G. S. KEELEY TESTIMONY

My name is Gilbert S. Keeley. I reside at 6108 Crest Road in Jackson, Michigan and I am currently the Project Manager for Consumers Power Company's Midland nuclear plant. I was born in Lincoln, Nebraska on September 9, 1922. I obtained a Bachelor of Science degree in electrical engineering from the University of Missouri at Rolla in 1948. In addition, I have taken post-graduate courses in advanced engineering mathematics and design of electronic circuits from the University of Idaho. I am a member of the Institute of Electrical and Electronic Engineers, and Tau Beta Phi, National Engineering Honorary Fraternity. Prior to joining Consumers Power Company I worked for the General Electric Company in Schenectady, New York; Pacific Gas & Electric Company in California and Westinghouse-Atomic Power Division in Idaho. I joined Consumers Power Company in 1961 and worked as a general nuclear engineer at the Big Rock Point nuclear plant until 1963. From 1963 to 1971 I had nuclear engineering responsibilities in the Company's general office. In January 1971 I was named Director of Project Engineering Services and served in that position until October 1973 when I was named Director of Project Quality Assurance Services. I became Project Manager for Midland in August 1975. As the Midland Project Manager I have overall responsibility for engineering, licensing, construction, cost and scheduling for the Midland Project.

The following testimony is made up of four parts.

Part I describes the current project status and projected work activities.

Part II describes ACRS concerns which appeared in the Midland ACRS letters dated 6/8/70 and 9/23/73, and indicates the status of these concerns.

It also describes other ACRS concerns including express generic concerns prior to and after the issuance of the ACRS generic letter dated 12/18/72, and indicates the status of these concerns.

Part III describes delay costs and the effects of delay that would be attributable to a suspension period of 12/1/76 - 5/1/77 and 12/1/76 - 9/1/77.

Part IV presents a comparison of the economic cost to complete and operate Midland to the cost of abandoning Midland and installing and operating an alternative generating facility.

I. CURRENT PROJECT STATUS AND PROJECTED WORK ACTIVITIES

A. Project Description and Status

As of November 1, 1976, the Midland Project was approximately 63% complete for engineering activities and 19% complete for construction activities. These percentage completion figures are based upon a comparison of engineering man-hours spent to date to estimated engineering man-hours to-go and a comparison of construction man-hours completed to date to construction man-hours to-go. It is estimated that 300 major purchase orders and subcontracts will have been issued before the project is completed. Approximately 170 have been issued to date, with fabrication of equipment either completed and on-site or in the process of being manufactured.

At present, there are approximately 280 Bechtel Engineering personnel located in the Ann Arbor-Engineering office who are working on the Midland Project. At Midland there are approximately 900 craft personnel, 350 field engineers and supervisory personnel employed by Bechtel, 100 subcontractor personnel, and 24 Consumers Power engineers.

As of November 1, 1976, an estimated 397 million dollars will have been spent on the project. This 397 million dollar figure includes the following major cost components:

a.	Bechtel (Engineering and Home Office, Field Labor, Materials, Subcontracts, Fee)	$187 million
b.	CP Co Directs (Engineering & Supervision)	8 million
c.	CP Co Overheads (Allowance for Funds Used During Construction, Taxes & Insurance, Administration)	64 million
d.	Nuclear Steam Supply System	99 million
e.	Turbine Generator	25 million
f.	Process Steam Evaporators	6 million
g.	Miscellaneous Other Work Orders (Land, Licensing)	8 million

Consumers Power's proposed Exhibits 1, 2 and 3 will be photographs showing the status of construction as of November 12, 1976. The auxiliary building, which lies between the two cylindrical containment buildings, houses auxiliary systems which are necessary to operate the nuclear steam supply systems. The walls for this building have been completed to the 634' elevation which is grade level on the site. The base of the auxiliary building is at grade level 568' and will eventually rise to grade level 659' which is the operating floor level. Between elevation 568' and elevation 634' four distinct floors with each floor consisting of several rooms have been completed. Within these rooms some of the larger pieces of equipment such as radwaste storage tanks, component cooling water heat exchangers, and decay heat coolers have been installed and piping installation has commenced.

Just south of the auxiliary building is the control tower building which houses switchgear, cable spreading rooms and the control room. The walls and floor have been completed to the 634' elevation. This building will eventually rise to elevation 659'.

Unit #2, the power only unit, is scheduled to be placed in service (commercial operation) in March 1981. Unit #1, the power unit plus process steam to Dow, is scheduled for service in March 1982. As a result, containment building #2 and turbine building #2 have more work completed on them than containment building #1 and turbine building #1. Both containment buildings have the liner plate completely erected. The welding of the liner plate is complete on containment building #2 and welding on containment building #1 liner plate is underway. The outside walls of the containment buildings have concrete in place up to elevation 683' on #2 and up to elevation 670' on #1.

The dome liner plate for containment building #2 has been assembled, welded and painted. Spray piping is currently being installed and the dome liner plate will be lifted and installed on top of the containment building before the first of the year. The dome liner plate for containment building #1 is also being assembled.

The base slabs for both containment buildings have been poured, and the cover slab has been poured in #2 containment building. The cover slab for #1 containment building is in the process of being poured.

The turbine pedestal concrete work is complete and the base slab has been poured at elevation 614' with circulating water piping installed in the slab in turbine building #2. The main condenser for #2 turbine has

been assembled on-site and is in place. In addition some of the exterior walls have been completed from elevation 614' to elevation 634'. Reinforcing steel is being installed for the base mat, turbine pedestal, and for exterior walls to elevation 634' for turbine building #1 and some concrete has been poured in those areas.

With respect to yardwork and support facilities, two large warehouses have been completed and components are stored in it until withdrawn for use on the project. A combination shop building has been completed and is in service for assembling various pieces of pipe prior to their being installed in the plant structures. A construction office building houses offices and working areas for Field Engineering personnel. Laydown areas have been graded and fenced to provide outside storage for large components. The building which was used for partial assembling of containment liner plates will be removed from the site. The building which was used for sandblasting and painting the containment liner plates is being relocated on the site and will serve as a painting and electrical shop. A railroad bridge and track which connects the site with a rail spur has been completed and is being used to transport materials to and from the site. A concrete batch plant with adjacent storage areas for aggregate and sand is in service. Access roads and parking areas for construction personnel have been completed and the major access road has been blacktopped. A meteorology tower has been in service for approximately two years. The dike work for the 880 acre cooling pond is complete except for the dikes immediately adjacent to the plant. Seeding, mulching and rip-rap of the dikes is virtually complete. The excavation for the emergency service water cooling section of the pond has been completed. The service water

piping and the pond makeup line are being installed. Piping for potable water from the City of Midland is completed to the railroad bridge and is being installed from the railroad bridge to the plant. Sanitary system piping is being installed. The piling which will serve as a cofferdam during the construction of the river intake structure and the pond makeup pump structure has been installed. Earthwork and concrete work for these structures is in progress.

B. Schedule of Work Activities To Be Completed at the Site

I have attached as Consumers Power Company's proposed Exhibit 4 a month-by-month breakdown of the work activities scheduled between 9/1/76 and 9/1/77 at the site. The 9/1/76 date was chosen to provide a background of the work to be accomplished between 12/1/76 and 9/1/77. The scheduled work activities are broken down into the following seven major categories:

1. Auxiliary building.
2. Containment building #1.
3. Containment building #2.
4. Turbine building #1.
5. Turbine Building #2.
6. Yard structures and improvements.
7. Subcontracts.

The major activities that will occur at the site between 12/1/76 and 9/1/77 can be summarized as follows:

1. Auxiliary Building - The five major activities scheduled during this period are concrete placement (1) for the control tower area walls and slab; (2) for the fuel pool areas walls; (3) for the radwaste and equipment area walls and slabs; (4) for the solid radwaste addition; and (5) piping installation for auxiliary systems.

2. Containment Building #1 - The four major activities scheduled during this period are concrete placement (1) for the interior concrete cover slab; (2) for the shield walls against the liner plate; (3) for the containment exterior concrete and placement of the dome cover; and (4) for the reactor vessel pedestal, primary and secondary shield walls and letdown cooler walls.
3. Containment Building #2 - The three major activities scheduled during this period are concrete placement (1) for the containment exterior concrete and dome cover slab; (2) for reactor vessel pedestal, primary and secondary shield walls; and (3) for the letdown cooler walls.
4. Turbine Building #1 - The two major activities scheduled during this period are concrete placement (1) for the main and auxiliary bay; and (2) for exterior walls to grade.
5. Turbine Building #2 - The major activities scheduled are concrete placement of the elevated slabs and installation of structural steel.
6. Yard and Miscellaneous Structural Work - The eight major activities in this category scheduled during this period are (1) earthwork associated with yard service water piping and electrical duct work; (2) earthwork, concrete placement and dewatering for the circulating water and service water building; (3) earthwork, associated with the site sewer lift station; (4) earthwork and concrete placement for the process steam tunnel and administrative building foundation; (5) earthwork and concrete placement for the circulating water discharge structures and yard circulating water piping; (6) earthwork for the evaporator, auxiliary boiler and waste treatment buildings; (7) earthwork and dewatering for the emergency pond service water return piping; and earthwork for plant backfilling to grade.

I have also attached as Consumers Power Company's proposed Exhibit 5 a table which can be used to establish the expenditures for the Midland project on a month-to-month basis until 9/1/77 assuming construction continues. These cash expenditures can be related to the work activities scheduled by comparing Exhibit 5 with Exhibit 4. As shown by Exhibit 5, as of December 1, 1976, Consumers Power will have expended $412,363,000 for the construction of Midland. If construction were to continue from 12/1/76 to 5/1/77, the additional expenditure would be $87,377,000. If construction were to continue from 12/1/76 to 9/1/77, the additional expenditure would be $182,562,000. The total expenditure at Midland, if construction were allowed to continue to 5/1/77 would equal $499,740,000 out of a projected project cost of $1,670,000,000. Likewise, if construction were allowed to continue to 9/1/77, total plant expenditure would be $594,925,000 out of a total project cost of $1,670,000,000.

II. C. ACRS

In the Midland ACRS letters of 6/18/70 and 9/23/70, the ACRS stated that: "Other problems related to large water reactors have been identified by the Regulatory Staff and the ACRS and cited in previous ACRS reports. The Committee believes that resolution of these items should apply equally to the Midland Plant, Units 1 and 2." In its decision, the Court of Appeals requested the ACRS to clarify that statement.

Since the ACRS has not yet identified the "other problems" to which it referred, a review was made of the ACRS generic letters of 12/18/72, 2/13/74, 3/12/75 and 4/16/76. Additionally, a review was made of ACRS letters published between 1967 and 12/18/72 to identify those generic items raised by ACRS which were not set forth in the 12/18/72 letter.

For those items in the 12/18/72, 2/13/74, 3/12/75 and 4/16/76 ACRS generic letters which have been resolved, and for generic items raised prior to the 12/18/72 letter, a review was made to determine whether Midland complies with the generic resolution, or with the resolution for items from the pre- 12/18/72 letter. If an item has been resolved and it has not yet been determined whether Midland complies with the resolution, it has been listed as "open" and a review was made to determine whether completion of the construction activities set forth in Exhibit 1 would foreclose the adoption of the ACRS resolution. Items for which there have been no resolution by ACRS have not been addressed in this testimony since no alternative to the resolution proposed by the Applicant has been identified by the ACRS and thus no determination can be made as to whether an alternative would be foreclosed by continued construction.

In order to summarize this review, I have attached as Consumers Power proposed Exhibits 6(a) - 6(e) matrixes setting forth the conclusions reached in our review. This section of the testimony will address those items which have been resolved by ACRS but which are still open. Exhibit 6(a) is a matrix showing specific ACRS concerns identified in the June 18 and September 23, 1970 Midland ACRS Reports and indicates the status of compliance by Midland for these items.

Exhibit 6b is a matrix showing other concerns which we have been able to identify relating to large water reactors which were cited by the ACRS in its reports prior to the ACRS generic letter of 12/18/72. This matrix is limited to items which do not appear in the Midland ACRS letter or in any of the ACRS generic letters dated 12/18/72, 2/13/74, 3/12/75 and 4/16/76. The matrix does not include items which are applicable only to BWR plants.

Exhibit 6c is a matrix of items from the ACRS letter of December 18, 1972 entitled "Status of Generic Items Relating to Light Water Reactors."

Exhibit 6d is a matrix of additional items added by the ACRS letter dated February 13, 1974 entitled "Status of Generic Items Relating to Light Water Reactors."

Exhibit 6e is a matrix of additional items added by the ACRS letter dated March 12, 1975 entitled "Status of Generic Items Relating to Light Water Reactors."

Exhibit 6f is a matrix of additional items added by the ACRS letter dated April 16, 1976 entitled "Status of Generic Items Relating to Light Water Reactors: Report Number 4."

In June 1974 Consumers Power initiated discussions with the Staff concerning implementation of Regulatory Guides (reg guides) from 1.1 to 1.75. At that time, it was agreed that reg guides after 1.75 would be reviewed with the Staff after issuance of the Final Safety Analysis Report (FSAR) scheduled for submittal in September 1977. Due to the length of time between issuance of the Construction Permit and preparation of the FSAR and the number of reg guides issued and modified in this time period,

Consumers Power deemed it prudent to have an interim review by the Staff in order to finalize plant design. Consumers Power submitted reg guide positions, discussions were held with the Staff, written responses were made to questions issued by the Staff and written Staff positions were received. The results of this review have been included in the exhibits.

With respect to Exhibit 6a, Midland compliance is currently assured for all items except for Items 8 and 12 which require additional discussion with the NRC Staff to establish compliance.

Item 8 concerns physical and electrical independence of the redundant portions of protection and emergency power systems. The Staff has issued Reg Guide 1.75 which addresses this subject. Consumers Power has presented its position on Reg Guide 1.75 and has had several discussions with the Staff on the reg guide. With the exception of the issues listed below, we are currently in full compliance and continuation of construction would not foreclose the implementation of the final resolution of the issues.

A. There are three types of circuits discussed in Reg Guide 1.75. These are Class 1E, non-class 1E and associated circuits. Class 1E circuits are those which relate to systems and components that are safety related. For all of these classes of circuits the Midland Balance-of-Plant (BOP) design will meet the requirements of Reg Guide 1.75. Non-Class 1E circuits are those circuits which relate to non-safety related components and do not have to meet separation criteria; however, they must be separated from Class 1E and associated circuits. Associated circuits are those non-1E circuits that share power supplies,

enclosures, or raceways with 1E circuits or are not physically separated from 1E circuits by acceptable separation distance or barriers.

In the Midland design, efforts are made to preclude the use of associated circuits. However, in some instances involving computer and annunciator inputs, the actual circuit design dictates the use of associated circuits. In such cases, associated circuits are treated in accordance with the requirements set forth in Reg Guide 1.75, which include as an acceptable approach, an analysis of associated circuits to demonstrate that 1E circuits are not degraded below an acceptable level. These associated circuits are being analyzed at this time with results to be included in the FSAR. If the results indicate that some Class 1E circuits are degraded below acceptable levels, appropriate isolation devices will be installed between the Class 1E and the associated circuits. Continuation of construction through September 1977 will not foreclose the capability of installing these isolation devices.

B. With respect to NSS signals and panels, isolation devices within the cabinets are provided in accordance with Reg Guide 1.75. Reg Guide 1.75 requires that within cabinets there be six inches separation between 1E and non-1E wiring unless a lesser separation can be demonstrated as acceptable by an analysis based on tests performed to determine the flame retardant characteristics of the wiring, wiring materials, equipment, and other materials internal to the cabinet. Tests and analysis have been performed and the results permit less than six-inch physical

separation between 1E and non-1E wiring within the cabinet and do not require the use of barriers internal to the cabinet. Noise rejection tests have also been run on B&W equipment (Reactor Protective System and Emergency Core Cooling System Actuation Panels) to determine its capability to function when noise signals are impressed. The results of these tests will be reviewed with the Staff for acceptability. If not considered acceptable, additional tests, modifications or additions to the cabinets may be necessary; this would not be foreclosed by continuation of construction.

With respect to Item 12 (ATWS) the ACRS considers this item resolved at this time by WASH-1270. WASH-1270 was published in September 1973 and there have been discussions between the Staff and B&W on implementation and several B&W Topicals have been issued. B&W is presently doing an analysis in response to the Staff's request and a specific Midland B&W Report is scheduled for mid-1977. Until the B&W reports are completed, we will not be able to specifically identify the modifications which may result from the analyses. However, some or all of the following items may have to be utilized for Midland to comply with the Staff's implementation of WASH-1270.

1. <u>ESFAS/RPS Diversity</u>

The present system of design for the Engineered Safeguards Features Actuation System (ESFAS) and the Reactor Protective System (RPS) is made up of three separate systems. The Emergency Core Cooling Actuation System (ECCAS) is supplied by B&W and is a subsystem of the ESFAS system which will not be supplied by B&W. The RPS is also supplied

by B&W. If the Staff evaluation requires that there be complete diversity between the ESFAS and the RPS, this could be accomplished by changing system design or supplier of one of the systems. This would not be foreclosed by construction continuing.

2. Containment Purge

It may be necessary to close the containment purge valves to prevent the postulated release from going off-site. This can be accomplished by closing the purge valve on reactor trip or high containment radiation. Continuation of construction does not foreclose making this change.

3. Reactor Coolant Pump Casing Thickness Adequacy for Handling Pressure Limit

An analysis of the reactor coolant pumps may have to be performed to determine whether their casings are thick enough to handle the pressure transient. If the pressure transient cannot be handled by the casing design, reactor coolant system relief capacity may have to be increased. Continuation of construction does not foreclose increasing this capacity.

4. Turbine Trip on Loss of Main Feedwater

Circuitry may have to be included in the BOP to trip the turbine generator on loss of main feedwater to the steam generators. Steam generator level instrumentation is presently installed to provide actuation for such a signal. This will not be foreclosed by continued construction.

5. Auxiliary Feedwater Initiation

Rapid initiation of auxiliary feedwater to the steam generators may be required on loss of main feedwater or off-site power. This

can be accomplished with existing instrument circuits. This will not be foreclosed by continued construction.

With respect to Exhibit 6b, Midland is meeting the specific concerns raised by the ACRS by either complying with the appropriate regulations and reg guides or by design of the plant, or by analysis. The only exception is: Item 10, Testing of Engineered Safety Features has been resolved by the issuance of a number of reg guides. Consumers will perform all tests required by the appropriate edition of ASME XI, Reg Guides 1.22, 1.52 and 1.68. However, there are additional reg guides, such as 1.79, which address testing of engineered safety features which have not yet been resolved with the Staff. However, since these reg guides only require testing, continuation of construction will not foreclose this resolution of this item.

With respect to Exhibit 6c, Midland complies with all items which have been resolved except for the following:

1. Item No 11 Quality Assurance. The Consumers Power Quality Assurance Program Manual (Topical Report No CPC-1A Revision 4) outlines the actions which are implemented by Consumers Power and its suppliers and indicates how Consumers Power will comply with the Quality Assurance requirements specified in NRC regulations, reg guides and industry standards. The Staff has accepted this program except for the following minor items:

   a. A statement of effectivity dates for certain updated procedures must be provided;

   b. The Consumers Quality Assurance Program Topical Report Revision Number and date must be identified;

c. A typographical error must be corrected with respect to Reg Guide 1.39 on Housekeeping Requirements;

d. Editorial changes must be made with respect to Reg Guide 1.54 on Quality Assurance Requirements for Protective Coatings and Reg Guide 1.94 on Concrete and Structural Steel;

e. A commitment must be made to comply with Section C.2.a of Reg Guide 1.55 on Concrete Placement; and

f. Exceptions to commitments in the program must be provided for plant design, procurement, fabrication and construction which has already taken place.

A submittal incorporating these requirements was provided to the Staff on November 3, 1976. Since these items have been effectively resolved and procedural changes are already being made, continuation of construction will not foreclose their resolution.

2. Item No 13. An Independent Check of Stress Analysis was not performed on all NSSS components, since some of the components were designed to the requirements of the 1968 edition of the ASME Code, Summer 1968 Addenda which did not require an independent review. Continuation of construction would not preclude making an independent review if it is required. The reactor coolant pumps, pressurizer safety valves, and letdown coolers were designed to the 1971 edition of the ASME Code and, therefore, an independent review has been or will be performed on these components.

3. Item No 20. Capability of the primary biological shield (reactor vessel cavity) to withstand a LOCA at the safe ends. The cavity design for Midland is based on preliminary mass energy release data which are not expected to change significantly when the final calculations are performed. The cavity is designed for 250 psi differential pressure

with all stresses remaining within elastic limits and for 1,000 psi differential pressure without exceeding ultimate strength. As required by the Midland ACRS letter, this design is comparable to those of the Zion and Indian Point 3 Plants. Additionally, since the cavity design incorporates specific features to limit blowdown into the cavity such as collars around the nozzles to direct blowdown outside of the cavity, the plant will comply with this item.

4. Item No 21. Although the construction of one unit while the other is in operation has not been fully resolved at this time, the construction and startup schedule for the Midland Plant has been planned so that all systems and structures which are common for both units and which are necessary for operation of the first unit are scheduled to be completed and tested before the first unit goes into service. Access to plant areas such as the control room or other areas that contain common equipment will be under administrative control, or barriers will limit access of construction personnel into areas that effect the operating unit. Therefore, continuation of construction will not foreclose resolution of this item.

5. Item No 24. Ultimate heat sink. The preliminary analysis of the emergency pond (ultimate heat sink) based on Reg Guide 1.27 assumptions indicates that the peak pond temperature could be 3.5°F above the service water system design temperature for approximately 24 hours under the most adverse conditions. During the operating license review,

Consumers can either demonstrate that safety equipment design temperatures will not be exceeded or that all safety related equipment whose design temperature could be temporarily exceeded will be able to function for as long as needed. Finally, since safety related equipment could be protected by imposing a technical specification limit on plant operation when the ultimate heat sink reaches a predetermined temperature, continued construction does not foreclose resolution of this item.

6. Item No 32. Performance of critical components in post-LOCA environments. The Midland Plant complies with all reg guides applicable to this item except for Reg Guide 1.89 which has not yet been discussed with the Staff. Until the implementation of this reg guide is resolved with the Staff, exact modifications which may be necessary to comply with the resolution of this item cannot be identified. However, continuation of construction will not foreclose implementation of Reg Guide 1.89 since equipment has been purchased with the requirement that it function under post-LOCA radiation and steam environments. If it is required that aging effects be factored into equipment already purchased or in the process of being purchased, this could be accomplished by conducting tests for on-going environmental effects on equipment after the plant goes into service.

7. Item No 35. ATWS. Refer to the discussion of Item No 12 in Exhibit 6a.

8. Item No 36. Radwaste Management. This item has been resolved by the issuance of Appendix I to 10 CFR 50. The Midland analysis which shows compliance with the effluent discharge requirements of Appendix I is currently under review by the NRC Staff. Since radwaste treatment for Midland utilizes a recycle system, it is not expected that the Staff review will result in system modifications. However, if changes are recommended, modifications to the radwaste system would not be foreclosed by continued construction.

With respect to Exhibit 6d, all items are unresolved except for Item 3 (Fuel Densification) with which Midland complies and Item 9 (Steam Generator Tube Leakage) which has been partially resolved by Reg Guide 1.83. The primary ACRS concern with Item 9 is the effect of prior degradation on steam generator tube integrity in the unlikely event of a LOCA. Reg Guide 1.83 requires a base line and subsequent in-service inspections to detect tube degradation. Midland will comply with this reg guide.

With respect to Exhibit 6e, the only item which is resolved is Item 4 on seismic Category I requirements for auxiliary systems. The Midland Plant complies with the reg guide which resolves this item.

With respect to Exhibit 6f, none of the items have been resolved by ACRS.

Thus, based on this review, continuation of construction will not foreclose the implementation of those generic items which have been resolved by the ACRS.

III. EFFECTS OF DELAY

A. Delay Costs

If it is assumed that, as a result of this hearing, the Construction Permits are suspended from 12/1/76 to 5/1/77, then there would be a delay of 9 months in the commercial operation dates of the Project. Unit 2 would have a commercial operation date of 12/1/81 instead of 3/1/81 and Unit 1 would have a commercial operation date of 12/1/82 instead of 3/1/82. The 5-month suspension period results in a 9-month delay in the commercial operation date due to a combination of the following:

1. Uncovering, inspection, and cleaning of materials and building areas could not commence until May 1, 1977;
2. The recruitment, organization, training, qualification, and assignment of all manual labor workers to all work areas could not be completed until some of the activities set forth in 1. above are finished; and
3. The time required to increase manpower to the levels existing previously is contingent upon partial completion of 2.

Based on our experience of past remobilizations in 1973 and 1975, it would take at least the 4 additional months to accomplish these tasks. In addition, this 9-month delay period cannot be reduced after restart of construction since the assumptions already include double shifts. Addition of another shift and hiring extra personnel are not feasible due to the limited number of available craftsmen, the limitation on the number of people who can work in a limited area and the decline in productivity for those workers already on site.

The resultant delay in commercial operation date of 9 months assumes that:

1. Unrestrained commercial reactivation will commence on May 1, 1977.
2. Project activities will be oriented towards minimizing the impact of the 5 months' suspension in order to minimize effects of schedule delay.
3. Design engineering will continue during the suspension period.
4. Home Office manpower levels will remain the same as if construction were not suspended.
5. The delivery schedule for existing material and purchase orders will not change, but future equipment and material purchase order deliveries will be in accordance with the revised schedule.
6. No cash flow limitations will apply during the suspension period or beyond.
7. Field nonmanual personnel will be retained at the current level in order to support unrestrained reactivation on May 1, 1977.
8. The construction craft labor force, including subcontractors, will be reduced to a minimum level consistent with supporting only such activities as site maintenance, completion of material laydown areas off-site, and receipt in storage of plant equipment and materials.

The suspension would cause the manual labor force to be widely dispersed. However, for the purpose of estimating delay costs it has been assumed that an unrestricted supply of labor is available due to extensive recruiting efforts to support the construction reactivation commencing 5/1/77. The suspension also causes higher peaks in manual labor needed for the Project. However, it again has been assumed that these extra men will be available.

If it is assumed that as a result of this hearing, the Construction Permits are suspended from 12/1/76 to 9/1/77, then there would be a delay of 15 months in the commercial operation dates of the Project. Unit 2 would have a commercial operation date of 6/1/82 instead of 3/1/81 and Unit 1 would have a commercial operation date of 6/1/83 instead of 3/1/82. Based on our experience of past remobilizations, the 9-month suspension period would result in a 15-month delay in commercial operation dates due to the combination of factors which were set forth for the 5-month suspension period. In addition, these factors would be complicated by having to rehire and retrain Field engineers and by starting up in the fall and early winter rather than the spring and early summer. This postulated suspension of the Construction Permit for 9 months and the resultant delays in the commercial operation date of 15 months assumes the same conditions occur as discussed above for the 5-month Construction Permit suspension, except that Home Office manpower levels would be reduced during the suspension period in areas which are related to construction activities and field non-manual would also be selectively reduced. The conditions and effects resulting from this 9-month suspension would be the same as discussed above for the 5 months suspension except that the effects would be even more traumatic.

Attached as Consumers Power's proposed Exhibit 16 is a table which sets forth costs that would be incurred if the Construction Permits were suspended for 5 months or for 9 months. Exhibit 16 demonstrates that the total plant cost would increase $145,000,000 if a 5-month suspension was ordered. If the resulting $7,409,000 increase in the cost of nuclear fuel and the $210,900,000 increase in the purchase and/or differential power costs for the 9-month delay in the operating date is added to the

increased plant costs, the total delay costs attributable to a 5 month suspension period would be $363,309,000. For a suspension period of 9 months, the total plant cost would increase $250,000,000, the nuclear fuel cost would increase $12,365,000, and the purchase and/or differential power costs for the 15-month delay in commercial operation would be $381,400,000. Thus, the total delay costs which would be attributable to a 9-month suspension would be $643,765,000. The following explanatory notes apply to Exhibit 16:

1. Where escalation is noted as being applied, a 7% per year compounded rate is used;
2. The B&W delay costs are based on a stretch-out in the performance of B&W startup services, operator training, Project Management and site representative services which results in additional man-hours. Since the man-hours occur during a later period of time, the charges for them are escalated;
3. The process steam evaporator delay costs are additional costs for storing and handling evaporators for a longer period of time than initially planned;
4. The turbine generator delay costs are those resulting from insurance and storage for the additional time period;
5. The Bechtel balance of plant delay costs are made up of several components:
    a. The manual labor component is due to additional labor for mothballing, maintenance, and reactivating the site; productivity losses due to learning and retraining during remobilization, increased shiftwork congestion and overtime, premium pay costs due to shift work and overtime, and escalation.

b. The nonmanual labor component is due to retaining nonmanual personnel on-site for longer periods of time, for shift work and overtime allowances and escalation.

c. The distributable component is due to increased equipment rental, heating of buildings, materials for mothballing, materials for building maintenance, field office overheads, insurance and escalation.

d. The direct materials and subcontract component is due to deferring and cancellation of some subcontracts, equipment and material warranty extensions and escalation.

e. The engineering and home office support component is due to added man-hours for contract negotiations on warranty extension, determination of storage requirements, retaining personnel on the project for longer periods of time and escalation.

f. The contingency component is the amount of money which was added to provide for uncertanties associated with the suspension activities and their related costs.

g. The escalation component represents the increased costs for materials, subcontracts, and labor which were normally planned to be incurred in a time frame established prior to the suspension delay, and will now be incurred at a later date due to the suspension of construction.

The Consumers delay costs are made up of the following components:

a. The "directs" component includes an extension in duration of the performance of management, engineering, other administrative functions and escalation.

b. The "administrative" component includes an increase in man-hours for the performance of corporate administrative functions not included in a. above. It includes functions such as purchasing and corporate accounting. This cost is computed on a percentage of all directs.

c. The "other overhead" component includes an increase in property taxes due to the application of current tax rates to a higher tax base (due to cost effects of delay) over a longer period of time (due to extended completion date); insurance is also included for this longer period of time and is escalated.

d. The "allowance for funds used during construction (AFUDC)" component is computed on the basis of a rate of 8% for the delay period through 1976 and at a rate of 8-1/2% thereafter. The rates are applied to the cash flow schedule, taking the effect of the delay on cash flow into account. The increase in AFUDC also reflects the application of these rates to already incurred costs for a longer period of time.

e. The "miscellaneous work orders" component was computed by:

(1) Increasing the land cost by adding to the land purchase price the AFUDC required for a longer period of time;

(2) Escalating the costs for spare parts, since their purchase will be made at a later date;

(3) Holding constant the cost of Electric R&D and the relocation of the Bullock-Dow transmission line; and

(4) Increasing licensing costs to handle responses to the Appeals Court decision and applying AFUDC to this increase for the extended period of time.

7. The exhibit also indicates the additional costs of nuclear fuel resulting from the delay. This cost is based upon an evaluation of the fuel contracts. Delivery schedules in these contracts have been slipped where possible to the maximum extent permitted. For the fuel contracts, an 8% escalation rate was used. Where slippage is not permitted by the contracts, the item is assumed to be delivered on the initial schedule and AFUDC is applied for the additional period of time.

8. Exhibit 16 also includes the cost of replacement power and/or differential power to make up for the period of delay. The derivation of these costs is set forth in the testimony of Gordon L. Heins.

Although the added escalation for future construction craft labor contract negotiations has been included, a delay of the magnitude which would be caused by the suspension requires Consumers Power to face an additional round of contract negotiations with the craft unions employed on site. The impact of additional negotiations has not been factored into the delay costs. However, experience has shown that work stoppages often

result during contract negotiations. For example, in the year 1976 between April 30 and July 16 there were 13 construction craft labor contracts negotiated and during the negotiation period there were 5 work stoppages. Some of the effects of short-term, ie, up to one month, work stoppages on the Project schedule might be rectified by working double shifts and putting more manpower on the job; however, this increases costs. Adding more manpower also causes hiring peaks which may not be capable of being supplied from the available labor force.

Since the Midland Project has already experienced previous shutdowns, additional shutdowns will have an effect on Project morale. Experience has shown that key people begin resigning for employment on other jobs. In addition, when the Project is remobilized, prospective employees looking at the past history of buildup and layoffs may refuse to take employment on the Midland Project if comparable employment can be obtained elsewhere. Another factor not taken into account is the effect on warranties on equipment which are normally written to be in effect for a given period of time after delivery of equipment on-site. While the cost of renegotiating and extending warranty coverage is included in the delay cost, the cost for self-insurance for those items for which extended warranties cannot be obtained is not included. No dollars have been factored into the cost of delay for any of the above items.

The effect of delay on The Dow Chemical Company is set forth in the testimony of Joseph G. Temple, Jr.

In addition to the previously described cost increases which would result from a postulated delay, it must be recognized that there are other short-term and long-term socio-economic impacts if construction of the plant is stopped for any length of time. The largest short-term impact would be the immediate layoff at the site of approximately 700 construction craft personnel, 100 nonmanual (professional, administrative, and executive), and approximately 100 subcontractor personnel. While the socio-economic impacts of the loss of these jobs cannot be identified with certainty, it has been estimated that a loss of 1,200 jobs would impact the Midland community approximately as follows:

a. 4,308 less people.

b. 1,092 less school children.

c. $8,520,000 less personal income.

d. $2,748,000 less in bank deposits.

e. 36 fewer or reduced retail establishments.

f. 1,164 fewer passenger cars.

g. 780 less people employed in support jobs.

h. $3,972,000 less in retail sales per year.

Even if these impacts, which are based upon a U.S. Chamber of Commerce formula, are reduced to assume that only 900 employees at Midland are laid off and that a number of those laid off stay within the area, there would still be a significant impact on the Midland community. This

impact would be compounded by the fact that there are no other large construction projects scheduled in the Midland area during the period that construction would be suspended.

Additionally, the economic cost of unemployment will include payment of unemployment compensation for those individuals who are laid off. It has been estimated by the Midland Chamber of Commerce that if 1,200 workers were laid off at Midland a minimum expenditure of $3,206,000 would be required during the 26 week eligibility period. Assuming the maximum allowance, this expenditure could be as high as $4,100,000. Since the State of Michigan already owes the Federal Government $1.6 billion for funds borrowed to finance unemployment compensation, this figure, even when scaled down to reflect the loss of 900 jobs and some of the unemployed moving out of the State, it is still an enormous economic burden on employers, unemployment compensation insurance carriers, State and Federal Government.

Tax revenues would also be lost by the City, County, State and Federal Governments as well as school districts in the form of personal property, sales and income taxes. Financial support for public schools in Michigan is based on a "taxing power equalization" principle under which the State guarantees a standard revenue return on the first 28 mills of tax levy. Beyond 28 mills, the school district is empowered to collect whatever amount of tax its locally-voted tax rate, applied to its local evaluation per student, will produce. According to Midland Public Officials the Midland School District levy for operation this year is 32.6 mills of tax on an evaluation per student of $44,500. This is above both the State-equalized tax rate and the State-equalized evaluation per student. Therefore, any diminution of taxable valuation in the school district would reduce the available tax revenue. If a suspension of nuclear plant

construction occurs, the taxable valuation will not increase as planned. Thus, the costs for other taxpayers would probably increase as Midland public officials have indicated that there would be no significant decline in the cost of education if a work force of 300-400 remains.

Taxpayers would also incur other added costs. County payments for General Assistance had been reduced 60% during the last year, and this figure could not be kept down. Demand for and costs of mental health services would also be likely to increase. Spreading taxing requirements over a disproportionately smaller base would increase individual costs.

Decreased tax revenues would not change the fixed costs of government services, so that absent a large increase in tax rate or property valuation the number and quality of services would decrease.

Suspension of construction activities would also have a harmful effect on aspects of community planning. As pointed out by Midland public officials, the quality of the educational atmosphere would be harmed not only by a loss of tax dollars, but by the disrupted and disorganized climate under which teachers and students would have to exist. A Midland city official also noted that it would become impossible to project housing needs, which in turn would prohibit decisions on when and how to improve or expand utility systems. The number of Midland Project workers having Midland addresses, 361, represents approximately 1-1/2 years of housing starts at the current rate. The city is presently planning for possible construction of 7 miles of 48-inch water main for additional

deliveries of raw water at a cost of $3 million. This planning would be seriously impeded by a suspension of construction.

Finally, the effect of a suspension of construction on community morale would be devastating, as was noted by a community religious leader. The crime rate has been related to that of unemployment; in February 1975 when the unemployment rate was 15.2%, the Midland County jail was full. Once unemployment declined to 10.2% in September of 1976, the number of arrests also decreased.

Thus, while the actual socio-economic impacts cannot be specifically quantified, it is clear that suspension of construction and the resulting lay-off of 900 workers would have a significant adverse impact on the community.

IV. ECONOMIC COST OF ABANDONMENT

Consumers Power proposed Exhibit 16, attached hereto, sets forth estimates of abandonment cost data utilizing several cases. For each of these cases the data set forth were calculated as follows

1. "Plant Expenditures to Date" were obtained by taking the actual costs through 8/31/76 and adding the estimated expenditures for the period during which construction is continued. For the suspension cases, additional amounts which must be expended assuming suspension of construction are also included. In order to obtain the salvage value of material already purchased, all material purchase orders and subcontracts of over $100,000 in value were reviewed. After review of the subcontracts it was decided that they had no salvage value. For the material orders, salvage values were determined based on whether the material could be utilized for resale to another utility or sold for scrap. The total value of materials and subcontracts whose individual value was less than $100,000, was assumed to be one-half for materials and one-half for subcontracts. No salvage was assumed for the subcontracts. A 5% salvage value was assumed for the materials.
2. For materials and subcontracts committed but not paid for, each individual order was analyzed on the basis of its completion status to estimate the cancellation costs as of the date of cancellation. This figure is not used in the cost of abandonment calculations, but is shown to indicate the value of committed expenditures. If a cancellation cost is paid, Consumers Power would obtain ownership of the component and its built in value. Therefore, salvage value was

estimated based on whether the component could be resold or scrapped. No salvage value was taken for subcontracts.

3. Expenditures for nuclear fuel were obtained by taking the booked costs through 8/31/76 and adding the expenditures to 12/1/76, 5/1/77 and 9/1/77 as appropriate. Since some of the fuel contracts can be slipped, the additional fuel cost, if construction is suspended, was obtained by adding the cost of escalation where the contracts accommodated a slippage and additional AFUDC for those contracts which cannot be slipped. "Fuel Cost Committed, But Not Paid," is not used in the cost of abandonment calculations. The cancellation cost of the fuel is based on the fuel suppliers' costs included under the contract for which payment has not been made. The salvage value of the fuel was obtained by assuming that Consumers Power could sell its fixed commitment enrichment contracts, and that it could sell the uranium concentrates for which it has commitments at todays world market prices.

4. Since orders of the Midland Township Zoning Board of Appeals require Consumers Power to remove the dikes and restore the area covered by the pond to its former condition if the site is abandoned as a generating facility site, restoration costs for this work were calculated. Copies of the orders are attached as Consumers Power proposed Exhibit 18(a) and (b), are attached hereto. In order to bring the site back to topographical conditions as near preconstruction status as possible, the site restoration costs also include removal of

structures to original grade level. These costs were based on costs of similar type work activities which Consumers Power has experienced at Karn and Midland.

5. Since the Dow/Consumers Power Steam Service Contract, Exhibit 7(c), includes a requirement for Dow to reimburse Consumers Power for certain costs if the plant cannot be completed, this reimbursement cost was included as a credit in the costs of abandonment.

6. Since it is unrealistic to assume sufficient quantities of oil or gas would be available for an alternative plant the size of Midland; and since long lead times on licensing and construction make it impossible to construct a nuclear alternative at another site on a schedule which would allow Consumers Power to meet its projected loads; coal fired facilities are the only feasible alternative to Midland Units 1 and 2. These coal facilities could be fired by either high or low sulfur coal. In order to bring such units on line as soon as possible, thereby minimizing the costs of differential and purchased power, it was assumed that each of two 800 MWe units would be constructed on a different existing Consumers Power site which is already partially developed. Using these assumptions, the earliest date on which these units could be in service is 1984. The capital costs for the coal fired alternatives were based on 1976 dollars for the Consumers Power 800 MWe Campbell unit which is scheduled for operation in 1980. These Campbell 1976 capital costs were then escalated at 7% per year for 1984 operation.

7. The purchased power and/or differential power costs were calculated using the period from the Midland in-service dates of 1981 and 1982

to the alternate units in-service date of 1984. These costs are based on expected loads during these years, upon use of the most economic dispatch procedures for the combined Consumers-Detroit Edison system and upon purchase of power from outside this system. It is also assumed that Consumers Power's Palisades Nuclear Plant is on line but derated at 5% per year.

8. The Midland to-go capital costs are based on the current estimate of $1.67 billion less the plant expenditures shown "to date." For columns 3 and 5, which assume suspension of construction and subsequent abandonment of the plant, the to-go costs include the cost of suspension which is shown on Consumers Power Exhibit 15.

9. The "Midland Operation Cost" includes fuel, operation and maintenance, nuclear insurance, and taxes. These costs are based on the plant being in service on the scheduled date and continuing in operation for 34 years. All the costs except nuclear fuel and taxes were escalated at 7% per year. Nuclear fuel costs were escalated at a composite escalation rate of 6-3/4%. The tax rate was held constant and applied to the estimated total capital cost for the particular case.

10 and 11. The "Alternate Plant Operation Cost" (low and high sulfur) include fuel, operation and maintenance, insurance and taxes. The costs are based on placing the plants in service 7 years after the date of abandonment and continuing to operate them for 34 years. The coal costs are based on 1976 costs which are escalated by 12% per year for 1977 through 1978 and then 10% per year for 1979 through 1983. Coal costs from 1984 on were escalated 9% per year. The operation

and maintenance costs were escalated 7% per year from 1984 on. The tax rate was held constant and applied to the capital cost of the coal units.

In order to provide a basis for comparison of costs of abandonment, three analyses using the above data have been provided.

Consumers Power proposed Exhibit 18, attached hereto, provides cost data which can be used to compare cost of abandonment for 5 conditions. The first condition is abandonment costs at 12/1/76. The second condition is abandonment costs at 5/1/77 assuming construction continues until that date. The third condition is abandonment costs at 5/1/77 assuming suspension of construction at 12/1/76. The fourth condition is abandonment costs at 9/1/77 assuming construction continues to that date. The fifth condition is abandonment costs at 9/1/77, assuming suspension of construction at 12/1/76 to 9/1/77. Analysis I shows that for abandonment on 5/1/77, if construction continues, there would only be $22 million more spent on plant expenditures than if construction was suspended between 12/1/76 and 5/1/77. In addition, the total cost figure for abandonment is only $35 million more if construction continues between 12/1/76 and 5/1/77 than if construction is suspended for that period. The additional $22 million is only 1.3% of the total estimated project cost and by spending this, $22 million dollars, a delay cost of $363 million is avoided. Therefore, it is more logical to spend the incremental $22 million, in order to avoid a potential delay cost of $363 million,

than to suspend construction based on a potential increase in abandonment costs of only $35 million dollars. A similar conclusion can be reached for the 9/1/77 abandonment case since an additional $60 million in plant expenditures, which is only 3.6% of total project cost, avoids a potential delay cost of $644 million, while suspension of construction results in a potential increase in abandonment cost of only $96 million.

Consumers Power proposed Exhibit 19, attached hereto, presents a comparison of the cost to complete and operate Midland to the cost of abandoning Midland and installing and operating an alternative source for the needed capacity (a low-sulfur coal unit) in the following five cases:

1. If the decision were to be made at 12/1/76, costs are stated in terms of future value at the scheduled date of commercial operation of Midland Unit 2 (3/1/81).
2. If the decision were to be made at 5/1/77, assuming that construction continues until 5/1/77, costs are again stated in terms of future value at the scheduled date of commercial operation of Midland Unit 2 (3/1/81).
3. If the decision were to be made at 5/1/77, assuming that construction was suspended for the period 12/1/76 to 5/1/77, costs are stated in terms of future value at the then earliest possible date of commercial operation of Midland Unit 2 (12/1/81), due to delays caused by suspension.
4. If the decision were to be made at 9/1/77, assuming that construction continues until 9/1/77, costs are stated in terms of future value at the scheduled date of commercial operation of Midland Unit 2 (3/1/81).

5. If the decision were to be made at 9/1/77, assuming that construction was suspended for the period 12/1/76 to 9/1/77, costs are stated in terms of future value at the then earliest possible date of commercial operation of Midland Unit 2 (6/1/82), due to delays caused by suspension.

This exhibit reflects the economic cost analysis which would have to be made, in each of the five assumed cases, in order to weigh whether continuation with Midland or abandonment of Midland and installation of an alternative is the preferred decision on economic grounds at the point in time and under the conditions assumed. The analysis reflects all appropriate costs, including capital costs, taxes, operation and maintenance, insurance and fuel costs. Credit is given to the cost of the alternative for material salvageable from Midland, reimbursement of certain capital costs by Dow and proceeds from the sale of rights to nuclear fuel. Debits include the cancellation cost of material orders and subcontracts, net of salvage value, required site restoration costs at Midland and the purchased power and/or differential power costs incurred during the period between the scheduled commercial operation date of Midland and the earliest possible date of commercial operation of the alternate.

Consumers Power proposed Exhibit 20, attached hereto, presents the same comparison for a high-sulfur coal-fired unit alternative.

In each of the five cases, the cost of abandoning Midland and proceeding with the alternative far exceeds the cost of proceeding with Midland.

Consumers Power proposed Exhibits 21 and 22 attached hereto reflect the fact that the cost ratio between abandoning Midland and proceeding with the assumed alternative on the one hand, and continuing with Midland on the other, varies very slightly at the decision point of 5/1/77, whether construction has been suspended at 12/1/76 or continued to 5/1/77. The same is also shown under the same assumptions for the decision point at 9/1/77. Consequently, these Exhibits establish that continued construction at Midland during the pendency of the remand proceedings will not alter the economic cost analysis between the alternatives of continuing with Midland, or abandoning Midland and installing an alternative, in any significant fashion.

For example, the economic cost ratio between abandoning Midland and continuing with Midland at 5/1/77 assuming continued construction is 2.66 (for the low-sulfur coal alternative). This same ratio, assuming suspension of construction at 12/1/76, is 2.59. Consequently, the variation in the ratios is only 2.6%, which must be considered insignificant in view of the vast advantage of the nuclear alternative over one low-sulfur coal-fired alternative (over 250%).

These analyses clearly establish that not only will continuation of construction not tilt the balance away from the alternative of abandonment, but it will not even affect the balance significantly.

Exhibit 4

SCHEDULE OF WORK ACTIVITIES

MONTH BY MONTH SEPTEMBER 1976 THROUGH SEPTEMBER 1977

Note: Components are listed in parentheses only where their installation is initially started in any given month. For subsequent months where installation of a component continues, the component is not listed again.

SEPTEMBER 1976

Facility: Auxiliary Building

1. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit, process piping (radwaste drains) and concrete for the Control Tower area walls and slab to El. 632'.

2. Continue installation of reinforcing steel, formwork, embedded metal, conduit, process piping (fuel pool leak chase piping, fuel pool cooling piping) and concrete for the Fuel Pool area to El. 659'.

3. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit, process piping and concrete for the Radwaste and Equipment area slabs and walls to El. 634'.

4. Continue installation of equipment (equipment drain tank, chemical waste tank, decay heat removal heat exchangers, component cooling heat exchanger, radwaste decay tanks, laundry drain tank, boron recovery system receiver tank, liquid waste receiver and drain tank) and large piping (decay heat removal and component cooling) in the El. 568', 584' and 599' levels.

Facility: Containment Building #1

1. Continue Dome Liner final alignment and production welding.

2. Continue Liner Plate second lift alignment and welding.

Facility: Containment Building #2

1. Complete Dome Liner plate attachments assembly and welding, start sandblast and painting of internal plate.

2. Continue installation of reinforcing steel, formwork, embeds and concrete for the Exterior Concrete to El. 683'.

3. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit, process piping (drains and block outs)

Facility: Containment Building #2 (cont'd)

and concrete for the Secondary Shield Walls (cavity access air transfer ducting) and R. V. Pedestal and Primary Shield (primary coolant piping and in-core tubing block outs) Wall to El. 612' and Letdown Cooler Walls to El. 630'.

Facility: Turbine Building #1

1. Continue installation of reinforcing steel, formwork, embedded metal, conduit, process piping and concrete for the Main and Auxiliary Bay base mat at El. 614'.

2. Complete installation of reinforcing steel, formwork, embedded metal, conduit, process piping and concrete for the T/G Pedestal base mat at 614' and columns above 614'.

3. Begin installation of reinforcing steel, formwork and concrete for the exterior wall to grade.

Facility: Turbine Building #2

1. Continue reinforcing steel, formwork and concrete for exterior wall to grade and Feedwater Pump pedestals.

Facility: Yard Structures & Improvements

1. Begin installation of Service Water piping from Station E-325 to Station E-500. (Earthwork).

2. Continue excavation and begin mud-mat concrete placement for the Circulating Water Building Sump base slab and walls and Service Water Building base slab and walls. (Earthwork and dewatering).

3. Continue installation of yard Sanitary System piping. (Earthwork).

4. Continue installation of the Potable Water piping from the Midland City main to Station E-200. (Earthwork).

5. Continue installation of the Circulating Water Pond Makeup and Service Water Cooling underground pipe between the Cooling Tower and Station S-4850. (Earthwork).

Facility: Subcontracts

1. Continue plant backfill and construction of Plant Dikes. (Earthwork). Include seeding, mulching and rip-rap.

2. Continue erection of the Unit #2 High and Low Pressure Condensers.

Facility: Subcontracts (cont'd)

3. Continue painting the Auxiliary Building interior.

4. Continue construction of the River Intake Structure and Pond Make-up Pump Structure. (Earthwork).

OCTOBER 1976

Facility: Auxiliary Building

1. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for Control Tower area walls and slab to El. 646'.

2. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Fuel Pool area walls to El. 659'.

3. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Radwaste and Equipment area walls north of the Fuel Pool to El. 646'.

4. Continue installation of equipment and large piping in the elevation 568', 584' and 599' levels.

5. Begin installation of electrical equipment (motor control centers, load centers, 4160 volt switchgear) at the 614' level in the Control Tower.

Facility: Containment Building #1

1. Continue Dome Liner final alignment and production welding.

2. Continue Liner Plate second lift alignment and welding.

3. Continue installation of the Equipment Hatch.

4. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Cover Slab at El. 594'.

Facility: Containment Building #2

1. Complete Dome Liner Plate sandblasting and painting. Begin installation of Dome HVAC Ductwork and Spray and H_2 Vent Piping. Continue installation of Dome Leakchase, Penetrations and Attachments.

Facility: Containment Building #2 (cont'd)

2. Complete cutting Containment liner plate Construction Opening.

3. Continue installation of Containment liner plate Pipe Restraint Embeds.

4. Complete installation of reinforcing steel, formwork, embeds and concrete for the Containment Exterior Concrete to elevation 693'.

5. Continue installation of reinforcing steel, formwork, embedded metal (channels or blockouts), conduit and process piping (PLOCAP) for the Secondary Shield Walls to El. 605'.

6. Continue installation of reinforcing steel, formwork, embedded metal, and process piping and concrete for the Primary Shield Walls to El. 612'.

7. Continue installation of reinforcing steel, formwork, embedded metal, and process piping and concrete for the Letdown Cooler Walls to El. 624'.

Facility: Turbine Building #1

1. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Main and Auxiliary Bay base mat.

2. Begin installation of the T/G Pedestal Deck structural truss.

3. Continue installation of reinforcing steel, formwork, embedded metal; conduit and process piping and concrete for the Exterior Wall to grade.

Facility: Turbine Building #2

1. Begin erection of structural steel.

Facility: Yard and Miscellaneous Structures

1. Complete installing yard service water piping from the Auxiliary Building to Station E-325. (Earthwork).

2. Complete excavation for the Circulating and Service Water Buildings base slabs and begin installation of reinforcing steel, formwork, embedded metal and concrete Circulating Water Building Sump base slab and the Service Water Building base slab. (Earthwork and dewatering).

3. Complete installation of Phase One of the yard Sanitary System piping. (Earthwork).

4. Complete installation of the Cooling Pond makeup and discharge piping from Station S-4550 to S-4870. (Earthwork).

Facility: Subcontracts

1. Continue plant backfill as allowed by weather. (Earthwork).

2. Continue erection of the Unit 2 Condensers. Begin erection of the Unit 1 Condensers.

3. Continue civil construction of the Makeup Pumphouse and River Intake Structures. (Earthwork).

4. Complete painting Unit 3 dome liner plate, begin installation of HVAC Duct.

NOVEMBER 1976

Facility: Auxiliary Building

1. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Control Tower area slab and walls to elevation 659'.

2. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Radwaste and Equipment area slabs to elevation 646'.

3. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Fuel Pool area walls to El. 659'.

4. Continue installation of equipment (decay heat pumps) and large piping in the elevation 566', 584' and 599' levels. Begin installation of large pipe in the elevation 614' level.

5. Start installation of small piping.

6. Continue installation of electrical equipment El. 614' level in the Control Tower.

Facility: Containment Building #1

1. Continue Dome Liner final alignment and production welding.

2. Continue Liner Plate second lift alignment and welding.

3. Complete installation of the Equipment Hatch.

4. Begin installation of reinforcing steel, formwork and embeds for the Equipment Hatch pourback.

5. Continue the installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Cover Slab at elevation 594'.

Facility: Containment Building #2

1. Complete installation of Dome HVAC Ductwork for containment air coding. Complete installation of Dome Spray and H_2 Purge Vent Piping.

2. Erect Polar Crane and Dome Liner Plate.

3. Complete installation of containment liner plate Pipe Restraint Embeds.

4. Continue installation of reinforcing steel, formwork, embeds and concrete for the Containment Exterior Concrete to elevation 744'.

5. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping for the Secondary Shield Walls to El. 605'.

6. Continue installation of reinforcing steel, formwork, embedded metal and process piping and concrete for the Primary Shield Walls to El. 612'.

7. Continue installation of reinforcing steel, formwork, embedded metal and process piping and concrete for the Letdown Cooler Walls to elevation 631'.

Facility: Turbine Building #1

1. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Main and Auxiliary Bay base mat.

2. Complete installation of the T/G Pedestal Deck structural truss, begin installation of reinforcing steel, formwork, embedded metal, conduit and process piping.

3. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Exterior Wall to grade.

Facility: Yard and Miscellaneous Structures

1. Continue installation of reinforcing steel, formwork, embedded metal and concrete for the Circulating Water Building base mat and the Service Water Building base slab and walls to El. 600'.

Facility: Subcontracts

*1. Continue construction of the Pond Makeup Pumphouse and River Intake Structures. (Earthwork).

2. Continue erection of the Units 1 & 2 Condensers.

Facility: Subcontracts (cont'd)

3. Complete installation of Unit 2 Dome HVAC Duct.

DECEMBER 1976

Facility: Auxiliary Building

1. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Control Tower area walls and slabs to El. 659'.

2. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Fuel Pool area walls to elevation 659'.

3. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Radwaste and Equipment area walls north of the Fuel Pool to elevation 659'.

4. Continue installation of equipment (Boric Acid storage tank, degasifier decay tanks) and large piping in the El. 568' through 614' levels.

5. Continue installation of small piping.

6. Continue installation of electrical equipment in the elevation 614' level, begin installation in the elevation 568' level.

Facility: Containment Building #1

1. Continue Dome Liner final alignment and production welding.

2. Continue Liner Plate second lift alignment and welding.

3. Begin the installation of the Air Purge and Main Steam Pipe Restraint embeds.

4. Complete the installation of reinforcing steel, formwork and embeds for the Equipment Hatch pourback.

5. Begin the installation of reinforcing steel, formwork and embeds for the Containment Exterior Concrete to El. 673'.

Facility: Containment Building #2

1. Complete Dome final attachment weld and leakchase.

2. Continue installation of reinforcing steel, formwork, embeds and concrete for the Containment Exterior Concrete to El. 744'.

Facility: Containment Building #2 (cont'd)

3. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping for the Secondary Shield Walls to El. 605'.

4. Continue installation of reinforcing steel, formwork, embedded metal and process piping and concrete for the Primary Shield Walls to El. 630'.

5. Complete installation of reinforcing steel, formwork, embedded metal and process piping and concrete for the Letdown Cooler Walls to El. 631'.

Facility: Turbine Building #1

1. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Main and Auxiliary Bay base mat.

2. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping for the T/G Pedestal Deck.

3. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Exterior Wall to grade.

Facility: Turbine Building #2

1. Continue erection of structural steel.

Facility: Yard and Miscellaneous Structures

1. Continue installation of reinforcing steel, formwork, embedded metal and concrete for the Circulating and Service Water Building Walls to El. 600'. (Earthwork).

Facility: Subcontracts

1. Continue erection of the Units 1 & 2 Condensers.

2. Continue construction of the Pond Makeup Pumphouse and River Intake Structures. (Earthwork).

JANUARY 1977

Facility: Auxiliary Building

1. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Control Tower area walls and slabs to El. 659'.

2. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Fuel Pool area walls to El. 659'.

3. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Radwaste and Equipment area walls north of the Fuel Pool to El. 659'.

4. Continue installation of large piping (engineered safeguards pump room) to approximately 10% complete.

5. Continue installation of equipment (reactor building spray pumps, component cooling water pumps, makeup pumps, makeup tank, radwaste gas surge tank, decay heat pumps) and small piping in the El. 568' through 614' levels.

6. Complete installation of electrical equipment in the elevation 614' level of the Control Tower.

Facility: Containment Building #1

1. Complete Dome Liner final alignment and production welding.

2. Continue Liner Plate second lift alignment and welding.

3. Complete the installation of the Air Purge and Main Steam Penetrations and continue installation of Pipe Restraint embeds.

4. Complete the installation of reinforcing steel, formwork and embeds for the Containment Exterior Concrete to El. 673'.

5. Continue installation of reinforcing steel, formwork, embeds and concrete for the interior concrete cover slab at El. 593'.

6. Start pre-assembly of dome spray piping headers.

Facility: Containment Building #2

1. Continue installation of reinforcing steel, formwork, embeds and concrete for the Containment Exterior Concrete to El. 744'.

2. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping for the Secondary Shield Walls to El. 615'.

Facility: Containment Building #2 (cont'd)

3. Continue installation of reinforcing steel, formwork, embedded metal and process piping and concrete for the Primary Shield Walls to El. 630'.

Facility: Turbine Building #1

1. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Main and Auxiliary Bay base mat.

2. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping for the T/G Pedestal Deck.

3. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Exterior Wall to grade.

Facility: Turbine Building #2

1. Continue erection of structural steel.

Facility: Yard and Miscellaneous Structures

1. Complete installation of reinforcing steel, formwork, embedded metal and concrete for the Circulating and Service Water Building Walls to El. 600'.

2. Begin installation of the site Sewer System Lift Station. (Earthwork).

3. Begin installation of reinforcing steel, formwork and concrete for the Process Steam Tunnel and Administration Building foundation. (Earthwork).

Facility: Subcontracts

1. Continue erection of the Units 1 & 2 Condensers.

2. Continue construction of the Pond Makeup Pumphouse and River Intake Structures. (Earthwork and dewatering).

3. Continue de-contaminative coatings in Auxiliary Building.

FEBRUARY 1977

Facility: Auxiliary Building

1. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Control Tower area walls and slabs to El. 659'.

Facility: Auxiliary Building (cont'd)

2. Complete installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Fuel Pool area walls to El. 659'.

3. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Radwaste and Equipment area walls north of the Fuel Pool to El. 659'.

4. Continue installation of equipment (spent resin storage tank), large and small piping in El. 568' through 634' levels.

5. Begin installation of cable tray in the El. 646' level of the Control Tower.

6. Begin installation of in-line instrumentation.

Facility: Containment Building #1

1. Continue Liner Plate second lift alignment and welding.

2. Complete pre-assembly of dome spray piping headers.

3. Continue the installation of Main Steam Pipe Restraint embeds.

4. Complete the installation of reinforcing steel, formwork and embeds for the Containment Exterior Concrete to El. 683'.

5. Continue installation of reinforcing steel, formwork, embeds and concrete for the interior concrete cover slab at El. 593'.

Facility: Containment Building #2

1. Complete installation of reinforcing steel, formwork, embeds and concrete for the Containment Exterior Concrete to El. 744'.

2. Complete installation of reinforcing steel, formwork, embedded metal, conduit and process piping for the Secondary Shield Walls to El. 615'.

3. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Primary Shield Walls to El. 630'.

Facility: Turbine Building #1

1. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Main and Auxiliary Bay base mat.

Facility: Turbine Building #1 (cont'd)

2. Complete installation of reinforcing steel, formwork, embedded metal, conduit and process piping for the T/G Pedestal Deck.

3. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Exterior Wall to grade.

Facility: Turbine Building #2

1. Complete erection of structural steel for Main Frame and Auxiliary Bay to El. 661'.

Facility: Yard and Miscellaneous Structures

1. Continue installation of reinforcing steel, formwork, embedded metal and concrete for the Circulating Water Building to El. 616'.

2. Complete installation of the site Sewer System Lift Station. (Earthwork).

3. Continue installation of reinforcing steel, formwork and concrete for the Process Steam Tunnel and Administration Building foundation. (Earthwork).

Facility: Subcontracts

1. Continue erection of the Units 1 & 2 Condensers.

2. Continue construction of the Pond Makeup Pumphouse and River Intake Structures. (Earthwork).

3. Continue de-contaminative coatings in Auxiliary Building.

MARCH 1977

Facility: Auxiliary Building

1. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Control Tower area walls to El. 674'.

2. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Radwaste and Equipment area walls north of the Fuel Pool to El. 659'.

3. Continue installation of equipment (spent fuel pool heat exchanger), large and small piping and in-line instrumentation in the elevation 568' through 634' levels.

Facility: Auxiliary Building (cont'd)

4. Continue installation of cable tray in the El. 646' level of the Control Tower and begin installation in the El. 568' through 634' level of the Radwaste and Equipment area.

5. Start exposed conduit in El. 634' level and below.

Facility: Containment Building #1

1. Start installation of dome spray piping headers.

2. Continue Liner Plate second lift alignment and welding.

3. Continue the installation of Main Steam Pipe Restraint embeds.

4. Begin the installation of reinforcing steel, formwork and embeds for the Containment Exterior Concrete to El. 744'.

5. Complete the installation of reinforcing steel, formwork, embedded metal, conduit and process piping (radwaste drains) for the interior concrete cover slab at El. 593'.

Facility: Containment Building #2

1. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping for the Secondary Shield Walls to El. 626'.

2. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Primary Shield Walls to El. 630'.

3. Start installation of structural and miscellaneous steel to El. 615'.

4. Begin installation of Flued Heads (for all pipes penetrating containment) and Electrical Penetration weld-neck flanges.

Facility: Turbine Building #1

1. Complete installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Main and Auxiliary Bay base mat.

2. Complete installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Exterior Wall to grade.

Facility: Turbine Building #2

1. Continue erection of miscellaneous structural steel framing in Main Frame.

Facility: Turbine Building #2 (cont'd)

2. Install H. P. Feedwater Heaters, Deaerator Storage Tanks and Deaerators.

Facility: Yard and Miscellaneous Structures

1. Continue installation of reinforcing steel, formwork, embedded metal and concrete for the Circulating Water Building Walls and Slab to El. 616'.

2. Continue installation of reinforcing steel, formwork and concrete for the Process Steam Tunnel and Administration Building foundation. (Earthwork).

Facility: Subcontracts

1. Continue erection of the Units 1 & 2 Condensers.

2. Continue construction of the Pond Makeup Pumphouse and River Intake Structures. (Earthwork).

3. Continue de-contaminative coatings in Auxiliary Building.

4. Install Reactor Building Unit 1 Dome Ductwork for heating, ventilating, and air cooling.

APRIL 1977

Facility: Auxiliary Building

1. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Control Tower slabs to El. 674'.

2. Begin installation of reinforcing steel, formwork and embedded metal for Solid Radwaste Addition basemat at El. 634'.

3. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Radwaste and Equipment area walls north of the Fuel Pool to El. 659'.

4. Continue installation of equipment (Auxiliary building air filtering unit, degasifier extraction pump), large and small piping and in-line instrumentation in the El. 568' through 634' levels.

5. Continue installation of cable tray in the El. 646' level of the Control Tower, continue installation of cable tray and exposed conduit in the El. 568' through 634' level of the Radwaste and Equipment area.

Facility: Containment Building #1

1. Complete installation of dome spray piping headers.

2. Complete Liner Plate second lift alignment and welding.

3. Complete the installation of Main Steam Pipe Restraint embeds.

4. Continue the installation of reinforcing steel, formwork and embeds for the Containment Exterior Concrete to El. 744'.

5. Begin the installation of reinforcing steel, formwork, embedded metal, conduit and process piping for the R. V. Pedestal to elevation 602', the secondary shield walls to elevation 605' and the let-down cooler walls to elevation 605'.

6. Begin the installation of reinforcing steel, formwork and concrete for the Shield Walls against the liner plate.

Facility: Containment Building #2

1. Begin installation of reinforcing steel, formwork, embeds and concrete for the Containment Exterior Concrete above elevation 744' and dome cover slab.

2. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping for the Secondary Shield Walls to Elevation 626'.

3. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Primary Shield Walls to elevation 630'.

4. Continue installation of structural and miscellaneous steel to elevation 615'.

5. Continue installation of Flued Heads and Electrical Penetration weld-neck flanges.

Facility: Turbine Building #1

1. Complete installation of reinforcing steel, formwork and embedded metal for the Feedwater Pump Pedestals.

Facility: Turbine Building #2

1. Continue erection of miscellaneous Structural Steel framing in the Main Frame.

2. Continue erection of Auxiliary Bay structural steel above elevation 661'.

3. Begin installation of decking, reinforcing steel and embeds for elevated slabs.

Facility: Yard and Miscellaneous Structures

1. Complete installation of reinforcing steel, formwork, embedded metal and concrete for the Circulating and Service Water Building Walls to elevation 616'.

2. Continue installation of reinforcing steel, formwork and concrete for the Process Steam Tunnel and Administration Building foundation. (Earthwork).

3. Begin construction of Circulating Water discharge structures and installation of yard Circulating Water piping. (Earthwork).

4. Begin dewatering Emergency Pond for Service Water return piping.

Facility: Subcontracts

1. Continue erection of the Units 1 & 2 Condensers.

2. Continue construction of the Pond Makeup Pumphouse and River Intake Structures.

3. Continue de-contaminative coatings in Auxiliary Building.

MAY 1977

Facility: Auxiliary Building

1. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Control Tower area walls to elevation 685'.

2. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Solid Radwaste Addition.

3. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Radwaste and Equipment area walls north of the Fuel Pool to elevation 659'.

4. Continue installation of equipment, large and small piping and in-line instrumentation in the elevation 568' through 646' levels.

5. Continue installation of cable tray and exposed conduit in the elevation 568' level through 634' level of the Radwaste and Equipment area and through elevation 674' of the Control Tower.

Facility: Containment Building #1

1. Install the Polar Crane.

2. Complete the installation of reinforcing steel, formwork and embeds for the Containment Exterior Concrete to elevation 744'.

3. Continue the installation of reinforcing steel, formwork, embedded metal, conduit and process piping for the R. V. Pedestal to elevation 602', the secondary shield walls to elevation 605' and the let-down cooler walls to elevation 605'.

4. Complete the installation of reinforcing steel, formwork and concrete for the Shield Walls against the liner plate.

Facility: Containment Building #2

1. Continue installation of reinforcing steel, formwork, embeds and concrete for the Containment Exterior Concrete above elevation 744' and dome cover slab.

2. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping for the Secondary Shield Walls to elevation 626'.

3. Complete installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Primary Shield Walls to elevation 630'.

4. Continue installation of structural and miscellaneous steel to elevation 615'.

5. Continue installation of Flued Heads and Electrical Penetration weld-neck flanges.

Facility: Turbine Building #1

1. Complete installation of concrete for feedwater pump pedestals.

Facility: Turbine Building #2

1. Continue erection of miscellaneous structural steel framing and structural steel in Auxiliary Bay.

2. Continue installation of decking, reinforcing steel, embeds, formwork and concrete for elevated slabs.

3. Begin blockwork for computer room.

Facility: Yard and Miscellaneous Structures

*1. Continue installation of reinforcing steel, formwork, embedded metal and concrete for the Circulating and Service Water Building Walls to elevation 634'. (Earthwork).

Facility: Yard and Miscellaneous Structures (cont'd)

2. Continue construction of Process Steam Tunnel, Administration Building foundation and Circulating Water discharge structures and piping. (Earthwork).

3. Begin installation of yard service water piping and electrical ductbank. (Earthwork).

4. Continuing dewatering Emergency Pond for Service Water return piping. (Earthwork and dewatering).

5. Begin Evaporator/Auxiliary Boiler/Water Treatment Building foundations. (Earthwork).

6. Begin plant backfill to elevation 634'. (Earthwork).

Facility: Subcontracts

1. Continue erection of the Units 1 & 2 Condensers.

2. Continue construction of the Pond Makeup Pumphouse and River Intake Structures. (Earthwork).

3. Continue de-contaminative coatings in Auxiliary Building.

4. Begin plant area backfill and completion of cooling pond dike work.

JUNE 1977

Facility: Auxiliary Building

1. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Control Tower area slab to elevation 685'.

2. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Solid Radwaste Addition.

3. Complete installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Radwaste and Equipment area walls north of the Fuel Pool to El. 659'. Begin to elevation 687'.

4. Continue installation of equipment (Auxiliary feedwater pumps, fuel pool cooling pumps, heating, ventilating, and air cooling), large piping to 25% complete and small piping to 10% complete in the elevation 568' through 646' levels.

Facility: Auxiliary Building (cont'd)

5. Continue installation of cable tray and exposed conduit in the El. 568' level through 634' level of the Radwaste and Equipment area and through elevation 674' of the Control Tower.

Facility: Containment Building #1

1. Set Dome Liner plate and complete final alignment and production welding.

2. Begin the installation of flued heads.

3. Continue the installation of reinforcing steel, formwork, embedded metal, conduit and process piping for the R. V. Pedestal to elevation 602', the secondary shield walls to elevation 615' and the let-down cooler walls to elevation 630'.

Facility: Containment Building #2

1. Continue installation of reinforcing steel, formwork, embeds and concrete for the Containment Exterior Concrete above El. 744' and the dome cover slab.

2. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping for the Secondary Shield Walls to El. 626'.

3. Continue installation of structural and miscellaneous steel to El. 615'.

4. Continue installation of Flued Heads and Electrical Penetration weld-neck flanges.

Facility: Turbine Building #1

1. Move condenser into place. Complete installation of reinforcing steel, formwork, and concrete for condenser construction opening in exterior subgrade wall.

Facility: Turbine Building #2

1. Complete erection of Structural Steel and miscellaneous framing.

2. Continued installation of decking, reinforcing steel, formwork and concrete for elevated slabs.

3. Complete computer room structure.

Facility: Yard and Miscellaneous Structures

1. Continue installation of reinforcing steel, formwork, embedded metal and concrete for the Circulating and Service Water Building Walls to elevation 634'. (Earthwork).

Facility: Yard and Miscellaneous Structures (cont'd)

2. Continue Process Steam Tunnel, Administration Building foundations, Circulating Water discharge structures and piping and Evaporator/ Auxiliary Boiler/Water Treatment Building foundations. (Earthwork).

3. Continue installation of yard service water piping and electrical ductbank. (Earthwork).

4. Begin installation of Emergency Pond Service Water return piping. (Earthwork).

5. Continue plant backfill to elevation 634'. (Earthwork).

Facility: Subcontracts

1. Complete erection of the Units 1 & 2 Condensers.

2. Continue construction of the Pond Makeup Pumphouse and River Intake Structures. (Earthwork and dewatering).

3. Continue de-contaminative coatings in Auxiliary Building.

4. Begin installation of Control Room seismic HVAC ductwork.

*5. Continue plant area backfill and completion of cooling pond dike work. (Earthwork).

JULY 1977

Facility: Auxiliary Building

1. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Control Tower area walls to elevation 704'.

2. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Solid Radwaste Addition.

3. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Radwaste and Equipment area walls north of the Fuel Pool to El. 687'.

4. Continue installation of equipment (purification demineralizers, safeguards rooms chillers), large and small piping in the El. 568' through 659' levels.

Facility: Auxiliary Building (cont'd)

5. Continue installation of cable tray and exposed conduit in the elevation 568' level through 659' level of the Radwaste and Equipment area and through elevation 685' of the Control Tower.

Facility: Containment Building #1

1. Begin installation of reinforcing steel, formwork, embeds and concrete for the Containment exterior concrete above elevation 744' and the dome cover slab.

2. Continue the installation of flued heads.

3. Continue the installation of reinforcing steel, formwork, embedded metal, conduit and process piping for the R. V. Pedestal to elevation 615', the secondary shield walls to elevation 615' and the let-down cooler walls to elevation 630'.

Facility: Containment Building #2

1. Continue installation of reinforcing steel, formwork, embeds and concrete for the Containment Exterior Concrete above El. 744' and the dome cover slab.

2. Complete installation of reinforcing steel, formwork, embedded metal, conduit and process piping for the Secondary Shield Walls to El. 626'.

3. Complete structural and miscellaneous steel to El. 615'.

4. Complete installation of flued heads and electrical penetration weld-neck flanges.

Facility: Turbine Building #1

1. Begin erection of structural steel.

Facility: Turbine Building #2

1. Continue construction of elevated slabs and blockwork partitions.

2. Begin erection of pre-cast panels.

3. Begin installation of computer room HVAC package.

4. Begin setting 4.16 kV Switchgear.

Facility: Yard and Miscellaneous Structures

1. Continue installation of reinforcing steel, formwork, embedded metal and concrete for the Service Water Building Walls to elevation 634'.

Facility: Yard and Miscellaneous Structures (cont'd)

2. Complete Circulating Water Pumphouse sub-structure to elevation 634'.

3. Continue Process Steam Tunnel, Administration Building foundations, Circulating Water discharge structures and piping and Evaporator/Auxiliary Boiler/Water Treatment Building foundations. (Earthwork).

4. Continue installation of yard piping and ductbank. (Earthwork).

5. Continue installation of Emergency Pond Service Water return piping. (Earthwork).

6. Continue plant backfill to elevation 634'. (Earthwork).

Facility: Subcontracts

1. Continue construction of the Pond Makeup Pumphouse and River Intake Structures. (Earthwork and dewatering).

2. Continue de-contaminative coatings in Auxiliary Building.

3. Continue installation of Control Room seismic HVAC ductwork.

4. Continue plant area backfill and completion of cooling pond dike work. (Earthwork).

AUGUST 1977

Facility: Auxiliary Building

1. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Control Tower area walls and slabs to elevation 704'.

2. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Solid Radwaste Addition.

3. Continue installation of decking, reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Radwaste and Equipment area walls north of the Fuel Pool to elevation 687'.

4. Continue installation of equipment, large and small piping in the elevation 568' through 659' levels.

Facility: Auxiliary Building (cont'd)

5. Continue installation of cable tray and exposed conduit in the elevation 568' level through 659' level of the building north of the Control Tower and through elevation 685' in the Control Tower.

Facility: Containment Building #1

1. Continue installation of reinforcing steel, formwork, embeds and concrete for the Containment exterior concrete above elevations 744' and the dome cover slab.

2. Continue the installation of flued heads.

3. Complete the installation of reinforcing steel, formwork, embedded metal, conduit and process piping and concrete for the Primary Pedestal and Secondary Shield Walls to elevation 615' and the let-down cooler walls to elevation 630'.

Facility: Containment Building #2

1. Continue installation of reinforcing steel, formwork, embeds and concrete for the Containment Exterior Concrete above elevation 744' and the dome cover slab.

2. Continue installation of reinforcing steel, formwork, embedded metal, conduit and process piping for the Secondary Shield Walls to elevation 644'.

3. Continue installation of structural and miscellaneous steel to elevation 626'.

4. Begin installation of electrical penetrations and junction boxes.

Facility: Turbine Building #1

1. Continue erection of structural steel.

Facility: Turbine Building #2

1. Continue construction of elevated slabs.

2. Continue erection of pre-cast panels.

3. Complete installation of computer room HVAC package.

4. Continue setting 4.16 kV Switchgear.

Facility: Yard and Miscellaneous Structures

1. Continue installation of reinforcing steel, formwork, embedded metal and concrete for the Service Water Building to elevation 634'.

Facility: Yard and Miscellaneous Structures (cont'd)

2. Continue Process Steam Tunnel, Administration Building foundations, Circulating Water discharge structures and piping and Evaporator/Auxiliary Boiler/Water Treatment Building foundations. (Earthwork).

3. Continue installation of yard piping and ductbank. (Earthwork).

4. Complete installation of Emergency Pond Service Water return piping. (Earthwork).

5. Continue plant backfill to elevation 634'. (Earthwork).

Facility: Subcontracts

1. Continue construction of the Pond Makeup Pumphouse and River Intake Structures. (Earthwork and dewatering).

2. Continue de-contaminative coatings in the Auxiliary Building.

3. Complete installation of Control Room seismic HVAC ductwork and seismic ceiling supports.

4. Continue plant area backfill and completion of cooling pond dike work. (Earthwork).

Exhibit 5

MIDLAND PLANT
Booked Expenditures and Estimated Expenditures
$1,000's

Description	Booked Thru Aug. 76	Est'd 9/76	Est'd 10/76	Est'd 11/76	Total As Of 12/1/76	Est'd 12/76	Est'd 1/77	Est'd 2/77	Est'd 3/77	Est'd 4/77	Total As Of 5/1/77	Est'd 5/77	Est'd 6/77	Est'd 7/77	Est'd 8/77	Total As Of 9/1/77
Nuclear Steam Supply System	$98,195	$240	$260	$488	$99,183	$385	$30	$380	$530	$30	$100,538	$20	$520	$20	$320	$101,418
Process Steam Evaporators	4,066	1,111	1,162	661	7,000	728	591	667	757	666	10,409	640	895	789	699	13,432
Turbine Generator	25,019	18	18	18	25,073	54	55	40	40	40	25,302	40	17,498	40	40	42,920
Bechtel (Balance of Plant):																
Engineering and Home Office	42,290	1,400	1,900	1,600	47,190	1,900	2,000	1,500	2,000	2,000	56,590	1,500	2,000	1,500	1,000	62,590
Field Labor	39,030	2,300	2,400	2,600	46,330	3,600	3,500	4,000	4,000	4,500	65,930	4,500	4,500	4,000	4,500	83,430
Materials	55,250	3,100	4,700	4,600	67,650	5,700	5,500	5,000	5,000	4,000	92,850	5,500	5,000	5,500	6,000	114,850
Subcontracts	27,838	1,000	1,000	1,000	30,838	1,000	1,000	1,000	1,000	1,000	35,838	1,000	1,000	1,500	1,500	40,838
Fee	3,447	131	131	131	3,840	131	131	131	131	131	4,495	131	131	138	138	5,033
Contingency	---	469	669	569	1,707	747	1,369	869	1,369	869	6,930	1,369	1,369	1,362	1,362	12,392
SUBTOTAL - Bechtel BOP	167,855	8,400	10,800	10,500	197,555	13,078	13,500	12,500	13,500	12,500	262,633	14,000	14,000	14,000	14,500	319,133
Consumers Power Company:																
Directs	6,441	260	1,205	523	8,429	784	295	295	325	413	10,541	413	443	590	590	12,577
Consumers Power Company Overheads:																
AFUDC	52,022	2,095	2,175	2,263	58,555	2,357	2,612	2,716	2,824	2,930	71,994	3,036	3,213	3,391	3,508	85,142
Other (Administrative and General, Taxes, Insurance, etc)	7,432	126	126	126	7,810	126	295	295	295	294	9,115	294	294	294	294	10,291
SUBTOTAL - CPCo Overheads	59,454	2,221	2,301	2,389	66,365	2,483	2,907	3,011	3,119	3,224	81,109	3,330	3,507	3,685	3,802	95,433
Misc. Other Work Orders:																
Spare Parts (7022)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Land (7023)	3,660	25	25	25	3,735	26	20	20	21	21	3,843	21	21	21	21	3,927
Bullock-Bow Line (7025)	162	5	5	5	177	3	---	---	---	---	180	---	---	---	---	180
Licensing (7029)	3,628	291	291	292	4,502	292	55	55	55	55	5,014	55	555	55	55	5,734
Electric R & D (5472)	171	---	---	---	171	---	---	---	---	---	171	---	---	---	---	171
SUBTOTAL - Misc. Work Orders	7,621	321	321	322	8,585	321	75	75	76	76	9,208	76	576	76	76	10,012
Deferred Payments	972	(302)	(346)	(151)	173	(173)	---	---	---	---	---	---	---	---	---	---
TOTAL PROJECT	$369,623	$12,269	$15,721	$14,750	$412,363	$17,660	$17,453	$16,968	$18,347	$16,949	$499,740	$18,519	$37,439	$19,760	$20,027	$594,925

MIDLAND ACRS ITEMS

ACRS ITEM	ACRS REPORT		CURRENT GENERIC RESOLUTION		MIDLAND STATUS		AFFECT ON RESOLUTION BY CONTINUED CONSTRUCTION (3)		
	Date	Reference	ACRS Ltr	RG, Etc	(1) Comply	(2) Open	Full Compliance Already Foreclosed	Compliance Foreclosed if Construction Continues to 9/1/77	Compliance Not Foreclosed if Construction Continues to 9/1/77
1. On-Site Meteorological Program	6-18-70 (Midland Docket)			1.23	X				
2. Control of Radioactivity in Export Steam	"				X				
3. Prohibit Salt Mining Within one-half Mile	"				X				
4. Chlorine Accident - Design of Control Room Vent System	"				X				
5. Reactor Vessel Cavity Design	"				X				
6. ECCS Design	"		4-16-76 Rulemaking Acceptance Criteria for ECCS		X				
7. Reactor Trip on High Containment Pressure	"				X				
8. Design of Emergency and Power Systems - Physical and Electrical Independence	"			1.75		X			X
9. Fuel Design - Damage Due to Flow Starvation, Etc	"				X				
10. Detection of Gross Fuel Failure	"				X				

MIDLAND ACRS ITEMS

ACRS ITEM	ACRS REPORT Date	ACRS REPORT Reference	CURRENT GENERIC RESOLUTION ACRS Ltr	CURRENT GENERIC RESOLUTION RG, Etc	MIDLAND STATUS (1) Comply	MIDLAND STATUS (2) Open	AFFECT ON RESOLUTION BY CONTINUED CONSTRUCTION (3) Full Compliance Already Foreclosed	Compliance Foreclosed if Construction Continues to 9/1/77	Compliance Not Foreclosed if Construction Continues to 9/1/77
11. Control of H_2 in Containment following Accident	6- 8-70		4-16-76	1.7, SRP	X				
12. ATWS	"		"	Wash - 1270		X			X
13. Demonstration of Analytical Equipment and Procedures for Determining Levels in Export Steam from Process Steam Evaporators	9-23-70				X				

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(b) NRC Staff Implementation of the ACRS Resolution

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(3) This means that a significant plant modification may be required to meet the ACRS Resolution or the NRC Staff implementation of that resolution.

GENERIC ACRS ITEMS

ACRS ITEM	ACRS REPORT Date	ACRS REPORT Reference	CURRENT GENERIC RESOLUTION ACRS Ltr	CURRENT GENERIC RESOLUTION RG, Etc	MIDLAND STATUS (1) Comply	MIDLAND STATUS (2) Open	AFFECT ON RESOLUTION BY CONTINUED CONSTRUCTION (3) Full Compliance Already Foreclosed	Compliance Foreclosed if Construction Continues to 9/1/77	Compliance Not Foreclosed if Construction Continues to 9/1/77
1. Post-LOCA environment: effect on materials in containment, pH, corrosion and abrasive slurries	1-17-69	TMI-2		(4)1.54, 1.82	X				
2. Evaluation of the Consequences of water contamination by structural coatings Post-LOCA	1-27-70	Palisades		1.54	X				
3. Leak tightness of Main Steam and other Containment Isolation Valves	2-17-67	H. B. Robinson		(4)1.48 (4)Appendix J	X				
4. Experimental verification of linear heat generation rate used as fuel element damage limit	3-14-67	Browns Ferry			X				
5. Flooding Protection for emergency cooling pumps	9-10-69	Dresden Unit 2		1.59,1.102	X				
6. Effect of Blowdown Forces on Core and Primary System	7-11-67	Oconee			X				
7. Ability of Fuel to withstand transients in its old age	7-11-67	Oconee			X				

GENERIC ACRS ITEMS

ACRS ITEM	ACRS REPORT		CURRENT GENERIC RESOLUTION		MIDLAND STATUS		AFFECT ON RESOLUTION BY CONTINUED CONSTRUCTION (3)		
	Date	Reference	ACRS Ltr	RG, Etc	(1) Comply	(2) Open	Full Compliance Already Foreclosed	Compliance Foreclosed if Construction Continues to 9/1/77	Compliance Not Foreclosed if Construction Continues to 9/1/77
8. Xenon Oscillations	7-11-67	Oconee			X				
9. Inspection of Welds in Containment Liner Plate	7-11-67	Oconee		1.19	X				
10. Testing of Eng Safety Features	8-17-72	Zion		1.22,1.52, 1.79,1.68, Sect XI		X			X

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(4) Regulatory Guide relates in part to this item.

Exhibit 6C

GENERIC ACRS ITEMS

ACRS ITEM	ACRS REPORT		CURRENT GENERIC RESOLUTION		MIDLAND STATUS		AFFECT ON RESOLUTION BY CONTINUED CONSTRUCTION (3)		
	Date	Reference	ACRS Ltr	RG, Etc	(1) Comply	(2) Open	Full Compliance Already Foreclosed	Compliance Foreclosed if Construction Continues to 9/1/77	Compliance Not Foreclosed if Construction Continues to 9/1/77
1. Net Positive Suction Head for ECCS Pumps	12-18-72 (Generic Letter)	I-1	4-16-76	1.1	X				
2. Emergency Power	"	I-2	"	1.6, 1.9, 1.32, IEEE-308	X				
3. H_2 Control after LOCA	"	I-3	"	1.7, SRP	X				
4. Inst Lines Penetrating	"	I-4	"	1.11	X				
5. Strong Motor Seismic Inst	"	I-5	"	1.12	X				
6. Fuel Pool Design Basis	"	I-6	"	1.13	X				
7. Protection Against Pump Flywheel Missiles	"	I-7	"	1.14	X				
8. Protection Against Sabotage	"	I-8	"	1.17	X				
9. Vibration Monitoring of Reactor Internals & Primary System	"	I-9	"	1.20	X				
10. Inservice Inspection	"	I-10	"	Sec XI, 1.65	X				
11. Quality Assurance	"	I-11	"	Appendix B, Sec III, ANSI-N45.2 1.28, 1.33, 1.64, 1.70.6 ANS-3.2		X			X

GENERIC ACRS ITEMS

ACRS ITEM	ACRS REPORT Date	ACRS REPORT Reference	CURRENT GENERIC RESOLUTION ACRS Ltr	CURRENT GENERIC RESOLUTION RG, Etc	MIDLAND STATUS (1) Comply	MIDLAND STATUS (2) Open	AFFECT ON RESOLUTION BY CONTINUED CONSTRUCTION (3): Full Compliance Already Foreclosed	Compliance Foreclosed if Construction Continues to 9/1/77	Compliance Not Foreclosed if Construction Continues to 9/1/77
12. (Applies only to BWR)	12-18-72 (Generic Letter)	I-12	4-16-76						
13. Independent Check of Primary System Stress	"	I-13	"	Sec III		X			X
14. (Applies only to BWR)	"	I-14							
15. RV Surviellance	"	I-15	"	10C FR 50 Appendix A & H, ASTM-E-185	X				
16. RV Materials	"	I-16	"	10C FR 50 Appendix A&G, Sec III, ACRS PV Report	X				
17. Operation with less than All Loops in Operation	"	I-17	"	ACRS/Staff Position	Not applicable				
18. Preoperational Testing	"	I-18	"	1.68	X				
19. Diesel Fuel Capacity	"	I-19	"	ACRS/Staff Position	X				
20. Capability of Biological Shield withstanding LOCA at safe ends	"	I-20	"	ACRS/Staff Position		X			X
21. Constructing one Plant while other is in operation	"	I-21	"	ACRS/Staff Position will Be Prepared		X			X

GENERIC ACRS ITEMS

ACRS ITEM	ACRS REPORT Date	ACRS REPORT Reference	CURRENT GENERIC RESOLUTION ACRS Ltr	CURRENT GENERIC RESOLUTION RG, Etc	MIDLAND STATUS (1) Comply	MIDLAND STATUS (2) Open	AFFECT ON RESOLUTION BY CONTINUED CONSTRUCTION (3): full Compliance Already Foreclosed	Compliance Foreclosed if Construction Continues to 9/1/77	Compliance Not Foreclosed if Construction Continues to 9/1/77
22. Seismic Design of Steam Lines	12-18-72	I-22	4-16-76	1.29	X				
23. Quality Group Classification	"	I-23	"	1.26	X				
24. Ultimate Heat Sink	"	I-24	"	1.27		X			X
25. Inst to Detect Stress in Containment Wall	"	I-25	"	1.18	X				
26. Adequacy of Primary System leak detection & Location	"	II-1	"	1.45	X				
27 Positive Moderator Coef	"	II-2	"	ACRS Position	X				
28. Use of Sensitized SS	"	II-3	"	1.44	X				
29. Protection Against Pipe Whip	"	II-4	"	1.46	X				
30. Turbine Missiles	"	II-4	(Pending)			X			X
31. Fixed In-core Detectors on High Power PWR's	"	II-6	4-16-76		Not Safety Related per ACRS General Statement				
32. Performance of Critical Components in Post-LOCA Environment	"	II-7	"	1.40, 1.63 1.73, 1.89, IEEE Stds		X			X

GENERIC ACRS ITEMS

ACRS ITEM	ACRS REPORT Date	ACRS REPORT Reference	CURRENT GENERIC RESOLUTION ACRS Ltr	CURRENT GENERIC RESOLUTION RG, Etc	MIDLAND STATUS (1) Comply	MIDLAND STATUS (2) Open	AFFECT ON RESOLUTION BY CONTINUED CONSTRUCTION (3) Full Compliance Already Foreclosed	Compliance Foreclosed if Construction Continues to 9/1/77	Compliance Not Foreclosed if Construction Continues to 9/1/77
33. Effective Operation of Cont Sprays in LOCA	12-18-72	II-8	(Pending)						
34. (Applies only to BWR)	"	II-9							
35. ATWS	"	II-10	4-16-76	Wash-1270	(See Exhibit 7A, item 12)	X			X
36. Radwaste Management	"	II-11	4-16-76	Appendix I		X			X
37. Possible Failure of RV Post-LOCA by Thermal Shock	"	II-12	(Pending)						
38. Inst to Detect Fuel Failures	"	II-13	(Pending)		(See Exhibit 7A, item 10)				
39. Monitoring for Excessive Vibration or Loose Parts Inside the RV	"	II-14	(Pending)						
40. Common Mode Failures	"	II-15	(Pending)		(See Exhibit 7A, item 12)				
41. ECCS Capability	"	II-16	4-16-76	Rule making-Acceptance Criteria for ECCS	X				
42. Behavior of Fuel Under Abnormal Conditions	"	II-17	(Pending)						
43. Emergency Power for Two or more Reactors	"	II-18	4-16-76	1.81	X				
44. (Applies Only to BWR)	"	II-19							

GENERIC ACRS ITEMS

ACRS ITEM	ACRS REPORT		CURRENT GENERIC RESOLUTION		MIDLAND STATUS		AFFECT ON RESOLUTION BY CONTINUED CONSTRUCTION (3)		
	Date	Reference	ACRS Ltr	RG, Etc	(1) Comply	(2) Open	Full Compliance Already Foreclosed	Compliance Foreclosed if Construction Continues to 9/1/77	Compliance Not Foreclosed if Construction Continues to 9/1/77
45. Inst to Follow Course of an Accident	12-18-72	II-20	(Pending)						
46. (Applies only to BWR)	"	II-21							
47. Advisablity of Seismic Scram	"	II-22	(Pending)						

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(3) This means that a significant plant modification may be required to meet the ACRS Resolution or the NRC Staff implementation of that resolution.

Exhibit (4)

GENERIC ACRS ITEMS

ACRS ITEM	ACRS REPORT Date	ACRS REPORT Reference	CURRENT GENERIC RESOLUTION ACRS Ltr	CURRENT GENERIC RESOLUTION RG, Etc	MIDLAND STATUS (1) Comply	MIDLAND STATUS (2) Open	AFFECT ON RESOLUTION BY CONTINUED CONSTRUCTION (3) Full Compliance Already Foreclosed	Compliance Foreclosed if Construction Continues to 9/1/77	Compliance Not Foreclosed if Construction Continues to 9/1/77
1. Pressure in Containment Following LOCA	2-13-74	IIA-1	(Pending)						
2. (Applies Only to BWR)	"	IIA-2							
3. Fuel Densification	"	IIA-3	4-16-76	Appendix K	X				
4. (Applies only to Westinghouse)	"	IIA-4							
5. Rupture of High Pressure Lines Outside Containment	"	IIA-5	(Pending)						
6. Pwr Pump Overspeed During LOCA	"	IIA-6	(Pending)						
7. Rod Sequence Control System	"	IIA-7			Not Applicable				
8. Isolation of Low Pressure System from High Pressure Systems	"	IIA-8	(Pending)						
9. Steam Generator Tube Leakage	"	IIA-9	4-16-76 Partially Resolved by 1.83			X			X
10. ACRS/NRC Periodic 10 Year Review	"	IIA-10	(Pending)						

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Exhibit 6E

GENERIC ACRS ITEMS

ACRS ITEM	CURRENT: ACRS REPORT Date	ACRS REPORT Reference	GENERIC RESOLUTION ACRS Ltr	GENERIC RESOLUTION RG, Etc	MIDLAND STATUS (1) Comply	MIDLAND STATUS (2) Open	AFFECT ON RESOLUTION BY CONTINUED CONSTRUCTION (3): Full Compliance Already Foreclosed	Compliance Foreclosed if Construction Continues to 9/1/77	Compliance Not Foreclosed if Construction Continues to 9/1/77
1. Hybrid Reactor Protection System	3-12-75	IIB-1	(Pending)						
2. Qualification of New Fuel Geometry	"	IIB-2	(Pending)						
3. (Applies Only to BWR)	"	IIB-3							
4. Seismic Category I Requirements for Aux Systems	"	IIB-4	4-16-76	1.26,1.29	X				
5. (Applies Only to BWR)	"	IIB-5							

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Exhibit 6F

GENERIC ACRS ITEMS

ACRS ITEM	ACRS REPORT Date	ACRS REPORT Reference	CURRENT GENERIC RESOLUTION ACRS Ltr	CURRENT GENERIC RESOLUTION RG, Etc	MIDLAND STATUS (1) Comply	MIDLAND STATUS (2) Open	AFFECT ON RESOLUTION BY CONTINUED CONSTRUCTION (3) Full Compliance Already Foreclosed	Compliance Foreclosed if Construction Continues to 9/1/77	Compliance Not Foreclosed if Construction Continues to 9/1/77
1. Locking Out of ECCS Power Operated Valves	4-16-76	IIC-1	(Pending)						
2. Fire Protection	"	IIC-2	(Pending)						
3. Design Features to Control Sabotage	"	IIC-3	(Pending)						
4. Decont & Decomm of Reactors	"	IIC-4	(Pending)						
5. Vessel Support Structures	"	IIC-5	(Pending)						
6. Water Hammer	"	IIC-6	(Pending)						
7. Maintenance & Inspection of Plants	"	IIC-7	(Pending)						
8. (Applies Only to BWR)	"	IIC-8							

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Exhibit 16

MIDLAND PLANT, UNITS 1 AND 2

Delay Costs Associated With Suspending Construction 5 Months and 9 Months
(x $1,000)

Item	Current Budget	Suspension 12/1/76 - 5/1/77 Increased Cost	Suspension 12/1/76 - 5/1/77 Actual Delay Cost	Suspension 12/1/76 - 9/1/77 Increased Cost	Suspension 12/1/76 - 9/1/77 Actual Delay Cost
B & W Nuclear Steam Supply System	$ 108,400	$ 109,750	$ 1,350	$ 110,650	$ 2,250
B & W Process Steam Evaporators	15,500	16,000	500	16,000	500
General Electric Turbine Generator	52,400	52,850	450	53,150	750
Bechtel (Balance of Plant):					
Manual Labor (Field)	238,870	246,270	7,400	248,170	9,300
Nonmanual (Field)	51,900	57,100	5,200	60,000	8,100
Distributables	50,360	53,560	3,200	55,860	5,500
Subcontracts and Materials	282,900	286,900	4,000	288,400	5,500
Engineering and Home Office Support	90,600	97,900	7,300	102,100	11,500
Contingency	76,000	81,600	5,600	84,200	8,200
Escalation	-	35,300	35,300	46,900	46,900
Miscellaneous (Allowances, Fees and Productivity Declines)	151,200	151,200	-	151,200	-
Consumers Power Company					
Directs (Project Management and Direct Engineering and Operator Training	65,995	70,526	4,531	75,200	9,205
Administrative and General	22,818	24,541	1,723	25,145	2,327
Other Overheads (Taxes and Insurance)	41,620	49,360	7,740	58,350	16,730
AFUDC	402,837	461,143	58,306	522,550	119,713
Miscellaneous Work Orders (Land, Licensing, Spare Parts, Electric Research and Development)	18,600	21,000	2,400	22,125	3,525
Total Plant Cost	$1,670,000	$1,815,000	$145,000	$1,920,000	$250,000
Nuclear Fuel Cost	124,600	132,009	7,409	136,965	12,365
Replacement Power and/or Differential Power Cost	-	-	210,900	-	381,400
TOTAL DELAY COSTS	$1,794,600 Base	$1,947,009	$363,309	$2,056,965	$643,765

MIDLAND PLANT

Estimated Abandonment Cost Data - $1,000's

Description	Abandon Plant On 12/1/76	Abandon Plant On 5/1/77 Construction Continued To 5/1/77	Abandon Plant On 5/1/77 Construction Suspended From 12/76 to 5/77	Abandon Plant On 9/1/77 Construction Continued To 9/1/77	Abandon Plant On 9/1/77 Construction Suspended From 12/76 to 9/1/77
1. Plant Expenditures to Date	$ 412,000	$ 500,000	$ 478,000	$ 595,000	$ 535,000
A. Salvage Value of Material	(45,000)	(52,000)	(52,000)	(58,000)	(58,000)
2. Plant Material and Subcontracts Committed But Not Paid	136,000	169,000	154,000	134,000	115,000
A. Cancellation Cost of Material and Subcontracts	56,000	59,000	58,000	41,000	40,000
B. Salvage Value of Material	(7,000)	(7,000)	(7,000)	(6,000)	(6,000)
3. Nuclear Fuel Cost Expenditures to Date	6,000	6,086	6,086	6,174	6,174
A. Fuel Cost Committed But Not Paid	118,600	118,514	125,923	118,426	130,791
B. Cancellation Cost of Fuel	86	88	88	70	70
C. Salvage Value of Fuel	(16,735)	(16,735)	(16,735)	(16,735)	(16,735)
4. Site Restoration Cost	59,000	76,000	59,000	101,000	59,000
5. Dow Dual Purpose Cost Reimbursement	(52,000)	(70,000)	(65,000)	(84,000)	(77,000)
6. Cost of Alternate (1600 MW) Fossil Plant*					
A. Low Sulfur Coal	1,061,600	1,063,700	1,120,400	1,063,500	1,158,400
B. High Sulfur Coal	1,265,500	1,268,500	1,336,200	1,271,700	1,385,000
7. Purchase Power and/or Differential Power Cost From Midland Inservice Dates to Alternate Plant Inservice Dates*	661,000	755,000	596,000	829,000	582,000
8. Midland To-Go Capital Cost	1,258,000	1,170,000	1,337,000	1,075,000	1,385,000
9. Midland Operation Cost*					
A. Fuel	840,000	840,000	889,000	840,000	922,000
B. Operation and Maintenance, Nuclear Insurance and Taxes	1,323,000	1,323,000	1,420,000	1,323,000	1,488,000
10. Alternate Plant Operation Cost (Low Sulfur)*					
A. Fuel	6,230,000	6,272,000	6,923,000	6,173,000	7,284,000
B. Operation and Maintenance, Insurance and Taxes	767,000	766,000	820,000	760,000	850,000
11. Alternate Plant Operation Cost (High Sulfur)*					
A. Fuel	3,372,000	3,407,000	3,760,000	3,353,000	3,956,000
B. Operation and Maintenance, Insurance and Taxes	1,108,000	1,050,000	1,193,000	1,101,000	1,242,000

*See single asterisk footnote on Exhibit 20.

Exhibit 18a

MIDLAND TOWNSHIP
ZONING BOARD OF APPEALS

FINDINGS AND ORDER

Pursuant to notice published in the Midland Daily News on August 1 and August 6, 1969, a copy of which notice was mailed to all owners of property adjoining the property in question, a public hearing was held in the Midland Township Hall at 7:00 PM on Tuesday, August 12, 1969, on the July 18, 1969 petition of Consumers Power Company (hereinafter called the "Company") to locate a nuclear power plant, cooling pond, and appurtenant equipment, structures and facilities on the following described property in Midland Township, Midland County, Michigan

A parcel of land in Sections 26, 27, 33, 34 and 35, T14N, R2E, Midland Township, Midland County, Michigan, being more specifically described as follows:

Beginning at the North 1/4 post of said Section 33; thence N. 89° 20' 40" E. along the North line of said Section 33 a distance of 2644.66 feet to the Northeast corner of said Section 33; thence N. 89° 30' 00" E. along the North line of said Section 34 a distance of 907.00 feet to the centerline extension of Bullock Creek (so called); thence North along said creek centerline a distance of 2195 feet more or less to the thread of the Tittabawassee River (so called); thence Southeasterly along the thread of said river approximately two miles to the South line of said Section 35 at a point S. 89° 52' 00" E. a distance of 1196.00 feet from the South 1/4 post of said Section 35; thence N. 89° 52' 00" W. along the South line of said Section 35 a distance of 3822.42 feet to the Southeast corner of said Section 34; thence N. 89° 52' 09" W. along the South line of said Section

34 a distance of 87.79 feet; thence continuing along said section line S. 89° 48' 50" W. a distance of 2618.12 feet to the South 1/4 post of said Section 34; thence S. 89° 49' 01" W. along the South line of said Section 34 a distance of 84.54 feet; thence continuing along said section line S. 89° 42' 37" W. a distance of 2574.67 feet to the Southeast corner of said Section 33; thence S. 89° 42' 40" W. along the South line of said Section 33 a distance of 81.30 feet; thence continuing along said section line S. 89° 31' 10" W. a distance of 2558.20 feet to the South 1/4 post of said Section 33; thence N. 00° 13' 23" E. along the North and South 1/4 line of said Section 33 a distance of 2637.76 feet to the East and West 1/4 line of said Section 33; thence continuing along said North and South 1/4 line N. 00° 15' 42" E. a distance of 2635.09 feet to the place of beginning.

On the basis of the petition, the statements made at the hearing, and other information available to the Board, the Board finds as follows:

1. The Company is a corporation organized under the laws of the State of Michigan, with its principal office at 212 W. Michigan Avenue, Jackson, Michigan, is duly authorized to carry on the business of generating and supplying electric energy as a public utility in the State of Michigan, and is carrying on such business in a substantial area of Michigan's Lower Peninsula.

2. The Company's proposed nuclear power plant, cooling pond, and appurtenant equipment, structures and facilities are public utility buildings, structures and uses.

3. The construction and operation of the Company's proposed two-unit nuclear power plant in Midland Township, together with a cooling pond and appurtenant equipment, structures and facilities, as described in the

petition and at the hearing, is reasonably necessary to meet foreseeable demands upon the Company for electric energy in the State of Michigan.

4. Automobile access to the proposed plant will be from the west via Miller Road, which will be strengthened. A railroad spur will serve the site from the northwest and will be constructed across the Tittabawassee River on a new railroad bridge. Sasse Road and River Road will be discontinued to the extent they fall within the boundaries of the Company's site. Stewart Road will be terminated by a turnaround at the western boundary of the plant site. The Company intends to provide adequate off-street parking on its site for its employees and visitors to the plant. The Bullock Creek and the Waite & Debolt drains will be rerouted as approved by the County Drain Commissioner. A bridge will be constructed over the rerouted drains where they cross Miller Road.

5. The plant will not produce noise, dust, fumes or odors in objectionable quantity, and planned releases of radioactivity from the plant will be controlled so as to be within the limits established by the United States Atomic Energy Commission. The Company has advised the Board that its studies indicate that the incidence of local fogging will not increase by more than three or four days a year as a result of the proposed plant and pond operation. The Company has presented information including meterorological studies, indicating that physical damage to existing dwellings from fogging, water or ice due to the Company's project will not occur.

6. The Company's proposed plant, pond, and appurtenant equipment, structures and facilities will be attractively designed and landscaped.

7. The Company estimates that the constructed cost of the plant, pond and appurtenant equipment, structures and facilities will be about $350 million. Up to approximately 700 persons will be employed at the site during construction. The plant's permanent staff will number about seventy-five.

8. All of the petitioner's proposed improvements, with the exception of the cooling pond, will be located in Section 27 of Midland Township, which is zoned "Industrial." The pond and its structures will be located in an area zoned "Residential A."

9. The Company's proposed nuclear power plant, cooling pond, and appurtenant equipment, structures and facilities, as described in the petition and at the hearing, are reasonably necessary for the public convenience and service, and will be designed, erected and landscaped to conform harmoniously with the general architecture and plan of the use districts in which they are proposed to be located.

10. The Company owns, has contracted to purchase, or has options to purchase all of the land comprising the property described above, except for a parcel of land owned by William J. Mergard and Hazel B. Mergard, 3697 E. Gordonville Road, being the South 1/2 of the Southwest 1/4 of Section 34 and the Southwest 1/4 of the Southeast 1/4 of Section 34, T14N, R2E, Midland County, Michigan. The Company has no present legal interest in the Mergard parcel and the owners have not given the Company permission to use the same for the purpose set forth in the Company's petition.

WHEREFORE, the Board hereby grants permission to the Company to locate, construct and operate its said proposed nuclear power plant, cooling pond, and appurtenant equipment, facilities and structures in the use

districts and on the property hereinabove first described, pursuant to Section 13.2 of the Zoning Ordinance of Midland Township, Midland County, Michigan, except for the parcel now owned by William J. and Hazel B. Mergard and described in paragraph 10 above, and the Building Inspector is hereby authorized and directed to issue a building permit therefor upon application by the Company. As to the Mergard parcel only, the Board hereby denies the Company's petition, without prejudice to the Company's right to petition the Board for its inclusion in the Company's project when and if the Company obtains a fee, leasehold, purchase-option, condemnor's title (whether or not subject to final court confirmation), or similar interest in said parcel, or has contracted to purchase the same, or has secured its owners' permission to so petition the Board. This Order is conditioned upon the following:

1. The Company shall surround the cooling pond with a security fence which shall, at the northwest corner of the pond in the vicinity of Tisland Subdivision, angle northeasterly to follow the line of the pond dike instead of continuing northward along the Company's property line;
2. The Company shall provide and maintain good evergreen trees and a continuous hedge along and on the outside of the security fence on the western side of the pond from Gordonville Road north, to terminate at existing vegetation near the edge of Bullock Creek, and shall provide and maintain good evergreen trees randomly spaced on the outside of the security fence along the Company's south property line running east to the flood plain of the River defined by the 100-year flood. The Company

shall replace vegetation and screening in areas of existing vegetation near the edge of Bullock Creek and in any other areas of planting should the existing vegetation be removed or die off or the planting of new screening fail to provide proper screening in the future;

3. Except on the river side, the Company shall locate the dike of the pond so that the center of the dike shall be no closer than one hundred sixty (160) feet from the property line at any point, and the security fence shall not be placed less than ten (10) feet inside the Company's property line at any point.

4. Company shall not erect any buildings on or along the dike not shown on drawings heretofore submitted to the Board, and shall not use this property for any other use than is provided for in this Order or as permitted by the Township Zoning Ordinance for the use district in which the project is located; Provided, however, that an information center concerning the nuclear power plant may be constructed on this property in a location other than that shown on such drawings, subject to the approval by the Board of the site thereof.

5. If the Company abandons the use of the property as approved by this Order, then the dike and pond area shall be leveled and left with a cover of soil in such a manner as to be harmonious with the then-existent drainage and suitable for uses permitted by the Township Zoning Ordinance for the use district in which the dike and pond area is located.

The Company has furnished the Board a set of plans of the entire pond area, showing setbacks, screenings, and specifications of all lines complying with Conditions 1, 2 and 3 above; and said plans, marked as "SK-C-235, Rev. A" and "SK-A-52, Rev. D," are hereby incorporated into and made a part of this Order. The Secretary of the Board shall forthwith deliver a copy of these Findings and Order to the Office of the Building Inspector.

ZONING BOARD OF APPEALS
MIDLAND TOWNSHIP, MIDLAND COUNTY, MICHIGAN

Chairman

Secretary

Member

Date: March 18, 1970

MIDLAND TOWNSHIP
ZONING BOARD OF APPEALS

FINDINGS AND ORDER

Pursuant to notice published in the Midland Daily News on May 21, 1974, a copy of which notice was mailed to all owners of property adjoining the property in question, a public hearing was held in the Midland Township Hall at 7:00 PM on Wednesday, May 29, 1974, on the May 6, 1974 petition of Consumers Power Company (hereinafter called the "Company") to locate a cooling pond and appurtenant equipment, structures and facilities on the following described property in Midland Township, Midland County, Michigan:

> The S 1/2 of the SW 1/4 and the SW 1/4 of the SE 1/4 of Section 34, T14N, R2E.

A previous public hearing was held before the Board on August 12, 1969, upon the application of the Company to locate a nuclear power plant, cooling pond, and appurtenant equipment, structures and facilities upon described property in Sections 26, 27, 33, 34 and 35 of Midland Township. A transcript of said public hearing is in the possession of the Board. On March 18, 1970, the Board issued its findings and an order authorizing the Company to locate, construct and operate said facilities upon all of the petitioned property except the parcel of land which is the subject of the Company's May 6, 1974 petition, subject to various conditions set forth in the order.

On the basis of the petition, the statements made at the hearings, and other information available to the Board, the Board finds as follows:

1. The Company is a corporation organized under the laws of the State of Michigan, with its principal office at 212 W. Michigan

Avenue, Jackson, Michigan, is duly authorized to carry on the business of generating and supplying electric energy as a public utility in the State of Michigan, and is carrying on such business in a substantial area of Michigan's Lower Peninsula.

2. The Company's proposed cooling pond and appurtenant equipment, structures and facilities are public utility buildings, structures and uses.

3. The construction and operation of the Company's proposed cooling pond and appurtenant equipment, structures and facilities, as described in the petition and at the hearings is necessary in order for the Company to operate the Company's nuclear power plant presently under construction.

4. The Company has advised the Board that its studies indicate that the incidence of local fogging will not increase by more than three or four days a year as a result of the proposed plant and pond operation. The Company has presented information including meteorological studies, indicating that physical damage to existing dwellings from fogging, water or ice due to the Company's project will not occur.

5. The Company's proposed cooling pond and appurtenant equipment, structures and facilities will be attractively designed and landscaped.

6. The Company's proposed cooling pond and appurtenant equipment, structures and facilities, as described in the petition and at the hearings, are reasonably necessary for the public convenience and service, and will be designed, erected and landscaped to conform harmoniously with the general architecture and plan of the "Residential A" use district in which they are proposed to be located.

7. The Company has received a warranty deed to the property described herein from William G. and Hazel B. Mergard dated February 12, 1974.

WHEREFORE, the Board hereby grants permission to the Company to locate, construct and operate its said proposed cooling pond and appurtenant equipment, facilities and structures in the use districts and on the property hereinabove first described, pursuant to Section 13.2 of the Zoning Ordinance of Midland Township, Midland County, Michigan, subject to the same terms and conditions as the Board's prior order of March 18, 1970. The Secretary of the Board shall forthwith deliver a copy of these Findings and Order to the Office of the Building Inspector.

ZONING BOARD OF APPEALS
MIDLAND TOWNSHIP, MIDLAND COUNTY, MICHIGAN

Clarence T. Brown
Chairman

Richard A. Ostrander
Secretary

Lloyd V. Livingston
Member

Date: May 30, 1974

Exhibit 19

Analysis I

Comparison of Midland Abandonment Costs - $1,000's

	Abandon at 12/1/76	Abandon at 5/1/77 Assuming Continuation Of Construction	Abandon at 5/1/77 Assuming Suspension Of Construction
1. Plant Expenditures to Date	$412,000	$500,000	$478,000
A. Salvage Value of Material	(45,000)	(52,000)	(52,000)
2. Plant Material and Subcontracts Committed But Not Paid	---	---	---
A. Cancellation Cost of Material and Subcontracts	56,000	59,000	58,000
B. Salvage Value of Material	(7,000)	(7,000)	(7,000)
3. Nuclear Fuel Expenditures to Date	6,000	6,000	6,000
A. Fuel Costs Committed But Not Paid	---	---	---
B. Cancellation Cost of Fuel	86	174	174
C. Salvage Value of Fuel	(16,735)	(16,735)	(16,735)
4. Site Restoration Cost	59,000	76,000	59,000
5. Dow Dual Purpose Reimbursement	(52,000)	(70,000)	(65,000)
TOTAL	$412,351	$495,439	$460,439

	Abandon at 9/1/77 Assuming Continuation Of Construction	Abandon at 9/1/77 Assuming Suspension Of Construction
1. Plant Expenditures to Date	$595,000	$535,000
A. Salvage Value of Material	(58,000)	(58,000)
2. Plant Material and Subcontracts Committed But Not Paid	---	---
A. Cancellation Cost of Material and Subcontracts	41,000	40,000
B. Salvage Value of Material	(6,000)	(6,000)
3. Nuclear Fuel Expenditures to Date	6,000	6,000
A. Fuel Costs Committed But Not Paid	---	---
B. Cancellation Cost of Fuel	244	244
C. Salvage Value of Fuel	(16,735)	(16,735)
4. Site Restoration Cost	101,000	59,000
5. Dow Dual Purpose Reimbursement	(84,000)	(77,000)
TOTAL	$578,509	$482,509

Analysis II

Exhibit 20

Cost to Complete and Operate Midland Vs
Cost of Abandoning Midland and
Installing and Operating Alternative Capacity (Low Sulphur Coal)

(Millions)*

	To Complete at 12/1/76	To Complete at 5/1/77		To Complete at 9/1/77	
		Assuming Continuation of Construction	Assuming Suspension of Construction at 12/1/76	Assuming Cont. nuation of Construction	Assuming Suspension of Construction at 12/1/76
MIDLAND PLANT*					
Midland to-go Capital Cost	1,258	1,170	1,337	1,075	1,385
Taxes	768	768	835	768	883
Fuel	840	840	889	840	922
Operation & Maintenance	502	502	530	502	549
Nuclear Insurance	53	53	55	53	56
Total Generation Cost	3,421	3,333	3,646	3,238	3,795

	Abandon at 12/-1/76	Abandon at 5/1/77		Abandon at 9/1/77	
		Assuming Continuation of Construction	Assuming Suspension of Construction at 12/1/76	Assuming Continuation of Construction	Assuming Suspension of Construction at 12/1/76
ALTERNATIVE*					
Capital Cost	1,061.6	1,063.7	1,120.4	1,063.6	1,158.4
Salvageable Material	(61.3)	(68.9)	(72.3)	(75.3)	(81.4)
Dow Dual Purpose Cost Reimbursement	(70.8)	(92.8)	(90.4)	(109.0)	(108.1)
Cancellation Cost of Material and Subcontracts Minus Salvage Value (Net of Number 2A-2B)**	66.7	68.9	70.9	45.4	47.7
Site Restoration Cost	80.3	100.8	82.0	131.0	82.8
Purchasing Power and/or Differential Power Cost	661.0	775.0	596.0	829.0	582.0
Taxes & Insurance	495.0	496.0	522.0	496.0	540.0
Fuel	6,230.0	6,272.0	6,923.0	6,173.0	7,284.0
Operation & Maintenance	272.0	270.0	298.0	264.0	310.0
Nuclear Fuel Cost (Net of number 3 + 3B -3C)**	14.4	(13.5)	(14.2)	(13.6)	(14.7)
Total Generation Cost	8,720.1	8,851.2	9,435.4	8,804.1	9,800.7

*Costs are stated in future value dollars as of the date of commercial operation of Midland Unit 2, ie, columns 1, 2 and 4 @ 3/1/81, Column 3 @ 12/1/81 and column 5 @ 6/1/82.
**From Exhibit 17.

Analysis II

Exhibit 21

Cost to Complete and Operate Midland Vs
Cost of Abandoning Midland and
Installing and Operating Alternative Capacity (High Sulphur Coal)

(Millions)

	To Complete at 12/1/76	To Complete at 5/1/77		To Complete at 9/1/77	
		Assuming Continuation of Construction	Assuming Suspension of Construction at 12/1/76	Assuming Continuation of Construction	Assuming Suspension of Construction at 12/1/76
MIDLAND PLANT					
Midland to-go Capital Cost	1,258	1,170	1,337	1,075	1,385
Taxes	768	768	835	768	883
Fuel	840	840	889	840	922
Operation & Maintenance	502	502	530	502	549
Nuclear Insurance	53	53	55	53	56
Total Generation Cost	3,421	3,333	3,646	3,238	3,795

	Abandon at 12/1/76	Abandon at 5/1/77		Abandon at 9/1/77	
		Assuming Continuation of Construction	Assuming Suspension of Construction at 12/1/76	Assuming Continuation of Construction	Assuming Suspension of Construction at 12/1/77
ALTERNATIVE					
Capital Cost	1,265.5	1,268.5	1,336.2	1,271.7	1,385.0
Salvageable Material	(61.3)	(68.9)	(72.3)	(75.3)	(81.4)
Dow Dual Purpose Cost Reimbursement	(70.8)	(92.8)	(90.4)	(109.0)	(108.1)
Cancellation Cost of Material and Subcontracts Minus Salvage Value (Net of Number 2A-2B)**	66.7	68.9	70.9	45.4	47.7
Site Restoration Cost	80.3	100.8	82	131.0	82.8
Purchased Power and/or Differential Power Cost	661	755	596	829	582
Taxes & Insurance	590	534	623	593	646
Fuel	3,372	3,407	3,760	3,353	3,956
Operation & Maintenance	518	516	570	508	596
Nuclear Fuel Cost (Net of number 3 + 3B - 3C)**	(14.4)	(13.5)	(14.2)	(13.6)	(14.7)
Total Generation Cost	6,407	6,475	6,861.2	6,533.2	7,091.3

*Costs are stated in future value dollars as of the date of commercial operation of Midland Unit 2, i.e., columns 1, 2 and 4 @ 3/1/81, column 3 @ 12/1/81 and column 5 @ 6/1/82.

**From Exhibit 17.

Exhibit 22

Analysis III

Abandonment Ratio of Generation Cost of Midland with Generation cost of an alternative Generating Facility (Low Sulphur Coal)

	12/1/76	5/1/77	9/1/77
		Assuming Continuation	Assuming Continuation
Alternative Midland	8,720.1 / 3,421	8,851.2 / 3,333	8.804.1 / 3,238
	Ratio = 2.55	Ratio = 2.66	Ratio = 2.72
		Assuming Suspension	Assuming Suspension
		9,435.4 / 3,646	9,800.7 / 3,795
	Ratio = 2.55	Ratio - 2.59	Ratio - 2.58

Exhibit 23

Analysis III

Abandonment Ratio of Generation Cost of
Midland With Generation Cost of an Alternative
Generating Facility (High Sulphur Coal)

	12/1/76	5/1/77 Assuming Continuation	9/1/77 Assuming Continuation
Alternative / Midland	6,407 / 3,421	6,475 / 3,333	6,533.2 / 3,238
	Ratio = 1.87	Ratio = 1.94	Ratio = 2.02
		Assuming Suspension	Assuming Suspension
		6,861.2 / 3,646	7,091.3 / 3,795
	Ratio - 1.87	Ratio - 1.88	Ratio - 1.87