

Granite Falls Municipal Utilities

Interconnection Process and
Requirements

For Qualifying Facilities
(0 – 40 kW)

DISTRIBUTED GENERATION
POLICY

Adopted: November 16, 2015

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DEFINITIONS

Net Metering – Customers electing Net Metering shall be billed under the appropriate retail rate for only the amount of energy used by customers which exceeds the energy delivered by the qualifying cogeneration facility to the Granite Falls Municipal Utility (GFMU) at the same site during the same billing period. Any energy delivered by the qualifying facility (QF) to GFMU in excess of that received by QF from GFMU 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, Section 292.201-292.207 adopted through 46 Federal Register 33025-33027 (1981).

OVERVIEW

The “Interconnection Process and Requirements for Qualifying Facilities (0 – 40 kW)” document describes the requirements for connecting a QF generation of 40 kW or less to the GFMU distribution system. The primary purpose of this document is to ensure that any generation system installed on GFMU’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 GFMU 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 GFMU’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 GFMU with complete design packages necessary for GFMU to verify the electrical characteristics of the generator systems, the interconnecting facilities, and the impacts of the customer’s equipment on GFMU’s system.

APPLICATION PROCESS

Step 1: The inquiry is reviewed by GFMU to determine the nature and scope of the project.

GFMU 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, including generator information, and one-line drawing of the proposed QF and interconnecting system. GFMU's application does not include the city's Building Code requirements e.g. permits(s). The customer/or their installer is required to contact the Granite Falls Planning and Zoning Department for this information.

Step 3: Customer reviews GFMU's "Requirements for Interconnection"

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

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

GFMU 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, GFMU 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 GFMU'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 system 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 GFMU then sign the contract. This contract will not become officially authorized until the City Manager has 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. GFMU will commence construction and installation of any system modifications and metering requirements as identified in Step 4, after receipt of estimated system upgrade costs. GFMU 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: GFMU’s cost reconciliation.

GFMU 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 GFMU. The customer must have all bills associated with the interconnection paid in full prior to GFMU authorizing the operation of the interconnection.

Step 8: Final acceptance and interconnection.

GFMU 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 GFMU of the safe operation of the customer-owned QF system when interconnected to the GFMU 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.

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 GFMU 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 GFMU 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 GFMU until the customer provides a satisfactory demonstration to GFMU showing the safe operation of the generation system. The customer will also allow GFMU 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, GFMU 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 GFMU.

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 GFMU above and beyond the Customer's own use will be according to the GFMU Average Retail Energy Rates (ARER) calculation.

Customers with a QF over 40 kW 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

GFMU 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 GFMU exceeds electricity generated by the customer during a billing period, the customer shall be billed for the net energy supplied by GFMU 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, GFMU 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 GFMU'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 GFMU in each subsequent month until the credit balance is completely offset. The phrase 'total monthly charges from GFMU' refers to all charges GFMU may bill for. Currently that includes, among others, these charges: electric energy sold by GFMU, electric monthly customer charge, purchase cost adjustment, sales tax, and CIP.
 - 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 outside 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 GFMU 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 GFMU Commission, 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 GFMU's distribution system or adversely affect the quality of service of any adjacent customers. The QF shall not supply power to GFMU 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. GFMU 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.

Granite Falls Municipal Utilities

**Application for Cogeneration and Small Powers Production Facilities
of Less than 40 kW**

Return Completed Application to: Granite Falls Municipal Utilities
ATTN: City Manager
641 Prentice Street
Granite Falls, MN 56241

Customer's Name: _____
Address: _____
Contact Person: _____
Telephone Number: _____
Service Point Address: _____

Information prepared and submitted by: _____
Name, address, phone number if other than customer: _____

Signature

The following information shall be supplied by the customer or customer's designated representative. All applicable items must be completed accurately to ensure generating facilities are effectively evaluated by the Granite Falls Municipal Utility and to ensure proper interconnection with the utility system.

GENERATOR

Number of Units: _____ Manufacturer: _____
Type: _____ Synchronous _____ Induction _____ Inverted
Fuel Source Type (Solar, Natural Gas, Wind, etc.): _____

Kilowatt Rating (95 F at location): _____
Kilovolt-Ampere Rating (95 F at location): _____
Power Factor: _____ Voltage Rating: _____ Ampere Rating: _____
Number of Phases: _____ Frequency: _____

Do you plan to export power: _____ Yes _____ No

If yes, maximum amount expected: _____

Pre-Certification Label or Type Number: _____

Expected Energizing and Start-up Date: _____

Normal Operation of Interconnection: (examples: provide power to meet base load, demand management, standby, back-up, other (please describe): _____

One-line diagram attached: _____ yes

Has the generator manufacturer supplied its dynamic modeling values to the Host Utility? _____ Yes (*Note: Requires a yes for complete application. For Pre-Certified Equipment, answer is yes.*)

Layout sketch showing lockable, "visible" disconnect device: _____ yes

Granite Falls Municipal Utilities

Customers Name

By: _____

By: _____

Title: _____

Title: _____

Date: _____

Date: _____

**Uniform Statewide Contract
Cogeneration and Small Powers Production Facilities**

THIS CONTRACT is entered into on _____, 20____ by Granite Falls Municipal Utilities (hereafter called "GFMU" and _____ Qualifying Facility (hereafter called "QF").

RECITALS

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

The QF is prepared to generate electricity in parallel with GFMU.

The QF's electric generating facilities meet the requirements of the Minnesota Public Utilities Commission (hereafter called "Commission") rules on Cogeneration and Small Power Production and any technical standards for interconnection GFMU has established that are authorized by those rules.

GFMU 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 GFMU is required by the Commission's rules.

AGREEMENTS

The QF and GFMU agree:

1. GFMU will sell electricity to the QF under the rate schedule in force for the class of customer to which the QF belongs
2. GFMU will buy electricity from the QF under the current rate. The QF has elected the rate schedule category hereinafter indicated (select one):
 - a. Net energy billing rate under part 7835.3300
 - b. Simultaneous purchase and sale billing rate under part 7835.3400
 - c. Time of day purchase rates under part 7835.3500

A copy of the present rate schedule is attached to this contract.

3. The rates for sales and purchases of electricity may change over the time this contract is in force, due to actions of GFMU or of the Commission. The QF and

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

4. GFMU will compute the charges and payments for purchases and sales for each billing period. Any net credit to the QF will be made as a credit to the QF's account with GFMU.
5. The QF must operate its electric generating facilities within any rules, regulations, and policies adopted by GFMU and not prohibited by the Commission's rules on Cogeneration and Small Power Production which provide reasonable technical connection and operating specifications for the QF. This agreement does not waive the QF's right to bring a dispute before the Commission as authorized by Minnesota Rules, parts 7835.4800, 7835.5800 and 7835.4500, and any other provision of the Commission's rules on Cogeneration and Small Power Production authorizing Commission resolution of a dispute.
6. GFMU's rules, regulations and policies must conform to the Commission's rules on Cogeneration and Small Power Production.
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 which are estimated to be \$ 425.00. The QF will pay GFMU in this way: GFMU will invoice the QF for the actual cost required for the connection. The QF will be responsible for all other costs required for the connection.
9. The QF will give GFMU reasonable access to its property and electric generating facilities if the configuration of those facilities does not permit disconnection or testing from GFMU's side of the interconnection. If GFMU enters the QF's property, GFMU will remain responsible for its personnel.
10. GFMU may stop providing electricity to the QF during a system emergency. GFMU will not discriminate against the QF when it stops providing electricity or when it resumes providing electricity.
11. GFMU may stop purchasing electricity from the QF when necessary for GFMU to construct, install, maintain, repair, replace, remove, investigate or inspect any equipment or facilities within its electric system. GFMU 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 \$300,000.

13. GFMU will require records of the QF's liability insurance annually. In addition anti- islanding testing must be performed by a qualified electrician every year. The Certificate of Testing must be submitted to GFMU.

14. The contract becomes effective as soon as it is signed by the QF and GFMU. This contract will remain in force until either the QF or GFMU gives written notice to the other that the contract is cancelled. This contract will be cancelled 30 days after notice is given.

15. This contract contains all of the agreements made between the QF and GFMU except that this contract shall at all times be subject to all rules and orders issued by GFMU, the Commission or other government agency having the jurisdiction over the subject matter of this contract. The QF and GFMU are not responsible for any agreements other than those stated in this contract.

THE QF AND GFMU 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.

GRANITE FALLS MUNICIPAL UTILITIES

By: _____
 Title: _____
 Date: _____

QUALIFYING FACILITY

By: _____
 Title: _____
 Date: _____

Anti-Islanding Certificate

Granite Falls Municipal Utilities (GFMU) requires that distributed generated systems, such as solar or wind, connected to its electrical grid have an anti-islanding test performed by a qualified electrician annually. The anti-islanding test confirms that the distributed generation system will not energize the utility electric grid if power goes out. This document may be submitted to Granite Falls Municipal Utilities, ATTN: City Manager at 641 Prentice Street, Granite Falls, MN 56241 as proof of this testing.

I _____ (print), state that the distributed energy system located at _____ on the date of _____ automatically disconnected from the Granite Falls Municipal Utilities electrical system after grid power was removed from the distributed energy system.

Signature _____

Please remember to have your system tested and submit this document to the Granite Falls Municipal Utilities one **year** from the date of testing.

Exhibit 1

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

