**COGENERATION** Section No. 9
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**TECHNICAL AND SPECIAL TERMS AND ABBREVIATIONS FOR COGENERATION AND SMALL POWER PRODUCTION**

Section No. 9
Original Sheet No. 1
Relocated from NDPSC No. 1 Sheet No. E 87 & E 88

**SUBDIVISION 1 - DEFINITIONS**

ANNUAL SYSTEM PEAK. The annual system peak is the highest Company system demand occurring during the calendar year.

CERTIFIED CAPACITY. The certified capacity rating of QF is the maximum generation output capability of the facility as determined by Company.

ECONOMIC SHUTDOWN. Economic shutdown occurs when Company notifies QF that no energy delivery should be made to Company during the off-peak period.

METERING CHANGE. The metering charge is assessed by Company for the installation of additional metering equipment and associated billing and operating and maintenance expenses.

ON-PEAK PERIOD. The on-peak period contains all hours between 9 a.m. and 9 p.m., Monday through Friday, except the following holidays: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day. When a designated holiday occurs on Saturday, the preceding Friday will be designated a holiday. When a designated holiday occurs on Sunday, the following Monday will be designated a holiday.

OFF-PEAK PERIOD. The off-peak period contains all other hours not included in the on-peak period. Definition of on-peak and off-peak period is subject to change with change in Company's system operating characteristics.

QUALIFYING FACILITY. A qualifying facility is a power production or cogeneration facility certified under the Public Utility Regulatory Policies Act of 1978 (PURPA), Title II, Section 201, by procedures established by the Federal Energy Regulatory Commission regulations under 18 CFR Section 292.207. Hereafter, the term may refer to the physical facility, the facility owner, or the facility operator.

SMALL QUALIFYING FACILITY. A small qualifying facility is a qualifying facility with certified capacity of 100 kW or less.

**SUBDIVISION 2 - ABBREVIATIONS**

QF **-** Qualifying facility

SQF **-** Small qualifying facility

**NET ENERGY BILLING SERVICE**
**RATE CODE D50**



**AVAILABILITY**

Available to any Small Qualifying Facility (SQF) with a capacity of 100 kW or less who receives non-time of day retail electric service from Company and offsets energy delivered by Company.

**RATE**

| | |
|---|---|
| Metering Charge per Month | |
| Single Phase | $3.25 |
| Three Phase | $5.50 |
| Payment Schedule for Energy Delivered to Company | |
| Energy Payment per kWh | 2.017¢ C |

**TERMS AND CONDITIONS OF SERVICE**

1. Energy used by customer in excess of energy delivered by the small qualifying facility at the same site during the same billing period shall be billed in accordance with the appropriate non-time of day retail electric rate.

   For demand metered General Service customers, the entire kW demand supplied by the Company at the same site during the same billing period shall be billed to the customer according to the appropriate General Service demand charge rate.

2. Interconnection charges will be assessed by the Company on an individual basis for all costs associated with addition to or modification of Company facilities to accommodate the small qualifying facility (SQF). The net interconnection charge is the responsibility of the SQF.

3. The voltage and phase of customer's generator must be consistent with existing service and approved by the Company.

4. The customer must maintain a power factor of the generator as close to unity as is consistent with NSP operating standards.

**PURCHASE AND SALE BILLING SERVICE**
**RATE CODE D51**



**AVAILABILITY**

Available to any Small Qualifying Facility of less than 100 kW who receives non-time of day retail electric service.

**RATE**

Metering Charge per Month

| | |
|---|---|
| Single Phase | $5.25 |
| Three Phase | $7.60 |

| Payment Schedule for Energy Delivered to Company | Oct-May | Jun-Sep | |
|---|---|---|---|
| Energy Payment per kWh | 2.011¢ | 2.028¢ | C |
| Capacity Payment per kWh for Firm Power | 0.201¢ | 1.398¢ | C |

**DETERMINATION OF FIRM POWER**

The small qualifying facility will have supplied firm power if during the billing period an on peak capacity factor of at least 65 percent was achieved. The calculation of the on peak capacity factor will be as follows:

The average on peak period metered capacity delivered to the Company for the on peak period of the billing period divided by the greatest 15 minute metered capacity delivered for the on peak period of the same billing period expressed in percent and rounded to the nearest whole percent. If the percent calculated is 65 or greater, capacity payment will be made. If the percent calculated is less than 65, capacity payment will not be made.

**TERMS AND CONDITIONS OF SERVICE**

1. Electric service provided by Company to customer at the same site shall be billed in accordance with the appropriate non-time of day retail electric tariff.
2. Interconnection charges will be assessed by the Company on an individual basis for all costs associated with addition to or modification of Company facilities to accommodate the small qualifying facility (SQF). The net interconnection charge is the responsibility of the SQF.
3. The minimum contracted term of service is 12 months.

**TIME OF DAY PURCHASE SERVICE**
**RATE CODE D52**

Section No. 9
15th Revised Sheet No. 4

**AVAILABILITY**
Available to any Small Qualifying Facility (SQF).

**RATE**

| | | | |
|---|---|---|---|
| Metering Charge per Month | | | |
| Single Phase | $5.25 | | |
| Three Phase | $7.60 | | |
| Payment Schedule for Energy Delivered to Company | Oct-May | Jun-Sep | |
| Energy Payment per On-Peak kWh | 2.431¢ | 2.792¢ | C |
| Energy Payment per Off-Peak kWh | 1.788¢ | 1.616¢ | C |
| Capacity Payment per On-Peak kWh for Firm Power | 0.580¢ | 4.005¢ | C |

**DETERMINATION OF FIRM POWER**
The small qualifying facility will have supplied firm power if during the billing period an on-peak capacity factor of at least 65 percent was achieved. The calculation of the on-peak capacity factor will be as follows:

The average on-peak period metered capacity delivered to the Company for the on-peak period of the billing period divided by the greatest 15 minute metered capacity delivered for the on-peak period of the same billing period expressed in percent and rounded to the nearest whole percent. If the percent calculated is 65 or greater, capacity payment will be made. If the percent calculated is less than 65, capacity payment will not be made.

**TERMS AND CONDITIONS OF SERVICE**
1. Electric service provided by Company to customer at the same site shall be billed in accordance with the appropriate time of day retail electric tariff.
2. Interconnection charges will be assessed by the Company on an individual basis for all costs associated with addition to or modification of Company facilities to accommodate the small qualifying facility (SQF). The net interconnection charge is the responsibility of the SQF.
3. The minimum contract term of service is 12 months.

**GENERAL CONDITIONS OF SERVICE**

Section No. 9
Original Sheet No. 5
Relocated from NDPSC No. 1 Sheet No. E 93 & E 94

**SMALL QUALIFYING FACILITIES**

1. SQF shall execute an electric service agreement with Company which shall include, among other provisions, a minimum term of service.
2. Power and energy purchased by SQF from Company shall be under the available retail rates for the purchase of electricity.
3. Company shall make compensation monthly for all energy received from SQF less the metering charge. The schedule for these payments is subject to annual review.
4. Company will inform SQF in writing if SQF is not to deliver to Company during the off-peak period for economic shutdown. At all other times, SQF may, if operating according to conditions of service deliver to Company.
5. The metering charge assumes common use of all Company facilities, up to the metering point, for both receipt and delivery of energy. Any additional facilities required by Company to accommodate SQF will require SQF to pay a one-time charge in advance.
6. SQF shall make provision for on-site metering. All energy received from and delivered to Company shall be separately metered. On-site use of SQF output shall be unmetered for purposes of compensation. SQF shall cooperate with and allow Company to install and have access to on-site monitoring equipment for purposes of gathering SQF performance data.
7. Interconnection with Company shall be in accordance with the guidelines set forth in the Company's electric rate book, Section VI, General Rules and Regulations, Section 2.4, Standby, Supplementary, Emergency, and Incidental Service. SQF shall provide for a Company approved disconnect device (switch) which will physically and visually open the circuit to SQF. The device shall have unrestricted access at all times without prior notice by Company personnel and shall be lockable in open position by Company; shall open all cables to SQF except the neutral; and shall be located near the interconnection point.
8. If SQF is located at a site outside Company service territory and energy is delivered to Company through facilities owned by another utility, energy payments will be adjusted downward reflecting losses occurring between point of generation and point of receipt by Company.
9. In the event SQF desires wheeling by Company, of SQF output, arrangements will be made subject to availability of existing Company distribution, transmission, and transformation facilities.

(Continued on Sheet No. 9-6)

**SMALL QUALIFYING FACILITIES (Continued)**

10. SQF shall indemnify, protect, defend, and save harmless Company from and against any and all claims and demands for damages, remote as well as proximate, to property and injury or death to persons, including payments made under any workmen's compensation law or under any plan for employees' disability and death benefits, which may arise out of or be caused by the erection, maintenance, presence, operation, or removal of the qualifying facility, or by any related act or omission of SQF, its employees, agents, contractors or subcontractors.

**STANDARD CONTRACT AND AGREEMENT FORMS**

Section No. 9
Original Sheet No. 7
Relocated from NDPSC No. 1 Sheet No. E 95

Listed below are the titles and form numbers of standard contract or service agreement form Company requires of customers for cogeneration and small power production purchase services.

Item No.

1. Electric Service Agreement – Form 17-6848 (8-75) (Amended)
2. Typical Additional Terms and Conditions for Customer Delivery

# Electric Service Agreement

Form 17-6848 (8-75)

THIS AGREEMENT, Made this ____ day of _____, ____, by and between NORTHERN STATES POWER COMPANY, a Minnesota Corporation, hereinafter called the "Company," and _____, hereinafter called the "Customer," engaged in the business of _____.

WITNESSETH: That the parties hereto, each in consideration of the agreements of the other, agree as follows:

1. KIND OF SERVICE: Company agrees to supply and Customer agrees to accept electric service in the form of _____ Phase, _____ Wire, Alternating Current at a nominal frequency of 60 Hertz and a nominal voltage of _____, for Customer's use solely for the operation of electric equipment now installed or to be installed by Customer on the property known as _____located at _____.

2. CAPACITY COMMITMENT: Company agrees to provide and keep available throughout the term of this Agreement for Customer's use at the above location_____kilovolt-amperes of capacity. Company also agrees to provide additional capacity to an aggregate of_____kilovolt-amperes upon reasonable notice from Customer specifying the additional amount of capacity and the date same will be required. Reasonable notice shall be construed as meaning ample time in which Company can provide such additional capacity in its system as maybe necessary.

3. ANNUAL MINIMUM CHARGE: In consideration of the above capacity commitment by Company and its investment in facilities to serve Customer, Customer agrees that if the total net payments during any contract year hereunder, in accordance with the RATE below, amount to less than a minimum charge of $_____per year, the difference between such minimum charge and said total net payment shall be included in the bill for the last month of said year and Customer agrees to pay same as a charge for service rendered.

~~4. TERM: This Agreement shall commence at 12:01 A.M. on _____, _____, and shall continue for a period ending at 12:01 A.M. _____, _____, and if not then terminated by at least 6 months prior written notice by either party, shall continue further until so terminated, provided, that in the event Company continues to supply electric service to Customer at this location subsequent to the termination hereof, the demands billed Customer during the eleven months preceding such termination shall be used in applying the rate during the first eleven months of such continued supply of electric service. This Agreement may not be reinstated for the same service within 12 months of the termination date unless the monthly demand minimums, subsequent to the termination date, have been satisfied.~~

5. RATE: Customer agrees to qualify for and elects the rate schedule for _____. Customer agrees to pay Company's established rate schedule in effect from time to time in this locality for such Service, the established rate schedule now in effect being the one attached hereto (Rate No._____).

(Continued on Sheet No. 9-9)

**ELECTRIC SERVICE AGREEMENT FOR COGENERATION AND SMALL POWER PRODUCTION (Continued)**



6. PAYMENT OF BILLS: All bills are payable at Company's office on or before the tenth day succeeding the date bill is rendered for service supplied by Company in the preceding billing period.

7. TERMS AND CONDITIONS: The service hereunder shall be supplied for Customer's use subject to the General Rules and Regulations of Company on file with the Public Service Commission as they now exist or may hereafter be changed. A copy of such rules and regulations is available from the Company. This agreement is also subject to Section(s)_____ appearing under the heading "Additional Terms and Conditions" on the reverse side of this Agreement. Customer agrees to use electrical service only as herein stated and will not assign this Agreement except upon written consent of Company.

NORTHERN STATES POWER COMPANY _____

By_____ By _____

Title_____ Title_____

**COGENERATION**

Section No. 9
Original Sheet No. 10
Relocated from NDPSC No. 1 Sheet No. Item 2

**TYPICAL ADDITIONAL TERMS AND CONDITIONS FOR CUSTOMER DELIVERY**

**1. FACILITY LOCATION AND COMPLIANCE**

Customer agrees to locate the small qualifying facility (SQF) so as to not cause a hazard to the NSP distribution system. Wind generators may only be installed at NSP-approved locations that preclude any possibility of the generation system contacting any NSP facilities if the system accidentally topples over. The total tower height, including the propeller when in the highest position, must be used in the determination. Customer agrees that the installation shall be in compliance with all applicable electric codes and the SQF will be operated only after the installation has been inspected and approved by the appropriate authorities. Customer understands and agrees that Company approval of the proposed or installed SQF does not preclude the necessity of customer obtaining all required permits, building and zoning variations, and applicable inspections.

**2. CONNECTION AND DISCONNECT SWITCH**

NSP agrees to permit customer to connect his proposed SQF to the NSP distribution system on the load side of customer's kilowatt-hour meter. The connection of the small qualifying facility (SQF) to the NSP distribution system must be made through a customer-provided, customer-installed, manual safety disconnect switch of adequate ampere capacity. The switch shall not open the neutral when the switch is open and must provide a visible disconnect. This switch shall have provisions for being padlocked in the open position with a standard NSP padlock. Customer agrees to locate the switch in a position accessible to NSP personnel, and further agrees the switch may be operated by NSP personnel at all times that such operation is deemed necessary by NSP for safety and operating reasons. SQF's using line-commutated synchronous inverters shall have the inverters connected on the load side (SQF side) of the safety disconnect switch.

**3. BACKFEED PREVENTION**

Customer agrees to supply NSP a schematic diagram and associated equipment list for the SQF control circuitry to enable NSP to determine if the SQF safety equipment provides a level of safety consistent wit the safety level required by NSP in its electrical equipment. If further analysis of the proposed SQF by NSP reveals that it is capable of backfeed into the NSP lines during distribution outages, customer shall immediately disconnect the SQF from NSP distribution system and shall only reconnect the SQF through a customer-provided, NSP approved interconnect device that will prevent said backfeed.

**4. ADDITIONAL SAFETY DEVICES**

Customer understands and agrees that as additional SQF's are connected to the NSP distribution system, NSP may require customer to install additional safety devices at customer expense.

**5. DISTRIBUTION SYSTEM ADEQUACY**

The proposed SQF installation will be reviewed by NSP to determine adequacy of the associated NSP distribution system components; the customer agrees to reimburse NSP for the addition, modification, or replacement of any distribution system components made necessary by customer's SQF installation.

**Issued:** 06-20-85

(Continued on Sheet No. 9-11)

**COGENERATION (Continued)**



**TYPICAL ADDITIONAL TERMS AND CONDITIONS FOR CUSTOMER DELIVERY (Continued)**

**6. INTERFERENCE**

Customer agrees to disconnect the SQF from the NSP distribution system or to reimburse NSP for cost of necessary system modification if operation of the SQF causes radio, television, or electrical service interference to other customers, or interference with the operation of NSP's system.

**7. SPECIAL METERING**

Customer agrees to allow NSP, at NSP's expense, to install necessary special metering and measuring equipment at the above address to provide information on the effect of the SQF.

**8. PROVISION TO SELECT METERING (CUSTOMER TO CHOOSE ONE OF THE FOLLOWING)**

a. **Detenting of Meter for Parallel Operation with No Sale to Company.** Because customer does not intend to be a significant net energy producer, the billing of customer's electrical requirements provided by NSP will be on the regular retail service rate and the electric meter measuring this consumption will at this time be detented to allow measurement only of power flow into the customer's premises. Customer will provide all meter socket replacement and rewiring required to accomodate a detented meter.

b. **Metering of Customer Service Supplied to Company.** Two meters will be installed in series. One meter will be installed and ratcheted to record energy delivered by Company. A second meter will be installed and ratcheted to record energy delivered by customer. Customer will provide all meter socket replacement and rewiring required to install these meters.

**9. KIND OF CUSTOMER SERVICE SUPPLIED TO COMPANY.**

Customer agrees to supply and Company agrees to accept electric service in the form of _____phase, _____wire, alternating current at a nominal frequency of 60 hertz, and at a nominal voltage of _____located at _____.

**10. PAYMENT RATE FOR CUSTOMER SALES TO COMPANY**

Customer agrees to qualify for and elects the rate schedule for _____. Company agrees to pay customer according to the established rate schedule in effect from time to time in this locality for such service, the established rate schedule now in effect being the one attached hereto.

**11. REVENUE LOSS**

Company shall not be liable for revenue lost by customer due to Company's inability to purchase or wheel customer-generated energy for any reason not within Company's reasonable control.

**Issued:** 06-20-85

(Continued on Sheet No. 9-12)

**TYPICAL ADDITIONAL TERMS AND CONDITIONS FOR CUSTOMER DELIVERY (Continued)**

**12. PARALLEL OPERATION**

Customer shall provide the necessary equipment as approved by NSP to operate his SQF in parallel with NSP's distribution system. The customer shall provide an automatic device which will disconnect the generating equipment from NSP's electric service supply under the following conditions.

a. De-energized NSP system
b. Sustained line faults on NSP system.
c. Faults on customer's system.

Customer shall consult with NSP regarding these minimum requirements, additional protection recommended, and proper operation of customer's generating system.

**13. LIGHTNING PROTECTION**

Customer agrees to effectively ground his SQF installation and to provide and install adequate surge arrester protection to prevent lightning damage to any NSP distribution system equipment.

**14. TERM**

This agreement shall become effective on the date hereof and shall continue in force for _____ months and shall continue thereafter until terminated by at least 30 days' prior written notice by either party, and shall at all times be subject to all rules and orders issued by the Public Service Commission or other government agency having jurisdiction over the subject matter of this agreement.

**15. INDEMNITY**

Since under these rates and contract provisions the Company will derive no financial benefit from the SQF, it is agreed that the Company will not bear the cost of risks associated with the SQF. Customer shall indemnify, protect, defend, and save harmless Company from and against any and all claims and demands for damages, remote as well as proximate, to property and injury or death to persons, including payments made under any workmen's compensation law or under any plan for employees' disability and death benefits, which may arise out of or be caused by the erection, maintenance, presence, operation, or removal of the SQF, or by any related act or omission of customer, its employees, agents, contractors, or subcontractors.

**16. INSURANCE**

The customer shall maintain during the term of this agreement liability insurance which insures customer against all claims for property damage and for personal injury or death arising out of, resulting from, or in any manner connected with the installation, operation, and maintenance of the small qualifying facility. The amount of such insurance coverage shall be at least $500,000 per occurrence. Customer shall furnish a certificate from its insurance carrier showing that it has complied with the provisions of this section and providing that the insurance policy will not be changed or cancelled during its term without written 90 day notice to NSP.

**Issued:** 06-20-85

TECHNICAL REFERENCE DOCUMENT

N

Company's "Distributed Generation Interconnection Manual" is available to interested parties upon a request made to the Company. This document provides information concerning technical interconnection requirements and the administrative process associated with interconnecting distributed generation facilities to the Company distribution system.

N