

City of Saint Peter Distributed Generation Interconnection Requirements for Inverter Connected Systems Rated less than 40 kW

TABLE OF CONTENTS

1.	Introduction	2
2.	References	4
3.	Interconnection Issues and Technical Requirements	6
4.	Generation Metering, Monitoring and Control	8
5.	Agreements	8
6.	Testing Requirements	8
Attachments:	Uniform Statewide Contract	11
	System Diagram – Figure 5 Inverter Connected	13

1. Introduction

Electric distributed generation systems span a wide range of sizes and electrical characteristics. Electrical distribution system design varies widely from that required to serve the residential customer to that needed to serve the large commercial customer. With so many variations possible, it becomes complex and difficult to create one interconnection standard that fits all generation interconnection situations.

This streamlined version of the Technical Requirements document has been written to cover only the technical interconnection requirements to interconnect a specific type and size of Generation Systems; specifically, a PURPA (Public Utilities Regulatory Power Act) qualified generation system utilizing a Grid Tie Inverter and rated below 40kW. If your system does not meet these qualifications, then these requirements are not applicable; please refer to the full “City of Saint Peter Distributed Generation Interconnection Requirements”.

While, this standard provides the Technical Requirements for interconnecting a Generation System with a typical radial distribution system, it is important to note that there are some unique Area EPS’s, which have special interconnection needs. One example of a unique Area EPS would be one operated as a “networked” system. This standard does not cover the additional special requirements of those systems. The Interconnection Customer must contact the Owner/operator of the Area EPS with which the interconnection is intended, to make sure that the Generation System is not proposed to be interconnected with a unique Area EPS. If the planned interconnection is with a unique Area EPS, the Interconnection Customer must obtain the additional requirements for interconnecting with the distribution system.

The Area EPS Operator has the right to limit the maximum size of any Generation System or number of Generation Systems that, may want to interconnect, if the Generation System would reduce the reliability to the other customers connected to the Area EPS.

This Technical Requirements document is based on assumptions of a “typical”, under 40kW Generation System. As a result, there may be areas not covered within this document. In such cases, the “City of Saint Peter Distributed Generation Interconnection Requirements” mentioned previously will apply.

This document covers only the technical requirements and does not cover the interconnection procedure. Please read the companion document “City of Saint Peter Interconnection Process for Inverter Connected Systems Rated less than 40kW” for the description of the procedure to follow for interconnection approval and construction. It is important to also get copies of the Area EPS’s tariffs concerning generation interconnection, which will include both rates and costs.

A) Definitions

The definitions defined in the “IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems” (IEEE 1547) apply to this document as well. The following definitions are in addition to the ones defined in IEEE 1547, or are repeated from the IEEE 1547 standard.

- i) “Area EPS”: an electric power system (EPS) that serves Local EPS. Note. Typically, an Area EPS has primary access to public rights-of-way, priority crossing of property boundaries, etc. **The City of Saint Peter is an Area EPS.**
- ii) “Generation” any device producing electrical energy, i.e., rotating generators driven by wind, steam turbines, internal combustion engines, hydraulic turbines, solar, fuel cells, etc.; or any other electric producing device including energy storage technologies.
- iii) “Generation System” the interconnected Distributed Generation(s), controls, relays, switches, breakers, transformers, inverters and associated wiring and cables up to the Point of Common Coupling.
- iv) “Grid Tie Inverter” the inverter is a device that converts DC electricity to AC electricity. While a Grid Tie Inverter usually has been specially designed and constructed to safely interconnect with an Area EPS. For this document, a Grid Tie Inverter must have also been designed and tested to meet the requirements of IEEE 1547 and ANSI 929 standards and has been certified with a UL 1741 label.
- v) “Interconnection Customer” the party or parties who are responsible for meeting the requirements of this standard. This could be the Generation System applicant, installer, designer, owner or operator.
- vi) “Local EPS” an electric power system (EPS) contained entirely within a single premises or group of premises.
- vii) “Point of Common Coupling” the point where the Local EPS is connected to an Area EPS.
- viii) “Transmission System” are those facilities as defined by using the guidelines established by the Minnesota Public Utilities Commission; “In the Matter of Developing Statewide Jurisdictional Boundary Guidelines for Functionally Separating Interstate Transmission from Generation and Local Distribution Functions” Docket No. E-015/M-99-1002.
- ix) “Type-Certified” Generation paralleling equipment that is listed by an OSHA listed national testing laboratory as having met the applicable type testing requirement of UL 1741. At the time of preparation of this document, this was the only national standard available for certification of generation transfer switch equipment. Other subsequent forms of type-certification are permitted if acceptable to the Area EPS.

B) Interconnection Requirements Goals

This standard defines the minimum technical requirements for the implementation of the electrical interconnection between the Generation System and the Area EPS. It does not define the overall requirements for the Generation System. The requirements in this standard are intended to achieve the following:

- i) Ensure the safety of utility personnel and contractors working on the electrical power system.

- ii) Ensure the safety of utility members and the general public.
- iii) Protect and minimize the possible damage to the electrical power system and other customer's property.
- iv) Ensure proper operation to minimize adverse operating conditions on the electrical power system.

C) Area EPS Modifications

Depending upon the size of the Generation System, the location on the Area EPS's distribution system, and how the Generation System is operated; certain modifications and/or additions may be required to the existing Area EPS distribution system, due to the addition of the Generation System. To the extent possible, this standard describes the modifications, which could be necessary to the Area EPS distribution system for different types of Generation Systems. If any special requirements are necessary they will be identified by the Area EPS operator during the application review process.

D) Generation System Protection

The Interconnection Customer is solely responsible for providing protection for the Generation System. Protection systems required in this standard, are structured to protect the Area EPS's distribution system and the public. The Generation System protection is not provided for in this standard. Additional protection equipment may be required to ensure proper operation for the Generation System. This is especially true when operating disconnected from the Area EPS's distribution system. The Area EPS does not assume responsibility for protection of the Generation System equipment or of any portion of the Local EPS.

E) Electrical Code Compliance

The Interconnection Customer shall be responsible for complying with all applicable local, independent, state and federal codes such as building codes, National Electric Code (NEC), National Electrical Safety Code (NESC) and noise and emissions standards. As required by Minnesota State law, the Area EPS distribution system will require proof of compliance with the National Electrical Code before the interconnection is made, through installation approval by an electrical inspector recognized by the Minnesota State Board of Electricity.

The Interconnection Customer's Generation System and installation shall comply with the latest revisions of the ANSI/IEEE standards applicable to the installation, especially IEEE 1547; "Standard for Interconnecting Distributed Resources with Electric Power Systems". See the reference section of this document for a partial list of the standards which apply to the generation installations covered by this standard.

2. References

The following standards shall be used in conjunction with this standard. When the stated version of the following standards is superseded by an approved revision then that revision shall apply.

IEEE Std 100-2000, "IEEE Standard Dictionary of Electrical and Electronic Terms"

IEEE Std 519-1992, "IEEE Recommended Practices and Requirements for Harmonic Control in Electric Power Systems"

IEEE Std 929-2000, "IEEE Recommended Practice for Utility Interface of Photovoltaic (PV) Systems".

IEEE Std 1547, "IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems"

IEEE Std C37.90.1-1989 (1995), "IEEE Standard Surge Withstand Capability (SEC) Tests for Protective Relays and Relay Systems".

IEEE Std C37.90.2 (1995), "IEEE Standard Withstand Capability of Relay Systems to Radiated Electromagnetic Interference from Transceivers".

IEEE Std C62.41.2-2002, "IEEE Recommended Practice on Characterization of Surges in Low Voltage (1000V and Less) AC Power Circuits"

IEEE Std C62.42-1992 (2002), "IEEE Recommended Practice on Surge Testing for Equipment Connected to Low Voltage (1000V and less) AC Power Circuits"

ANSI C84.1-1995, "Electric Power Systems and Equipment – Voltage Ratings (60 Hertz)"

ANSI/IEEE 446-1995, "Recommended Practice for Emergency and Standby Power Systems for Industrial and Commercial Applications".

ANSI/IEEE Standard 142-1991, "IEEE Recommended Practice for Grounding of Industrial and Commercial Power Systems – Green Book".

UL Std. 1741 "Standard for Safety for Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources"

NEC – "National Electrical Code", National Fire Protection Association (NFPA), NFPA-70-2002.

NESC – "National Electrical Safety Code". ANSI C2-2000, Published by the Institute of Electrical and Electronics Engineers, Inc.

3. Interconnection Issues and Technical Requirements

A) General Requirements - The following requirements apply to the interconnected generating equipment. The Area EPS distribution system shall be considered the source side and the customer's system shall be considered the load side in the following interconnection requirements.

i) Certification – Prior to installation, the inverters shall be Type-Certified for interconnection to the electrical power system. The certification will confirm anti-islanding protection and power quality related levels at the Point of Common Coupling. Also, utility compatibility, electric shock hazard and fire safety will be approved through UL listing of the model. Once this Type Certification is completed, additional design review of the inverters should not be necessary by the Area EPS.

ii) Phase Detection – For three-phase operation, the inverter control must also be able to detect and separate for the loss of one phase.

iii) Multiple Inverter Banks – When banks of inverter systems are installed at one location, a design review by the Area EPS must be performed to determine if any additional protection systems, metering or other modifications are needed. These additional systems or modifications will be identified by the Area EPS once the interconnection application is received.

iv) Visible Disconnect – A visible disconnect is required for safely isolating the distributed generation when connecting with an inverter. The inverter shall not be used as a safety isolation device. A disconnecting device shall be installed to electrically isolate the Inverter from the rest of the load. The visible disconnect shall provide a visible air gap between Interconnection Customer's Generation and Area EPS distribution system in order to establish the safety isolation required for work on the Area EPS distribution system. This disconnecting device shall be readily accessible 24 hours per day by Area EPS field personnel and shall be capable of being padlocked by Area EPS field personnel. The disconnecting device shall be lockable in the open position.

The visible disconnect shall be a UL approved or National Electrical Manufacture's Association approved, manual safety disconnect switch of adequate ampere capacity. The visible disconnect shall not open the neutral when the switch is open.

The visible disconnect shall be labeled, as required by the Area EPS Operator to inform the Area EPS field personnel.

v) Energization of Equipment by Generation System – The Generation System shall not energize any de-energized portion of the Area EPS distribution system.

vi) Fault and Line Clearing - The Generation System shall be removed from the Area EPS distribution system for any faults or outages occurring on the electrical circuit serving the Generation System.

vii) Interference – The Interconnection Customer shall disconnect the Distributed Generation from the Area EPS if the Distributed Generation causes radio, television or electrical service interference to other customers, via the EPS or interference with the operation of Area EPS. The Interconnection Customer shall either effect repairs to the Generation System or reimburse the Area EPS for the cost of any required modifications to Area EPS distribution system due to the interference.

viii) Unintended Islanding – Under certain conditions with extended parallel operation, it would be possible for a part of the Area EPS distribution system to be disconnected from the rest of the Area EPS distribution system and have the Generation System continue to operate and provide power to a portion of the isolated circuit. This condition is called “islanding”. It is not possible to successfully reconnect the energized isolated circuit to the rest of the Area EPS distribution system since there are no synchronizing controls associated with all of the possible locations of disconnection. Therefore, it is required that the Generation System be automatically disconnected from the Area EPS distribution system immediately by protective relays for any condition that would cause the Area EPS distribution system to be de-energized. The Generation System must either isolate with the member’s load or trip. The Generation System must also be blocked from closing back into the Area EPS distribution system until the Area EPS distribution system is reenergized and the Area EPS distribution system voltage is within Range B of ANSI C84.1 Table 1 for a minimum of one (1) minute. Depending upon the size of the Generation System, it may be necessary to install direct transfer trip equipment from the Area EPS distribution system source(s) to remotely trip the generation interconnection to prevent islanding for certain conditions.

ix) Protective Systems - In general, a Grid Tie Inverter is designed, constructed and tested so that the necessary protective functions are built into the inverter, to ensure isolation of the generation system from the distribution system as required. In general, the functions required by IEEE 1547 and IEEE 929 standards include Over/Under Voltage, Over/Under Frequency, phase and ground overcurrent. So, no further protective equipment is typically necessary. Please note that the NEC or other state or local codes may require you to install additional protective equipment such as fuses.

x) Disconnection – The Area EPS operator may refuse to connect, or may disconnect without prior notice, a Generation System from the Area EPS distribution system under the following conditions:

- (1) Lack of approved Standard Application Form and Standard Interconnection Agreement.
- (2) Termination of interconnection by mutual agreement.
- (3) Non-Compliance with the technical or contractual requirements.
- (4) System Emergency or for imminent danger to the public or Area EPS personnel (Safety).

- (5) Routine maintenance, repairs and modifications to the Area EPS distribution system. The Area EPS shall coordinate planned outages with the Interconnection Customer to the extent possible.

4. Generation Metering, Monitoring and Control

Metering, Monitoring and Control – For distributed generation systems 40kW or less, the following are the Metering, Monitoring and Control requirements. This document assumes that the Generation System qualifies under the PURPA requirements (Public Utilities Regulatory Power Act – Federal Gov. 1978) and that the power is not being sold to a third party.

Metering Requirements*

For Generation Systems that qualify under the PURPA requirements, the service will be metered following the State of Minnesota net metering standards.

- For single-phase Generation Systems, the applicant is required to provide and install an Area EPS-approved single phase meter socket. The Area EPS will supply a single-phase meter that will record power flow in both directions.
- For three-phase Generation Systems, the applicant is required to provide an Area EPS-approved commercial three phase meter socket. The Area EPS will supply the three-phase meter to record power flow in both directions.

Monitoring and Control Requirements *

For qualified inverter connected Generation Systems 40kW and less, there are no requirements for monitoring and remote control of the generation system by the Area EPS.

* The above Metering, Monitoring and Control Requirements assume a typical installation. There could be alternate requirements for metering, monitoring or control that are required under special tariffs.

5. Agreements

- A) Uniform Statewide Contract for Cogeneration or Small Power Production Facilities – This agreement is a standard contract between the Applicant and the Area EPS.

6. Testing Requirements

A) Certification of equipment

The most important part of the process to interconnect generation with Local and Area EPS's is safety. One of the key components of ensuring the safety of the public and employees is to ensure that the design and implementation of the elements connected to the electrical power system operate as required. To meet this goal, all of the electrical wiring in a business or residence, is required by the State of Minnesota to be listed by a recognized testing and certification laboratory, for its intended purpose. Typically we see this as "UL" listed. To be able to follow this version of the Technical Standard the Inverter used, shall be listed by a nationally recognized testing laboratory as having met the

applicable type-testing requirements of UL 1741 and IEEE 929, and shall be acceptable for interconnection without additional protection system requirements.

i) Commissioning Testing

The following tests shall be completed by the Interconnection Customer. The Area EPS has the right to witness all field testing and to review all records prior to allowing the system to be made ready for normal operation.

- i) Before testing - The Generation System shall be inspected and approved by a State of Minnesota electrical inspector prior to interconnecting the Generation System with the electrical system.
- ii) Any pre-testing recommended by the equipment manufacturer and/or installer shall be completed prior to the On-line Commissioning test.
- iii) On-Line Commissioning Test – The Area EPS and the Generation System owner shall complete the following tests once the Generation System has completed Pre-testing and the results have been reviewed and approved by the Area EPS. Generation System functionally shall be verified for specific interconnections as follows:

(1) Anti-Islanding Test Steps

- (a) The Generation System shall be started and operated in parallel with the Area EPS distribution system source.
- (b) The Area EPS distribution system source shall be removed by opening a switch, fuse or breaker or other means on the Area EPS side of the inverter.
- (c) Under the condition established in step (b), the Generation System shall stop generating.
- (d) Under the condition established in step (b), the Generation System shall not reenergize any part of the Utilities distribution system (Area EPS).
- (e) The device that was opened to disconnect The Area EPS's distribution system source shall be closed and the Generation System shall not reparallel/reconnect with the Area EPS's distribution system for at least five (5) minutes or other agreed-to duration.
- (f) For three phase systems this test will be repeated for each phase of the system and also for a complete three phase loss of Utility power.

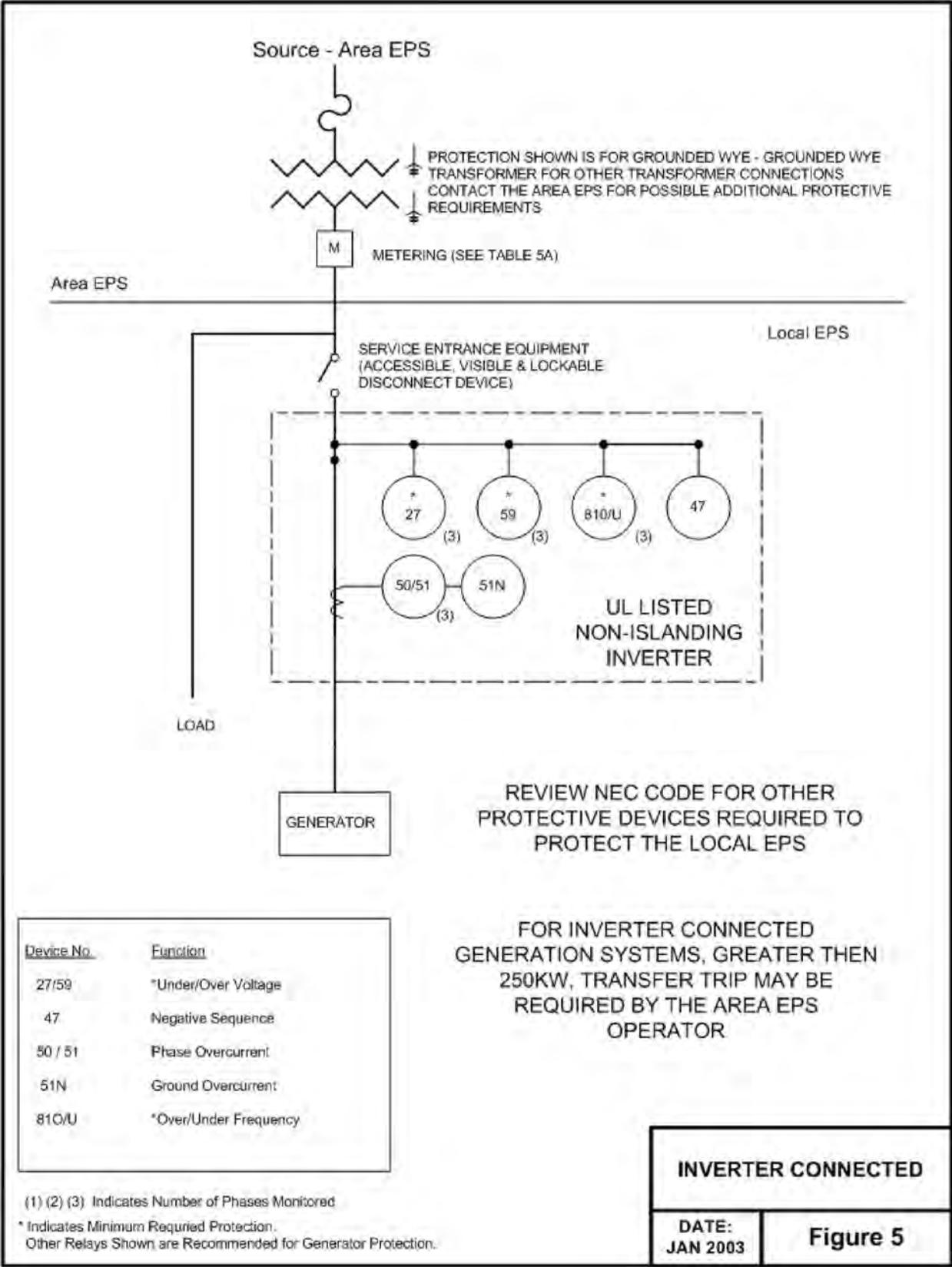
iv) Periodic Testing and Record Keeping

- (1) Any time the inverter hardware or software is replaced and/or modified, the Area EPS Generation Coordinator shall be notified. This notification shall be as soon as reasonably possible and, if possible, be provided with sufficient warning so that the Area EPS personnel can be involved and/or witness the verification testing.

Verification testing shall be completed on the replaced and/or modified equipment and systems. The involvement of the Area EPS personnel will depend upon the complexity of the Generation System and the component being replaced and/or modified. Since the Interconnection Customer and the Area EPS are now operating an interconnected system, it is important for each to communicate changes in operation, procedures and/or equipment to ensure the safety and reliability of the Local and Area EPS.

- (2) All interconnection-related protection systems shall be periodically tested and maintained, by the Interconnection Customer, at intervals specified by the manufacturer or system integrator. These intervals shall not exceed five (5) years. Periodic test reports and a log of inspections shall be maintained, by the Interconnection Customer and made available to the Area EPS upon request.

(Insert Uniform Statewide Contract for < 40 kW)



City of Saint Peter Interconnection Process For Inverter Connected Systems Rated less than 40kW

Introduction

To interconnect a Generation System with the City of Saint Peter, there are several steps that must be followed. This document outlines a streamlined version of those steps for an inverter connected system rated less than 40kW. At any point in the process, if there are questions, please contact the Generation Interconnection Coordinator.

This streamlined version of the interconnection process has been prepared to explain the process to interconnect a specific type and size of Generation System: a PURPA (Public Utilities Regulatory Power Act) qualified generation system utilizing a Grid Tie Inverter and rated below 40kW. If your system does not meet these qualifications, then this procedure is not applicable for interconnecting your system. Please refer to the full “Distributed Generation Interconnection Process”.

This document does not discuss the associated interconnection Technical Requirements, which are covered in the “Distributed Generation Interconnection Requirements for Inverter Connected System Rated less than 40kW” document. Please refer to that document for Technical Requirements and additional explanation of the terms utilized herein.

GENERAL INFORMATION

A) Definitions

- 1) “Applicant” is defined as the person, customer or entity which is requesting the interconnection of a Generation System with the Area EPS and has overall responsibility for ensuring that the Generation System is designed, operated and maintained in compliance with the Technical Requirements.
- 2) “Area EPS” an electric power system (EPS) that serves Local EPS’s. Typically, an Area EPS has primary access to public rights-of-way, priority crossing of property boundaries, etc. The City of Saint Peter is an Area EPS.
- 3) “Area EPS Operator” is the entity who operates the Area EPS.
- 4) “Dedicated Facilities” the equipment that is installed due to the interconnection of the Generation System and not required to serve other Area EPS customers.
- 5) “Distribution System” is the Area EPS facilities which are not part of the Area EPS Transmission System or any Generation System.
- 6) “Extended Parallel” means the Generation System is designed to remain connected with Area EPS for an extended period of time.
- 7) “Generation” any device producing electrical energy, i.e., rotating generators driven by wind, steam turbines, internal combustion engines, hydraulic turbines, solar, fuel cells, etc.; or any other electric producing device, including energy storage technologies.
- 8) “Generation Interconnection Coordinator” is the person or persons designated by the Area EPS Operator to provide a single point of coordination with the Applicant for the generation interconnection process.
- 9) “Generation System” is the interconnected generator(s), controls, relays, switches, breakers, transformers, inverters and associated wiring and cables, up to the Point of Common Coupling.
- 10) “Grid Tie Inverter” is a device that converts DC electricity to AC electricity. While a Grid Tie Inverter usually has been specially designed and constructed to safely interconnect with an Area EPS, for the purposes of this interconnection procedure, a Grid Tie Inverter must also have been designed and tested to meet the requirements of IEEE 1547 and ANSI 929 standards and has been certified with a UL 1741 label.
- 11) “Interconnection Customer” the party or parties who will own/operate the Generation System and are responsible for meeting the requirements of the agreements and Technical Requirements. This could be the Generation System

applicant, installer, owner, designer, or operator.

- 12) “Local EPS” an electric power system (EPS) contained entirely within a single premise or group of premises.
- 13) “Nameplate Capacity” the total nameplate capacity rating of all the Generation included in the Generation System. For this definition, the “standby” and/or maximum rated kW capacity on the nameplate shall be used.
- 14) “Point of Common Coupling” is the point where the Local EPS is connected to an Area EPS.
- 15) “Technical Requirements” The complete set of requirements outlined in the “City of Saint Peter Distributed Generation Interconnection Requirements.” Also includes the more concise subset of the technical requirements provided for smaller inverter interconnected generation systems titled “Distributed Generation Interconnection Requirements for Inverter Connected System Rated less than 40kW”.

B) Area EPS Coordinator.

For questions regarding this Generation Interconnection Process or any other questions regarding generation installation in general, please contact the following:

Name: Chad Rasmussen
Title: Engineer
Company: DGR
Address: 1302 South Union Street PO Box 511 Rock Rapids IA 51246
Phone: (800) 446-2531
E-mail: chadr@dgrnet.com

This Generation Interconnection Coordinator may not be able to directly answer or resolve all of the issues involved in the review and implementation of the interconnection process and standards, but shall be available to provide coordination assistance with the Applicant.

C) Insurance

In connection with the Interconnection Customer’s performance of his or her duties and obligations under the Small Renewable Generation Interconnection Procedure and subsequent Agreement, the Interconnection Customer shall maintain, during the term of the Agreement, general liability insurance from a qualified insurance company with a B+ or better rating by “Best” and with a combined single limit of not less than three hundred thousand dollars (\$300,000) for each occurrence.

Process for Interconnection

Step 1 Application (By Applicant)

Once a decision has been made by the Applicant, that they would like to interconnect a Generation System with the Area EPS, the Applicant shall supply the Area EPS with the following information:

- 1) Completed Generation Interconnection Application (Appendix A) including:
 - a) One-line diagram
 - b) Site plan of the proposed installation
 - c) Proposed schedule of the installation
- 2) Payment of the \$100 application fee. This application fee is to contribute to the Area EPS Operator's labor costs for administration, review of the design concept and engineering screening for the proposed Generation System interconnection.

Step 2 Review of Application (By Area EPS)

Within 15 business days of receipt of all the information listed in Step 1, the Area EPS Generation Interconnection Coordinator shall respond to the Applicant with the information listed below. (If the information required in Step 1 is not complete, the Applicant will be notified within 10 business days of what is missing and no further review will be completed until the missing information is submitted. The 15 day clock will restart with the new submittal.)

As part of Step 2 the proposed Generation System will be screened to see if additional Engineering Studies are required. The base screening criteria is listed in the general information section of this document.

- 1) A single point of contact with Area EPS Operator for this project.
(Generation Interconnection Coordinator)
- 2) Approval or rejection of the generation interconnection request.
 - a) Rejection – The Area EPS shall supply the technical reasons, with supporting information, for rejection of the Application.
 - b) Approval - An approved Application is valid for six (6) months from the date of the approval. The Area EPS Generation Interconnection Coordinator may extend this time if requested by the Applicant
- 3) Comments on the schedule provided
- 4) Distributed Generation distribution constrained credits available
- 5) Interconnection Agreement
- 6) Cost estimate and payment schedule for required Area EPS Operator work, including, but not limited to:
 - a) Labor costs related to the final design review

- b) Labor & expense costs for attending meetings
- c) Required Dedicated Facilities and other Area EPS modification(s)
- d) Final acceptance testing costs

Step 3 Final Go-No Go Decision (By Applicant)

In this step, the Applicant shall have the opportunity to indicate whether or not they want to proceed with the proposed generation interconnection. If the decision is NOT to proceed, the Applicant will notify the Area EPS Generation Interconnection Coordinator, so that other generation interconnections in the queue are not adversely impacted.

Should the Applicant decide to proceed, the following information is to be supplied to the Area EPS Generation Interconnection Coordinator:

- 1) Applicable up-front payment required by Area EPS Operator, per Payment Schedule, provided in Step 2.
- 2) Signed Interconnection Agreement
- 3) Final proposed schedule, incorporating the Area EPS comments or requirements
- 4) Detailed information on the proposed equipment, if required by Area EPS in Step 2, including wiring diagrams, models and types

Step 4 Order Equipment and Construction (By Area EPS / Applicant)

The following activities shall be completed during this step:

By the Applicant's personnel:

- 1) Ordering of Generation System equipment
- 2) Installing Generation System
- 3) File required State of Minnesota electrical inspection forms ("blue" copy to Area EPS)
- 4) Inspecting and functional testing of Generation System components

By Area EPS personnel:

- 1) Ordering any necessary Area EPS equipment
- 2) Installing and testing any Area EPS facilities or line extensions
- 3) Assisting Applicant's personnel with interconnection installation coordination issues
- 4) Providing review and input for testing process

Step 5 Final Tests (By Area EPS / Applicant)

(Due to equipment lead times and construction, a significant amount of time may take place between the execution of Step 4 and Step 5.) During this time the construction of the facilities are completed.

Final acceptance testing will commence when all equipment has been installed and all contractor preliminary testing has been accomplished. A week or two prior to the start of the final testing of the generation interconnection, the Applicant shall provide Area EPS Interconnection Process < 40kW

Operator with a report stating:

- The Generation System meets all interconnection requirements
- All contractor preliminary testing has been completed
- A proposed date that the Generation System will be ready to be energized and acceptance tested

City of Saint Peter

Generation Interconnection Application (w/Inverter and < 40kW)

WHO SHOULD FILE THIS APPLICATION: Customers interested in installing generation, rated less than 40kw which will interconnect to City of Saint Peter distribution system using a Grid Tie Inverter. This application should be completed and returned to the Utility, in order to begin processing the request.

INFORMATION: Utility will perform an interconnection review based on the information provided. The Applicant shall complete as much of the form as possible. The fields in BOLD are required to be completed to the best of the Applicant’s ability. The Applicant will be contacted if additional information is required. The response may take up to 15 business days after receipt of all the required information and the required application fee.

COST: A payment to cover the application fee shall be included with this application. The application fee amount is outlined in the “State of Minnesota Interconnection Process for Distributed Generation Systems”.

OWNER / APPLICANT		
Applicant:	Phone Number:	FAX Number:
Mailing Address:		
Email Address:		

PROPOSED LOCATION OF GENERATION SYSTEM INTERCONNECTION
Street Address, Legal Description or GPS coordinates:

ELECTRICAL CONTRACTOR (if applicable)		
Company:		
Representative:	Phone Number:	FAX Number:
Mailing Address:		
Email Address:		

TYPE OF INTERCONNECTED OPERATION	
Type of Generation System Solar Wind (Circle one) or other Describe	
Proposed use of generation: (Check all that may apply) <input type="checkbox"/> Peak Reduction <input type="checkbox"/> Standby <input type="checkbox"/> Energy Sales <input type="checkbox"/> Cover Load	Duration Parallel: <input type="checkbox"/> None <input type="checkbox"/> Limited <input type="checkbox"/> Continuous
Pre-Certified System: Yes / No / Don't know (Circle one)	Exporting Energy Yes / No (Circle one)

ESTIMATED START/COMPLETION DATES	
Order Equipment:	
Construction Start Date:	
Start Acceptance Testing:	
Generation In Service:	

GENERATOR or (Solar Panel) INFORMATION		
Manufacturer:	Type (Model):	Phases: 1 or 3
Rated Output (each unit) kW	# of Units to be installed:	Rated Voltage (Volts):
Supplier of Equipment		
Address		
Phone		
Additional Information:		

INVERTER		
Manufacturer:	Model:	
Rated Power Factor (%):	Rated Voltage (Volts):	Rated Current
% Total harmonics at full load	% Current	% Voltage
Inverter Type (ferroresonant, step, pulse-width modulation, etc.):		
Additional Information:		

MISCELLANEOUS	(Use this area and any additional sheets for applicable notes and comments)

SIGN OFF AREA:	
<p>With this Application, I, the Applicant, requests the Utility review the proposed Generation System Interconnection. I request that Utility identify any additional equipment and costs/fees involved with the interconnection of this system and to provide an estimate of those costs. I understand that the costs supplied by Utility will be estimated using the information provided. I also agree that I will supply, as requested, any additional information requested by Utility for evaluation of this proposed Generation System interconnection. We have read the "State of Minnesota Distributed Generation Interconnection Requirements" and will design the Generation System and interconnection to meet those requirements.</p>	
Applicant Name (print):	
Applicant Signature:	Date:

SEND THIS COMPLETED & SIGNED APPLICATION AND ATTACHMENTS TO THE UTILITY