



Application Package Checklist

- Copy of “Distributed Generation Rider”
- Copy of “Technical Requirements for Distributed Generation Agreement”
- Copy of “Application for Interconnection and Parallel Operation of Distributed Generation”
- Copy of site electrical one-line diagram of the generating equipment and interconnection to GEUS.
- Copy of site documentation that indicates the precise physical location of the proposed distributed generation facility, proposed meter locations, and proposed manual disconnects.
- Copy of site documentation that describes and details the operation of the protection and control schemes with schematic drawings for all protection and control circuits, relay current circuits, relay potential circuits, and alarm/monitoring circuits (if applicable).
- Copy of purchase agreement between customer and contractor that shows proof of ownership of installed equipment.

ITEMS MUST BE REVIEWED AND APPROVED BEFORE AUTHORIZATION IS GIVEN TO INTERCONNECT WITH UTILITY.



TECHNICAL REQUIREMENTS FOR DISTRIBUTED GENERATION AGREEMENT

A. General

1. This document describes requirements for interconnecting Distributed Generation (DG), rated up to 25kW and operating at 600V or less. For DG larger than 25kW, or DG operating at greater than 600V, please contact GEUS Engineering Department for requirements.

2. GEUS may determine that certain specific interconnection locations and conditions require the installation of more sophisticated protective devices and operating schemes. If GEUS determines an application for parallel operation describes facilities that require additional devices and operating schemes, GEUS shall make those additional requirements known to the Customer after the interconnection studies are completed.

3. Point of Interconnection:

For a single phase overhead service, the Point of Interconnection is defined as the connections between the GEUS overhead service cable(s) and the conductors associated with the Customer's weatherhead.

For a single phase underground service, the Point of Interconnection is defined as the connections between the GEUS underground service cable(s) and the source side terminals of the Customer's underground Net Flow metering socket.

For a three phase service, the Point of Interconnection will be determined and defined by the GEUS Engineering Department. The customer shall be informed of the Point of Interconnection after the interconnection studies are completed.

4. Customer shall own, operate, maintain, design and install the DG Facility, as necessary, to allow the flow of energy from/to the DG Facility, to the customer's load, and to the GEUS electric distribution system. Customer will be responsible for GEUS's cost to place into service, operate and maintain Interconnection Facilities, and for the costs of any protective and/or metering facilities which, in GEUS's sole opinion, are required and/or prudent in order to protect GEUS's System from disruption or damage caused by the DG Facility, and/or are required and/or prudent to meter parameters associated with the DG Facility. At a minimum, the metering facilities shall measure the energy delivered by the DG Facility, the energy fed back into the GEUS system, and the energy provided by GEUS to the Customer.

B. Design Considerations

1. The DG Facility equipment shall be designed in accordance with, but not limited to, UL Standards, IEEE Standards, the National Electrical Code, the National Electrical Safety Code, ERCOT requirements, GEUS Electric Service Policy, Public Utility Commission of Texas, and any other applicable local, state or federal codes or standards.

2. The DG Facility generator shall be equipped with protective hardware and software designed to prevent the generator from being connected to a de-energized GEUS circuit, and in the event of de-energization of GEUS facilities, the DG facility generator shall cease to energize GEUS facilities, within the timeframes dictated by IEEE 1547.
3. The DG Facility generator shall be equipped with the necessary protective hardware and software designed to prevent connection or parallel operation of the generating equipment with GEUS's distribution system unless the GEUS voltage and frequency are of normal magnitude, and the DG voltage is synchronized with the GEUS voltage.
4. Prior to energization of the DG facility, the customer shall submit design documentation to the GEUS Engineering Department for review. Design documentation shall include, but not be limited to, electrical one line diagram, schematic drawings showing configuration of all DG equipment, current and potential circuits, control schemes, and protection schemes. Approval of the design must be obtained from the GEUS Engineering Department, prior to starting construction of the DG facility.
5. Prior to connection of the DG Facility to GEUS, a GEUS representative will inspect the DG Site. In addition, a commissioning test may be required, which must be witnessed by a GEUS representative. The commissioning test will be used to determine if the DG Facility complies with Technical Requirements and that all metering, telemetry, communications equipment, etc., associated with the Point of Interconnection are functioning properly, and receiving and transmitting accurate information. Customer shall not commence parallel operation of the DG Facility with GEUS facilities until written approval has been provided to customer, by GEUS. GEUS shall notify Customer as to whether or not approval is granted, within ten (10) working days from GEUS's inspection of the DG Facility. In the event the DG Facility does not comply with Requirements, GEUS shall notify Customer in writing and shall provide Customer a reasonable period of time to bring the DG Facility into compliance. GEUS shall have reasonable access to the DG Site at all times and shall provide advance notice to Customer of the need for GEUS presence at the DG Site, except that no advance notice is necessary in the case of an emergency, or in connection with the performance of GEUS obligations imposed on it by this Agreement, or if necessary to meet GEUS's legal obligation to provide service to GEUS retail customers.

C. Protective function requirements.

The DG Facility must have an over-voltage trip function, an under-voltage trip function, an over/under frequency trip function, and an automatic synchronizing check function.

D. Operational requirements

GEUS recognizes the importance of having operational and maintenance procedures for the purpose of coordinating the operation of DG and Interconnection Facilities with GEUS's Electric Operation system. Failure to install, operate and maintain all wiring and apparatus in such condition and/or manner, as to not endanger persons or property, as to not cause impairment of Interconnection facilities, as to not cause impairment of GEUS facilities, as to not cause impairment of the DG facility, and as to not cause impairment of any of GEUS's distribution customers, may result in GEUS disconnecting the DG Facility from the GEUS distribution system. The Customer's contractors, agents, and operating/maintenance personnel must be informed (by Customer) of these procedures, and must follow these procedures. Copies of this document and any attachments shall be posted at the DG Facility. Accordingly, to help ensure the protection and safety of the DG Facility and GEUS personnel and property, the continued provision of electric service to the DG Facility, the continued maintenance of an interconnection between the DG Facility and Interconnection Facilities, and the reliable functioning of GEUS's overall system operations, the following operational and maintenance procedures shall be observed.

1. The DG Facility shall be responsible for protecting its generating equipment in such a manner that GEUS system outages, short circuits or other disturbances, including zero sequence currents, negative sequence currents, and ferroresonant over-voltages, do not damage the DG Facility's generating equipment. The DG Facility's protective equipment shall also prevent unnecessary operation of GEUS interrupting devices, which might affect GEUS's capability to provide reliable service to other customers.
2. Circuit breakers or other interrupting devices at the Point of Interconnection must be capable of interrupting maximum available fault current from either direction.
3. The Customer shall furnish and install a manual disconnect switch on the load side of the DG meter. The manual disconnect switch shall be accessible to GEUS personnel and capable of being locked in the open position.
4. GEUS shall have the right to suspend service by disconnection, in cases (i) where continuance of service to Customer will, in GEUS's reasonable determination, endanger persons or property of GEUS or if there is evidence that the DG Facility operation causes disruption or deterioration of service to other customers served from the same grid; (ii) where GEUS reasonably determines that Customer is failing to meet its obligations as provided for under this Agreement; (iii) where GEUS has reasonable cause to believe that the requirements of this Agreement are not being complied with by Customer.

E. Prevention of interference.

1. Voltage. The Customer will operate its generating equipment in such a manner that the voltage levels on GEUS facilities are in the same range that would exist if the DG equipment were not connected to GEUS's system. The DG Facility shall have an automatic method of disconnecting the generating equipment from GEUS if a voltage deviation in excess of +5.0 % or -10% from nominal voltage persists for more than 30 seconds, or a voltage deviation in excess of +10% or -30% from nominal voltage persists for more than ten cycles. The DG Facility may be reconnected when the DG facility voltage and frequency are within normal range, GEUS voltage and frequency are within normal range, and the DG facility is synchronized with the GEUS system.
2. Flicker. The DG Facility shall not cause excessive voltage flicker on GEUS's distribution system. This flicker shall not exceed 3.0% voltage dip, in accordance with Institute of Electrical and Electronics Engineers (IEEE) 519 as measured at the Point of Interconnection.
3. Frequency. The operating frequency of the DG Facility shall not deviate more than +0.5 Hertz (Hz) or -0.7 Hz from a 60 Hz base. The DG Facility shall automatically disconnect the generating equipment from GEUS within 15 cycles if this frequency tolerance cannot be maintained. The DG Facility may be reconnected when the DG facility voltage and frequency are within normal range, GEUS voltage and frequency are within normal range, and the DG facility is synchronized with the GEUS system.
4. Harmonics. In accordance with IEEE 519, the total harmonic distortion (THD) voltage (measured at the Point of Interconnection) shall not exceed 5.0% of the fundamental (60 Hz). Any individual harmonic frequency shall not exceed 3.0% of the fundamental, when measured at the Point of Interconnection.
5. Fault and line clearing. The DG Facility shall automatically disconnect from GEUS within ten cycles if the voltage on one or more phases falls below 70% of nominal voltage. This disconnect timing also ensures that the DG Facility is disconnected from GEUS prior to automatic re-close of breakers. The DG Facility may be reconnected only after GEUS voltage and frequency return to normal range, the GEUS system is stabilized, and the DG facility voltage and frequency are within normal range.
6. Inspection and start-up testing. With at least two weeks advance notice, the Customer shall request from GEUS a date and time for initial energization and start-up testing of the DG Facility. GEUS may witness the

testing of any equipment and protective systems associated with the interconnection. The Customer shall revise and re-submit the application with information reflecting any proposed modification that may affect the safe and reliable operation of the GEUS distribution system.

7. Site testing. Testing of protection systems shall include procedures to functionally test all protective elements of the system up to and including tripping of the DG Facility. Testing will verify all protective set points and relay/breaker trip timing. GEUS may witness the testing of installed switchgear, protection systems, and DG. The Customer is responsible for routine maintenance of the DG, control equipment, and protective equipment. The Customer will maintain records of such maintenance activities, which GEUS may review at reasonable times.

8. Metering. At a minimum, two meters shall be required (one to monitor the output of the DG facility, and the other meter to monitor the net flow between GEUS and the Customer). GEUS shall supply, own, and maintain all necessary meters and associated equipment to record energy flow, and demand (if applicable). The Customer shall supply at no cost to GEUS suitable locations on its premises for the installation of GEUS's meters and any other required equipment. Meter locations shall be within ten feet of each other. Procurement and installation of meter bases are the responsibility of the customer.

By signature below, customer agrees to the terms and conditions stated within this document.

Printed Name of Customer

Signature of Customer

Date

NOTICE:

INSTALLATION MUST BE COMPLETED WITHIN ONE YEAR FROM THE DATE SHOWN ABOVE, OR AGREEMENT IS SUBJECT TO CANCELLATION. THE TERM OF THIS AGREEMENT IS ONE YEAR, EXTENDED AUTOMATICALLY UNLESS TERMINATED BY EITHER PARTY WITH SIXTY DAYS WRITTEN NOTICE.

APPENDIX “D” - DISTRIBUTED GENERATION RIDER

Application:

This Rider is available to any retail consumer receiving electric service under a GEUS electric rate schedule who owns and operates an on-site generating system, and who interconnects with GEUS' electric system.

Conditions of Service:

All charges, character of service, and terms and conditions of the GEUS Rates for Electric Service under which the consumer receives service apply except as expressly altered by this Rider.

The consumer shall comply with the current GEUS agreement document, entitled

TECHNICAL REQUIREMENTS FOR DISTRIBUTED GENERATION AGREEMENT

and any revisions to the requirements. The consumer shall obtain approval from GEUS before the consumer energizes the consumer's on-site generating system or interconnects it with GEUS' electric system. The consumer shall submit to GEUS a completed Application for Interconnection form and a signed Technical Requirements for Distributed Generation Agreement. The consumer is responsible for the costs of interconnecting with GEUS' electric system, including transformers, service lines, or other equipment determined necessary by GEUS for safe installation and operation of the consumer's equipment with GEUS' system. The consumer is responsible for any costs associated with required inspections and permits. The consumer will own all facilities on the customer side of GEUS' net flow meter, except for the DG meter described within the Metering section below. Proof of Ownership is required before approval will be given.

Metering:

Metering under this Rider shall be performed by a single net flow meter capable of registering the flow of electricity in two directions (delivered and received) to determine the consumer's net energy flow. An additional meter (DG), installed at the output of the DG (Distributed Generation) facility, shall be required to enable GEUS to verify and monitor the output of the DG facility. The DG meter will be supplied and owned by GEUS.

Rate:

If, in a billing month after a consumer receives approval from GEUS to interconnect the consumer's on-site generating system, the energy delivered by the consumer's approved system to GEUS' electric system, exceeds the amount of energy delivered by GEUS to the consumer, GEUS shall credit the consumer's account as described below.

The monthly credit, if any, is calculated as follows:

Each kWh delivered from the consumer's approved system to GEUS' electric system, which is in excess of the kWh delivered by GEUS to the consumer, is multiplied by the Fuel Adjustment Charge (FAC).

Any credit shall be applied to the electric service charges due from the consumer to GEUS.



APPLICATION FOR INTERCONNECTION AND PARALLEL OPERATION OF DISTRIBUTED GENERATION

| Customer Information | | | |
|----------------------|------------|---------------|-----|
| Customer Name | | | |
| Service Address | City | State | Zip |
| Home Phone | Cell Phone | Email Address | |

| Contractor Information | | | |
|------------------------|------------|---------------|-----|
| Contractor Name | | Business Name | |
| Address | City | State | Zip |
| Office Phone | Alt. Phone | Email Address | |

The following information shall be supplied by the Customer or Customer's designated representative. All applicable items must be accurately completed in order that the Customer's generating facilities may be effectively evaluated by GEUS for interconnection.

| Distributed Generation Information | |
|---|---|
| Number of units: | Manufacturer: |
| Type: (Synchronous, Induction, or Inverter) | Fuel Source: (Solar, Natural Gas, Wind, etc.) |
| Kilowatt Rating: (95 Deg. F at location) | Kilovolt-Ampere Rating: (95 Deg. F at location) |
| Voltage Rating: | Ampere Rating: |
| Frequency: | Number of Phases: |
| Maximum Available RMS Symmetrical Short Circuit Current - for a Line to Ground Fault: _____ for a 3-Phase Fault: _____ | |

UTILITY INTERCONNECTION AND GENERATOR PROTECTION EQUIPMENT:

Submit a detailed, one line, electrical diagram of the generating equipment and interconnection to GEUS. Include lockable, “visible” disconnect device or breaker indicating full load, momentary, and interrupting ratings as applicable. Show all the protective devices and include, as applicable, size, rating, manufacturer, style, type, model, settings, and any other information which is appropriate. Indicate location and ratings of all instrument transformers.

| Additional Information | |
|---|--|
| Do you plan to export power: (yes or no) | If Yes, maximum amount expected: |
| Pre-Certification Label or Type Number: | Expected Energizing and Start-up Date: |
| Normal Operation of Interconnection (please describe - examples: provide power to meet base load, demand management, standby, back-up, other) | |
| | |
| City Permit #: | |

| Customer Certification | |
|--|----------|
| I certify that the above listed Renewable Energy equipment has been purchased and is wholly owned by | |
| Customer Name: | Address: |
| Signature: | Date: |

| Information Prepared and Submitted By | |
|---------------------------------------|----------|
| Name: | Address: |
| Signature: | Date: |

| GEUS Internal Use | |
|--------------------------------------|---------------------------|
| GEUS Subst/Fdr #: | GEUS Grid Map #: |
| Customer 1-Line Drawing Submitted: | Customer Station Name: |
| Approval to Build | |
| Granted on: (date) _____ | By: (GEUS Engineer) _____ |
| Authorization to Interconnect | |
| Granted on: (date) _____ | By: (GEUS Engineer) _____ |



Step-By-Step Guide for Applying for GEUS's Distributed Generation Program

1. Customer submits the following documents to GEUS at 2810 Wesley St., Greenville, TX 75401 or by email to kwilliams@geus.org
 - a. Signed and completed "Technical Requirements for Distributed Generation Agreement".
 - b. Signed and completed "Application for Interconnection and Parallel Operation of Distributed Generation".
 - c. Copy of site electrical one-line diagram of the generating equipment and interconnection to GEUS. (see detail requirements in Application)
 - d. Copy of site documentation that indicates the precise physical location of the proposed distributed generation facility, proposed meter locations, and proposed manual disconnects.
 - e. Copy of any site documentation that describes and details the operation of the protection and control schemes with schematic drawings for all protection and control circuits, relay current circuits, relay potential circuits, and alarm/monitoring circuits (if applicable).
 - f. Copy of purchase agreement between customer and contractor that shows proof of ownership of installed equipment.
2. GEUS Administration and Engineering will review the application and documents received.
3. GEUS will
 - a. Approve and sign the Application for Interconnection and Parallel Operation of Distributed Generation or reject the application.
 - i. If GEUS approves the application, Customer may begin the installation of the system.
 - ii. If GEUS rejects the application, GEUS will provide the Customer with written justification of why the application was rejected.
4. Customer/Contractor is responsible for obtaining Electrical Permit from the City of Greenville Community Development, located at 2315 Johnson St, Greenville, TX 75401.
5. Contractor installs the system.
6. Customer will notify GEUS when installation is complete and GEUS will conduct a final inspection.
7. GEUS will conduct an Inspection within two (2) weeks of notice
 - a. If the system passes the Inspection, GEUS will provide the Customer with signed authorization to interconnect (Application for Interconnection and Parallel Operation of Distributed Generation)
 - b. If the system does not pass the Inspection, GEUS will require the Customer to make any corrections necessary for the system to meet all requirements outlined in the Technical Requirements for Distributed Generation Agreement.
8. Once the Customer receives written authorization from GEUS to interconnect with the utility system, the Customer may commence with parallel operations.