

ROCHESTER PUBLIC UTILITIES

Interconnection Process and Requirements For Qualifying Facilities (0 - 40 kW)



August 16, 2011

INDEX

Document Review and History	3
Definitions	4
Overview	4
Application Process	
Step 1: The inquiry is reviewed by RPU to determine the nature of the project.	4
Step 2: Potential customer files an application	5
Step 3: Customer reviews RPU’s “Rules Covering Cogeneration and Small Power Production Facilities”	5
Step 4: RPU performs a review of customer’s proposed interconnection design Package	5
Step 5: Customer commits to RPU’s metering requirements and possible construction of distribution system modifications	5
Step 6: Project construction	5
Step 7: RPU’s cost reconciliation	5
Step 8: Final acceptance and interconnection	6
Requirements for Interconnection	
Metering	6
Generator Service Disconnect.....	6
Permits	6
System Inspection	6
Insurance	6
Billing	7
Rates.....	7
Operation & Safety	8
Appendix A	9
Appendix B	11
Exhibit 1	15

Document History and Review

Date	Revision Description	Revised by
Mar 25, 2004	Date of Original Document	
May 11, 2010	Revised Overview, Revised and reversed Step 6 & Step 7, revised System Inspection, revised Insurance, revised Rates #3, added street light fee in Rates #3a, modified Operations to say Operations & Safety	RLA
July 28, 2011	Revised Document title, revised metering diagram ME1MI01 and added as Exhibit 1, Misc formatting changes, added Appendix A & B, added Definitions, changed document name to "...Qualifying Facility". Added proof of insurance requirement. Added Rate Option on Appendix A. Clarified language in Rates section.	RLA
Aug 16, 2011	Modified language in Step 3, Step 5, Appendix A (changed Attachment to Appendix), Appendix B (rate schedule available at office instead of attached)	RLA

Definitions

Net Metering - Customers electing Net Metering shall be billed under the appropriate retail rate only for that amount of energy used by customer which exceeds the energy delivered by the QF to Company at the same site during the same billing period. Any energy delivered by the QF to Company in excess of that received by QF from Company during the same billing period at the same site shall be compensated according to the appropriate rate schedule.

Qualifying Facility (QF) – A qualifying facility is a cogeneration or small power production facility which satisfies the conditions in 18 Code of Federal Regulations, Section 292.101(b)(1) (1981), as applied when interpreted in accordance with the amendments to 18 Code of Federal Regulations, Sections 292.201-292.207 adopted through 46 Federal Register 33025-33027 (1981).

Overview

The “Interconnection Process and Requirements for Qualifying Facilities (0 - 40kW)” document describes the requirements for connecting a Qualifying Facility (QF) generation of 40 kW or less to Rochester Public Utilities’ (RPU) distribution system. The primary purpose of this document is to ensure that any generation system installed on RPU’s distribution system functions reliably and does not adversely affect the safety and reliability of the electrical distribution system and those working on the system.

This document will provide applicants (customers) with an understanding of the process and information required allowing RPU to review and accept the applicant’s equipment for interconnection in a reasonable and expeditious manner. This document will ensure that customers are aware of the technical interconnection requirements and RPU’s interconnection policies and practices. Generation not operating in parallel is not subject to these requirements.

The time required to complete the process will reflect the complexity of the proposed project. Projects using previously submitted designs that have been satisfactorily tested will move through the process more quickly. Several steps may be satisfied with an initial application depending on the detail and the completeness of the application and supporting documentation submitted by the customer. Customers submitting previously tested systems, however, are not exempt from providing RPU with complete design packages necessary for RPU to verify the electrical characteristics of the generator systems, the interconnecting facilities, and the impacts of the customer’s equipment on RPU’s system.

Application Process

Step 1: The inquiry is reviewed by RPU to determine the nature of the project.

RPU staff will discuss the scope of the project with the potential customer to determine what specific information and documents (i.e. application, technical requirements, specifications, applicable rate schedules and metering requirements) will be provided to the potential applicant. The preliminary technical feasibility of the project at the proposed location may also be discussed at this time.

Step 2: Potential customer files an application.

The filing must include the completed standard application form (Appendix A), including generator information, and a one-line drawing of the proposed QF and interconnecting system. RPU's application does not include the city's Building Safety requirements e.g. permit(s). The customer /or their installer is required to contact the city's Building and Safety Department for this information.

Step 3: Customer reviews RPU's "Rules Covering Cogeneration and Small Power Production Facilities"

A copy of the above mentioned document is available at the RPU office for the customer to review.

Step 4: RPU performs a review of customer's proposed interconnection design package.

RPU will review the design package to ensure that the plans and design satisfy the goal of attaining a safe, reliable, and efficient interconnection and satisfy the technical requirements for interconnection. Upon completion of the review, RPU will notify the customer of its final acceptance of the customer's design or an explanation of the technical requirements the design fails to meet.

Step 5: Customer commits to RPU's metering requirements and possible construction of distribution system modifications.

Metering for QF interconnection usually requires a non-standard metering installation. The customer will be responsible for the incremental costs of the metering over standard metering installation for the facility. If any construction on the utility distribution systems is determined to be required for the interconnection, the customer will be required to pay an advance payment for the estimated costs associated with the system modification. The customer and RPU then sign four original copies of the contract in Appendix B. This contract will not become officially authorized until the Mayor and City Clerk have signed the copies of the contract.

Step 6: Project construction.

The customer can now install their facility in accordance with the previously submitted design, with comments incorporated into the installation design. RPU will commence construction and installation of any system modifications and metering requirements as identified in Step 4, after receipt of estimated system upgrade costs. RPU system modifications will vary in construction time depending on the extent of work and equipment required. The schedule for this work will be discussed with the customer.

Step 7: RPU's cost reconciliation.

RPU will reconcile its actual costs related to the customer's project against any advance payments for utility distribution system construction made by the customer. The customer will

receive either a bill for any balance due or a reimbursement for overpayment as determined by RPU. The customer must have all bills associated with the interconnection paid in full prior to RPU authorizing the operation of the interconnection.

Step 8: Final acceptance and interconnection.

RPU will review the results of its on-site verification and issue to the customer a formal letter of acceptance for interconnection. The customer's QF will be allowed to commence parallel operation upon electrical inspection by agencies having jurisdiction at the location, and satisfactory demonstration to RPU of the safe operation of the customer-owned QF system when interconnected to the RPU distribution system. In addition, the customer must have complied with and must continue to comply with any applicable code, safety, operating, maintenance, and or technical requirements. The customer is strongly urged to follow the manufacturer's maintenance, testing, and operation instructions for the life of the installed generation and associated controls.

Requirements for Interconnection

Metering

Metering for generation interconnection usually requires a non-standard metering installation. The customer will be responsible for the cost associated with a non-standard facility metering installation. Depending on the nature of the customer's installation, a new meter socket(s) likely will need to be installed. This installation will be the customer's responsibility. See Exhibit 1 for metering details

Generator Service Disconnect

The customer shall provide a visible, lockable manual disconnect switch within ten (10) feet of the meter location which is readily accessible to RPU at all times of the year per Minnesota Rule 7835.5200. This disconnect switch shall be clearly marked, "Generator Disconnect Switch", with permanent half inch or larger letters. The disconnect switch will open all of the phases, but not the neutral.

Permits

The customer will provide RPU with copies of all electrical permits and inspections from agencies having jurisdiction over the location of the installation before interconnection of the generation will be allowed.

System Inspection

The QF will not be allowed to operate in parallel with RPU until the customer provides a satisfactory demonstration to RPU showing the safe operation of the generation system. The customer will also allow RPU to inspect and test the isolation and protective equipment when necessary as per Minnesota Rule 7835.5400.

Insurance

Due to the increased potential liability which can result from an operation of a generating facility, RPU requires a minimum liability umbrella policy of \$300,000, in accordance with Minnesota Rule 7835.2300. The customer should contact their insurance carrier to advise them of the generating interconnected equipment is being added to the home or facility. Proof of \$300,000 liability insurance is required to be provided to RPU.

Billing

Billing for the energy usage and delivery will be based on a Net Metering calculation for generation less than 40 kW. Reimbursement for kilo-watt hours (kWh) produced and delivered to RPU above and beyond the Customer's own use will be according to the RPU Average Retail Energy Rates (ARER) calculation.

Customers with a QF over 40kW will be reviewed on a case by case basis and either fall under standard rates or a negotiated contract as per Minnesota Rules: 7835.2000, 7835.3200, 7835.3300, 7835.3400, and 7835.3500.

Rates

RPU will calculate the customer's bill for the billing period using a Net Metering calculation and with the following conditions:

1. The customer will be billed for service in accordance with the rate structure and monthly charges that the customer would be assigned if the customer had not interconnected a QF.
2. If electricity supplied by RPU exceeds electricity generated by the customer during a billing period, the customer shall be billed for the net energy supplied by RPU in accordance with the appropriate rate schedule.
3. If the kWh generated by the customer's QF exceed the kWh supplied by the grid during the billing period, RPU shall credit the customer's account by the dollar value of the excess kWh generated. This dollar value will be determined by multiplying the excess kWh generated for the month by RPU's current Average Retail Energy Rate (ARER) for the previous year.
 - a. An outstanding credit balance on the account will be applied against the customer's total monthly charges from RPU in each subsequent month until the credit balance is completely offset. The phrase "total monthly charges from RPU" refers to all charges RPU may bill for. Currently that includes, among others, these charges: electric energy sold by RPU, electric monthly customer charge, water use, water monthly customer charge, sales taxes, sewer charges, storm water charges, water hydrant fees, load management credits, Service Assured[®] charges, etc.
 - b. If the customer leaves the system, an outstanding credit balance on the account due to excess kWh generated will be paid to the customer after final reads process through the billing system in the same manner an outstanding credit balance on the account due to other reasons is handled.

4. The rates for sales and purchases of electricity may change over the time of this agreement. Also, at times the rates may need to be adjusted retroactively. Therefore, the customer and RPU agree that sales and purchases will be made under the rates in effect each month during the time this agreement is in force.
5. When an applicable tariff is developed and approved by the RPU Board, established agreements will come to an end. The customer will abide by the terms and conditions laid out within the new tariff.

Operation & Safety

The QF system shall not affect the safety, reliability, or operation of RPU's distribution system or adversely affect the quality of service of any adjacent customers. The QF shall not supply power to RPU during any outages of the distribution system or be used to energize any portion of a de-energized utility circuit for any reason. Islanding is not permitted. RPU may require that the QF discontinue parallel operation due to safety, reliability, operational, and power quality issues. The QF is responsible for providing protection for the installed equipment and must adhere to all applicable national, state, and local codes.



Appendix A

Qualifying Facility Information and Acknowledgement (0 - 40 kW)

Customer:

Name: _____

Address: _____

Installation Address (if different from above):

Home Phone: _____ Daytime Phone _____

Account Number: _____

System Designer & Installation Contractor Information:

Design Consultant: _____

Address: _____

Phone: _____

Contact Person: _____

Installation Contractor (if different): _____

Address: _____

Phone: _____

Contact Person: _____

Specifications:

Estimated In-Service Date: _____

Existing Electric Service: Amperes Voltage _____ Volts _____

Identify Type of Service: () Solar PV array () Fuel Cell () Wind () Other

If Other Describe: _____

Specific Location of Service Disconnect Equipment on Property: _____

Generation Equipment Information: (Include copy of product literature)

Manufacturer: _____ Model No: _____
Version No: _____

Synchronous Induction Inverter
 Other _____

Rating: _____ kW Rating: _____ kVa

Single Phase Three Phase
Generator Connection: Delta Wye Wye Grounded

Interconnection Voltage: _____ Volts

Rate option:

Net energy billing Simultaneous purchase and sale billing

Metering: _____

Interconnection Compliance & Owner Acknowledgement

The electrical system referenced above shall meet RPU’s “Interconnection Process and Requirements For Qualifying Facilities (0 – 40kW)”.

Customer shall be solely responsible for obtaining and complying with any and all necessary easements, licenses and permits, or exemptions, as may be required by federal, state, local statutes, regulations, ordinances or other legal mandates.

The customer shall submit documentation to RPU that the system has been inspected and approved by the local permitting agency regarding electrical code requirements.

Customer shall not commence parallel operation of the generating system until inspecting written approval of the interconnection has been given by RPU.

I the undersigned have completed this Appendix A for interconnection, which accurately describes the QF equipment to be interconnected and operated in parallel with RPU’s distribution system. I have read and understand the “Interconnection Process and Requirements For Qualifying Facilities (0 – 40kW)” and understand that approval of Appendix A is dependent on compliance with these requirements and the accuracy of the information as included in this Appendix A.

Customer Signature

Date



Appendix B

Contract For Cogeneration And Small Power Production Facilities Rated (0 to 40kW)

THIS CONTRACT is entered into _____, _____, by the City of Rochester, acting by and through its Rochester Public Utilities (hereafter called "RPU") and _____ (hereafter called "QF" - Qualifying Facility).

RECITALS

The QF has installed electric generating facilities, consisting of _____ (Description of facilities), rated at less than 40 kilowatts of electricity, on property located at _____.

The QF is prepared to generate electricity in parallel with the Utility.

The QF's electric generating facilities meet the requirements of RPU's Rules Covering Cogeneration and Small Power Production Facilities (the Rules). RPU is obligated under federal and Minnesota law to interconnect with the QF and to purchase electricity offered for sale by the QF.

A contract between the QF and RPU is required by the Rules.

AGREEMENTS

The QF and RPU agree:

1. RPU will sell electricity to the QF under the rate schedule in force for the class of customer to which the QF belongs.

2. RPU will buy electricity from the QF under the current rate schedule as part of the Rules. The QF has elected the rate schedule category hereinafter indicated (select one):

_____ a. Net energy billing rate under Section VII (B) of the Rules.

_____ b. Simultaneous purchase and sale billing rate Section VII (C) of the Rules.

A copy of the present rate schedule is available at the RPU office.

3. The rates for sales and purchases of electricity may change over the time this contract is in force, due to actions by RPU, and the QF. RPU and the QF agree that sales

and purchases will be made under the rates in effect each month during the time this contract is in force.

4. RPU will compute the charges and payments for purchases and sales for each billing period. Any net credit to the QF will be made under one of the following options as chosen by the QF:

- ____ 1. Credit to the QF's account with RPU.
- ____ 2. Paid by check to the QF within 15 days of the billing date.

5. The QF will operate its electric generating facilities within any rules, regulations, and policies of RPU not prohibited by rules of the Minnesota Public Utilities Commission (the "Commission") on Cogeneration and Small Power Production which provide reasonable technical connection and operating specifications for the QF. A copy of those rules, regulations, and policies of RPU is attached to this contract. This agreement does not waive the QF's right to bring a dispute before the RPU Board for resolution of a dispute.

6. Appendix A to this contract shall contain a description of the type of metering and interconnection facilities to be employed, the responsibilities for installation, ownership, and maintenance of those facilities, and the procedure required for safe and technically acceptable operation of parallel electrical generating equipment.

7. The QF will operate its electric generating facilities so that they conform to the national, state, and local electric and safety codes, and will be responsible for the costs of conformance.

8. The QF is responsible for the actual, reasonable costs of interconnection incurred by RPU which are estimated to be \$_____. The QF will pay RPU in this way:

_____.

9. The QF will give RPU reasonable access to its property and electric generating facilities if the configuration of those facilities does not permit disconnection or testing from RPU's side of the interconnection. If RPU enters the QF's property, RPU will remain responsible for its personnel.

10. RPU may stop providing electricity to the QF during a system emergency. RPU will not discriminate against the QF when it stops providing electricity or when it resumes providing electricity.

11. RPU may stop purchasing electricity from the QF when necessary for RPU to construct, install, maintain, repair, replace, remove, investigate, or inspect any equipment or facilities within its electric system. RPU will notify the QF before it stops purchasing electricity in this way:

_____.

12. The QF will keep in force liability insurance against personal or property damage due to the installation, interconnection, and operation of its electric generating facilities. The amount of insurance coverage will be \$_____ (RPU may not require an amount greater than \$300,000).

13. This contract becomes effective as soon as it is signed by the QF and RPU. This contract will remain in force until either the QF or RPU gives written notice to the other that the contract is canceled. This contract will be canceled 30 days after notice is given. Such cancellation does not relieve the QF of any costs for which it is responsible under Item 8 above.

14. This contract contains all the agreements made between the QF and RPU except that this contract shall at all times be subject to all rules and orders issued by any government agency having the requisite jurisdiction.. The QF and RPU are not responsible for any agreements other than those stated in this contract.

THE QF AND RPU HAVE READ THIS CONTRACT AND AGREE TO BE BOUND BY ITS TERMS. AS EVIDENCE OF THEIR AGREEMENT, THEY HAVE EACH SIGNED THIS CONTRACT BELOW ON THE DATE WRITTEN AT THE BEGINNING OF THIS CONTRACT.

QF

By: _____

Dated:_____

ROCHESTER PUBLIC UTILITIES

Authorized Representative

General Manager

CITY OF ROCHESTER

Mayor

Attest:

City Clerk

Reviewed by:

City Attorney

Statutory Authority:

MS s [216A.05](#); [216B.08](#); [216B.164](#) subd 6

History:

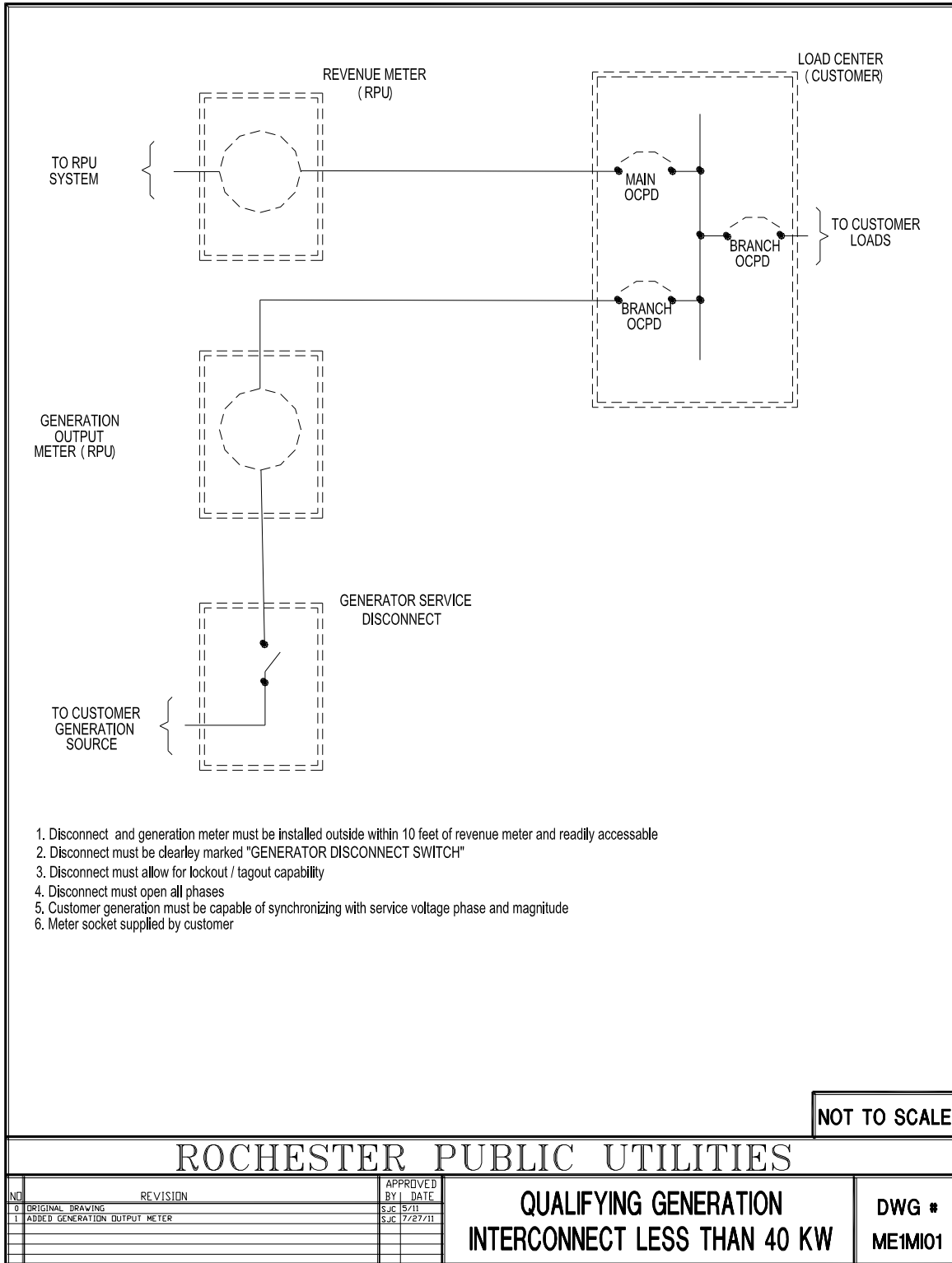
9 SR 993; L 1998 c 254 art 1 s 107

Posted:

February 28, 2000

Exhibit 1

The following diagram represents "Net Metering" along with a generation output meter:



ISSUE DATE - MAY 11