



SUBJECT: Grid-Tied Distributed Generation Specifications

EFFECTIVE DATE:

APPROVED BY:

Dec 11, 2015

Hurricane City Council

SCOPE

(a) This subchapter also sets forth requirements for the interconnection of customer electric generating facilities, including those that generate renewable energy, within the City of Hurricane electric distribution systems.

Definitions

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.

“Customer” means a City of Hurricane customer that generates electricity, on the customer’s side of the meter and receives an electric utility bill from the City of Hurricane.

“Customer-generating facility” means the equipment used by a customer-generator to generate, manage, and monitor electricity. A customer-Generating Facility typically includes an electric generator and/or an equipment package, as defined herein.

“Electric distribution system” means that portion of an electric system which delivers electricity from transformation points on the transmission system to points of connection at a customer’s premises. An electric distribution system generally carries less than 69 kilovolts of electricity.

The “City” means the City of Hurricane Power Department

“Electric power supplier” means the City of Hurricane Power Department.

“Equipment package” means a group of components connecting an electric generator with an electric distribution system, and includes all interface equipment including



switchgear, inverters, or other interface devices. An equipment package may include an integrated generator or electric source.

“Fault current” means electrical current that flows through a circuit and is produced by an electrical fault, such as to ground, double-phase to ground, three-phase to ground, phase-to-phase, and three phases. A fault current is several times larger in magnitude than the current that normally flows through a circuit.

“Good utility practice” means a practice, method, action or policy that is engaged in and/or accepted by a significant portion of the electric industry in a region in which a reasonable utility official would expect in the facts reasonably discernable at the time, to accomplish the desired result reliably, safely and expeditiously.

“Ground level mounted solar array panels” means solar panels which are supported by and affixed to the ground.

“IEEE standards” means the standards published by the institute of Electrical and Electronic Engineers, available at www.ieee.org.

“Interconnection agreement” means an agreement between a customer-generator and the City which governs the connection of the Customer-Generating Facility to the electric distribution system, as well as the ongoing operation of the Customer-Generating Facility after it is connected to the system.

“KW” means kilowatts, a unit of power representing 1,000 watts. A kW equals 1/1000 of a MW, as defined herein.

“Net metering” means a system of metering electricity in which the City:

Credits a customer-generator at the full retail rate for each kilowatt-hour produced by a renewable energy system installed on the customer generator’s side of the electric revenue meter.

“MW” means megawatts, a unit of power representing 1,000,000watts. A megawatt equals 1000 kW.

“Point of common coupling” has the same meaning as assigned to this term in IEEE Standard 1547 Section 3.2 (published July 2003), as amended and supplemented, which is incorporated herein by reference. IEEE standard 1547 can be obtained through the IEEE website at www.ieee.org. As of (effective date of this rule), IEEE Standard 1547 Section 3.0 defined this term as “the point in the interconnection of a Customer-Generating Facility with an electric distribution system at which the harmonic limits are applied.

“Solar electric generation” has the meaning of a photovoltaic system installed at the customer-generator site and approved by Hurricane City.



Renewable Attributes

The City will be the owner of the renewable attributes of the electricity that is generated on or after the customer generating facility is installed and working.

General interconnection provisions

The Following will be required;

The City will use this review procedure for all applications to connect inverter-based customer-generating facilities.

(a) An application for interconnection review shall be submitted on a standard form, available from the Power Department and posted on the City's website.

The application form will require the following types of information:

1. Basic information regarding the customer.
2. Information regarding the type and specifications of the Customer-Generating Facility.
3. Information regarding the contractor who will install the Customer-Generating Facility.

(b) The customer will be responsible for obtaining all information and specifications required by the City.

(c) A packet of all information and specifications regarding the customer-generator system, including a one line diagram will need to be submitted in person or by emailed to both (Crystal Wright) with the Hurricane City Power Department) and to (Tami Jones with the City Building Department). See contact info below.

- Crystal Wright Hurricane City Power Department crystal@cityofhurricane.com
- Tami Jones Hurricane City Building Department tami@cityofhurricane.com

(d) The Building and Power Department should be contacted regarding installations to assure permits, if necessary, are obtained.

The following standards shall be followed;

(a) IEEE 1547, Standard for Interconnecting Distributed Resources with Electric Power Systems, as amended and supplemented, which is incorporated by reference herein. IEE Standard 1547 can be obtained through the IEE website at www.ieee.org; and

(b) UL 1741, Inverters, Converters, and Controllers for use in Independent Power Systems) January 2001), as amended and supplemented, which is incorporated by reference herein. UL Standards can be obtained through the Underwriters Laboratories website at www.ul.com.



Certification of customer-generator facilities

(a) An equipment package shall be considered certified for interconnected operation if it has been submitted by a manufacturer to a nationally recognized testing and certification laboratory, and has been tested and listed by the laboratory for continuous interactive operation with an electric distribution system in compliance with the applicable codes and standards listed in (a) above.

(b) If the equipment package has been tested and listed in accordance with this section as an integrated package, which includes a generator or other electric source, the equipment package shall be deemed certified, and the City generally will not require further design review, testing or additional equipment.

(c) If the equipment package includes only the interface components (switchgear, inverters, or other interface devices), an interconnection customer must show that the generator or other electric source being utilized with the equipment package is compatible with the equipment package and consistent with the testing and listing specified for the package. If the generator or electric source being utilized with the equipment package is consistent with the testing and listing performed by the nationally recognized testing and certification laboratory, the equipment package will be deemed certified, and the City generally will not require further design review, testing or additional equipment.

Location criteria for ground level mounted solar array panels

(a) The solar array shall be located on the residential lot behind the front setback line.

(b) The solar array shall not infringe on any easement or sight distance requirements and shall not violate any City Ordinance or subdivision CC&R's.

© Maximum height for the solar array, measured from ground level to the highest point on the array shall not exceed fifteen feet (15')

(d) The following size limits shall apply;

Lot Size:	Maximum array surface area
Less than one acre	200 square feet
One acre to two and one half acres	400 square feet
Greater than two and one half acres	Limited to 6 KV maximum

(e) Solar array should be located to maximize unobstructed line of sight.



Interconnection review

(a) The City will review an application to interconnect a customer generating facility that meets all of the following criteria:

1. The facility is inverter-based;
2. The facility has a capacity of 8.1 KW DC and 6 KW AC or less;
3. The facility has a capacity of 16 KW DC and 12 KW AC with a 6 KW limiter;
4. The facility has a capacity of more than 16 KW DC and 12 KW AC with a battery programmed to zero export;
5. The facility has been certified by the City.

Limiting facility factors

(a) The aggregate generation capacity on the distribution circuit to which the Customer Generating Facility will interconnect, including the capacity of the Customer-Generating Facility, shall not contribute more than 10% to the distribution circuit's maximum fault current at the point on the high voltage (primary) level that is nearest the proposed point of common coupling as determined by the City.

(b) A Customer-Generating Facility's point of common coupling shall not be on a transmission line or a spot network.

(c) If a Customer-Generating Facility is to be connected to a radial distribution circuit, the aggregate generation capacity connected to the circuit, including that of the Customer-Generating Facility, shall not exceed 10% (15% for solar electric generation) of the circuit's total annual peak load, as most recently measured at the substation.

(d) If a Customer-Generating Facility is to be connected to a single-phase shared secondary, the aggregate generation capacity connected to the shared secondary, including the Customer-Generating Facility, shall not exceed 20 kilovolt-amperes (kVA).

(e) If a single-phase Customer-Generating Facility is to be connected to a transformer center tap neutral of a 240 volt service, the addition of the Customer-Generating Facility shall not create an imbalance between the two sides of the 240 volt service of more than 20% of nameplate rating of the service transformer.



Customer and City Requirements

(a) Once a metering interconnection has been approved, the City will not require a Customer to test or perform maintenance on its facility except for the following:

1. An annual test in which the Customer-Generating Facility is disconnected from the City's distribution equipment to ensure that the inverter stops delivering power to the grid.
2. Any manufacturer-recommended testing or maintenance.
3. Any post-installation testing necessary to ensure compliance with IEEE 1547 or to ensure safety.
4. Documentation is required for testing done yearly and needs to be submitted to the City.

(b) The City shall have the right to inspect a Customer-Generating Facility after interconnection approval is granted, at reasonable hours and with reasonable prior notice to the Customer. If the City discovers that the Customer-Generating Facility is not in compliance with the requirements of this subchapter, and the noncompliance adversely affects the safety or reliability of the electric distribution system, the City may require the Customer to disconnect the Customer-Generating Facility until compliance is achieved.

(c) The City shall have the right to disconnect the Customer-Generating Facility in the event it causes system problems. The Customer will have the option on correcting the problem, at which time the system will be re-inspected before beginning operation again.

(d) The Customer shall be required to install a manual disconnect located within five feet of the meter.