

TESTIMONY OF STEPHEN H. HOWELL

My name is Stephen H. Howell and I reside at 3923 Harwich Lane, Jackson, Michigan.

I am currently Vice President, Projects, Engineering and Construction for Consumers Power Company, Jackson, Michigan ("Consumers Power") with responsibility for engineering and construction activities for all production, generation and transmission facilities of the Company.

I graduated from Princeton University in 1954 with Honors in Engineering and received a Bachelor of Science in Engineering Degree. After graduation, I served two years on active duty as an officer in the US Navy. I obtained a Masters of Science Degree in Industrial Management in 1966 from the Massachusetts Institute of Technology, which I attended on a Sloan Fellowship. After my naval service and prior to joining Consumers Power in 1961, I worked for five years as an exploration geologist for The Ohio Oil Company. I joined Consumers Power in Jackson as a geologist in the Gas Department. I held successive jobs in the Gas Department in underground gas storage, gas and oil exploration, gas production and transmission, and gas distribution, before being named Executive Manager of Gas Engineering and Construction in 1968. In 1970 I was appointed Executive Manager of Electric and Generating Plant Construction and in 1971 was named Executive Manager of Electric Plant Projects. I was elected a vice president in June 1972 with responsibilities for design and construction of electric generating plants. I assumed my current responsibilities in April 1976. I am a Registered Professional Engineer in the State of Michigan.

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I have been involved in the consultations and negotiations between The Dow Chemical Company ("Dow") and Consumers Power with regard to the Midland Nuclear Plant for the last five years and am familiar with the contracts currently in effect between the parties and the positions of the parties in negotiations now in progress to modify the contracts in several respects. The purpose of this testimony is to outline changes in the contracts since the construction permit hearings in this proceeding, and to indicate Consumers Powers principal objectives in the current negotiations between the parties.

I have attached as proposed Consumers Power Exhibit 7(a) - 7(c) the contracts between Dow and Consumers Power which were executed in January 1974 and which are presently in effect. These contracts are identical to those submitted to the US Nuclear Regulatory Commission and as to which it stated in its order of April 11, 1974:

"We have carefully reviewed the relevant portions of these contracts and reaffirm our prior determination that there are no 'changed circumstances', as alleged by Saginaw, warranting a reopening of these proceedings. We think it sufficient to note that Dow has a contractual commitment to purchase large quantities of process steam from the completed facility, that substantial purchases of electricity are also contemplated, and that Dow's existing fossil-fueled facilities are to be maintained primarily on a standby basis."

#### Principal Changes in the Steam Contract

At the construction permit hearing, the form of steam service contract appended to the 1967 Dow-Consumers Power General Agreement, as amended through Supplemental Agreement No. 13 (the 'initial steam proposal') was entered into evidence

as Mapleton Exhibit 27. The principal changes between this initial steam proposal and the steam supply contract executed in 1974 (the "present steam contract") are as follows:

1. There was no minimum requirement for steam in the initial steam proposal. Dow agreed in the present steam contract to a minimum take of at least 2,000,000 lbs/hr of 175 psig steam. There is no minimum requirement for 600 psig steam.
2. The estimated date for commercial operation of the nuclear unit which would supply steam to Dow was changed from February 1, 1974 in the initial steam proposal to March 1, 1980 in the present steam contract.
3. The initial steam proposal contemplated that, if requested by Dow, Consumers would install fossil-fired package boilers to supply 1,000,000 lbs/hr of emergency back-up steam to Dow, to be utilized in the event the total steam supply to Dow from the nuclear plant fell below 1,000,000 lbs/hr. The present steam contract provides that such units would be installed by Consumers Power only if Dow had given Consumers Power such notice by October 1, 1974, and that the notice could require boilers having a total flow rate not less than 300,000 lbs/hr and not more than 1,000,000 lbs/hr of 175 psig steam. If no such notice had been given by that date, Dow would have been obligated to maintain, throughout the life of the agreement, a standby and auxiliary source of steam of 300,000 lbs/hr at 150 psig or greater for Consumers Power's Midland Nuclear Plant. As a result of notice given by Dow in September 1974 and subsequent discussions, Consumers Power and Dow will each provide for its own standby steam requirements. Consumers Power plans to install oil-fired package boilers with 300,000 lbs/hr of steam generating capacity to supply its standby steam requirements.

4. The present steam contract provides that Dow may generate any amount of steam, as standby or auxiliary to the steam provided by Consumers Power, from Dow's existing facilities which were operable as of January 15, 1974, provided that Dow may repair but not replace or add to its then existing fossil-fueled South and West Power Houses. The initial steam proposal required that these fossil-fired units be retired after the second nuclear unit was declared in commercial operation.

Under the initial steam proposal, Dow expected to maintain its existing fossil-fired units as back-up for the nuclear-generated steam until the second nuclear unit was placed in service to provide back-up steam capacity. At that time it was anticipated that the first unit on line would be the steam generating unit (Unit 1) and that Unit 2, the back-up unit, would come on line about one year later. The order in which the units will be placed in service has now been reversed. The present steam contract further provides that, upon retirement of Dow's antiquated fossil-fired units, Dow may generate and utilize up to 1,000,000 lbs/hr of 175 psig steam from any facility owned and operated by Dow as standby or auxiliary to the steam provided by Consumers Power. This Dow steam capacity would enable Dow to provide back-up steam in the event both nuclear units are down or auxiliary steam to Dow in excess of the take from Consumers Power, in instances where Dow desires to do so.

This change was made when it was anticipated that nuclear steam would come on line in 1980. Dow had expressed concern that serious power shortages might develop in the early 1980's which could cause the Michigan Public

Service Commission to order Consumers Power to cut back steam and power supplies to Dow. Of course, current projections are for nuclear steam to come on line in 1982 and the spectre of severe power shortages in the early 1980's has been somewhat diminished. Another reason for the change was Dow's lack of ability to forecast scales that far in advance. Dow desired the flexibility to make correct economic decisions on how to provide for those increases in steam demand that could not be forecast sufficiently in advance to give Consumers Power the required notice. Dow has informed us that it intends to shut down its antiquated units as soon as possible after a reliable and economic source of process steam is available. Consequently, the provision of the present steam contract permitting Dow to continue to generate steam from its existing fossil-fueled powerhouses is not expected to actually be utilized.

5. The present steam contract provides that if, for any reason, the Consumers Power's Midland Nuclear Plant is prevented from being completed or operated, Dow shall pay Consumers Power for all costs for facilities to produce and serve process steam as well as costs for the turbine-generator cycle of the steam unit which cannot be used in a full electric-only unit.

There was no such provision for cost sharing in the initial steam proposal. However, the 1967 General Agreement as amended through Supplemental Agreement No. 13, prior to the construction permit hearing, (the "initial proposal") a provision that Dow would share 50/50 in all expenditures up to a limit of \$18,000,000 in the case of termination before the execution of the steam contract. The steam contract at that time was not executed but the proposed form of such a contract was attached to the General Agreement.

Principal Change in the Electric Contract

The principal change between the form of electric service contract appended to the 1967 General Agreement, as last amended through Supplemental Agreement No. 13, prior to the construction permit hearing (the "initial electric proposal") and the electric service contract executed in 1974 (the "present electric contract"), is that the initial electric proposal provided for Consumers Power to supply all of Dow's electrical needs, up to 400,000 kW, while the present electric contract provides for Consumers Power to supply electric energy as auxiliary or standby to Dow's existing generating facilities with a contract demand established at 300,000 kW. The reasons for these changes are analogous to those described for steam in item 4 above.

Since Dow has said it expects to cease operating these units as soon as a reliable source of process steam is in place, this provision also may be of no practical significance.

Other Changes

The foregoing discussions summarize the major differences between the proposed electric and steam service contracts as considered at the construction permit hearing, on the one hand, and the contracts executed in 1974 on the other, insofar as the differences relate directly to operation of Dow's existing fossil-fueled generating facilities, and to the installation and operation of any new fossil-fueled generating facilities. The only other difference of any note is a minor one relating to the description of nuclear insurance and indemnity to be maintained.

Current Negotiations

There are current negotiations between Consumers Power and Dow regarding possible further contract changes. Mr. Joseph G. Temple of Dow will testify concerning changes sought by Dow. Consumers Power is principally seeking the following modifications in the contract:

1. The right to sell undivided interests in the Midland Nuclear Generating Plant to third parties, or to obtain financing for the generating plant by transferring it, or any portion of it, to a financial institution or other entity, with Consumers Power continuing to be responsible for corresponding limitation on Dow's right to increase its reserved steam capacity. Consumers Power seeks this revision principally in order to allow it to sell a portion of the plant to certain rural electric cooperatives and municipal utilities that have expressed an interest in making such a purchase and with whom negotiations are in progress.
2. Refinements in the formulas for calculating the rate to be charged for steam.

CONTRACT FOR SUPPLY OF WATER  
BETWEEN  
CONSUMERS POWER COMPANY  
AND  
THE DOW CHEMICAL COMPANY

CONTRACT FOR SUPPLY OF WATER

AGREEMENT, made this 30<sup>th</sup> day of January, 1974, between CONSUMERS POWER COMPANY (hereinafter called "Consumers Power"), a Michigan corporation having its principal office at Jackson, Michigan, and THE DOW CHEMICAL COMPANY (hereinafter called "Dow"), a Delaware corporation authorized to do business in the State of Michigan, having its principal office therein at Midland, Michigan,

W I T N E S S E T H :

WHEREAS, Consumers Power proposes to construct a two-unit nuclear power plant and other facilities (which nuclear power plant and other facilities in the aggregate are hereinafter called the "Generating Plant") on a site (hereinafter called the "Site") conveyed to Consumers Power pursuant to the General Agreement dated December 13, 1967, as amended (hereinafter called the "General Agreement") between the parties hereto; and

WHEREAS, operation of the Generating Plant will require an adequate supply of water for various uses; and

WHEREAS, Consumers Power is unwilling to construct the Generating Plant at the Site unless Dow will construct certain facilities and guarantee certain supplies of water for operation of the Generating Plant;

NOW, THEREFORE, in consideration of the mutual undertakings and promises herein made, Consumers Power and Dow hereby agree as follows:

1. Dow shall construct, cause to be constructed, or otherwise provide, and shall own, operate and maintain throughout the life of this agreement, all transmission, treatment and other water supply facilities necessary to furnish and deliver, at mutually agreeable points of delivery on the property line of the Site, the supplies of water which Dow is obligated to furnish to Consumers Power under Section 2 hereof. All facilities required to transmit, treat and utilize such water beyond such points of delivery and all facilities required to supply cooling water to said nuclear power plant shall be furnished, operated and maintained by Consumers Power.

2. Dow guarantees that it will furnish to Consumers Power the following supplies of water:

- a. at such time or times as Consumers Power may designate prior to their initial operation, the initial supply of water for each nuclear steam supply system (including, but not limited to, primary and secondary loop water, fuel storage pool water and flushing water) and fossil-fired package boiler included in the Generating Plant, at no cost to Consumers Power.
- b. throughout the term of this agreement, continuous condensate return and makeup water equivalent to 100% of the steam supplied to Dow from the Generating Plant, at no cost to Consumers Power.

Section 2 (Contd)

- c. throughout the term of this agreement, all or such part of Consumers Power's additional requirements of makeup water for the Generating Plant as Consumers Power may from time to time request for delivery on a continuous or non-continuous basis, but not to exceed 400,000 gallons per day (or such larger amount as the parties may agree on the basis of Generating Plant design or operation is desirable for Generating Plant operation), at the rate of \$0.85 per 1,000 gallons, subject to adjustment from \$0.85 per 1,000 gallons as of January 1 of each year, for water thereafter furnished in such year, by \$0.01 per 1,000 gallons for each full \$0.01 per 1,000 gallons which Dow's average cost for unfiltered water supplied by the City of Midland varied from \$0.105 per 1,000 gallons for the year immediately preceding.
- d. throughout the term of this agreement, all or such part of the potable water requirements for the Generating Plant as Consumers Power may from time to time request for delivery on a continuous or noncontinuous basis, at the rate of \$0.40 per 1,000 gallons for the first 25,000 gallons used

Section 2d (Contd)

per quarter, \$0.32 per 1,000 gallons for the next 50,000 gallons used per quarter, and \$0.26 per 1,000 gallons for all over 75,000 gallons used per quarter, or such other rate for filtered water as may be charged by the City of Midland, exclusive of any penalty, minimum charge or readiness-to-serve charge; provided, however, that if, in the opinion of legal counsel for Dow, Dow is legally unable to resell to Consumers Power water obtained by Dow from the City of Midland, Dow shall provide an alternate means, satisfactory to Consumers Power, of delivering or ensuring the supply at the Site of Consumers Power's requirements of potable water for the Generating Plant, and the parties shall agree upon the compensation, if any, to be paid to Dow therefor.

Potable water shall meet specifications at least equal to the City of Midland's standards for filtered water. The parties understand and agree that the supplies of water described in Paragraphs a, b and c of this Section 2 must meet the following specifications at the points of Consumers Power's intended use, as to the supplies of water described in said paragraph a, and at the point or points of introduction into the condensate system or systems of said nuclear power plant and any fossil-fired package boilers included in the Generating Plant, as to the supplies

Section 2 (Contd)

of water described in said paragraphs b and c:

Conductivity, micromhos/cm <sup>2</sup>		0.5
Total solids, ppm	Dissolved	0.10
	Suspended	0.01
Silica, ppm		0.03
Chlorides, ppm		0.1
Hardness, ppm		0
Oil, ppm		0
Organics, ppm		0
Iron, ppm		0.01
Copper, ppm		0.005
Lead, ppm		0.005

Dow shall bear the capital, operating and maintenance, and all other costs necessary to ensure that the specifications described herein shall be met. Dow shall reimburse Consumers Power for any such costs which are incurred initially by Consumers Power, either upon receipt of invoice therefor or in the monthly rate for steam supplied to Dow from the Generating Plant, at Consumers Power's option. Suitable metering equipment for measuring all water furnished hereunder for which Dow is to be paid by Consumers Power shall be furnished, installed and maintained by Dow. Dow shall test its meters at mutually agreeable intervals, and shall keep the same within accepted standards of accuracy. Consumers Power shall be given advance notice of each such test in order that its representatives may witness the same. In case of failure of a meter to register the amount of water supplied during any period, billing for service furnished during such period shall be for an estimated amount based upon test results, use during a similar period, both of the foregoing methods, or other known factors.

3. Dow does not undertake to furnish the supply of cooling water for said nuclear power plant, and Consumers Power expects to use

Section 3 (Contd)

the waters of the Tittabawassee River at Midland to supply the cooling water requirements for said nuclear power plant. If, however, at any time the supply of cooling water from the Tittabawassee River, or Consumers Power's right as a riparian owner to divert water from the Tittabawassee River for cooling purposes or for storage in a reservoir or reservoirs, is impaired or restricted to the extent of requiring Consumers Power to reduce its steam production, its electric energy production, or both, from said nuclear power plant, Consumers Power shall have the right to do the following (in the following order, if practicable):

- (1) purchase replacement electric energy and recover from Dow, in addition to and not in lieu of the charges to Dow under the electric service contract for Dow's Midland Plant, the additional cost to Consumers Power of such replacement energy over the cost of equivalent electric energy had it been produced by said nuclear power plant or, to the extent that such purchase is impracticable, to reduce or limit or cease supplying Dow with electric energy at Dow's Midland Plant,
- (2) reduce or limit or cease supplying Dow with steam,  
or
- (3) both of the above,

without thereby breaching or terminating the contracts for electric and steam service executed by the parties concurrently herewith and

Section 3 (Contd)

without affecting Dow's continuing liability throughout the period of such reduction, limitation or cessation for all minimum or capacity charges provided for in such contracts. If Consumers Power is legally precluded, by injunction or otherwise, from diverting water from the Tittabawassee River for cooling purposes or for storage in a reservoir or reservoirs, or if at any time, in Consumers Power's sole judgment, the supply of cooling water from the Tittabawassee River or Consumers Power's right as a riparian owner to divert water from the Tittabawassee River for cooling purposes or for storage in a reservoir or reservoirs is likely to be impaired or restricted to the extent of requiring Consumers Power to reduce its electric production from said nuclear power plant by 400 MWe or more, Consumers Power, in addition to its rights under the sentence immediately preceding, shall have the right to give Dow written notice to such effect and thereby require Dow to procure and furnish an alternate supply or supplies of water or other means of cooling acceptable to Consumers Power, adequate to meet Consumers Power's cooling requirements for said nuclear power plant; and Dow shall proceed, immediately upon receipt of such notice, to procure and furnish the same. Notwithstanding anything herein to the contrary, Dow has the right, even though not requested by Consumers Power, at any time to procure such alternate supply or supplies of water or other means of cooling acceptable to Consumers Power and adequate to meet Consumers Power's cooling requirements for said nuclear power plant. All additional capital, operating, maintenance and other direct and indirect costs incurred by Dow and Consumers Power as a result of the procurement, furnishing and use of

Section 3 (Contd)

any alternate supply or supplies of water or other means of cooling pursuant to this Section 3 shall be borne by Dow.

4. If Dow shall in any respect default in the performance of its obligations and undertakings set forth in Sections 1 through 3 hereof, Consumers Power shall have available to it all remedies provided by law for such default, including but not limited to the right to compel specific performance of this agreement and the right to recover damages for any and all liabilities to others and for any and all losses or expenses incurred by Consumers Power by reason of such default. Without in any way limiting the foregoing, Dow agrees that Consumers Power, in order to minimize or prevent damage, loss or expense to itself and others and to minimize or prevent impairment of service to its other customers, shall have the right to remedy such default by doing the following (in the following order, if practicable):

- (1) purchasing replacement electric energy and recovering from Dow, in addition to and not in lieu of the charges to Dow under the electric service contract for Dow's Midland Plant, the additional cost to Consumers Power of such replacement energy over the cost of equivalent electric energy had it been produced by said nuclear power plant or, to the extent that such purchase is impracticable, to reduce or limit or cease supplying Dow with electric energy at Dow's Midland Plant,

Section 4 (Contd)

- (2) reducing or limiting or ceasing to supply Dow with steam, or
- (3) both of the above,

without thereby reaching or terminating the contracts for electric and steam service executed by the parties concurrently herewith and without affecting Dow's continuing liability throughout the period of such reduction, limitation or cessation for all minimum or capacity charges provided for in such contracts. Without in any way limiting the foregoing, Dow also agrees that Consumers Power shall have the right to remedy any such default by furnishing or contracting with others for the furnishing of necessary facilities, water supplies or water treatment, or by contracting with others for the furnishing of replacement steam or electric energy, and to recover from Dow all additional capital, operating, maintenance and other direct and indirect costs to Consumers Power associated therewith.

5. In order to provide storage for a supply of cooling water of sufficient magnitude to meet any emergency cooling requirements at said nuclear power plant and to furnish normal plant cooling water requirements, Consumers Power shall construct or cause to be constructed at the Site a reservoir or reservoirs and associated equipment of sufficient design and capacity to supply the design cooling water requirements of said nuclear plant continuously for such number of days as may be required by the United States Atomic Energy Commission or other governmental authorities, plus not more than 100 additional days.

6. Neither party shall be liable to the other hereunder for damages for any act, omission or circumstance occasioned by or in consequence of any labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm, flood, explosion, or any cause beyond such party's reasonable control; provided, however, that nothing in this Section 6 shall in any way affect Dow's obligations or Consumers Power's rights under Sections 3 and 4 hereof in the event the supply of cooling water from the Tittabawassee River, or Consumers Power's right to divert water from the Tittabawassee River, is impaired or restricted.

7. This agreement shall become effective as of the date hereof and shall continue in effect for a period of fifty (50) years, and from year to year thereafter until terminated by either party as of the anniversary date hereof upon one (1) year's written notice to the other party.

8. Any assignment, subcontracting or other transfer of this agreement or any part hereof without the prior written consent of Consumers Power shall be void and not merely voidable, except that Dow may contract with others for the construction of facilities and for its purchase of a water supply or supplies. Subject to the foregoing, the terms, conditions and obligations of this agreement shall bind and inure to the benefit of the successors and assigns of the parties hereto, and if any subcontracting by Dow is approved, the subcontract shall specify that the provisions of the subcontract shall be subject to, and the subcontractor shall comply in every respect with, the relevant provisions of this agreement.

9. The failure of either party to enforce at any time any of the provisions of this agreement or to require at any time performance by the other party of any of the provisions hereof shall in no way be construed to be a waiver of such provision or to affect in any way the validity of this agreement or any part thereof, or the right of either party thereafter to enforce each and every such provision.

10. The terms of this agreement shall not be changed, superseded or supplemented except in writing, signed by authorized officers of the parties hereto.

IN WITNESS WHEREOF, the parties hereto have executed this agreement in duplicate by their duly authorized representatives on the day and year first above written.

~~RESERVED TO THE PART~~  
~~CONSUMERS POWER COMPANY~~

CONSUMERS POWER COMPANY

By R. C. Germydall

THE DOW CHEMICAL COMPANY

By E. Barnes

AGREEMENT FOR ELECTRIC SERVICE  
BETWEEN  
CONSUMERS POWER COMPANY  
AND  
THE DOW CHEMICAL COMPANY

AGREEMENT FOR ELECTRIC SERVICE

AGREEMENT, made this 30<sup>th</sup> day of January, 1974, between CONSUMERS POWER COMPANY (hereinafter called "Consumers Power"), a Michigan corporation having its principal office at Jackson, Michigan, and THE DOW CHEMICAL COMPANY (hereinafter called "Dow"), a Delaware corporation authorized to do business in the State of Michigan, having its principal office therein at Midland, Michigan, as follows:

1. Consumers Power agrees to supply, and Dow agrees to purchase hereunder, electric energy as auxiliary or standby to Dow's presently existing electric generating facilities located at Dow's chemical plant complex, including all contiguous administrative and other facilities, (hereinafter called "Dow's Midland Plant") located in Sections 20, 21, 22, 23, 26, 27, 28, and 35 in the City of Midland and Midland Township, Midland County, Michigan, for the operation of Dow's Midland Plant and for the operation of all of Dow's wells heretofore served by Dow's Midland Plant primary electric distribution system and shown on the attached Dow's Sketches No. 64-SK-1438 (Rev. 12/1/67) and 64-SK-1439 (Rev. 12/1/67). It is expressly understood and agreed that Dow may modernize and replace said wells, but Consumers Power will not serve hereunder any additional total number of such wells, any kW load for wells in excess of the present total kW load of such wells or any extension of Dow's Midland Plant primary electric distribution system presently serving said wells. Dow presently plans to construct additional chemical plant facilities on land adjacent to Consumers Power's Midland Plant in Midland County, Michigan. Consumers Power agrees to serve such additional facilities

as part of Dow's Midland Plant under the terms of this Agreement, modified by written agreement of the parties as necessary to provide for such service.

2. The electric energy to be supplied hereunder shall be alternating current, three phase, 60 hertz, at approximately 13,800 volts. Delivery shall be made at a mutually agreeable point at each of two Consumers Power-owned 138,000-13,800 volt substations at Dow's Midland Plant. Said energy shall be metered at each of said substations and totalized for billing purposes by meters and metering equipment furnished, installed and maintained by Consumers Power. Consumers Power shall make periodic tests of its meters and keep them within acceptable standards of accuracy. Dow shall furnish, without cost to Consumers Power, a suitable site or sites on its premises for Consumers Power's 138,000-13,800 volt substation equipment and transmission lines. If, during the term hereof, Dow's use of its premises makes necessary the relocation of said facilities, from the site or sites so furnished, to another site or sites on its premises, Consumers Power shall relocate the same at Dow's request, and Dow shall reimburse Consumers Power for the cost thereby incurred. Consumers Power, its agents and employees, shall have full right and authority of ingress and egress at all times on and across Dow's premises, for the purpose of constructing, operating, maintaining, replacing, repairing, moving and removing its said facilities. Dow's use of its premises shall not unreasonably interfere with Consumers Power's said right of ingress and egress. Dow shall afford adequate protection to avoid damage to or tampering or interference with Consumers Power's said substation equipment and transmission lines, meters and metering equipment.

3. Dow shall pay for such energy in accordance with Consumers Power's Rate "F." By reason of the character of the proposed use of service, it is also subject to the provisions of Rule 12(1) - Auxiliary or Standby Service, of Consumers Power's Standard Electric Rules and Regulations. A copy of said Rate and Sheet No. 5.06 and Sheet No. 5.07 containing said Rule are attached hereto and made a part hereof. Said service shall also be subject to such future revisions and amendments to said Rate or Rule, or both, supplements thereto, or substitutes therefor as are hereafter filed with and approved by the Michigan Public Service Commission.

4. It is further agreed that:

(a) Dow's contract demand for such service shall be established at 300,000 kilowatts. Such service is for the sole use of Dow, for the purposes aforesaid, and shall not be transmitted elsewhere or shared or resold. Said energy may be used by Dow as auxiliary to electric energy generated by Dow by its own generating facilities existing and operating or operable as of January 15, 1974. It is a condition of Consumers Power's agreement to serve Dow hereunder that Dow may repair, but shall not replace or add to, Dow's said generating facilities. Dow may generate and utilize in its Midland Plant such portion of Dow's Midland Plant electrical power requirements as may be supplied incidentally from chemical processes at Dow's Midland Plant. Consumers Power agrees to permit Dow, when Dow so desires, to operate Dow's electric generating facilities in parallel with Consumers Power's electric system; provided, however, that such parallel operation shall at no

time create a hazard, disturb, impair or interfere with Consumers Power's service to other customers. Dow further agrees that the electric energy furnished by Consumers Power shall not be utilized in such manner as to cause any objectionable inductive interference in communication circuits.

(b) Such service shall be governed by Consumers Power's Standard Rules and Regulations as filed with the Michigan Public Service Commission, and such future revisions and amendments thereof, supplements thereto, or substitutes therefor as hereafter filed with and approved by the Michigan Public Service Commission.

(c) Except as to the demand and minimum charges payable by Dow, prescribed in said Rate and Rule 12(1), neither party shall be liable to the other for damages for any act, omission or circumstance occasioned by or in consequence of any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm or flood, explosion, breakage or accident to machinery or equipment, or by any other cause or causes beyond such party's control, including any curtailment, order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, or by the making of necessary repairs upon the property or equipment of either party hereto; provided, however, that Consumers Power's responsibility for interruptions in the service, phase failure or reversal, or variations in the service

characteristics shall be as provided in said Standard Electric Rules and Regulations.

(d) This Agreement will extend for an initial term of five (5) years from the date Unit No. 2 of the nuclear power plant which Consumers Power proposes to construct at Midland, Michigan is declared by Consumers Power to be available for commercial operation, which date is estimated to be March 1, 1979. This Agreement will continue in effect from month to month after said initial term until terminated by mutual consent, or terminated at the expiration of any monthly period by either party giving the other at least sixty (60) days' notice of its desire to terminate the same, which notice may be given at any time.

(e) This Agreement shall not be transferred by Dow or otherwise alienated without Consumers Power's written consent. Subject to the preceding sentence, this Agreement inures to and binds the successors and assigns of the respective parties hereto. This Agreement cancels and supersedes, as of the date of commencement of the initial term hereof, the contract between the parties hereto dated December 30, 1969 for the purchase of electric energy at the above location, including any ~~revisions~~ and amendments thereof, supplements thereto, and ~~substitutes~~ therefor agreed

to between the parties prior to the date of commencement of the initial term hereof.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement in duplicate by their duly authorized representatives as of the day and year first above written.

~~APPROVED AS TO FORM~~  
*[Signature]*  
CONSUMERS POWER COMPANY  
LEGAL DEPARTMENT

CONSUMERS POWER COMPANY

By

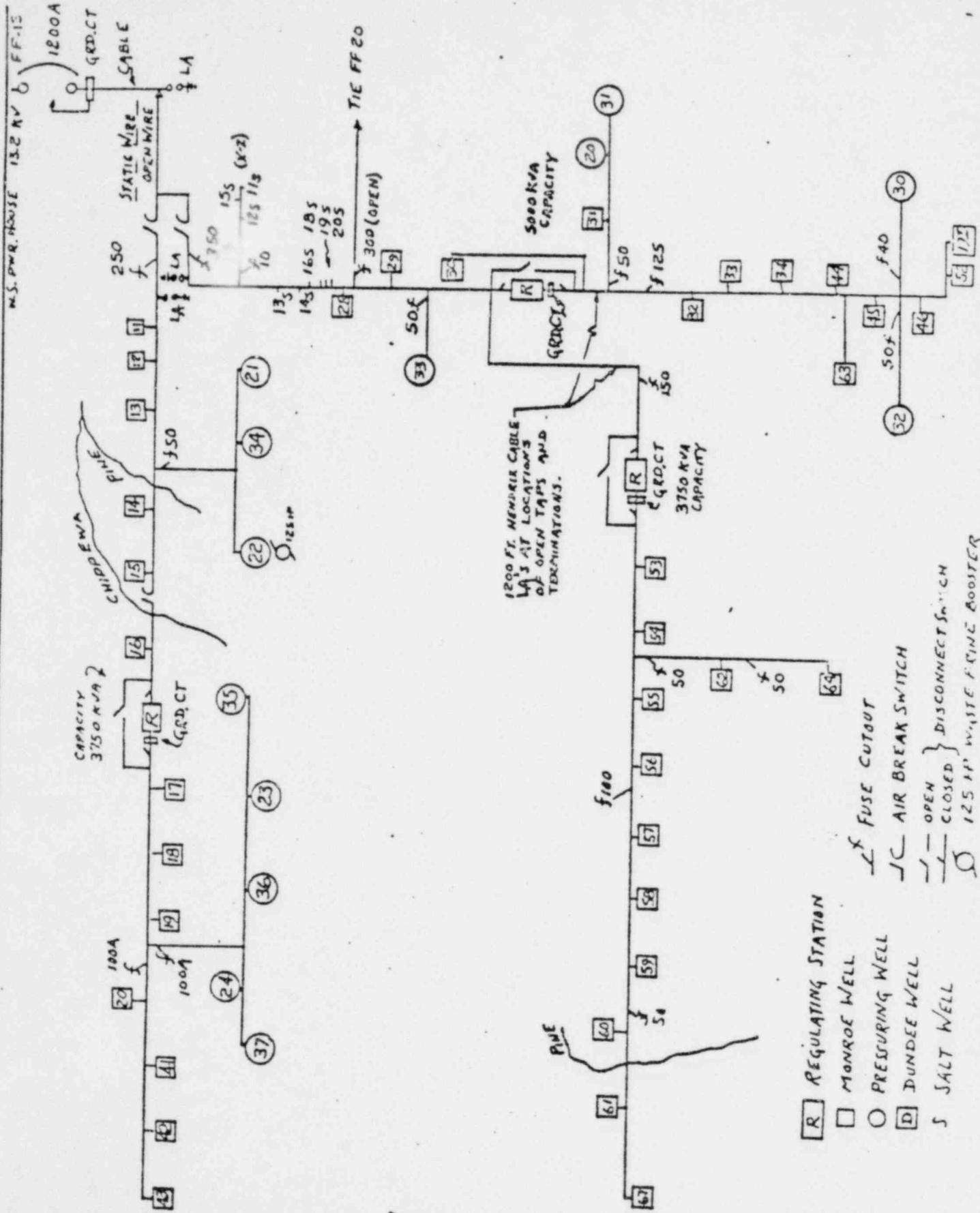
*R. C. Youngdale*

THE DOW CHEMICAL COMPANY

By

*[Signature]*





Demand 12,000 KVA

D.N. RCH 12/1/67

MADE: L.J. GENSON	THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN	SKETCH NUMBER
CHECKED:	ONE LINE	FF-13
APP'D: <i>[Signature]</i>	BRINE WELL POWER LINE	645K-1439
DATE: 7-10-64		

COMMERCIAL AND INDUSTRIAL  
PRIMARY HIGH LOAD FACTOR SERVICE  
(OPTIONAL CONTRACT RATE "F")

Availability:

Open to any customer desiring primary voltage service for commercial or industrial use where the billing demand is 100 kW or more. This rate is not available for streetlighting service or for resale purposes.

Nature of Service:

Alternating current, 60 hertz, single phase, or three phase, the particular nature of the voltage in each case to be determined by the Company.

Monthly Rate:

Capacity Charge: (Including 600 kWh per kW of billing demand)

\$9.30 per kW for the first 2,000 kW of billing demand,  
\$8.20 per kW for the next 8,000 kW of billing demand,  
\$7.50 per kW for the next 15,000 kW of billing demand,  
\$6.90 per kW for all over 25,000 kW of billing demand.

Energy Charge:

.48¢ per kWh for all kWh over 600 kWh per kW of billing demand.

Fuel Cost Adjustment:

The fuel clause adjustment shall consist of an increase or decrease of .0109 mill per kWh for each full .01 mill increase or decrease in the average delivered cost of fossil fuel burned monthly above or below 5.15 mills per kWh adjusted by the ratio of the monthly fossil fuel generation to the monthly net generation.

The adjustment shall apply to the second billing month following the calendar month in which the fuel is burned.

Tax Adjustment:

- (a) Bills shall be increased within the limits of political subdivisions which levy special taxes, license fees or rentals against the Company's property, or its operation, or the production and/or sale of electric energy, to offset such special charges and thereby prevent other customers from being compelled to share such local increases.
- (b) Bills shall be increased to offset any new or increased specific tax or excise imposed by any governmental authority upon the Company's generation or sale of electrical energy.

Minimum Charge:

The capacity charge included in the rate.

Delayed Payment Charge:

A delayed payment charge of 2% of the total net bill shall be added to any bill which is not paid on or before the due date shown thereon.

(Continued on Sheet No. 16.01)

Effective: For electric service rendered on and after

January 19, 1974

Issued under authority of order of the  
Michigan Public Service Commission dated  
January 18, 1974 in Case U-4332

Issued by: A. H. Aymond, Chairman of the Board of Directors and President,  
Jackson, Michigan

**RATE T**

(Continued from Sheet No. 10.00)

**Billing Demand:**

1. The billing demand shall be the kilowatts (kW) supplied during the 15-minute period of maximum use in the billing month adjusted for off-peak hour operation as specified below, but not less than 60% of the highest billing demand of the preceding 11 months, nor less than 100 kW.
2. When a customer guarantees in writing a billing demand of 2,500 kW or more for a minimum term of twelve consecutive months, the billing demand each month during the period of such guarantee shall be the average of the four maximum weekly demands for such month (the period after the first 21 days of each month being considered to be the fourth week); provided that no billing demand shall be less than 60% of the highest billing demand of the preceding 11 months, and in no case less than 2,500 kW.

**Adjustment for Off-Peak Hour Operation:**

Demands created during off-peak hours designated by the Company in the Company's current "Schedule of Off-Peak Hours" (Sheet No. 7.00) shall be disregarded provided the billing demand shall not be less than 83- $\frac{1}{3}$ % of the greatest demand created in such off-peak hours nor less than 100 kW.

**Adjustment for Power Factor:**

This rate requires a determination of the average power factor maintained by the customer during the billing period. Such average power factor will be determined through metering of lagging kilovarhours and kilowatthours during the billing period. The calculated ratio of lagging kilovarhours to kilowatthours will then be converted to the average power factor for the billing period by using the appropriate conversion factor. Whenever the average power factor during the billing period is above .899 or below .800, the capacity charge will be adjusted as follows:

- (a) If the average power factor during the billing period is .900 or higher, the capacity charge will be reduced by 2%. This credit shall not in any case be used to reduce the prescribed minimum charge or the capacity charge when based upon 60% of the highest billing demand of the preceding 11 months.
- (b) If the average power factor during the billing period is less than .800, the capacity charge will be increased by the ratio that .800 bears to the customer's average power factor during the billing period.

**Term and Form of Contract:**

Minimum term of one year on written contract.

(Continued on Sheet No. 16.02)

Issued: December 29, 1972

Effective: For electric service rendered on  
and after November 25, 1972

Issued under authority of order of the  
Michigan Public Service Commission dated  
November 24, 1972 in Case U-4174.

Issued by: A. H. Aymond, Chairman of the Board of Directors and President,  
Jackson, Michigan

RATE "F"  
(Continued from Sheet No. 16.01)

Rules and Regulations:

Service governed by Company's Standard Rules and Regulations.

Where service is supplied at a nominal voltage of 25,000 volts or less, the customer shall furnish, install and maintain all necessary transforming, controlling and protective equipment.

Where the Company elects to measure the service at a nominal voltage above 25,000 volts, 2% will be deducted, for billing purposes, from the demand and energy measurements thus made.

Where the Company elects to measure the service at a nominal voltage of less than 2,400 volts, 3% will be added for billing purposes, to the demand and energy measurements thus made.

Where service is supplied at a nominal voltage of more than 25,000 volts and the customer provides all of the necessary transforming, controlling and protective equipment for all the service, there shall be deducted from the capacity charge herein provided for, the sum of 10¢ per kW if the nominal supply voltage is 46,000 volts or less and 20¢ per kW if the nominal supply voltage is above 46,000 volts (after the 2% deduction or the 3% addition referred to above) for the *maximum integrated* demand created during the month or for the billing demand, whichever is greater.

Where service is supplied at a nominal voltage of more than 25,000 volts and the customer provides all of the necessary transforming, controlling and protective equipment for a part of the service, there shall be deducted from the capacity charge herein provided for, the sum of 10¢ per kW if the nominal supply voltage is 46,000 volts or less and 20¢ per kW if the nominal supply voltage is above 46,000 volts (after the 2% deduction or the 3% addition referred to above) for that part of the *maximum integrated* demand created during the month through such customer-owned equipment.

Issued: December 29, 1972

Effective: For electric service rendered on  
and after November 25, 1972

Issued under authority of order of the  
Michigan Public Service Commission dated  
November 24, 1972 in Case U-4174.

Issued by: A. H. Aymond, Chairman of the Board of Directors and President,  
Jackson, Michigan

## STANDARD RULES AND REGULATIONS (Continued from Sheet No. 5.05)

### 12. Application of Rates (Continued)

#### (1) Auxiliary or Stand-By Service:

"Auxiliary" service is defined as that electric service which supplements another source of power supply, there being throw-over arrangements, either electrical or mechanical, which enable either or both sources of supply to be utilized for all or any part of the customer's total requirements.

"Stand-by" service is defined as that service which is capable of being used in place of the generally used source of power supply, there being no actual use of the "stand-by" service except in emergency.

Customers who purchase all or practically all of their energy requirements from the Company, but who install generating equipment for use only in case of failure of the Company's service, or who use a relatively small amount of energy generated as a by-product of manufacturing or testing processes, will not be considered to be using the Company's service for either auxiliary or stand-by purposes.

Where a customer desires to use the Company's facilities as an auxiliary or stand-by to primary or secondary service supplied, or capable of being supplied from another source, the Company only offers its General Secondary Service Rate "C," or its Primary Service Rates "D," and "F" for such service.

The application of the above rates to auxiliary or stand-by service shall be subject to the following special conditions:

- (1) Contracts for such service shall be executed on a special contract form for minimum term of one year.
- (2) A "contract demand" shall be initially established by mutual agreement between the Company and the customer and stated in the service contract. The Company shall not be required to supply power to the customer in excess of the contract demand; however, the Company will, at the written request of the customer made at least thirty days in advance, permit an increase in the contract demand provided the Company has power available.
- (3) No customer shall be permitted to effect a reduction in his contract demand by recontracting for the same service, unless a bona fide reduction in load has occurred.
- (4) The billing demand provisions in Rates "C," "D" and "F" shall be modified to provide that the billing demand shall not be less than 80% of the highest billing demand of the preceding 11 months, or 60% of the contract demand, whichever is greater, and in no case less than 25 kW on Rate "C," 100 kW on Rate "D," or 100 kW on Rate "F." The billing demand provisions of Rates "D" and "F" shall be further modified to provide that the billing demand shall in no case be less than 80% of the actual maximum kilovoltampere (kVA) demand.

When the billing demands under Rates "D" and "F" are determined by any of the modifications stated above, the capacity charge credit based on average power factor shall not apply.

(Continued on Sheet No. 5.07)

Issued: May 8, 1970  
Issued under authority of order of the  
Michigan Public Service Commission dated  
April 20, 1970 in Case U-3179.

Effective: For electric service rendered on  
and after October 22, 1969

Issued by: J. H. Campbell, President, Jackson, Michigan

**STANDARD RULES AND REGULATIONS**  
(Continued from Sheet No. 5.06)

12. Application of Rates: (Contd)

(i) Auxiliary or Standby Service: (Contd)

- (5) The provisions in Rate "D" and Rate "F" covering the determination of the billing demand from the average of the four weekly maximum demands shall not apply.
- (6) The provisions in Rates "C", "D" and "F" for adjusting off-peak demands shall not apply.
- (7) For the protection of the Company's facilities, the customer may be required to furnish, install and maintain a load limiting device approved by and under the sole control of the Company.

(j) Temporary Service:

Customers desiring general secondary service for a short time only, such as for construction jobs, traveling shows, outdoor or indoor entertainments or exhibitions, etc, shall pay the charge per customer per month provided in the General Secondary Service Rate "B", provided, however, that if such service extends for a period in excess of six months the customer may qualify for other of the Company's available rates.

In addition, such customer shall pay installation and removal charges as follows:

- (1) Where 120/240 volt single phase service is desired and such service is available at the site at the time temporary service is desired, the charge for installation and removal of temporary, single phase, three wire, 120/240 volt service shall be:
  - (a) For temporary overhead service \$40.00
  - (b) For temporary underground service, during the period from April 1 to December 14 \$55.00
  - (c) For temporary underground service, during the period from December 15 to March 31 \$75.00
- (2) Where 120/240 volt single phase service is not available at the site, or if other than 120/240 volt single phase service is desired, the charge for installation and removal shall be based on the cost thereof.

The customer may be required to deposit with the Company an amount to cover the cost of installing and removing these temporary facilities plus the estimated cost of service under the terms of the rate set forth above. Meters may be read daily and the deposit modified as the energy used may justify such modifications.

(Continued on Sheet No. 5.071)

Issued: November 30, 1973

Effective: For electric service rendered on  
and after November 10, 1973

Issued under authority of order of the  
Michigan Public Service Commission dated  
November 9, 1973 in Case U-4332

Issued by: A. H. Aymond, Chairman of the Board of Directors and President,  
Jackson, Michigan

CONTRACT FOR STEAM SERVICE  
BETWEEN  
CONSUMERS POWER COMPANY  
AND  
THE DOW CHEMICAL COMPANY

CONTRACT FOR STEAM SERVICE

AGREEMENT, made this 30<sup>th</sup> day of January, 1974, between CONSUMERS POWER COMPANY (hereinafter called "Consumers Power"), a Michigan corporation having its principal office at Jackson, Michigan, and THE DOW CHEMICAL COMPANY (hereinafter called "Dow"), a Delaware corporation authorized to do business in the State of Michigan, having its principal office therein at Midland, Michigan, as follows:

1. Except as hereinafter otherwise provided, Consumers Power agrees to supply and Dow agrees to purchase hereunder all of the steam requirements for the operation of Dow's chemical plant complex, including all contiguous administrative and other facilities, (hereinafter called "Dow's Midland Plant") located in Sections 20, 21, 22, 23, 26, 27, 28 and 35 in the City of Midland and Midland Township, Midland County, Michigan, at the following pressures, plus or minus ten percent (10%), up to and including but not in excess of the following flow rates, as the same may be adjusted from time to time pursuant to Section 12 hereof, said flow rates being the capacities reserved by Consumers Power for Dow's use:

<u>Pressure, Psig</u>	<u>Flow Rate, Lbs/Hr</u>
600	400, 00
175	3,650,000

Dow agrees to receive and purchase hereunder, throughout the life of the agreement, at least 2,000,000 lbs/hr of nominal 175 psig steam. The steam will be approximately saturated under normal conditions, but the minimum degrees of saturation shall be ninety-eight percent (98%) at 600 psig and ninety-five percent (95%) at 175 psig. Dow presently plans to construct

additional chemical plant facilities on land adjacent to the site of the two-unit nuclear power plant which Consumers Power plans to construct and operate, together with other facilities, in Midland County, Michigan.

(Said nuclear power plant and other facilities, in the aggregate, are hereinafter referred to as the "Generating Plant," and the site thereof, conveyed to Consumers Power pursuant to the General Agreement between the parties dated December 13, 1967, as amended, is hereinafter referred to as the "Site.") Consumers Power agrees to serve such additional chemical plant facilities as part of Dow's Midland Plant under the terms of this agreement, modified by written agreement of the parties as necessary to provide for such service.

2. Delivery of said steam shall be at one mutually agreeable point of delivery for each class of steam on or near the property line separating Dow's Midland Plant site from the Site. The amount of steam and the heat content of the steam shall be metered at the points of delivery or, at Consumers Power's option, at locations selected by Consumers Power on the Site, by suitable metering equipment furnished, installed and maintained by Consumers Power. The amount of the condensate return and makeup water to be supplied by Dow to Consumers Power at the Site pursuant to Section 2a of the Contract for Supply of Water executed by the parties concurrently herewith, and the heat content of such condensate return and makeup water, shall be metered at the point or points of delivery provided for in Section 1 of said Contract or, at Consumers Power's option, at locations selected by Consumers Power on the Site, by suitable metering equipment furnished, installed and maintained by Consumers Power.

APPENDIX C

<u>Year</u>	<u>Amount</u>
7	\$11,051,000
8	10,935,000
9	10,809,000
10	10,674,000
11	10,528,000
12	10,371,000
13	10,200,000
14	10,016,000
15	9,818,000
16	9,603,000
17	9,371,000
18	9,121,000
19	8,851,000
20	8,559,000
21	8,244,000
22	7,903,000
23	7,536,000
24	7,138,000
25	6,710,000
26	6,246,000
27	5,746,000
28	5,206,000
29	4,622,000
30	3,992,000
31	3,312,000
32	2,577,000
33	1,783,000
34	925,000
35	-

Consumers Power shall test its meters at mutually agreeable intervals and keep them within accepted standards of accuracy. Dow shall be given advance notice of each such test in order that its representatives may witness the same. In case of failure of a meter to register the amount or heat content of steam supplied by Consumers Power during any period, or the amount or heat content of such condensate return or makeup water supplied by Dow during any period, billing for steam service furnished during such period shall be for an estimated amount based upon test results, use during a similar period, both of the foregoing methods, or other known factors.

3. All piping, valves and other equipment for generating, regulating, metering, monitoring, and conducting the steam to said points of delivery shall be furnished, installed, owned, operated and maintained by Consumers Power at its expense. All piping, valves and other equipment for conducting, regulating, monitoring and utilizing the steam beyond said points of delivery shall be furnished, installed, owned, operated and maintained by Dow at its expense. Each party shall at its own expense secure and maintain in effect any and all permits, licenses or other authorizations required from government authorities for the construction, use and maintenance of the piping, valves and other equipment to be furnished by it hereunder.

4. Except as otherwise provided in Section 12 hereof, Dow shall pay for steam delivered to it hereunder at the following monthly rate, consisting of a capacity charge and a commodity charge:

Monthly Rate:

Capacity Charge

\$0.1823 per pound per hour of total design reserved capacity for both classes of steam. "Total design reserved capacity" for purposes of computing the monthly rate and applying the rate adjustments provided for in this Section 4 and in Section 12 hereof equals 4,050,000 pounds of steam per hour.

Commodity Charge

600 psig . . . . .	\$0.2086 per 1,000 lbs
175 psig . . . . .	\$0.1497 per 1,000 lbs

Said monthly rate will be adjusted in accordance with the following paragraphs:

- a. The capacity charge in said monthly rate assumes a total "allocated steam investment" of \$69,476,000 in and required for the Generating Plant. Said amount does not include any allowance for fossil-fired package boilers. On or about the date that Unit No. 1 of the nuclear power plant is declared by Consumers Power to be available for commercial operation (hereinafter called the "commercial operation date"), which date is estimated to be March 1, 1980, and at any time during the life of this agreement that investment is added to or subtracted from any of the elements in the following formula, Consumers Power shall recalculate its "allocated

Monthly Rate:

Capacity Charge

\$0.1823 per pound per hour of total design reserved capacity for both classes of steam. "Total design reserved capacity" for purposes of computing the monthly rate and applying the rate adjustments provided for in this Section 4 and in Section 12 hereof equals 4,050,000 pounds of steam per hour.

Commodity Charge

600 psig . . . . . \$0.2086 per 1,000 lbs  
175 psig . . . . . \$0.1497 per 1,000 lbs

Said monthly rate will be adjusted in accordance with the following paragraphs:

- a. The capacity charge in said monthly rate assumes a total "allocated steam investment" of \$69,476,000 in and required for the Generating Plant. Said amount does not include any allowance for fossil-fired package boilers. On or about the date that Unit No. 1 of the nuclear power plant is declared by Consumers Power to be available for commercial operation (hereinafter called the "commercial operation date"), which date is estimated to be March 1, 1980, and at any time during the life of this agreement that investment is added to or subtracted from any of the elements in the following formula, Consumers Power shall recalculate its "allocated

steam investment" in and required for the Generating Plant by means of the following formula, using actual costs and then-current estimates of costs not yet incurred:

$$\text{Allocated Steam Investment} = (CB) + M + S$$

where C = investment common to electric and steam service, other than investment included in "M";

$$B = \frac{\text{nuclear steam supply system output, in Btu/hr, devoted to steam service to Dow at total design reserved capacity}}{\text{Total maximum warranted nuclear steam supply system output, in Btu/hr}}$$

M = cooling facilities (less estimated average cost of equivalent cooling facilities for Palisades Units 1 and 2) and all other investment necessary because of location at Midland which is not necessary at a low-population site on the Great Lakes; and

S = turbine generator extraction, steam distribution facilities, fossil-fired package boilers, and all other investment wholly devoted to steam service to Dow.

The values for the numerator and denominator of "B" in the above formula shall be calculated as follows:

- (1) the numerator shall equal the sum of the products of the following for each class of steam: the pounds of steam per hour at total design reserved capacity, multiplied by the enthalpy of such steam at the point at which it is metered for billing purposes minus the enthalpy of the condensate drain return and makeup water from Dow equivalent to 100% of the steam supplied to Dow from the Generating Plant at the point at which it is metered by Consumers Power.

- (2) the denominator shall equal the product of the total pounds of steam per hour leaving the steam generators at the maximum nuclear steam supply system output warranted by the nuclear steam supply systems vendor in its contract for the sale of such systems to Consumers Power, multiplied by the enthalpy of such steam minus the enthalpy of the feedwater as it enters the steam generators.

The parties agree that "M" in the above formula shall include, but not be limited to, the cost to Consumers Power of the Site; provided, however, that for purposes of the above formula there shall be excluded from the Site cost that portion thereof which is equivalent to the cost of a site for a nuclear electric generating plant on the Great Lakes, which the parties agree would be \$1,500,000.

For each \$1,000,000 increase or decrease from \$69,476,000 in the allocated steam investment, as so recalculated by Consumers Power, there shall be a corresponding \$0.0030 increase or decrease in said capacity charge, plus such increase or decrease in said capacity charge as is provided for by the next sentence hereof; provided, however, that for any such increase in the allocated steam investment occurring after ten (10) years of commercial operation of the Generating Plant, the

amount of the corresponding increase in the capacity charge shall be adjusted to provide for depreciation of the amount of such increase in the allocated steam investment over a period of thirty-five (35) years minus the number of years during which the Generating Plant has been in commercial operation. For such portion of an increase or decrease from \$69,476,000 as is not a multiple of \$1,000,000, including an increase or decrease from \$69,476,000 in an amount less than \$1,000,000, the increase or decrease in the capacity charge shall be calculated by linear interpolation, to the nearest one hundredth of one cent. If at any time during the life of this agreement there are established by law, or by regulation, rule or order of any governmental body having jurisdiction, criteria which would require all future Consumers Power condensing power generating plants located on the Great Lakes to utilize cooling towers, cooling ponds or other similar heat dissipation facilities other than the Great Lakes for all or any portion of the cooling requirements of such plants, an equivalent portion, at prices contemporary with the investment in cooling facilities for the Generating Plant, of the investment in cooling facilities included as part of "M" in the above formula shall thenceforth be regarded as investment wholly devoted to electric service and the capacity charge in said

monthly rate shall be recalculated accordingly using the above formula. In any case, that portion of the investment in cooling towers, cooling ponds and other similar heat dissipation facilities for the Generating Plant equal to the investment, at prices contemporary with the investment in cooling facilities at the Generating Plant, required to build closed cycle cooling facilities to dissipate the same quantity of waste heat at a Great Lakes site, to the extent included in Consumers Power's electric rate base by order of applicable regulatory bodies, shall be regarded as investment wholly devoted to electric service and the capacity charge in said monthly rate shall be recalculated accordingly using the above formula. If at any time during the life of this agreement there are established by rule, regulation or order of the U. S. Atomic Energy Commission, criteria which would require all existing and future pressurized-water nuclear power plants on Consumers Power's system to include any capital-investment item which is included in as part of "M" in the above formula, such item shall thenceforth be included as part of "C," rather than "M," in the above formula and the capacity charge in said monthly rate shall be recalculated accordingly, using the above formula.

- b. The capacity charge in said monthly rate assumes a credit of \$0.0379/lb/hr of reserved steam capacity for savings in Generating Plant investment common to electric and

steam service, other than investment included in "M" in the above formula, resulting from the generation of electric energy utilizing steam which is subsequently supplied to Dow hereunder. The amount of said credit is based upon (1) an estimated Generating Plant investment common to electric and steam service, other than investment included in "M" in the above formula, (2) delivery of steam to Dow at the total design reserved capacity, (3) the difference in estimated net plant heat rates for the Generating Plant and for a hypothetical two-unit electric generation-only nuclear power plant located on the Great Lakes and having nuclear steam supply systems of a like design to those of the Generating Plant, and (4) an estimated net electrical output of the Generating Plant which assumes operation at maximum warranted nuclear steam supply system output at one hundred percent (100%) capacity factor, at design conditions. On or about the commercial operation date, Consumers Power shall recalculate the amount of such credit, assuming operation at maximum warranted nuclear steam supply system output and delivery of steam to Dow at the total design reserved capacity, and using its then-current best estimates of the remainder of the foregoing bases. For each full \$0.0001 increase or decrease in the recalculated credit from said assumed \$0.0379 credit, there shall be a corresponding \$0.0001 decrease or increase in said capacity charge. Amounts less than \$0.0001 shall be

disregarded in making the capacity charge adjustment provided for in this paragraph.

c. The capacity charge in said monthly rate assumes the following tax rates:

Federal income tax . . . . .	48.0%
Michigan income tax . . . . .	5.6%
Michigan franchise tax . . . . .	5 mills

Other taxes:

(a) All real and personal property taxes actually assessed against the property of Consumers Power at the Site (1.35%), and

(b) Michigan intangibles tax, Federal unemployment tax, Federal old age benefit tax, miscellaneous excise taxes

(0.15%) . . . . . 1.5% of allocated steam investment (effective)

In the event that there is a change in any of the above tax rates, or in the event that new taxes, license fees or rentals of any kind are levied by any governmental unit against Consumers Power's steam property maintained to serve Dow, or against Consumers Power's steam operation or the production or sale of steam hereunder, or against the revenues, income or profits from the sale

of steam hereunder, prior to the commercial operation date or at any time during the life of this agreement, the monthly capacity charge and the bills rendered and the payments made hereunder shall be adjusted as necessary to reflect said change as of the commercial operation date as to changes occurring prior to said commercial operation date, and as of the effective date of such change as to changes occurring after said commercial operation date; provided, however, that changes in the tax rates tabulated above shall have the following effects:

- (1) The composite effective rate of the above Federal and Michigan income tax rates is 50.9%. For each full 0.5 of a percentage point net increase or decrease from 50.9% in said composite effective rate, there shall be a corresponding increase or decrease in said capacity charge of \$0.000018 times the number of millions of dollars (to the nearest one-tenth of one million) of allocated steam investment as recalculated under paragraph a. of this Section 4 less the number of millions of dollars (to the nearest one-tenth of one million) of savings in initial investment upon which the credit provided for in paragraph b. of this Section 4 is based.

- (2) For each full 1 mill net increase or decrease from 5 mills in the Michigan franchise tax rate, there shall be a corresponding increase or decrease in said capacity charge of \$0.00001 times the number of millions of dollars (to the nearest one-tenth of one million) of allocated steam investment as recalculated under paragraph a. of this Section 4 less the number of millions of dollars (to the nearest one-tenth of one million) of savings in initial investment upon which the credit provided for in paragraph b. of this Section 4 is based.
- (3) For each full 0.1 of a percentage point net increase or decrease from 1.5% in the effective rate for the remaining taxes, there shall be a corresponding increase or decrease in said capacity charge of \$0.00002 times the number of millions of dollars (to the nearest one-tenth of one million) of allocated steam investment as recalculated under paragraph a. of this Section 4 less the number of millions of dollars (to the nearest one-tenth of one million) of savings in initial investment upon which the credit provided for in paragraph b. of this Section 4 is based. Said effective rate shall be recalculated annually by Consumers Power, using for component (a) of the effective rate the ratio of

all real and personal property taxes assessed against the property of Consumers Power at the Site to Consumers Power's total investment at the Site, and using for component (b) of the effective rate the ratio of the total amount of all such taxes to Consumers Power's total year-end gross investment in utility plant as shown in Consumers Power's latest annual report to the Michigan Public Service Commission. The capacity charge, if adjusted hereunder, shall be adjusted to the nearest one-hundredth of one cent.

- d. The capacity charge in said monthly rate shall be adjusted to the extent necessary to reflect the impact of changes in the Federal income tax payment of Consumers Power related to the investment in that portion of the Generating Plant allocated to steam service to Dow pursuant to tax law changes, e.g., the investment tax credit and Asset Depreciation Range rules of the Revenue Act of 1971 and any future amendments to the internal revenue code, in a manner consistent with the manner in which any change in said tax payment resulting from such legislation for investment in the electric portion of said Generating Plant is reflected in the retail electric rates offered by Consumers Power. This adjustment, if any, shall be made on or about the commercial operation date and subsequent adjustments shall be made in the same manner as necessary to reflect any similar changes in

Consumers Power's tax payment from future tax legislation.

The capacity charge, if adjusted hereunder, shall be adjusted to the nearest one-hundredth of one cent.

- e. The capacity charge in said monthly rate assumes an annual expense of \$912,000 allocable to steam service for nuclear insurance and operation and maintenance, on the basis that 26.9% of nuclear insurance and operation and maintenance expense for said nuclear power plant is allocable to steam service. Consumers Power shall reestimate its annual expense for nuclear insurance and operation and maintenance (including operation and maintenance for fossil-fired boilers, if any, installed by Consumers Power) on or about the commercial operation date and shall annually calculate its actual expense for nuclear insurance, fossil-fired boiler operation and operation and maintenance as of every November 30 thereafter. For every full \$50,000 increase or decrease from \$912,000 in such annual expense allocable to steam service, as so reestimated and calculated, allocated by substituting for 26.9% the value for "B" used in recalculating the allocated steam investment under paragraph a. of this Section 4, there shall be a corresponding \$0.0010 increase or decrease in said capacity charge as of the commercial operation date in the case of said reestimate and as of the December 1 immediately following each such annual calculation.
- f. The capacity charge in said monthly rate assumes an interest cost to Consumers Power of 5% on all long-term debt incurred

between January 1, 1968 and the commercial operation date. For each full 0.2 of a percentage point increase or decrease from 5% in the weighted average interest cost to Consumers Power on all long-term debt incurred by Consumers Power between said dates, there shall be a corresponding increase or decrease in said capacity charge of \$0.000013 times the number of millions of dollars (to the nearest one-tenth of one million) of allocated steam investment as recalculated under paragraph a. of this Section 4 less the number of millions of dollars (to the nearest one-tenth of one million) of savings in initial investment upon which the credit provided for in paragraph b. of this Section 4 is based, effective as of the commercial operation date. The capacity charge, if adjusted hereunder, shall be adjusted to the nearest one-hundredth of one cent.

- g. The commodity charges in said monthly rate assume a nuclear fuel cost of \$0.1801 per million Btu levelized over the 20-year period beginning on the commercial operation date. On or about the commercial operation date and annually thereafter during the life of this agreement, Consumers Power shall recalculate the nuclear fuel cost as of the commercial operation date and the anniversary of such date in each year thereafter, by means of the CONFUCY Computer Program (Consumers Power Company Computer Program No. 5201), using the most accurate nuclear fuel cost and other data then available to Consumers Power. On the basis of such

recalculation, Consumers Power shall adjust the commodity charge rates and previous billings to Dow as follows:

- (1) For each full \$0.001 per million Btu which any such recalculation shows the levelized nuclear fuel cost for the 20-year period beginning on the commercial operation date to be above or below \$0.1801 per million Btu, the commodity charge for each class of steam shall be increased or decreased, whichever is appropriate, from the commodity charge set forth above in this Section 4 for such class of steam as follows:

600 psig - - by \$0.001158 per 1,000 pounds of steam

175 psig - - by \$0.001125 per 1,000 pounds of steam

as of the effective date of such recalculation.

- (2) For purposes of adjusting previous billings to Dow, \$0.1801 per million Btu shall be deemed to be the original base levelized nuclear fuel cost for the 20-year period beginning on the commercial operation date. Said original base cost and every revised base levelized nuclear fuel cost established for said 20-year period pursuant to this subparagraph (2) shall be deemed to be the "effective base cost" for purposes of this subparagraph (2) until superseded by such a revised base cost. Whenever any recalculation provided for in this paragraph g. shows that the levelized nuclear fuel cost for said 20-year period is

\$0.001 per million Btu or more above or below the effective base cost, a revised base cost for said 20-year period shall be established by increasing or decreasing the effective base cost, whichever is appropriate, by each full \$0.001 which said recalculation shows the 20-year levelized nuclear fuel cost to be above or below said effective base cost. One-twelfth ( $1/12$ ) of the difference between the revised base cost and said effective base cost, multiplied by the number of millions of Btu utilized at the nuclear power plant for the production of steam delivered to Dow hereunder (including additional steam delivered to Dow under Section 12 hereof at cost of fuel plus ten percent [10%]) during all of the years preceding such recalculation less the number of millions of Btu for which an efficiency credit for fuel savings is made under paragraph h. of this Section 4 during all of the years preceding such recalculation, shall be added to or deducted from each of Dow's monthly bills in the succeeding year, whichever is appropriate. Any increase or decrease in the levelized cost of nuclear fuel during the year or part thereof immediately preceding termination of this agreement shall be paid in one lump sum upon termination on the basis of a recalculation as aforesaid, made at the time of

termination. On or before the expiration of the initial term of this agreement, the parties shall agree upon a levelized nuclear fuel cost to be used as the original base fuel cost for rate and billing adjustments as aforesaid following the initial term. Amounts less than \$0.001 in the recalculated levelized nuclear fuel cost shall be disregarded in making the commodity charge adjustments provided for in this paragraph g. The commodity charges, if adjusted hereunder, shall be adjusted to the nearest one-hundredth of one cent.

- h. The commodity charge for 175 psig steam in said monthly rate assumes a credit of \$0.0509 per 1000 lbs for annual fuel savings resulting from the generation of electric energy utilizing steam which is subsequently supplied to Dow. The amount of said credit is based upon (1) a 20-year levelized nuclear fuel cost of \$0.1801 per million Btu, (2) delivery of 600 psig and 175 psig steam to Dow at the total design reserved capacity, (3) the difference in estimated net plant heat rates for the Generating Plant and for a hypothetical two-unit electric generation-only nuclear power plant located on the Great Lakes and having nuclear steam supply systems of like design to those of the Generating Plant, and (4) an estimated net electrical output of the Generating Plant which assumes operation at maximum warranted nuclear steam supply system output at eighty-five percent (85%) capacity factor at design

conditions. On or about the commercial operation date and annually as of every November 30 thereafter, Consumers Power shall recalculate the amount of such credit, based upon the then-current 20-year levelized nuclear fuel cost, as calculated pursuant to paragraph g. of this Section 4, and other Generating Plant design conditions. Such recalculations shall also be based upon the following electrical output and heat-rate differential assumptions:

- (1) the recalculation to be made on or about the commercial operation date shall be based upon Consumers Power's estimate of the net electrical output of Unit No. 1 at eighty-five percent (85%) capacity factor for the period beginning with the commercial operation date and ended the first November 30 thereafter, and also upon the difference between Consumers Power's then-current estimate of the net plant heat rate for a hypothetical two-unit, electric-generation-only nuclear power plant located on the Great Lakes and having nuclear steam supply systems of like design to those of the Generating Plant and Consumers Power's then-current estimate of the net heat rate for Unit No. 1 during the same period;
- (2) each annual recalculation hereunder shall be based upon Consumers Power's estimate of the net electrical output of Unit No. 1 for the succeeding twelve-month period, and also upon the difference between Consumers Power's

estimate, as of the commercial operation date, of the net plant heat rate for a hypothetical two-unit, electric-generation-only nuclear power plant located on the Great Lakes and having nuclear steam supply systems of like design to those of the Generating Plant and Consumers Power's estimate of the net plant heat rate for Unit No. 1 for the succeeding twelve-month period.

There shall be excluded from the amount of savings upon which the credit is based the expenses associated with the additional fuel use by Unit No. 2 of the nuclear power plant at an eighty-five percent (85%) capacity factor due to the increased backpressure of Unit No. 2 resulting from the cooling water temperature at Midland over the 1.8 inch backpressure which would occur at the site of the hypothetical power plant located on the Great Lakes. There shall also be excluded from the amount of savings upon which the credit is based the expenses associated with the increased net heat rate for Unit No. 2 of the Midland Power Plant due to the supplying of steam to Dow from Unit No. 2 through pressure-reducing stations, for the periods during which steam must be supplied to Dow in such manner. For each full \$0.0001 increase or decrease from \$0.0509 in said credit, as so recalculated, there shall be a corresponding \$0.0001 decrease or increase in said commodity charge, as of the commercial operation date in the case of the initial

recalculation and as of the December 1 immediately following each such annual calculation. Amounts less than \$0.0001 shall be disregarded in making the commodity charge adjustments provided for in this paragraph. At the time of each annual recalculation hereunder Consumers Power shall correct the recalculation next preceding to reflect the actual net heat rate and net electrical output of Unit No. 1, and the actual periods and amounts of increased net heat rate of Unit No. 2 when steam had to be supplied to Dow from Unit No. 2 through pressure-reducing stations, during the period between said recalculations. There shall be included in the first bill to Dow for steam service following each such annual recalculation a charge or credit, whichever is appropriate, for the difference, if any, between the amount of the credit for the period elapsed since the previous recalculation as so corrected and the amount of the credit actually applied to Dow's bills for steam service during such period.

1. The commodity charges in said monthly rate assume an average heat content per pound of steam of 1158 Btu per pound of 600 psig steam and 1114 Btu per pound of 175 psig steam, determined by deducting the estimated total Btu content of condensate return and makeup water equivalent to 100% of the steam supplied to Dow from the estimated total Btu content of the steam supplied to Dow. Each monthly bill to Dow shall include a charge or credit, whichever is appropriate,

for all Btu in excess of or less than 1158 times the number of pounds of 600 psig steam, plus 1114 times the number of pounds of 175 psig steam, supplied to Dow during the month for which such bill is rendered. Said charge or credit shall be computed on the basis of the then-current levelized nuclear fuel cost as calculated pursuant to paragraph g. of this Section 4.

- j. The capacity charge in said monthly rate is based upon delivery of steam to Dow at levels not exceeding the reserved capacity for each class of steam set forth in Section 1 hereof, as the same may be adjusted pursuant to Section 12 hereof. If in any month the flow rate of steam delivered to Dow from the Generating Plant for any one (1) hour is greater than such reserved capacity, and the net electrical output available to Consumers Power's electric system is thereby decreased, the capacity charge for such month and for the succeeding eleven (11) months shall be increased by 1.67 times the Adjustment Factor calculated in accordance with the provisions of subparagraph (1) of paragraph a. of Section 12 for each full 1,000 kW by which the net electrical output available to Consumers Power's electric system is thereby decreased below the net electrical output upon which the capacity charge is based. However, the reserved capacity for such class of steam shall not thereby be changed. Amounts less than 1,000 kW shall be disregarded in making the capacity charge increases provided for herein. It is agreed that the capacity charge increases provided for herein and the capacity charge

increases provided for in paragraph a(1) and a(2) of Section 12 hereof for reduction of steam flow below a minimum steam flow shall not be added together. If more than one of said increases would otherwise be in effect at any given time only the increase resulting from the greatest decrease in net electrical output shall be effective at such time.

5. Bills for steam service shall be rendered approximately monthly on the basis of Consumers Power's meter readings, and shall be due and payable on or before the due date shown on each bill. Bills shall be delivered to Dow not less than seven (7) days prior to the due date. Each bill shall show the beginning and closing dates of the period for which the bill is rendered, the due date, the meter readings, the number of units, and the amount payable. A delayed payment charge of two percent (2%) of the total bill shall be added to any bill which is not paid on or before the due date shown thereon. The minimum monthly charge shall be the capacity charge provided for in Section 4 hereof.

6. Consumers Power does not guarantee, but will endeavor to furnish continuous supplies of steam and to maintain pressure within plus or minus ten percent (10%) hereunder. Consumers Power shall not be liable for interruptions in the service or variations in pressure or other service characteristics, or for any loss or damage of any kind or character occasioned thereby, due to causes or conditions beyond Consumers Power's reasonable control, and such causes or conditions shall be deemed to specifically include, but not be limited to, the following: acts or omissions of customers or third parties; operation of safety devices except when such operation is

caused by the negligence of Consumers Power; absence of an alternate supply of service; failure, malfunction, breakage, necessary repairs or inspection of machinery, facilities or equipment when Consumers Power has carried on a program of maintenance consistent with the general standards prevailing in the industry; act of God; war; action of the elements; storm or flood; fire; riot; labor dispute or disturbance; or the exercise of authority or regulation by governmental or military authorities. Dow shall not be relieved of its obligation to pay the minimum monthly charge provided for in Section 5 hereof by reason of any interruption in the service or variation in pressure or other service characteristics, however caused. Whenever there shall be any interruption in service or variation in pressure or other service characteristics due to causes or conditions covered by the second sentence of this Section 6, Consumers Power shall use reasonable efforts, consistent with the standards of performance prevailing in the public utility industry, to remove such causes or conditions.

7. Consumers Power shall secure and maintain in force during the life of this agreement financial protection against nuclear hazards associated with the Generating Plant in such form and amounts as may be required by law. Notwithstanding anything to the contrary in this agreement, Dow shall indemnify and save Consumers Power harmless from and against all loss, expense, liability or damages arising out of injury (including death) or damage to any person or property whatsoever, caused, contributed to or resulting from steam delivered to Dow hereunder, or from Dow's use or misuse of such steam, or from the presence of such steam in Dow's facilities, except to the extent Consumers Power is insured or indemnified

against such loss, expense, liability or damages as part of the financial protection it is required by law to maintain with respect to the Generating Plant, it being understood and agreed that Consumers Power does not hereby assume any liability by contract. As used in the preceding sentence, the word "expense" shall be deemed to include, but not be limited to, any and all reasonable and necessary expenses incurred by Consumers Power in defending any claim, action or proceeding brought against Consumers Power for any of the above-named reasons.

8. Consumers Power does not guarantee, but will endeavor to ensure that steam supplied to Dow from said nuclear power plant does not contain radioactivity in excess of the applicable limits set forth in Part 20 of the U. S. Atomic Energy Commission's regulations. Each party shall install monitoring and shutoff equipment on its own premises to permit detection and shutoff of steam supplied from said nuclear power plant in the event that such steam contains radioactivity at levels in excess of such limits at any time. Upon notification from Dow that Dow detects radioactivity in excess of such limits in the steam supplied to Dow hereunder at any time, Consumers Power shall take such corrective action as it deems appropriate to eliminate such excess.

9. In the event that the total steam supply to Dow from said nuclear power plant falls below 1,000,000 lbs/hr or below Dow's total steam requirements, whichever is less, Consumers Power will, if requested, supply emergency steam to Dow's Midland Plant within a mutually agreeable time, from fossil-fired package boilers installed as a part of the Generating Plant, at a nominal pressure of 175 psig, and at such flow rate as is

necessary to restore the total steam supply to Dow to 1,000,000 lbs/hr or to Dow's total steam requirements, whichever is less, to the extent such flow rate is within the capability of said package boilers, at the monthly rate for 175 psig steam provided for in Section 4 hereof; provided, that Dow has given Consumers Power, on or before October 1, 1974, written notice to procure and install said package boilers. Such notice may require Consumers Power to procure and install package boilers having an aggregate flow rate of not less than 300,000 lbs/hr and not more than 1,000,000 lbs/hr of nominal 175 psig steam.

If Dow has not given Consumers Power, on or before October 1, 1974, notice to procure and install said package boilers, then Dow shall be obligated to maintain at its Midland Plant throughout the life of this agreement a standby and auxiliary source or sources of steam for the Generating Plant, having a nominal pressure of 150 psig or higher and a flow rate of 300,000 lbs/hr. Dow agrees to supply up to 300,000 lbs/hr of such steam to Consumers Power at a mutually agreeable point or points of delivery on or near the property line separating Dow's Midland Plant site from the Site, upon at least twenty-four (24) hours' notice given at any time after two years prior to the scheduled commercial operation date of Unit No. 2 of the Generating Plant, at a price equal to the monthly rate for 175 psig steam then in effect pursuant to Section 4 hereof for steam service to Dow. All piping, valves and other equipment for generating, regulating, metering, monitoring, and conducting the steam to said point or points of delivery shall be furnished, installed, owned, operated and maintained by Dow at its expense. All piping, valves and other equipment for conducting,

regulating, monitoring and utilizing the steam beyond said point or points of delivery shall be furnished, installed, owned, operated and maintained by Consumers Power at its expense, and shall be deemed to be "investment common to electric and steam service" for purposes of calculating the allocated steam investment in and required for the Generating Plant, to the extent such equipment is not also utilized by Consumers Power for steam service to Dow hereunder. Each party shall at its own expense secure and maintain in effect any and all permits, licenses or other authorizations required from government authorities for the construction, use and maintenance of the piping, valves and other equipment to be furnished by it hereunder.

Dow does not guarantee, but will endeavor to furnish such steam and to maintain pressure as provided in the paragraph immediately preceding. Dow shall not be liable for interruptions in the service or variations in pressure or other service characteristics, or for any loss or damage of any kind or character occasioned thereby, due to causes or conditions beyond Dow's reasonable control, and such causes or conditions shall be deemed to specifically include, but not be limited to, the following: acts or omissions of third parties; operation of safety devices except when such operation is caused by the negligence of Dow; failure, malfunction, breakage, necessary repairs or inspection of machinery, facilities or equipment, when Dow has carried on a program of maintenance of said package boilers, piping, valves and other equipment consistent with the recommendations of the manufacturers and vendors thereof; act of God; war; action of the elements; storm or flood; fire; riot; labor dispute or disturbance; or the exercise

of authority or regulation by governmental or military authorities. Whenever there shall be any interruption in service or variation in pressure or other service characteristics due to the aforementioned causes or conditions, Dow shall use all reasonable efforts to remove such causes or conditions.

10. Steam supplied to Dow hereunder shall be for the sole use of Dow, for the purpose aforesaid, and shall not be transmitted elsewhere, or shared or resold.

11. Dow may generate and utilize in its Midland Plant the following supplies of steam, and the same shall be excluded from Dow's obligation to purchase all of its Midland Plant steam requirements from Consumers Power as provided in Section 1:

- a. from all of its facilities at Dow's Midland Plant which are operating or operable as of January 15, 1974, any amount of steam, as standby or auxiliary to the steam to be provided by Consumers Power; provided, however, that Dow may repair, but shall not replace or add to, its steam-producing facilities at the South and West Power Houses at its Midland Plant; and provided, further, that upon retirement of said Power House facilities Dow may generate and utilize in its Midland Plant an amount of steam not exceeding 1,000,000 lbs/hr of steam at a pressure not exceeding nominal 175 psig from any facilities owned and operated by Dow, as standby or auxiliary to the steam to be provided by Consumers Power. The foregoing amounts of steam shall be deemed to include,

and not be in addition to, the capacity of 300,000 lbs/hr if maintained by Dow pursuant to Section 9 hereof.

- b. from any source, such portion of Dow's Midland Plant steam requirements as is not within the design capabilities of the Generating Plant; provided, however, that Dow shall permit Consumers Power to supply such steam requirements from another source if Consumers Power is able to do so at an estimated cost to Dow which is not more than ten percent (10%) higher than Dow's estimated cost of supplying said requirements from its own facilities or those of a third party or parties;
- c. such portion of Dow's Midland Plant steam requirements as may be supplied incidentally from chemical processes at Dow's Midland Plant.

The provisions of this Section 11 shall not operate to relieve Dow from its obligation to pay Consumers Power the minimum monthly charge provided for in Section 5 hereof.

12. Dow may vary the reserved capacities set forth in Section 1 hereof, or purchase additional steam produced by said nuclear power plant, as follows:

- a. The capacity charge in the monthly rate set forth in Section 4 hereof is based upon the availability to Consumers Power's electric system of the maximum net electrical output attainable at the maximum warranted nuclear steam supply system output when steam is delivered to Dow at the total design reserved capacity. The minimum

flow rate of 175 psig steam necessary to obtain the maximum net electrical output of the Generating Plant (hereinafter called the "Minimum Flow Rate") is presently estimated to be 2,000,000 lbs/hr. Consumers Power agrees that the reserved capacities set forth in Section 1 hereof may be changed at the request of Dow during the term of this agreement with corresponding adjustments in the capacity charge in said monthly rate, as follows:

- (1) Upon at least six (6) years' written notice to Consumers Power of a desired reduction in reserved 175 psig steam capacity, which notice shall state Dow's estimated minimum 175 psig steam demand at the desired reserved capacity, the reserved capacity for 175 psig steam shall be reduced. For each full 1,000 kW by which the net electrical output available to Consumers Power's electric system is increased as a result of such reduction in Dow's reserved steam capacity, the capacity charge in the monthly rate shall thereupon be decreased by \$0.0006 per lb times the ratio of the as-incurred cost per kW of the Generating Plant to \$205. (The product of this multiplication is called the "Adjustment Factor" in this subparagraph (1) and subparagraphs (2) and (3) of this paragraph a. of Section 12.) The as-incurred cost per kW shall be calculated

by dividing the total Generating Plant investment less the quantity calculated by subtracting the investment savings credited to steam from the allocated steam investment by the rated net electric output of the Generating Plant at the maximum warranted nuclear steam supply system output. The investment savings credited to steam shall be calculated as follows:

$$\frac{X \cdot Y}{Z} \cdot C$$

- X = the difference in estimated net plant heat rates for the Generating Plant and for a hypothetical two-unit electric generation-only nuclear power plant located on the Great Lakes and having nuclear steam supply systems of a like design to those of the Generating Plant, expressed in MBTU/kWh.
- Y = the estimated net electrical output of the Generating Plant which assumes operation at maximum warranted nuclear steam supply system output at one hundred percent (100%) capacity factor, at design conditions, expressed in kW.
- Z = the maximum warranted nuclear steam supply system output, expressed in MBTU/hr.
- C = common investment as provided in formula for calculating allocated steam investment (paragraph a. of Section 4).

The Adjustment Factor shall be rounded to the nearest one-hundredth of a cent. The amount of the increase in such net electrical output shall be determined on the basis of the net electrical output at the new reserved capacity or the net electrical output at said estimated minimum 175 psig steam demand, whichever is lower. If in any month following such reduction in Dow's reserved steam capacity the flow rate of 175 psig steam delivered to Dow from the Generating Plant for any one (1) hour is less than the minimum steam flow necessary to maintain the net electrical output upon which such decreased capacity charge is based, the capacity charge for such month and for the succeeding 11 months shall be increased by the Adjustment Factor times 1.67 for each full 1,000 kW by which the net electrical output available to Consumers Power electric system is hereby decreased below the net electrical output upon which such decreased capacity charge is based, except as provided in the next sentence and except as provided in paragraph j. of Section 4 hereof. The capacity charge shall not be increased as provided in the sentence next preceding for the first instance in any calendar year where such flow rate is from

300,000 to 400,000 lbs/hr less than said minimum steam flow for a period not greater than forty-eight (48) hours due to an unscheduled, emergency shutdown of Dow chemical processes, or for any instance where such flow rate is less than said minimum steam flow as a result of act of God, war, storm, flood, or inability of Consumers Power to deliver said minimum steam flow. Amounts less than 1,000 kW shall be disregarded in making the capacity charge adjustments provided for herein.

- (2) Upon at least six (6) years' written notice to Consumers Power of a desired increase in reserved 175 psig steam capacity, which notice shall state Dow's estimated minimum 175 psig steam demand at the desired reserved capacity, the reserved capacity for 175 psig steam shall be increased to any flow rate level of which the Generating Plant is capable, except to the extent Dow has relinquished its right to increased steam flow pursuant to paragraph c. of this Section 12. For each full 1,000 kW by which the net electrical output available to Consumers Power's electric system is decreased as a result of such increase in Dow's reserved steam capacity, the capacity charge in the monthly rate shall thereupon be increased by the Adjustment Factor. The amount

of the decrease in such net electrical output shall be determined on the basis of the net electrical output at the new reserved capacity or the net electrical output at said estimated minimum 175 psig steam demand, whichever is lower. If in any month following such increase in Dow's reserved steam capacity the flow rate of 175 psig steam delivered to Dow from the Generating Plant for any one (1) hour is less than the minimum steam flow necessary to maintain the net electrical output upon which such increased capacity charge is based, the capacity charge for such month and for the succeeding 11 months shall be increased by the Adjustment Factor times 1.67 for each full 1,000 kW by which the net electrical output available to Consumers Power electric system is hereby decreased below the net electrical output upon which such increased capacity charge is based, except as provided in the next sentence and except as provided in paragraph j. of Section 4 hereof. The capacity charge shall not be increased as provided in the sentence next preceding for the first instance in any calendar year where such flow rate is from 300,000 to 400,000 lbs/hr less than said minimum steam flow for a period not greater than forty-eight (48) hours due to an unscheduled, emergency shutdown of Dow chemical

processes, or for any instance where such flow rate is less than said minimum steam flow as a result of act of God, war, storm, flood, or inability of Consumers Power to deliver said minimum steam flow. Amounts less than 1,000 kW shall be disregarded in making the capacity charge adjustments provided for herein.

- (3) Upon at least six (6) years' written notice to Consumers Power of a desired increase in reserved 600 psig steam capacity, the reserved capacity for 600 psig steam shall be increased to any flow rate level of which the Generating Plant is capable, except to the extent Dow has relinquished its right to increased steam flow pursuant to paragraph c. of this Section 12. For each full 1,000 kW by which the net electrical output available to Consumers Power's electric system is decreased as a result of such increase in Dow's reserved steam capacity, the capacity charge in the monthly rate shall thereupon be increased by the Adjustment Factor. Amounts less than 1,000 kW shall be disregarded in making the capacity charge adjustments provided for herein.
- (4) Upon at least thirty (30) days' written notice to Consumers Power of a desired reduction or increase

in reserved steam capacity which would decrease or increase the net electric output available to Consumers Power's electric system, the total reserved capacity for 175 psig steam may be reduced or increased, and the reserved capacity for 600 psig steam may be increased, upon such terms as the parties may agree.

- b. At the written request of Dow made at least two (2) years in advance, or upon shorter notice if Consumers Power so agrees, Consumers Power will supply steam to Dow in addition to the total of the capacities reserved by Consumers Power for Dow's use, if the following conditions are satisfied: (1) Consumers Power has such additional steam available from said nuclear power plant; (2) Consumers Power is unable to utilize such additional steam in the turbines of said nuclear power plant; (3) the supply of such additional steam is permitted under applicable laws, rules, regulations and orders and the provisions of Consumers Power's operating license(s) for said nuclear power plant, and (4) Dow assumes whatever additional costs, of any kind, are necessary to enable Consumers Power to furnish such additional steam to Dow. The rate for such additional steam shall be a commodity charge consisting of the levelized cost of nuclear fuel as determined and adjusted

pursuant to paragraph g. of Section 4 hereof, plus ten percent (10%) of such cost.

- c. At any time during the life of this agreement Dow may notify Consumers Power in writing that Dow desires to permanently relinquish its right to have Consumers Power supply steam to Dow hereunder at reserved capacities in excess of a reduced reserved capacity or capacities stated in such notice. Consumers Power will agree to Dow's proposed relinquishment if a third party or parties satisfactory to Consumers Power agree to contract with Consumers Power, on terms (including rates) satisfactory to Consumers Power and said third party or parties, for the amount of reserved steam capacity or capacities by which Dow's reduced reserved capacity or capacities is less than the total design reserved capacity. Consumers Power agrees not to demand unreasonable terms from such third party or parties. In the event any such relinquishment is agreed to, the capacity charge in Dow's monthly rate will thereafter be based upon Dow's reserved capacity or capacities as reduced thereby, and the total of such reduced reserved capacity or capacities shall thereafter be used in lieu of the total design reserved capacity for purposes of the rate adjustments provided for in Section 4 and in this Section 12.

13. Subject to the rights of termination set forth in this Section 13, this agreement shall extend for an initial term of twenty (20) years from the commercial operation date, and following said initial term of twenty (20) years until terminated by mutual consent or as hereinafter provided.

- a. Dow shall have the right to terminate this agreement at the expiration of the seventh (7th) or any succeeding year during the life of this agreement by giving Consumers Power at least two (2) years' written notice of Dow's desire to terminate the same, which notice may be given at any time; provided, however, that in such event Dow shall pay Consumers Power on or before the termination date a termination charge consisting of (1) the present worth in the year of termination, computed at an interest rate of seven and one-half percent (7-1/2%) per annum, of the additional expense for nuclear fuel which Consumers Power estimates it will incur during the period between the date of termination and a date thirty-five (35) years after the commercial operation date as a result of such termination, such additional expense being associated with the following:
  - (a) the additional nuclear fuel consumed by Unit No. 2 of the nuclear power plant attributable to greater backpressure due to location of Unit No. 2 at Midland rather than at a Great Lakes site; and

- (b) the additional cost of nuclear fuel consumed by Unit No. 1 of the nuclear power plant due to its operation as an electric generation-only plant as compared to the cost of nuclear fuel consumed by a hypothetical electric generation-only nuclear unit located at a Great Lakes site and having the same rated net electrical output and operating at the same capacity factor as does Unit No. 1 following such termination.
- (2) the applicable percentage, set forth in Appendix A hereto, of Consumers Power's allocated steam investment in the Generating Plant, calculated as of said termination date by Consumers Power by means of the formula set forth in paragraph a. of Section 4 hereof, using undepreciated original costs and using the same value for "B" in said formula as was used in recalculating the allocated steam investment pursuant to paragraph a. of Section 4 hereof. As used herein, "applicable percentage" shall mean the percentage set forth in Appendix A hereto for the number of years elapsed between the commercial operation date and the date of termination, except that with respect to Consumers Power's investment allocated to steam service to Dow and

made after the commercial operation date "applicable percentage" shall mean the percentage set forth in Appendix A hereto for the number of years elapsed between the date of such installation and the date of termination.

- b. Consumers Power may terminate this agreement at any time after the expiration of the initial term hereof by giving Dow at least four (4) years' written notice of its desire to terminate the same, which notice may be given at any time.
- c. If the total of Dow's bills for electric service under the Contract for Electric Service entered into by the parties concurrently herewith increases in any year during the term of said Contract by reason of any change in the monthly electric rate provided for in said Contract, then the amount of Consumers Power's allocated steam investment which Dow would be required by paragraph a(2) of this Section 13 to pay Consumers Power upon termination of this agreement shall be reduced, if such termination occurs during the period that such rate change is effective, by the applicable amount set forth in Appendix B hereto multiplied by the number of millions of dollars, to the nearest one-tenth of one million, by which the total of Dow's bills for electric service under said Contract in such year exceeded the amount which said total of Dow's bills would have been but

for such rate change, but only to the extent that such excess is \$1,000,000 or more and is attributable to an increase in the ratio of Consumers Power's rate of return on electric service under said Contract to Consumers Power's rate of return under all of its residential electric rates. The amount of any such excess and its attributability to an increase in said ratio shall be verified by a third party selected by Consumers Power and satisfactory to Dow. The amount of any such adjustment shall not exceed the amount of the termination charge. As used herein, "applicable amount" shall mean the amount set forth in Appendix B hereto for the year corresponding to the "applicable percentage" (as defined in paragraph a. of this Section 13) of allocated steam investment that Dow is to pay to Consumers Power on termination of this agreement.

- d. If Dow terminates this agreement and can demonstrate to the satisfaction of Consumers Power that Dow has made a firm commitment to purchase or produce at its Midland Plant steam of a quantity and quality equal to or greater than that supplied by Consumers Power under this agreement, that said steam will be generated by a technological means not known or feasible at the date of this agreement, and that the cost of said steam to Dow is at least ten percent (10%) less than Dow's cost for steam under this

agreement, then the termination charge to be paid by Dow to Consumers Power under paragraph a(2) of this Section 13 shall be reduced by fifty percent (50%). In the event that said steam is to be produced by Dow or an entity controlled by Dow, the cost of said steam to Dow shall be calculated on the basis of the same fixed charge rate as is used by Consumers Power in the steam rate provided for in Section 4 hereof, as verified by a third party selected by Consumers Power and satisfactory to Dow.

- e. If, due to any cause or condition whatsoever, including but not limited to the exercise or nonexercise of authority or regulation by the U. S. Atomic Energy Commission or any successor agency or any court or any other governmental authority, Consumers Power at any time prior to the commercial operation date for Unit No. 1 of the Generating Plant is prevented from or is unable to complete or operate the Generating Plant or is prevented from or is unable to serve process steam to Dow from the Generating Plant, then either party may at its option, and upon written notice to the other, terminate this agreement without further liability to the other, except that in such event Dow shall be liable for and shall pay Consumers Power, upon receipt of properly-itemized invoice therefor, the following costs, less salvage value of the equipment, structures and facilities to which such costs relate:

- (1) all costs incurred by or on behalf of Consumers Power for the design, procurement, fabrication, installation, dismantling, removal and disposal of equipment, structures and facilities intended to be utilized solely for the production and delivery of process steam to Dow; and
- (2) all costs incurred by or on behalf of Consumers Power for the design, procurement, fabrication, installation, dismantling, removal and disposal of equipment, structures and facilities for the turbine-generator cycle of Unit No. 1 of the Generating Plant except for the costs, as calculated or estimated by Consumers Power, which would have been expended for the design, procurement, fabrication and installation of items in the turbine-generator cycle for Unit No. 1 of the Generating Plant which could have been utilized without modification in an 800 MWe electric-only turbine-generator cycle for Unit No. 1 of the Generating Plant.

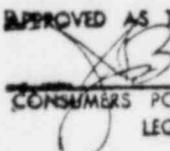
The costs referred to in (1) and (2) above shall include, but not be limited to, Consumers Power overheads for General and Administrative Expense, Allowance for Funds During Construction, Miscellaneous Work Orders, Taxes, and Insurance. Consumers Power's books of account shall be open, if Dow so requests, to an independent auditor

satisfactory to Consumers Power for the purpose of verifying that the costs for which Dow is charged hereunder have in fact been incurred.

14. This agreement shall not be transferred by Dow or otherwise alienated without Consumers Power's written consent. Subject to the preceding sentence, this agreement inures to and binds the successors and assigns of the respective parties hereto. This agreement cancels and supersedes, as of the commercial operation date, the Contract for Interim Steam Service between the parties dated December 13, 1967, unless said Contract has been previously terminated.

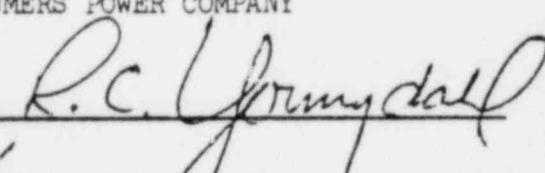
IN WITNESS WHEREOF, the parties hereto have executed this agreement in duplicate by their duly authorized representatives on the day and year first above written.

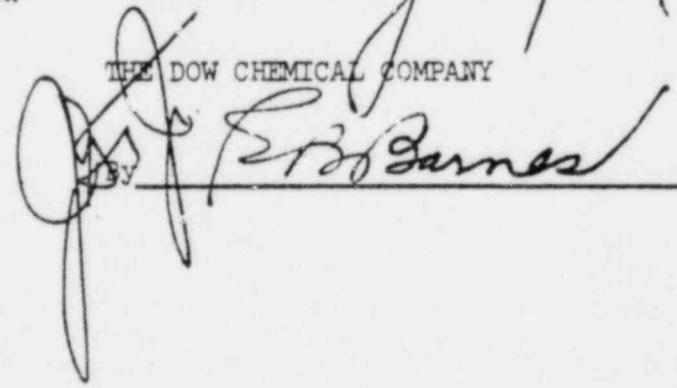
APPROVED AS TO FORM

  
CONSUMERS POWER COMPANY  
LEGAL DEPARTMENT

CONSUMERS POWER COMPANY

By

  
THE DOW CHEMICAL COMPANY

  
BY

APPENDIX A

<u>Year</u>	<u>Percentage</u>
1	99.4
2	98.7
3	97.9
4	97.1
5	96.2
6	95.3
7	94.3
8	93.2
9	92.1
10	90.8
11	89.5
12	88.1
13	86.5
14	84.9
15	83.1
16	81.2
17	79.1
18	76.9
19	74.5
20	71.9
21	69.2
22	66.2
23	63.0
24	59.6
25	55.9
26	52.0
27	47.7
28	43.2
29	38.3
30	33.0
31	27.3
32	21.2
33	14.7
34	7.6
35	-

APPENDIX B

<u>Year</u>	<u>Amount</u>
7	\$11,051,000
8	10,935,000
9	10,809,000
10	10,674,000
11	10,528,000
12	10,371,000
13	10,200,000
14	10,016,000
15	9,818,000
16	9,603,000
17	9,371,000
18	9,121,000
19	8,851,000
20	8,559,000
21	8,244,000
22	7,903,000
23	7,536,000
24	7,138,000
25	6,710,000
26	6,246,000
27	5,746,000
28	5,206,000
29	4,622,000
30	3,992,000
31	3,312,000
32	2,577,000
33	1,783,000
34	925,000
35	-