. WHILE TODAY'S DISCUSSION DEALS ESSENTIALLY WITH THE U.S., I AM COORDINATING THE PROGRAM WITH EUROPE AND THE COURSE THERE WILL BE ESSENTIALLY THE SAME AS THE U.S. THE TIMING

MAY VARY SLIGHTLY.

: DE BACKGROUND EVENTS

SLIDE 2 LET ME ACQUAINT YOU NOW WITH CERTAIN FACTS WHICH ARE GERMANE TO THE EVOLUTION OF THE DECISIONS I HAVE JUST MENTIONED:

1. PCB PRODUCTION COMMENCED AT ANNISTON IN 1929 AND VOLUME BUILT TO A HIGH OF 85 MILLION POUNDS IN 1970. USES INCLUDED SURFACE COATINGS, PRINTING INKS, CARBONLESS CARBON PAPER, PLASTICIZERS AND ELECTRICAL SYSTEMS AMONG OTHERS. BY 1970, WHEN THE FIRST SCIENTIFIC INVESTIGATIONS CONFIRMED THE PRESENCE OF PCB'S IN THE ENVIRONMENT IN THE U.S. AND LONG BEFORE INFORMATION REGARDING THE POTENTIAL IMPACT OF THIS CONTAMINATION WAS DETERMINED, MONSANTO VOLUNTARILY BEGAN ITS PROGRAM OF TERMINATING SALES OF PCB'S TO ALL APPLICATIONS OTHER THAN THOSE SERVING THE ELECTRICAL INDUSTRY WHICH ARE CLOSED SYSTEMS AND WHERE LOSSES TO THE ENVIRONMENT ARE MINIMIZED. THIS DECISION CUT OUR VOLUME ROUGHLY IN HALF, DROPPING TO 45 MILLION POUNDS IN 1971.

2. 1976 ESTIMATED SALES WILL BE DOWN TO 27 MILLION POUNDS REFLECTING THE CONTINUING MOVE AWAY FROM PCB'S. DURING THE 47 YEAR SPAN BETWEEN STARTUP AND TODAY, APPROXIMATELY 1.4 BILLION POUNDS HAVE BEEN RPODUCED IN THE U.S. BY

MONSANTO.

SLIDE 3. IT SHOULD BE POINTED OUT THAT WE SUCCESSFULLY RETAINED MOST -- 68% -- OF THE NON-ELECTRICAL MARKETS FROM WHICH PCB'S WERE WITHDRAWN. THE FLUIDS PRODUCTS INVOLVED WERE REFORMULATED USING EXISTING ALTERNATES FROM WITHIN MIC. LOST VOLUME WAS BASICALLY RESTRICTED TO PLASTICIZERS WHERE SUITABLE REPLACEMENTS WERE NOT FEASIBLE. WE'VE HELD ON TO 27 MILLION OF THE 40 MILLION POUNDS AFFECTED, PRIMARILY THROUGH NON-PCB BASED FLUIDS WHICH INCLUDE HEAT TRANSFER FLUIDS (THERMINOLS) -- HYDRAULIC FLUIDS -- (PYDRAULS) -- AND CARBONLESS COPY PAPER SOLVENTS -- (SANTOSOLS).

F RECENT EVENTS

SO MUCH FOR PAST HISTORY. LET US TURN NOW TO THE MOST RECENT SERIES OF KEY EVENTS AND THEY ARE AS DEPICTED ON THIS SLIDE:

SLIDE 4. I. IN ANTICIPATION OF EVENTUAL PCB PHASEOUT, MONSANTO HAS BEEN WORKING HARD ON REPLACEMENT PRODUCTS FOR SEVERAL YEARS. IN NOVEMBER, 1975, A TASK GROUP WAS FORMED TO PLAN OUR WITHDRAWAL. PART OF THAT PLANNING INCLUDED SELECTION OF TWO REPLACEMENT CANDIDATES FROM A LIST OF 30 POSSIBLES BY MR. POTTER AND ME FOR BOTH CAPACITORS AND TRANSFORMERS. WE SELECTED THOSE WE BELIEVED HAD THE HIGHEST ODDS OF SUCCESS BY BEST MEETING THE CRITERIA OF:

A. ELECTRICAL PROPERTIES
B. ACCEPTABLE FIRE RISK
C. ENVIRONMENTAL ACCEPTABILITY, AND
D. A CLOSE PLUG-IN FOR PCB'S TO MINIMIZE CUSTOMER RETROFITTING.

AND, OF COURSE, AS A MINIMUM, WE WANTED TO MAINTAIN OUR CURRENT $4 MILLION PERFORMANCE INCOME GENERATION WITH A PROPRIETARY PRODUCT. WE MADE THAT SELECTION ON DECEMBER 10, 1975. OUR CAPACITOR REPLACEMENT WAS CALLED MCS 1238, A COMBINATION OF MIPB AND TXS. OUR TRANSFORMER REPLACEMENT CALLED MCS 1866, WAS AN ALKYLATED BIPHENYL PLUS TCB. BOTH UTILIZED OUR POLYPHENYL FAMILY TREE.

2. GE, OUR MAJOR CUSTOMER, HAS ITS BIG CAPACITOR PLANTS UP ON THE HUDSON RIVER IN NEW YORK STATE AND THEIR HANDLING OF PCB EFFLUENT CAUSED SUBSTANTIAL PROBLEMS WITH THE NEW YORK STATE VERSION OF THE EPA. AS THEIR PROBLEMS MOUNTED, INDEED, LITERALLY REACHED THE CRITICAL STAGE IN THEIR OPINION -- THEY URGENTLY REQUESTED THAT WE PREPARE A PROPOSAL TO COMMERCIALIZE OUR SELECTED REPLACEMENT PRODUCT WHICH THEY HAD, HAD IN TEST FOR SOME TIME. THIS WE DID AND, INDEED, I PERSONALLY CALLED ON THEM WITHIN TWO DAYS AFTER THEIR REQUEST TO US SO THAT THEY COULD BE SURE OF OUR COOPERATION AT THE MANAGEMENT LEVELS OF THE CORPORATION AS WELL AS THE TECHNICAL ONES. WE TOLD THEM WE WOULD GET

A PRODUCTION PLAN FOR 1233 THAT WOULD BE SUITABLE TO SUPPLY THEM WITHIN THE TIME FRAME THEY THEN THOUGHT THEY REQUIRED. WE FURTHER ADVISED THEM AS TO THE VERY SIGNIFICANT INCREASE IN PRICE OVER THE THEN EXTANT PCB'S WHICH WE EXPECTED TO HAVE TO CHARGE.

3. ON DECEMBER 22, 1975, RUSSELL TRAIN, THE EPA ADMINISTRATOR, CALLED A PRESS CONFERENCE, THE THRUST OF WHICH ANNOUNCED THAT "PCB'S MUST GO." HE GOT NO ADVERSE REACTION FROM MONSANTO.

4. ON JANUARY 14, MR. TRAIN FOLLOWED UP HIS EARLIER PRESS CONFERENCE WITH A MEETING WITH REPRESENTATIVES OF THE CAPACITOR AND TRANSFORMER INDUSTRY AS WELL AS MONSANTO. IT WAS AT THIS MEETING THAT MR. FITZGERALD, REPRESENTING MR. HANLEY, ANNOUNCED MONSANTO'S RESOLVE TO QUIT THE PCB BUSINESS AS SOON AS ACCEPTABLE REPLACEMENT PRODUCTS WERE AVAILABLE TO THE INDUSTRY, IRRESPECTIVE OF WHO MADE THESE REPLACEMENT PRODUCTS.

5. BY FEBRUARY 26, WE HAD PREPARED A PROPOSAL FOR GE CONSIDERATION, OFFERING TO SUPPLY SUFFICIENT PRODUCT TO SATISFY BOTH THEIR NEEDS AND THE NEEDS OF THE TOTAL U.S. CAPACITOR INDUSTRY FOR A REPLACEMENT PRODUCT. WE

WE HAD A LENGTHY MEETING WITH THE GE VICE PRESIDENT AND GENERAL MANAGER IN CHARGE OF THE CAPACITOR BUSINESS AS WE SOUGHT TO EXPLAIN THE CONTRACTUAL TERMS WHICH WE FELT NECESSARY IN ORDER TO SUPPLY THEM THE PRODUCT WHICH WE HAD DEVELOPED AND WHICH THEY HAD ASKED US TO HURRY WITH. IT WAS OBVIOUS AT THAT MEETING THAT THE SITUATION HAD CHANGED AND THAT GE'S DIRECTION WAS SUBSTANTIALLY ALTERED.

6. THE LAST POINT ON MY CHART SUMS UP THE STORY. OUR REPLACEMENT PRODUCT FOR CAPACITORS WAS REJECTED AND THAT BRINGS US TO THE SECOND AND MORE DETAILED PART OF OUR DISCUSSION WITH YOU TODAY, NAMELY, AN EXAMINATION OF THE CONDITIONS WHICH EXIST, WHICH EXPLAIN WHY WE WILL NOT BE IN THE REPLACEMENT BUSINESS. TO COVER THIS PART OF THE PICTURE WITH YOU, MR. R. G. POTTER, BUSINESS GROUP =F DIRECTOR, FUNCTIONAL PRODUCTS.

THANK YOU EARLE

SLIDE 5 THE DIELECTRIC FLUID MARKET BREAKS ROUGHLY INTO TWO PARTS: TWO-THIRDS CONSUMED IN CAPACITORS AND ONE-THIRD USED IN TRANSFORMERS. LET'S LOOK FIRST AT THE U.S. CAPACITOR MARKET:

Remember THAT

A. PCB's POSSESS AN EXCELLENT ABILITY TO STORE ENERGY, ARE VERY FIRE RESISTANT, AND HAVE A [redacted] LONG FUNCTIONAL LIFE. HOWEVER, THE VERY THING THAT MAKES PCB's SO FIRE RESISTANT, MAKES THEM UNACCEPTABLE TO THE ENVIRONMENT BECAUSE THEY ACCUMULATE INSTEAD OF DEGRADE.

B. AROCLOR 1016 IS THE TRADENAME FOR OUR PCB CAPACITOR FLUID WHICH TODAY [redacted] DOMINATES ITS 20M POUND MARKET. OUR REPLACEMENT CANDIDATE, MCS 1238, IS A BLEND OF A BIPHENYL DERIVATIVE AND A SULFONE. THIS BLEND HAS CHARACTERISTICS WHICH WOULD PERMIT ALMOST 25% LESS POUNDAGE BEING NEEDED OR ROUGHLY A 16M POUND MARKET.

C. G.E. HAS AN ESTIMATED 44% MARKET SHARE AND IS ALMOST FOUR TIMES THE SIZE OF ITS NEAREST COMPETITOR, WESTINGHOUSE.

D. THE END-USE MARKET FOR CAPACITORS IS:
-- 50% MOTOR RUN, PRIMARILY MAJOR APPLIANCES
-- 25% LIGHTING, BOTH FLUORESCENCE AND STREET
-- 25% POWER, FOR USE IN TRANSMISSION LINES

SLIDE 5A OUR REASONS FOR SELECTING MCS 1238 AS OUR PCB REPLACEMENT CANDIDATE ARE SUMMARIZED ON THIS CHART. LET'S REVIEW THE CHARACTERISTICS OF 1238 COMPARED TO AROCLOR 1016.

~~COMPARISON OF CHARACTERISTICS~~

	AROCLOR 1016	MCS 1238
	THAT IS	
FIRE RESISTANCE	~~EXCELLENT~~	FAIR, BUT ACCEPTABLE
ELECTRICAL PROPERTIES	~~EXCELLENT~~	EXCELLENT
ENVIRONMENTAL ACCEPTABILITY	~~UNACCEPTABLE~~	GOOD
PATENT POSITION	~~FAIR~~	~~GOOD~~
RAW MATERIAL POSITION	~~EXCELLENT; BASIC IN BIPHENYL & CHLORINE~~	GOOD; BIPHENYL PLUS SULFONE CAPABILITIES
FIT WITH CUSTOMER FACILITIES	~~EXCELLENT~~	EXCELLENT; IN OTHER WORDS, NO RETROFITTING REQUIRED
COSTS	~~LOWER~~	$1.20/LB. (EQUIVALENTLY 90¢/LB.) WITH A 3/4s REPLACEMENT RATIO VERSUS PCB

OUR FINAL MONSANTO/G.E. ~~M~~ PROPOSAL WAS AS FOLLOWS:

PRICE @ $1.20/LB. AGAIN THAT'S EQUIVALENTLY 90¢/LB. ON A FORMULATED BASIS.

VOLUME @ 4M LBS./YEAR FOR THREE YEARS -- ROUGHLY TWO-THIRDS OF ~~G~~ NORMAL REQ.'S.

LIQUIDATED DAMAGES STARTING AT $3M, DECLINING OVER THREE YEARS TO ZERO.

3

THIS PROPOSAL WAS DEVELOPED TO GENERATE $3M PER YEAR PI FOR MONSANTO, WHICH WOULD YIELD 23% ROI ONCE VOLUME REACHED 70% OF TOTAL CAPACITY SOLD TO BOTH G.E. AND THEIR COMPETITORS.

SLIDE 6 G.E. EVALUATED OUR PROPOSAL, LOOKED AT THEIR ALTERNATES AND CAME UP WITH THE FOLLOWING CONCLUSIONS:

A. G.E. CAN MAKE ACCEPTABLE CAPACITORS WITH DOP TO SERVE ALL MARKETS, THEREBY SAVING 60¢/LB. VERSUS OUR CANDIDATE.

B. IF G.E. CAN DO IT, THEIR COMPETITORS WILL LEARN THE TECHNOLOGY TO DO LIKEWISE.

C. THE CAPACITOR MARKET HISTORICALLY HAS BEEN EXTREMELY COMPETITIVE, LOW GROWTH AND LOW PROFIT AND WILL REMAIN THAT WAY.

D. SOME FRAGMENTATION TO SEVERAL AVAILABLE COMMODITY CHEMICAL ALTERNATES WILL BE INEVITABLE AS WE WILL ILLUSTRATE SHORTLY.

E. THEREFORE, G.E. MUST SELECT A COMMODITY CHEMICAL SOLUTION TO PCB's TO STAY COMPETITIVE LONG-TERM.

(4)

AS REVIEWED IN OUR EARLIER SLIDE, WE DESIGNED OUR REPLACEMENT FLUID TO SATISFY AS MANY OF THE EXISTING PCB CHARACTERISTICS AS WE COULD, INCLUDING FIRE RESISTANCE. KEEP IN MIND THAT, ON THE AVERAGE, ONLY 5% OF THE TOTAL COST OF A CAPACITOR IS THE FLUID COST. NONETHELESS, ONCE THIS INDUSTRY BACKED OFF THE SUPERIOR PERFORMANCE OF PCB's, PARTICULARLY THEIR EXCELLENT FIRE RESISTANCE, THE FLUID COST BECAME THE DOMINANT CRITERIA FOR ALTERNATE SELECTION. IN OTHER WORDS, THEY WILL MAKE DO WITH THE CHEAPEST PRODUCT AT ALL SUITABLE FOR THE JOB.

SLIDE 7 THE REST OF THE INDUSTRY, AWARE OF G.E.'S POSITION DUE TO G.E.'s OWN ACTIONS IN THE MARKETPLACE, REACHED THE FOLLOWING CONCLUSIONS:

A. DOP CAN BE MADE TO WORK IN MOTOR RUN CAPACITORS.

B. IF G.E. CAN MAKE DOP WORK IN LIGHTING CAPACITORS, OTHERS WILL TRY TO DO THE SAME.

C. However Some FRAGMENTATION WILL TAKE PLACE IN POWER CAPACITORS INCLUDING THOSE ALTERNATES LISTED ON THE SCREEN RANGING PRINCIPALLY BETWEEN 27 AND 67 CENTS PER POUND.

Do Not Read

-- G.E. USING DOP + TRICHLOROBENZENE @ ABOUT 30¢/LB.

-- WESTINGHOUSE USING EITHER MIPB OR SANTOSOL 100 @ ABOUT 67¢/LB.

MONS 045009

-- SANGAMO GOING WITH DOP @ 27¢/LB.

DO NOT READ

-- MCGRAW CURRENTLY PLANS ON STAYING WITH DOW's FLUID WHICH WAS DEVELOPED WITH McGRAW's TECHNICAL HELP AND UPON WHICH MANY PATENTS ARE JOINTLY HELD. McGRAW DOES ADMIT THEIR ODDS FOR SUCCESS NOW ARE AT BEST SLIM @ $2.00/LB.

SLIDE 8 BASED ON THESE CONCLUSIONS REACHED BY OUR CUSTOMERS, WE HAVE NOW EMBARKED UPON THE FOLLOWING COURSE OF ACTION:

A. WE CONTINUE TO REVIEW THIS PHTHALATE ESTER OPPORTUNITY WITH THE PLASTICIZER DIVISION, ASSISTING THEM WITH OUR TECHNICAL BASE.

B. WE WILL OFFER SANTOSOL 100, WHICH IS BENZYLATED ETHYL BENZENE, (CURRENTLY SOLD TO NCR AS A CARBONLESS COPY PAPER SOLVENT) TO POWER CAPACITOR PRODUCERS.

C. WE WILL PUT OUR REPLACEMENT CANDIDATES BACK ON THE SHELF.

D. WE WILL REDEPLOY OUR RESOURCES TO GROWTH PROJECTS.

E. WE WILL REAFFIRM MONSANTO's PCB WITHDRAWAL.

SLIDE 9 NOW THAT WE HAVE REVIEWED THE BACKGROUND, CONCLUSION AND BUSINESS DIRECTION TAKEN FOR THE CAPACITOR PORTION OF OUR DIELECTRIC BUSINESS, LET'S TAKE A COMPARATIVELY QUICK LOOK AT THE TRANSFORMER MARKET:

A. THE TRANSFORMER BUSINESS, YOU WILL RECALL, HISTORICALLY HAS ACCOUNTED FOR APPROXIMATELY ONE-THIRD OF OUR DIELECTRICS SALES IN THE U.S. WE SAID THAT OUT OF A 30M POUND PCB SALES YEAR, 10M POUNDS WOULD BE SOLD INTO "ASKAREL" OR FIRE RESISTANT TRANSFORMERS. THESE WOULD TYPICALLY ACCOUNT FOR ONLY FIVE TO SEVEN PERCENT OF THE TOTAL OUTPUT OF SUCH UNITS [redacted] PRODUCED IN THE U.S. ANNUALLY.

B. PCB OR ASKAREL TRANSFORMERS WOULD NORMALLY BE ORDERED WHERE THE UNIT IS EITHER IN THE MIDST OF, OR IN CLOSE PROXIMITY TO, PEOPLE SUCH AS APARTMENT BUILDINGS, HOSPITALS, AND FACTORIES.

C. KEEP IN MIND THAT THE PRESSURE TO REMOVE PCB's FROM CAPACITORS HAS BEEN MORE SEVERE THAN IN TRANSFORMERS [redacted] FOR THESE MAIN REASONS!

(1) CAPACITORS ARE THE LARGEST CONSUMPTION AREA;

(2) G.E.'s HUDSON RIVER PLANTS ARE CAPACITOR PLANTS; AND,

(3) TRANSFORMERS ARE MORE TRULY CLOSED APPLICATIONS BECAUSE THESE LARGE UNITS ARE NOT NORMALLY DISCARDED INTO THE ~~ENVIRONMENT~~ ENVIRONMENT.

SLIDE 10 THE SITUATION THEN WAS MONSANTO DEVELOPED THE BEST REPLACEMENT CANDIDATE WE COULD FOR TRANSFORMERS BASED UPON A BLEND OF HYDROCARBON (ALKYLATED BIPHENYL) AND TRICHLOROBENZENE.

OUR CANDIDATE: WAS DESIGNED AS A PLUG-IN FOR PCB's IN EXISTING, AS WELL AS NEW ASKAREL TRANSFORMERS; WAS BELIEVED TO BE ENVIRONMENTALLY ACCEPTABLE; WAS DESIGNED TO COST ONLY FRACTIONALLY MORE THAN TODAY'S PRICE OF PCB's; COULD BE PRODUCED WITH COMPARATIVELY LOW LEVEL NEW CAPITAL; AND WAS BASED UPON EXISTING MONSANTO RAW MATERIALS.

HOWEVER, THE MOVE AWAY FROM PCB's IN TRANSFORMERS CAME MUCH FASTER THAN WE, OR ANYONE ELSE, HAD ANTICIPATED. WE FOUND OURSELVES SIMULTANEOUSLY DEVELOPING AND TESTING ALTERNATES AS WE INTENSIFIED OUR CUSTOMER DIALOGUES. EVEN BEFORE OUR PROGRAM REALLY GOT OFF THE GROUND, WE DISCOVERED THAT:

A. OUR OWN FIRE TESTS (AT MONSANTO's FIRE LAB IN ST. CHARLES) SHOWED OUR FLUID TO HAVE LESS FIRE RESISTANCE THAN PCB's BUT ALSO LESS THAN SILICONE.

B. G.E. HAS SAID THEY COULD AND LIKELY WOULD USE STRAIGHT TCB IN THEIR LIQUID FILLED FIRE RESISTANT [redacted]. UNITS

C. LIQUID SILICONE CAN BE USED AS A REPLACEMENT FLUID IN EXISTING PCB TRANSFORMERS.

D. TRANSFORMER CUSTOMERS ARE MOVING RAPIDLY AWAY FROM ASKARELS BY SPECIFYING AIR-COOLED OR OIL-COOLED UNITS. PCB SALES FOR NEW UNITS ARE NOW PROJECTED TO BE NEAR ZERO BY EARLY 1977.

SLIDE 11 MONSANTO'S COURSE OF ACTION THEN IS TO:

A. CEASE ALL WORK ON FORMULATION OF NON-PCB REPLACEMENT TRANSFORMER FLUIDS.

B. REDEPLOY OUR RESOURCES TO GROWTH PROJECTS.

C. REAFFIRM MONSANTO'S PCB WITHDRAWAL.

[redacted]

SLIDE 12 A. [redacted], LET ME STRESS THAT WE ARE NOT LIGHTLY WALKING AWAY FROM THE DIELECTRIC FLUIDS BUSINESS. TECHNICALLY, AS WELL AS COMMERCIALLY, WE BELIEVE WE MADE EVERY POSSIBLE

EFFORT TO REPLACE OUR OWN PCB PRODUCTS WITH MONSANTO REPLACEMENT CANDIDATES. BUT, THE FACT IS CLEAR THAT ONCE THE ELECTRICAL INDUSTRY STEPPED AWAY FROM THE EXCELLENT FIRE-RESISTANCE OF PCB's, ALTERNATE PRODUCTS OF HIGHER FIRE RISK MUST COMPETE ON THE BASIS OF PRICE. THAT CRITERIA OF PRICE HAS LED THIS INDUSTRY TO EXISTING COMMODITY CHEMICALS.

~~WHILE WE HAVE SPECIFICALLY DISCUSSED OUR U.S. BUSINESS DIRECTIONS WITH YOU TODAY, THE INEVITABILITY OF OUR EUROPEAN PCB PRODUCTION FOLLOWING THIS SAME PHASEOUT AT PERHAPS ONLY A SLIGHTLY SLOWER PACE [redacted] UNAVOIDABLE.~~

B. WE DO TAKE SOME MEASURE OF ACCOMPLISHMENT THOUGH IN KNOWING THAT WE HAVE DONE AT LEAST THREE THINGS WE CONSIDER TO BE IMPORTANT:

1. WE ARE GETTING THE CORPORATION OUT OF THE PRODUCTION OF AN ENVIRONMENTAL POLLUTANT, PROBABLY [redacted] THE END OF 1977.

2. WE ARE EXITING THE BUSINESS PROFITABLY WHILE COVERING ALL OUR PHASEOUT COSTS.

3. WE PREVENTED WHAT WOULD HAVE BEEN, WE BELIEVE, A SERIOUS CAPITAL MISTAKE. HAD WE COMMERCIALIZED THE IN-HOUSE MANUFACTURE OF MCS 1238 AND ITS RAW MATERIALS, AN ESTIMATED $10.5M OF NEW FIXED CAPITAL WOULD HAVE BEEN REQUIRED.

HOWEVER, WE WERE SUITABLY CAUTIOUS FROM THE BEGINNING, UTILIZING A TOLL CONVERTER APPROACH WITH THE DOWNSTREAM INTENT OF EVENTUAL FULL SCALE IN-HOUSE MANUFACTURE ONLY IF ECONOMICALLY JUSTIFIED. THE "TOUCHSTONE" OF OUR WHOLE EFFORT REMAINED THE PRICE AND RETURN A SPECIALTY TYPE PRODUCT SHOULD HAVE. THE EVENTUAL MARKET MOVEMENT TOWARD A COMMODITY CHEMICAL SOLUTION TO THE PCB REPLACEMENT DILEMMA HAS, IN RETROSPECT, JUSTIFIED OUR CAUTIOUS CAPITAL APPROACH.

SLIDE 13 [redacted]

IN CONCLUSION, LET'S REVIEW THE POTENTIAL ECONOMIC IMPACT OF SHUTTING DOWN OUR PCB PRODUCTION WORLDWIDE AS SHOWN ON THE SCREEN:

ON PCB's

A. WE WILL SUFFER AN AVERAGE YEARLY PI LOSS OF $4M, A ONE-TIME ESTIMATED NET WRITE-OFF OF $700M OF CAPITAL AND A COMBINED DISMANTLING AND DECONTAMINATION CHARGE OF $1M INCLUDING THOSE RAILCARS NOW IN PCB SERVICE.

B. IF THE LOSS OF PCB's ALSO DESTROYS THE CONTINUED VIABILITY OF THE REMAINING PRODUCTS WITHIN THE POLY-PHENYL GROUP, THE ADDITIONAL IMPACT WORLDWIDE COULD BE:

-- AN AVERAGE YEARLY PI LOSS OF APPROXIMATELY $3M, AN ADDITIONAL CAPITAL WRITE-OFF OF $700M AND DISMANTLING CHARGES ESTIMATED AT $300M.

-- WE CURRENTLY HAVE A MAJOR, JOINT ST. LOUIS-BRUSSELS STUDY UNDERWAY TO DETERMINE HOW BEST TO MAINTAIN THE HEALTH OF OUR REMAINING POLYPHENYL FAMILY PRODUCTS. THAT STUDY WILL CONCLUE PRIOR TO SEPTEMBER 1st. LET ME ASSURE YOU THIS PRIORITY OBJECTIVE IS RECEIVING MAXIMUM EFFORT.

[redacted]

SIT-DOWN