

This is an abbreviated version of MVEC's distributed generation interconnection policy and procedure for Inverted Connected Systems rated 40 kW or less. For a complete copy please refer to step 7 on the web site.

Minnesota Valley Electric Cooperative Distributed Generation Interconnection Process For Inverter Connected Systems Rated 40kW or less.

Introduction

To interconnect a Generation System with Minnesota Valley Electric, there are several steps that must be followed. This document outlines a streamlined version of those steps for inverter connected system rated 40kW or less. At any point in the process, if there are questions, please contact the Wind Energy Consultant at Minnesota Valley Electric.

This process has been prepared specifically for 40 kW or below systems.

GENERAL INFORMATION

A) Definitions

- 1) "Applicant" is defined as the person or entity, whom is requesting the interconnection of the Generation System with Minnesota Valley Electric 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. Note. Typically, an Area EPS has primary access to public rights-of-way, priority crossing of property boundaries, etc.
- 3) "Dedicated Facilities" the equipment that is installed due to the interconnection of the Generation System and not required to serve other Minnesota Valley Electric members.
- 4) "Distribution System" is the Minnesota Valley Electric facilities which are not part of the Area EPS Transmission System or any Generation System.
- 5) "Extended Parallel" means the Generation System is designed to remain connected with Minnesota Valley Electric for an extended period of time.
- 6) "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.
- 7) "Generation Interconnection Coordinator" the person or persons designated by Minnesota Valley Electric to provide a single point of coordination with the Applicant for the generation interconnection process.
- 8) "Generation System" the interconnected generator(s), controls, relays, switches, breakers, transformers, inverters and associated wiring and cables, up to the Point of Common Coupling.
- 9) "Grid Tie Inverter" a device that converts DC electricity to AC electricity. While a Grid Tie Inverter also has been specially designed and constructed to safely interconnect with an Area EPS. For this document, a Grid Tie Inverter is also designed and tested to meet the requirements of IEEE 1547 and ANSI 929 standards and has been certified with a UL 1741 label.
- 10) "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.
- 11) "Local EPS" an electric power system (EPS) contained entirely within a single premises or group of premises
- 12) "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.

This is an abbreviated version of MVEC's distributed generation interconnection policy and procedure for Inverted Connected Systems rated 40 kW or less. For a complete copy please refer to step 7 on the web site.

- 13) "Point of Common Coupling" the point where the Local EPS is connected to an Area EPS.
- 14) "Technical Requirements" "Minnesota Valley Electric Cooperative Distributed Generation Interconnection Requirements". This refers to the complete set of requirements outlined in that document. There is a more concise subset of the technical requirements provided for smaller inverter interconnected generation systems titled "Distributed Generation Interconnection Requirements for Inverter Connected Systems Rated 40kW or Less".

B) Minnesota Valley Electric Generation Interconnection Coordinator.

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

Jeff Langeberg / Wind Energy Consultant
Minnesota Valley Electric Cooperative
125 Minnesota Valley Electric Drive
(952) 492.8247 or (800) 282.6832
jeffl@mvec.net

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 its duties and obligations under this Agreement, the Interconnection Customer shall maintain, during the term of the Agreement, general liability insurance, from a qualified insurance agency with a B+ or better rating by "Best" and with a combined single limit of not less than Three hundred thousand (\$300,000) for each occurrence if the Gross Nameplate Rating of the Generation System is less than 40kW.

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 Minnesota Valley Electric, the Applicant shall supply Minnesota Valley Electric 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
 - d) Site must be serviced by an existing service
 - e) If member pays 100% of contribution to aid of construction. The member can pick their site without an existing service.
- 2) Payment of the \$100 application fee. This application fee is to contribute to Minnesota Valley Electric'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 Minnesota Valley Electric)

Within 15 business days of receipt of all the information listed in Step 1, the Minnesota Valley Electric 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 Minnesota Valley Electric for this project. (Generation Interconnection Coordinator)
- 2) Approval or rejection of the generation interconnection request.
 - a) Rejection – Minnesota Valley Electric shall supply the technical reasons, with supporting information, for rejection of the interconnection Application.
 - b) Approval - An approved Application is valid for 6 months from the date of the approval. The Minnesota Valley Electric 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 Minnesota Valley Electric work, including, but not limited to:
 - a) Labor costs related to the final design review
 - b) Labor & expense costs for attending meetings

This is an abbreviated version of MVEC's distributed generation interconnection policy and procedure for Inverted Connected Systems rated 40 kW or less. For a complete copy please refer to step 7 on the web site.

- c) Required Dedicated Facilities and other Minnesota Valley Electric 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 Minnesota Valley Electric 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 Minnesota Valley Electric Generation Interconnection Coordinator:

- 1) Applicable up-front payment required by Minnesota Valley Electric, per Payment Schedule, provided in Step 2. (if applicable)
- 2) Signed Interconnection Agreement
- 3) Final proposed schedule, incorporating the Minnesota Valley Electric comments
- 4) Detailed information on the proposed equipment, if required by Minnesota Valley Electric in Step2, including wiring diagrams, models and types

Step 4 Order Equipment and Construction (By Minnesota Valley Electric / 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 Minnesota Valley Electric)
- 4) Inspecting and functional testing Generation System components

By Minnesota Valley Electric personnel:

- 1) Ordering any necessary Minnesota Valley Electric equipment
- 2) Installing and testing any Minnesota Valley Electric facilities, 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 Minnesota Valley Electric / 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, 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 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