

RELATED CORRESPONDENCE

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of
CONSUMERS POWER COMPANY
(Midland Plants, Units 1 and 2)

Docket Nos. 50-329
50-330

RESPONSES TO INTERROGATORIES

The Dow Chemical Company ("Dow") submits the following answers to the interrogatories of other Intervenor:

1. Testimony in this proceeding thus far has indicated a dispute between Consumers and Dow Chemical Company (Dow) relating to the construction of the Midland Nuclear Facility and sale and purchase of steam and electricity from said facility. All or a portion of the Dow-Consumers contracts have been identified or attached in written testimony of Consumers' witnesses in this proceeding, Messrs. Keeley and Howell. With respect to any dispute concerning such contracts between Consumers and Dow please state the following:

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(a) Describe in detail the nature of the dispute and the status of any negotiations to resolve said dispute. If it is your position that no dispute exists, please state the basis therefor in light of the cross-examination testimony of Dow witness Temple, including but not limited to the disclosures made by Mr. Temple of meetings between Consumers and Dow and their representatives in September, 1976 wherein suggestions of lawsuits were made, as well as correspondence between Youngdahl and Temple during 1975 and 1976 which has already been produced by Consumers.

(b) Describe in detail your factual and legal position concerning said dispute including whether you believe Dow has an obligation to purchase steam or electricity at any time regardless of the date when the Midland Nuclear Facility first becomes operational.

(c) Set forth the legal theory or theories in connection with said dispute upon which Dow would base a defense against any lawsuit by Consumers in the event Dow announced a position that it would no longer consider itself obligated by any contracts for the purchase or sale of electricity or steam from the Midland Nuclear Facility.

(d) To the best of your ability and whether based upon personal knowledge or not state what you believe to be the position of Consumers in connection with the dispute.

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Used within these interrogatories the word "dispute" shall have the broadest possible meaning and shall include differing positions, disagreements, different viewpoints, different objectives and different perspectives concerning all or any part of the subject matter.

ANSWER

(a) The dispute between Consumers Power and Dow results from the delays which have thus far occurred in the schedule for the completion of the nuclear plant, and centers upon the consequences which would follow from a failure by Consumers Power to place both nuclear reactors in commercial operation by a given date.

It is Dow's position that if the nuclear plant is not in commercial operation by the time at which Dow's present generating facilities must be retired, which in no event will be later than the end of 1984, Dow will be discharged from its contractual obligations to purchase steam and electricity from Consumers Power. Representatives of Consumers Power, on the other hand, have asserted that Dow is obligated to purchase steam and electricity from Consumers Power whenever the

Midland nuclear plant is completed, even if such completion is not accomplished until 1990 or 1995, and even though Dow may be forced, in the interim, to expend substantial sums to construct new power plants to replace its outmoded facilities. More recently, Mr. Aymond, the Chairman of the Board of Consumers Power, expressed to Dow his agreement that a 1984 deadline for the completion of the plant is reasonable.

Dow and Consumers Power have held several negotiating sessions at which attempts were made to reach an amicable resolution of this controversy. Generally, Dow has proposed that the agreement between the parties be amended to state explicitly that Dow would have the absolute right to terminate the agreement if Consumers Power is unable, for any reason, to place the nuclear plant in commercial operation no later than the end of 1984. The parties have not as yet reached agreement on such a proposed modification of the agreement.

At the most recent negotiating session, held January 12, 1977, Consumers Powers' representatives took the position that they would be willing to amend the agreement to make it specifically clear that Dow's obligations to purchase steam and electricity would end if the nuclear plant were not in operation by the end of 1984, provided:

1. Dow agree to an elastic final date, whereby the final date was to be advanced if the delay in completion was due to any factor listed in a force majeure clause yet to be drafted by Consumers Power.
2. Dow agree to pay Consumers Power \$100,000,000 (an amount equivalent to the current estimated allocated steam investment) upon execution of the amendment, and continue to make payments of an additional estimated \$300,000,000, making a total of \$400,000,000 (which equals the current estimated total allocated steam investment at the current estimated completion date). The amount would be higher if the cost of the plant increases. These funds are to be called an advance in aid of construction and Dow is to have no security interest in the nuclear facility. Under certain circumstances, Dow's money would be returned at a later date.

Dow has informed Consumers Power that this proposal is unacceptable.

(b) Dow's position is as follows:

The contract for the construction of the Midland nuclear plant provides that Consumers Power will use its best efforts to put the two reactors into commercial operation by 1979 and 1980, respectively. It is Dow's position that Consumers Power must, in any event,

commence the delivery of steam and electricity to Dow within a reasonable time. In Dow's view, whether a given delivery date is reasonable is a function of Dow's continued ability to operate its existing generating facilities safely, economically and reliably up to that time.

From the inception of the Dow/Consumers Power relationship in 1966, it has been the clear understanding of both parties that the nuclear plant was designed to replace Dow's present coal-fired generating plants, which are outmoded and antiquated. These plants are currently being operated pursuant to a Consent Order of the Michigan Air Pollution Control Commission which expires on July 1, 1980.

Since it was apparent that Dow must operate its existing facilities beyond that date, Dow presented a proposal to the Michigan Air Pollution Control Commission on January 18, 1976 for continued operation of Dow's existing facilities. The Commission directed the Michigan Air Pollution Control Commission Staff, to develop, with Dow, a new Consent Order based on Dow's proposal. The substance of Dow's proposal is presented in the Answer to Interrogatory 8.

In any event, Dow's existing power plants cannot possibly be made to operate safely, economically and reliably beyond the end of 1984. If Dow is unable to obtain steam and electricity from the Midland nuclear

plant by the time its existing generating facilities must be retired, Dow may be compelled to spend hundreds of millions of dollars for the construction of a new power plant at Midland to replace its existing facilities. In such event, Dow would have no use for the steam and electricity to be produced by the nuclear plant. Thus, Dow's position is: (1) it intends to honor its contractual obligations (as it understands them) to purchase electricity and steam from the nuclear plant; and (2) any delay in the construction of the nuclear plant which results in Consumers Power's inability to supply steam and electricity to Dow by the date on which Dow's existing power plants must be closed down, not later than the end of 1984, would constitute an unreasonable delay which would discharge Dow's obligations to Consumers Power.

Dow has also expressed concern as to whether Consumers has exerted its best efforts as required under the contract and has requested assurances from Consumers Power. Consumers Power has responded, but Dow has stated that the response was not satisfactory. Dow believes that it has rights with regard to Consumers Power's failure to perform in accordance with its best efforts requirements, and its conduct in connection with the contract. Without waiving any such claims,

Dow is proceeding, at present, on the assumption that Consumers Power will perform its obligations.

(c) Dow has not, to date, taken the position that it is no longer obligated to purchase steam or electricity to be generated by the Midland nuclear plant. As noted above, however, it is Dow's position that it will not be obligated to purchase steam or electricity from the Midland nuclear plant if the plant is not in operation by the time, not later than the end of 1984, at which Dow's present generating facilities must be retired. If Dow were to determine at some time in the future that it no longer considers itself obligated to purchase steam or electricity from Consumers Power, it would only be because, in Dow's view, Consumers Power had failed to perform its contractual obligations or because a condition precedent to Dow's obligations to purchase steam and electricity had not been fulfilled.

(d) At the negotiating meeting held between representatives of Dow and Consumers Power on February 24, 1976, Consumers Powers' representatives took the position that Dow has an open-ended contractual obligation to purchase steam from the nuclear plant. They stated that Dow is obligated to purchase steam from the nuclear plant even if the steam does not become available until 1990 or 1995 (or even later), and regardless

of the fact that Dow may, in the interim, have been forced to build its own new power plant to supply the steam needs of its Midland complex after its present outmoded generating facilities have failed.

However, at a subsequent meeting held between the parties on September 24, 1976, Mr. A. H. Aymond, Chairman of the Board of Consumers Power, expressed to Dow his agreement that the 1984 deadline for the completion of the Midland plant is reasonable.

Dow does not know which of these two positions represents Consumers Power's present views on this matter, although Mr. R. Youngdahl indicated in a recent telephone conversation with Mr. J. G. Temple that he supported the former position.

2. State the date of commercial operation for the Midland Nuclear Facility which you currently project. If a different date is applicable to each unit then so state. Explain in detail the basis for your projection and set forth in detail whether you have taken into account in your projection a contested hearing at the operating stage level, economic conditions which could restrict Consumers' ability to raise funds for construction completion and regulatory changes requiring modifications in the design of the Midland Nuclear Facility. Where applicable give dates for each of the events or factors upon which you base your overall projection.

ANSWER

Dow has not made any projections of the dates on which the two units of the Midland nuclear plant will be placed in commercial operation. Instead, it has relied on the projections supplied to it by Consumers Power. Dow has been advised by Consumers that Consumers Power's target date for putting Unit No. 2, which will supply electricity to Dow, in commercial operation is March 1, 1981. A recent status report from Bechtel indicates that completion of the Midland nuclear reactors will most probably be delayed for an additional five months. Bechtel's report states that its projections exclude delays resulting from external factors beyond Bechtel's control, such as work stoppages, cash flow restrictions, retrofit requirements and actions by intervenors. Dow is not privy to the data or analysis used by Consumers Power in preparing its projections. However, it is Dow's understanding that Consumers Power is obligated to advise Dow promptly of any significant change in its expectations for the commencement of commercial operation of the nuclear units and that Consumers Power is obligated to base its projections upon its evaluation of all relevant factors including such delays as Consumers Power projects may result from contested hearings, adverse economic conditions and required modifications in the design of the plant.

3. With respect to your existing contract with Consumers concerning the purchase and sale of steam and electricity, state the date by which you believe Consumers is obligated to have the Midland Nuclear Facility in commercial operation capable of making available to you those amounts of steam and electricity contemplated by your existing contract with Consumers. If it is your position that the existing contract calls for no particular date, please explain your answer in detail including your legal theories or interpretation of the contract making specific reference to applicable contractual provisions.

ANSWER

Dow believes that Consumers is obligated to have the Midland nuclear plant in commercial operation and capable of providing Dow with the amounts of steam and electricity specified in the contracts between the parties by the date on which Dow's present generating facilities must be retired. In view of the fact that Dow's antiquated power facilities cannot possibly be made to operate safely, economically and reliably after the end of 1984, it is Dow's position that the end of 1984 is the outside date. Dow believes that it will be discharged from its contractual obligations to purchase steam and electricity from Consumers Power if the nuclear plant is not in commercial operation by then, or such earlier date that Dow's existing facilities cannot operate safely, economically and reliably any longer.

4. Do you have a contingency plan setting forth, whether formal or informal and whether oral or written, any alternatives to the purchase of steam and electricity from the Midland Nuclear facility in the event that

- (a) the construction permit is suspended;
- (b) the construction permit is permanently lifted and vacated;
- (c) You determine not to purchase steam or electricity from the Midland Nuclear Facility; and/or
- (d) it is impossible or improbable for Consumers to have a Midland Nuclear Facility in commercial operation by your currently projected commercial operation date.

If it is your position that you do not have a contingency plan in the event of one or more of the above occurrences please state why not. If you have such contingency plans, set them forth in detail.

ANSWER

(a) In the event that the construction permit for the Midland nuclear facility is suspended, and the consequence of that suspension is a delay of the commercial operation date of Unit #2 and Unit #1, but not beyond 1984, then Dow expects to continue to generate most of its own power and all of its steam requirements from its existing facilities under a plan which was proposed

to the Michigan Air Pollution Control Commission, and which is more fully discussed in the Answer to Interrogatory 8.

If the construction permit for the Midland nuclear facility is suspended, and the consequence of that suspension is a delay of the commercial operation dates of Units 2 and 1 beyond 1984, which is the latest Dow believes it can run safely, economically and reliably its existing steam and power facilities, Dow essentially has three alternatives:

- i. Construction of a new fossil fuel steam by-product power plant which would meet all applicable air pollution control regulations, and which would supply steam and power in an amount which would be a direct replacement for the present energy needs of the Midland Plant. Consumers Power has taken the position that while Dow is not prevented from constructing such a facility, Dow is required to shut down such a facility when Units 2 and 1 are declared in commercial operation, regardless of when that is, unless such a facility is utilized solely for purposes of providing up to 1,000,000 lbs/hr of 175 psig steam to the Midland Plant.
- ii. Change the product mix and reduce production of energy-intensive products made in the Midland Plant. This would reduce the need for steam, and

needed electric energy could be purchased from the integrated system of Consumers Power. The Michigan Division has instituted a study, not yet complete, to determine what the future product mix should be in such a situation. (That study also will consider what products could support investment in new steam and power generating facilities as described in i. and iii.) Under this alternative, the steam and electric needs of the Midland Plant could be greatly reduced.

iii. Change the product mix in the Midland Plant so that a Dow steam and electric generating facility smaller than that described in i. would be required to provide steam and electricity for the Midland Plant. This alternative also would reduce the steam and electricity requirements of the Midland Plant.

(b) Dow, as yet, does not have a contingency plan setting forth any alternatives for the purchase of steam and electricity from the Midland nuclear facility in the event that the construction permit for that facility is permanently lifted and vacated. The development of such a contingency plan will depend, in large measure, upon the results of a recently-instituted study. That study will determine what products can or could support capital investment in new generating facilities and what the

steam and electric requirements would be for the manufacture of those products. Once those judgments have been made, power and steam facilities can be designed to provide for those requirements.

(c) Dow has a Contract for Electric Service and a Contract for Steam Service with Consumers Power which will become effective upon the happening of a condition precedent. Dow has been treating these contracts, and other agreements with Consumers Power, as though they were still in effect. Therefore, Dow has no contingency plan to deal with the event posed in 4(c).

(d) Dow's contingency plan, in the event it is impossible or improbable for Consumers Power to have the Midland nuclear facility in commercial operation by the current commercial operation date, is to utilize Dow's existing steam and power generating facilities to supply the steam requirements and most of its electric needs for the Midland Plant, in the manner more fully described in the Answer to Interrogatory 8.

5. Have any of your representatives (including legal representatives) rendered any advice (whether formal or informal and whether written or oral) concerning a lawsuit against Dow by Consumers in the event Dow determines not to purchase steam or electricity from the Midland Nuclear Facility. Explain your answer in detail and if such advice has been

rendered set forth the advice with particularity including applicable legal theories.

ANSWER

Dow has received legal advice from its counsel, including William A. Groening, Jr., General Counsel of The Dow Chemical Company, James H. Hanes, General Counsel to Dow Chemical, U.S.A., Leslie F. Nute, Senior Attorney in the Michigan Division, and Dow's outside counsel, Milton R. Wessel, Special Litigation Counsel; Kaye, Scholer, Fierman, Hays & Handler; Fisher, Franklin & Ford; and Lain, McDonald and Wilshire, concerning Dow's relationship with Consumers Power, with regard to the Midland nuclear project. The nature and substance of the advice given by counsel is protected by the attorney-client privilege and the attorneys' work-product exemption.

6. In the original proceedings concerning the construction license the total cost of the Midland Nuclear Facility was approximately \$600 million. Both Consumers and the Regulatory Staff took the position that the chief benefit (under a cost-benefit analysis pursuant to the National Environmental Policy Act) was the production of electricity to various users as well as the sale of steam and electricity to Dow. The projected cost for the nuclear facility is not at least \$1.67 billion and may be higher. Please state in light of the additional cost, each benefit which exists

today, if any exists, not applicable and/or analyzed in connection with the earlier cost-benefit analysis in this proceeding and to the extent any such additional benefits exist, please quantify them and give your judgment in detail, as to whether such additional benefits justify the increased capital cost.

ANSWER

Dow is not aware of any additional benefits to be derived from the Midland nuclear project other than those which were considered in the original cost-benefit analysis. It should be noted, however, that although the projected costs of the Midland nuclear plant have increased considerably, the costs of other items relevant to the cost-benefit analysis have also substantially increased. Thus, while the cost of constructing nuclear plants has increased, the cost of constructing fossil-fuel plants has also increased due to the general inflationary trend. Similarly, while nuclear fuel costs more today than it did several years ago, the cost of fossil fuel also has increased since the formation of OPEC and the resulting energy crisis. Dow believes that all of these factors must be taken into consideration if the cost-benefit analysis of the Midland nuclear project is restruck.

7. Dow is currently under a consent order with the Michigan Air Pollution Control Authorities which prevents Dow from operating its existing generating facilities past

1980. In addition the United States Environmental Protection Agency has recently taken the position that it may not permit Dow to wait as long as 1980 to remedy air pollution problems in and around Midland, Michigan. In the event that the State and Federal Air Pollution Regulatory Authorities do not permit Dow to operate its present generating facilities after 1980, would you agree that it is no longer necessary from a cost-benefit standpoint, to build the Midland Nuclear Facility as currently designed and at its current location? Whether you agree or disagree, please explain your answer in detail.

ANSWER

Dow's Consent Order with the Michigan Air Pollution Control Commission does not prevent Dow from operating its existing generating facilities past 1980. This Order provides:

"By July 1, 1980, Dow Chemical Company shall purchase its steam and power requirements in sufficient quantities or make other operating modifications, as appropriate, to be approved in advance by the Commission to ensure complete compliance with all applicable state and federal particulate and sulfur dioxide emission limitations, such limitations being published in the Administrative Code."

Therefore, under Dow's present Consent Order, Dow may operate its existing facilities after July 1, 1980 so long as the facilities meet the emission limitations for particulate and sulfur dioxide.

Dow is not aware that the United States Environmental Protection Agency has taken any position regarding Dow operations prior to 1980. The only communication Dow has had in this regard from the United States Environmental Protection Agency concerns the Notice of Violation received by Dow on November 22, 1976 and which has been provided to all of the parties to this proceeding. Dow has requested a conference with the United States Environmental Protection Agency to discuss the Notice of Violation and this conference is presently scheduled on February 14, 1977, in Lansing, Michigan.

In view of the foregoing and in view of the position which Dow took before the Michigan Air Pollution Control Commission as outlined in the Answer to Interrogatory 8, Dow does not believe that either the United States Environmental Protection Agency or the State of Michigan will take the action contemplated by this interrogatory. Having reached this conclusion, Dow has no position with regard to the hypothetical situation presented in this interrogatory.

8. State in detail the present status of your current facilities for generating electricity or steam in light of each of the following:

(a) regulation, discussion, citation, demands or requests by or from the United States Environmental Protection Agency regarding State or Federal air pollution requirements in Midland, Michigan.

(b) regulation, discussion, citation, demands or requests by or from the Michigan Air Pollution Authority regarding State or Federal air pollution requirements in Midland, Michigan.

Include within your answer to this interrogatory, separately for Federal and State regulatory authorities, whether you presently believe that each or both of them would permit you to operate your present generation facilities past 1980 and if so, under what circumstances, explaining in detail any costs or capital changes in connection with such circumstances.

ANSWER

Dow generates steam and power for the Midland Plant in power plants which will not, in Dow's best estimate, operate safely, economically and reliably after 1984, at the latest. These powerhouses are presently using coal, oil and natural gas as fuels. The use of coal as a fuel creates particulate and sulfur dioxide emissions in excess of those allowed by the State of Michigan. Under our present Consent Order (a copy of which has been provided to all parties to this proceeding) between Dow and the Michigan Air Pollution Control Commission, Dow is permitted to exceed the State emission regulations. Dow has agreed, however, to limit its emissions of sulfur dioxide so that the sulfur dioxide air quality standards promulgated by the United States Environmental Protection Agency are not exceeded in and around Midland, Michigan.

Dow meets the sulfur dioxide air quality standards through the use of a Supplementary Control System (SCS) that limits the rate of pollutant emissions during periods when meteorological conditions conducive to ground-level concentrations in excess of air quality standards are anticipated. Dow may operate its power plants in that manner until July 1, 1980. If Dow is to operate its existing facilities after that date, Dow must comply with all state emission regulations, unless there is a valid extension of the current Consent Order or some modification to that Order.

(a) On November 22, 1976 Dow received a Notice of Violation (a copy of which has been provided to the parties to this proceeding) from the United States Environmental Protection Agency that alleged Dow was in violation of certain state regulations governing particulate emissions, sulfur dioxide emissions and visible emissions. Dow has requested a conference with the United States Environmental Protection Agency to discuss this matter and such conference is presently scheduled for February 14, 1977 in Lansing, Michigan. Dow maintains that the facilities covered in the Notice of Violation were operated in accordance with its valid Consent Order and the emissions were therefore permissible under Michigan law. The United States Environmental Protection Agency did not charge Dow with violating any Federal Ambient Air Quality Standards.

(b) Dow appeared before the Michigan Air Pollution Control Commission on January 13, 1977 to discuss its plans for operation of its powerhouses after July 1, 1980. Dow took the position before the Commission that it can comply with all of the applicable emission regulations by July 1, 1980 by converting all of its boilers to burn oil rather than coal. Such a switch in fuel will require about \$17,000,000 in capital expenditures and will cost Dow \$52,000,000 in added fuel costs to run its existing facilities on oil until July 1, 1982. An additional \$31,000,000 will be spent in rehabilitating Dow's existing facilities to insure that they operate safely, economically and reliably until 1984 at the latest.

Since expenditures of this magnitude will make the Michigan Division less able to compete with other Dow divisions for manufacturing assignments, the Commission was asked to allow Dow to gradually eliminate coal as a fuel over a two-year period ending in July 1982. Dow's proposal was to reduce the average coal burn from 50% of Dow's total fuel at the present time to 33% between July 1, 1980 and July 1, 1981, and 17% between July 1, 1981 and July 1, 1982. After the latter period, Dow would no longer burn coal. The fuel penalty under the proposal will amount to \$27,000,000 during the period July 1, 1980 to July 1, 1982, rather than

\$52,000,000 required for full compliance, a savings to Dow of \$25,000,000.

The Commission directed the Staff to develop, with Dow, a new Consent Order based on Dow's proposal.

9. Have you been informed, whether formally or informally, that you probably may not be able to operate your present generating facility after a certain date? If so, state in connection with such information:

(a) the name of the regulatory agency which has provided you such information and the relevant dates;

(b) the schedule or timetable (including relevant costs and a description of capital changes or improvements to your generating facility) which will probably be required from you; and

(c) the status of your plans to comply with said requests.

ANSWER

No.

10. Is it possible for you to construct in Midland, Michigan as an alternative to your purchase from Midland Nuclear Facility a fossil fuel generating facility? If not, state why not. If your answer is "yes," then also provide the following information:

- (a) a description of the type of fossil fuel generating facility which can be constructed,
- (b) a statement of the total capital cost of such facility,
- (c) an estimate of the time which it would take to construct or make commercially operable such a fossil fuel generating facility, and
- (d) whether, if you began to use good faith efforts now, you could construct such a fossil fuel generating facility which would be commercially operable on or before the end of 1980.

As used within these interrogatories, the term "fossil fuel facility" means a facility which could take the place of the Midland Nuclear Facility to generate electricity and/or steam in accordance with your perception of your current needs.

Include within your answer to this interrogatory whether you agree that the total cost of such a fossil fuel generating facility, plus assuming a complete loss of Consumers' current investment in the Midland Nuclear Facility, would be less than 1.67 billion. If you disagree please explain your answer in detail and whether you agree or not set forth the figures upon which you have relied in your answer.

ANSWER

Yes.

- (a) Dow has two options under consideration:

i. Conventional coal-fired boilers with back-pressure turbines, equipped with precipitators and limestone scrubbers for particulate and sulfur dioxide control.

ii. A coal gasification system which would produce a clean, low BTU gas that would be used to fire gas turbines to generate electrical power. The exhaust gases from the turbines would be heat-exchanged to make a portion of steam needed. This system could be augmented with one or more conventional steam boilers, either coal or gasified coal fired, to meet Dow's steam needs at the Midland Plant.

(b) Assuming engineering and construction is initiated in 1977 and completed without delays, the approximate capital estimate for such facilities, which would be a direct replacement for the present steam and electric requirements of the Midland Plant, would be \$300,000,000 in either option discussed above.

(c) Even assuming immediate (January 1977) authorization of the project, no delays in obtaining an environmental impact statement from the appropriate authorities, approval by the Michigan Air Pollution Control Commission of such a project, good labor climate in this state and good economic conditions,

completion of the conventional facilities by the end of 1980 would be a difficult task. Dow believes a 1981 completion date would be more realistic. Due to projected availability of boiler and turbine components, the completion of such a project would be greatly delayed if a later starting date was chosen. As much of the technology is presently in a developmental stage, Dow believes a realistic completion date for the coal gasification system is 1984.

(d) As stated in the answer to 10(c), completion of the conventional facilities during 1980 would be difficult, and would hinge on many factors not directly under Dow's control. A completion date of 1981 for the conventional facilities, as described, is a more realistic date.

Neither of the power-steam generating facilities under consideration would replace the Consumers Power nuclear generating facility. The steam and electrical loads are not comparable. With this in mind, the answer to the last statement in this interrogatory is "yes."

11. Set forth your understanding and definition of the term "energy conservation." After you have set forth your understanding and definition of the term "energy conservation," provide the following information.

(a) What steps or actions you have planned or are contemplating planning to initiate voluntary energy conservation throughout the period 1976-1986.

(c) Set forth what steps you are planning or contemplating planning concerning the adoption of inverted rate structures which would contemplate consumers of electricity who use more electricity to pay more therefor rather than less.

(d) With respect to each of the alternatives described in (a), (b), and (c) above and in consideration of your plans or contemplated plans if any, set forth what you believe would be the savings in energy sales (in terms of megawatts electrical) that would result over the period of 1976-1986).

ANSWER

Energy conservation implies the utilization of energy in a more efficient manner which in turn will require less net energy to perform a given operation.

(a) Dow has been actively involved with energy conservation for several years. Recently, along with other companies in the chemical industry, Dow has committed to the Federal Energy Administration through the Manufacturing Chemists Association to reduce energy 15% on a unit of production basis by 1980. The base year is 1972.

(b) Dow has not addressed this situation.

(c) No reliable forecast of increases or decreases in the total energy required by the Michigan Division has been made ten years into the future. Fuel availability, product shifts into, out of, and within the Michigan Division, competitive forces, economic climate and technology are today so unpredictable that a definitive estimate is difficult to make. However, Dow continues to search for a way to do so.

12. Please set forth each cost and benefit which you currently believe to be applicable in connection with the Midland Nuclear Facility. The term "cost-benefit analysis" in this interrogatory shall mean that process, as you understand it, required to be done pursuant to the National Environmental Policy Act. In connection with your answer, quantify separately each cost and each benefit and state whether you are including within your answer the cost of fuel reprocessing, fuel storage, fuel availability and decommissioning of the Midland Nuclear Facility. If you do not include any of said items in the cost-benefit analysis, please state why not. Also include within your answer the percentage of the design electrical rating of the Midland Nuclear Facility (e.g., 90% of megawatt electric rating) which you believe should be used in connection with the cost-benefit analysis, explaining your reasons therefor.

ANSWER

Apart from its interest as a member of the public, Dow's special relationship with the Midland nuclear facility is as a customer for process steam and otherwise in accordance with its agreements with Consumers Power. Accordingly, Dow has not prepared any "cost-benefit analysis" in accordance with the provisions of the National Environmental Policy Act, nor has it analyzed or quantified each cost and each benefit involved.

Dow personnel have examined the cost-benefit analyses and environmental impact statements which have been prepared in connection with the proposed Midland nuclear facility, and have no reason to believe that they are not in compliance with the requirements of law. However, Dow does not know whether the cost of fuel reprocessing, fuel storage, fuel availability and decommissioning of the facility have been treated in accordance with the requirements of law, nor what percentage of the design electrical rating of the facility should be used in connection with the cost-benefit analysis. The latter involve issues of law which Dow has not researched.

13. Do you agree that there exists in your relationship with Consumers any "change of circumstances" from those which existed in 1973? If you do not agree, please explain your answer in detail. If you do agree, list each changed

circumstance in sufficient detail so as to be understood without reference to any document other than your answer.

ANSWER

Dow believes that there have been several "changes of circumstances" since 1973 with regard to its relationship with Consumers Power. The most significant of these is the delay in construction of the Midland nuclear facility. The project has been substantially delayed, thus necessitating a postponement of the target commercial operating date of the nuclear reactors. The repeated delays in the construction of the facility and Consumers Power's difficulty in financing have given rise to a concern on Dow's part that Consumers Power will be unable to provide steam and electricity to Dow when Dow's existing power facilities must be closed down. Dow's perception of Consumers Power's approach towards its obligations to Dow has also affected the Dow-Consumers Power relationship. Finally, the projected cost of the Midland nuclear facility has increased substantially since 1973.

14.. For the period 1976 through 1984, state annually your quantification of the environmental costs to the Midland, Michigan and surrounding community from pollution emissions from your present facilities which you use to generate electricity or steam. Whether or not you are able to give a quantification in dollars, please describe in detail the

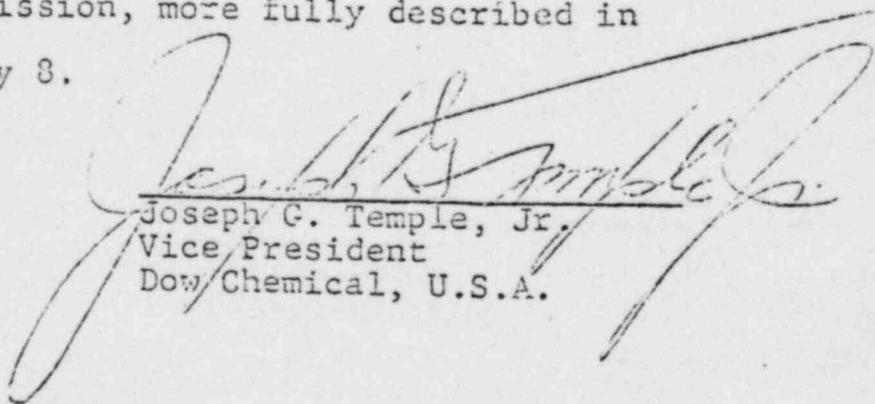
sources of environmental costs including in particular the pollutants involved and what harm or damage to anyone or anything in Midland, Michigan and the surrounding area will result from present or projected pollution emissions during the period requested hereinabove.

ANSWER

The primary ambient air quality standards are defined by the Administrator of the Environmental Protection Agency as levels of air quality necessary with an adequate margin of safety to protect the public health. It is Dow's belief that since the Consent Order became effective, the primary ambient air quality standards are being met in and around Midland, Michigan. Therefore, the air quality in Midland is safe and the health of the citizens of Midland is protected.

The main pollutants associated with the present coal-fired operations of Dow's existing facilities are sulfur dioxide and particulate matter (flyash).

For the period 1976 through 1984, a graph is attached which illustrates the emission reduction that is projected to occur under the plan proposed to the Michigan Air Pollution Control Commission, more fully described in the Answer to Interrogatory 8.


Joseph G. Temple, Jr.
Vice President
Dow Chemical, U.S.A.

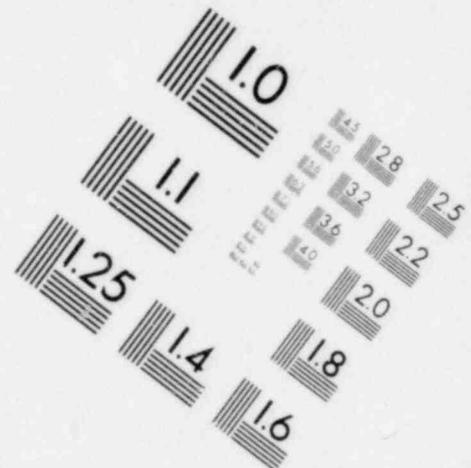
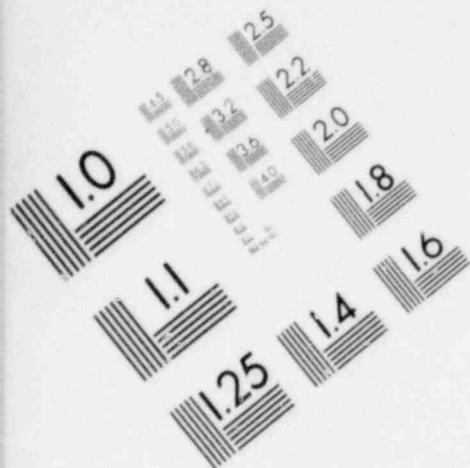
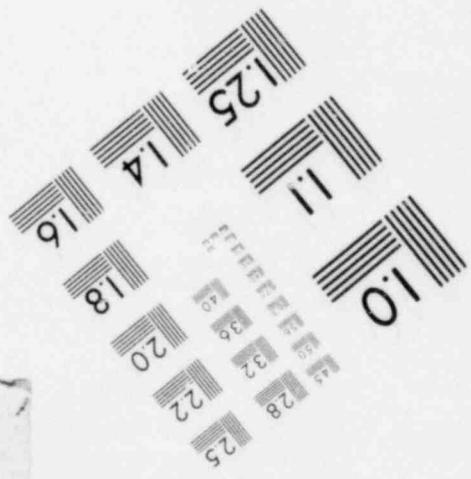
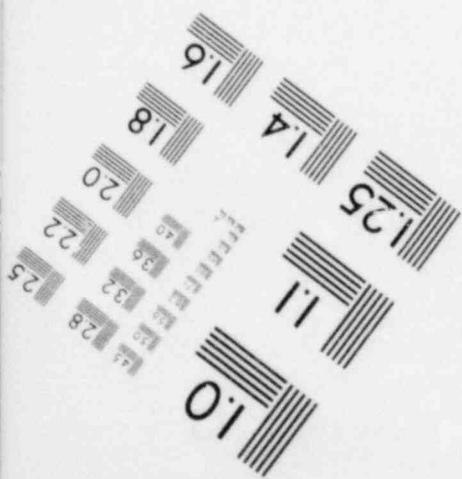
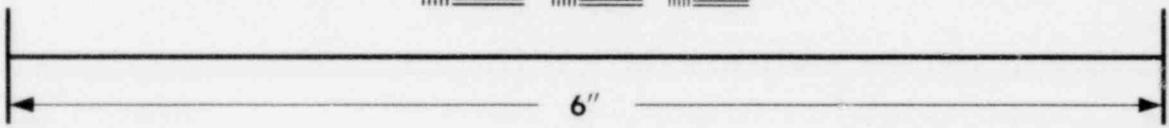
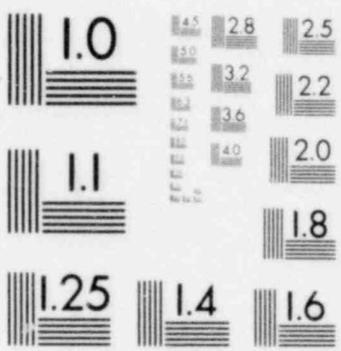
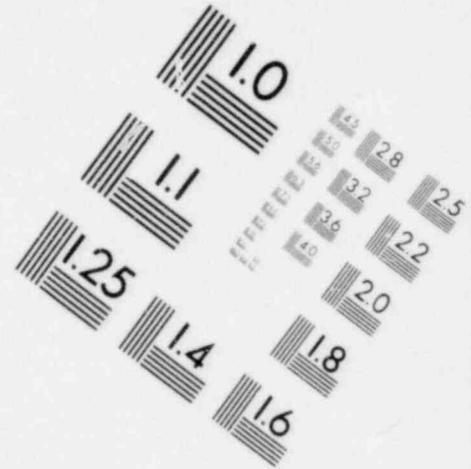
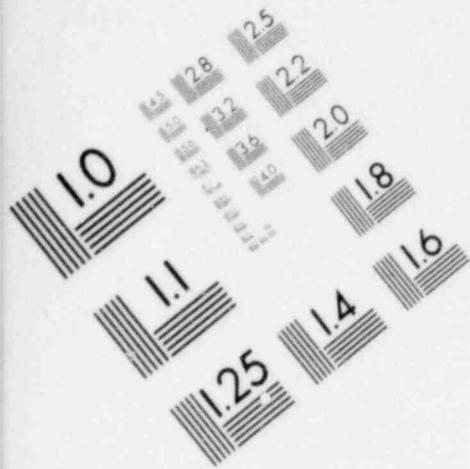
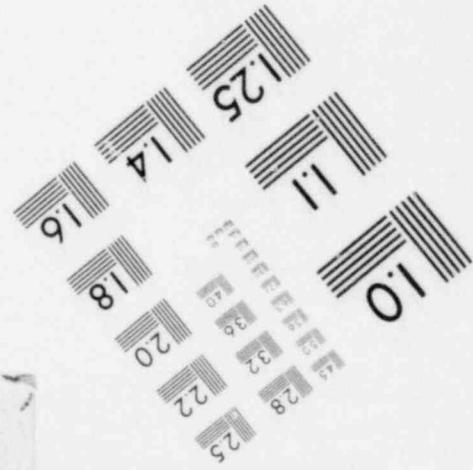
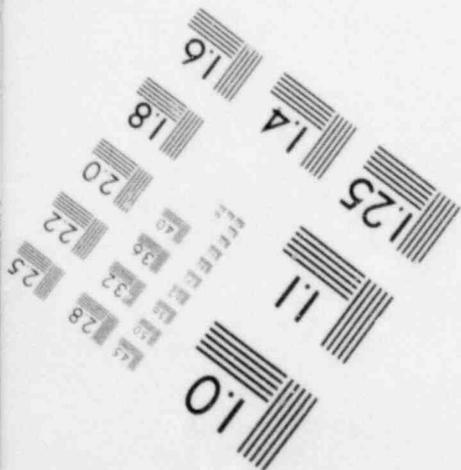
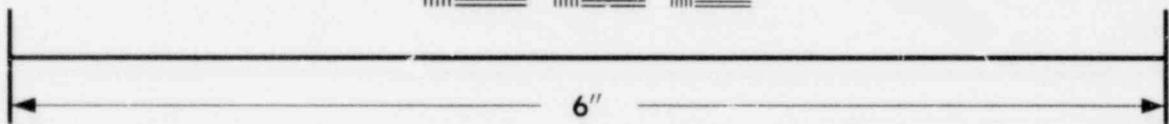
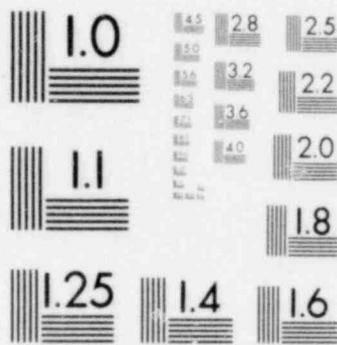


IMAGE EVALUATION
TEST TARGET (MT-3)





**IMAGE EVALUATION
TEST TARGET (MT-3)**



EMISSION REDUCTIONS - DOW CHEMICAL
MIDLAND, MICHIGAN
FLYASH AND SULFUR DIOXIDE

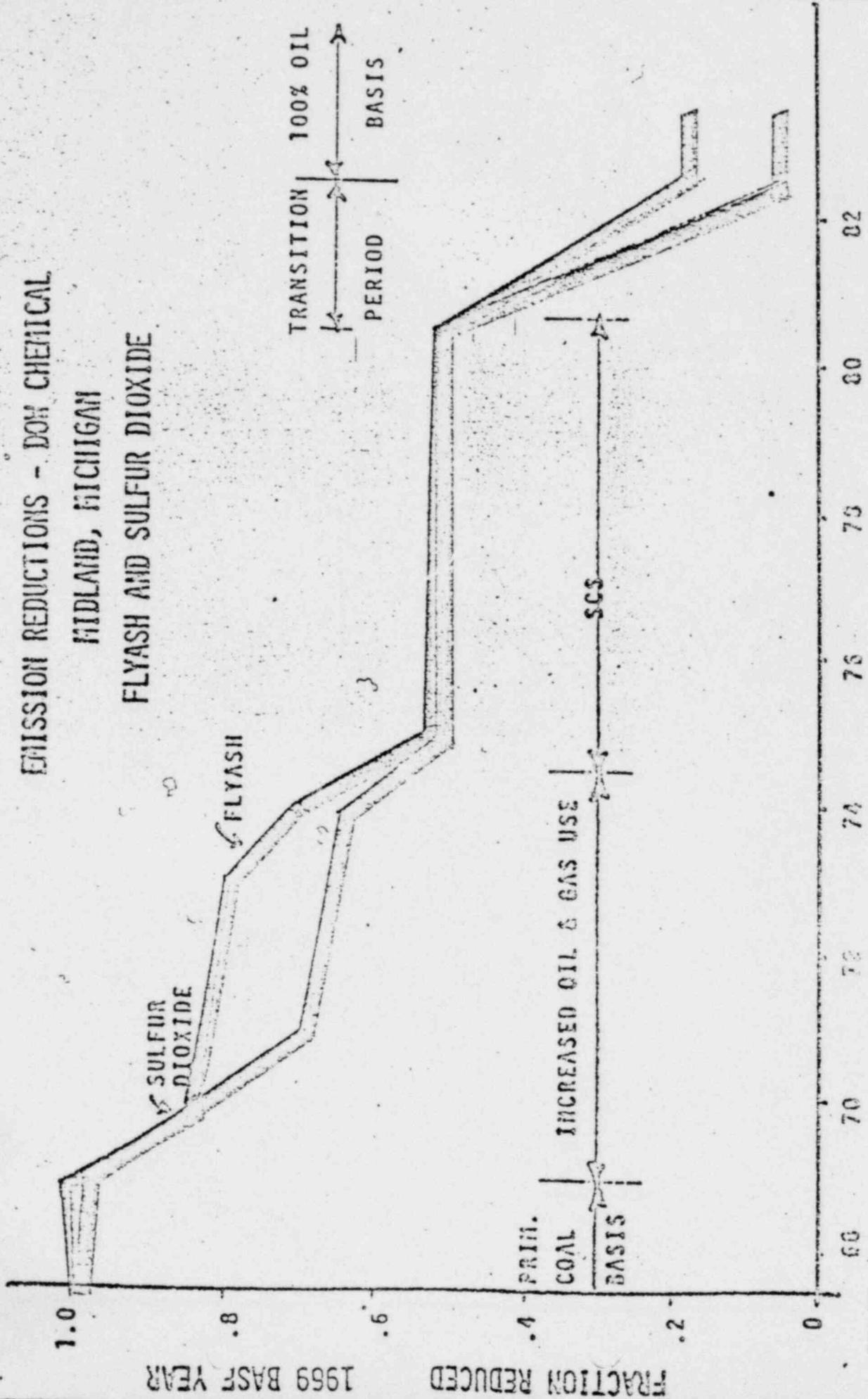


CHART 4