

14.32.225. - Small generation interconnection standards.

*A. Installation and permitting.*

1. *General.* Distributed Generation Systems (DGS) are customer-owned generation and utilization equipment on the load side of the electric utility meter, and are subject to all permitting and inspection requirements pertinent to these facilities in conformance with the National Electrical Code (NEC). In addition, the customer must apply for the electric service rate applicable to these interconnected facilities.
2. *Classes of electric service for distributed generation systems.* Service requirements for distributed generation systems shall be based upon the generator (or inverter) nameplate rating(s). If the site incorporates more than one generator or inverter, the capacity (for the purposes of determining class) shall be the sum of the nameplates.
  - a. Class 1 is distributed generation of 50 kW or less. Class 1 generation must be registered for residential or commercial self-generation service and must meet the requirements and standards, including those in subsections 14.32.225.C, a through g. Class 1 services rated more than 10 kW may require upgrades to LPC facilities at customer cost.
  - b. Class 2 is distributed generation of more than 50 kW but less than 1,000 kW. Class 2 systems will require a contract for electric service and an extensive engineering review by LPC for system interconnection and facility upgrade requirements. Class 2 services may be subject to additional codes and requirements.
  - c. Class 3 is distributed generation of 1,000 kW or larger. Class 3 will require coordination with LPC and Platte River Power Authority (PRPA) regarding interconnection requirements and compensation for generation output.
3. *Minimum standards.* The DGS must comply with all applicable standards and codes including, but not limited to, NEC, UL, ANSI, NEMA, and IEEE. Specific requirements include the current versions of the following:
  - a. UL 1741-Standard (e.g., Standard for static inverters and charge controllers for use with photovoltaic systems).
  - b. IEEE Standard 1547 (2003): Standard for interconnecting distributed resources with electric power systems.

*B. Service account administration.*

1. *Request for service.* The customer or contractor must apply for the appropriate interconnected electric service for the facility - resident self-generation or commercial self-generation. The interconnection customer may not connect the DGS to LPC's electric system until the LPC service application form has been completed and the DGS has been tested and approved by LPC. LPC may perform (at its own expense) whatever testing of the DGS that LPC deems necessary.

2. *Transfer of property ownership.* The residential self-generation and/or commercial self-generation rates are associated with the interconnected generation facilities and will transfer with the property to any new ownership.

C. *Power quality requirements.* The DGS shall not create power system disturbances that exceed the standards specified by LPC, and as referenced in other sections of this Code. When there is demonstrated, unreasonable interference to other customers and such interference exceeds LPC standards, LPC reserves the right, at its expense, to install test equipment as may be required to perform a disturbance analysis and monitor the operation of the DGS to evaluate the quality of the power produced. If the DGS is demonstrated to be the source of the interference, and the interference exceeds LPC standards or generally accepted industry standards, then the DGS will be disconnected and locked out from the LPC distribution system until corrections are made to remedy the interference. It is the customer's responsibility to eliminate the interference problem caused by the DGS. A disconnect switch or electric breaker for the DGS would allow isolation of the DGS from the electric service for the parcel. If this specific isolation is not available, LPC will disconnect the entire electric service until any DGS operating problems are resolved by the customer. The following power quality requirements apply:

1. *Voltage.* The DGS must be capable of operating within normal or emergency electric utility voltage operating limits and properly disconnect (or otherwise cease to generate) from the utility source when warranted by operating conditions.
2. *Flicker.* The DGS shall not create objectionable flicker for other LPC customers. Flicker is considered objectionable when it either causes a modulation of the light level of lamps sufficient to be irritating to humans or causes equipment malfunction. See IEEE 519-1992 (or current version).
3. *Frequency.* The DGS must operate in a fixed frequency range of 59.3 to 60.5 Hz. When the interconnected system frequency is outside this range, the DGS shall cease to energize the LPC connection.
4. *Waveform distortion (harmonics).* The DGS must have low-current-distortion levels to ensure that no adverse effects are caused to other equipment connected to LPC's electric system. When the DGS is serving balanced linear loads, harmonic current injection into LPC's network shall not exceed maximum total demand distortion of 5.0 percent.
5. *Power factor.* The DGS must operate at a power factor greater than 0.9 (leading or lagging).
6. *Islanding protection.* The DGS must cease to energize the utility system when there is a loss of utility source voltage on the LPC system. The DGS must immediately, completely, and automatically disconnect (or otherwise cease to operate) from LPC's electric system in the event of a fault on the DGS or loss of source on LPC's electric system. LPC, at its own discretion and expense, may conduct periodic testing of anti-islanding. Anti-islanding is an industry term describing the means by which the DGS will cease to generate when it is still connected to the electric utility system that is de-energized due to fault clearing or other switching.
7. *Direct current injection.* The distributed generation system shall comply with IEEE 1547 (or current version) for direct current injection as measured at the LPC meter.

D. *Additional equipment.* The interconnection customer must pay for any additional equipment required to connect the DGS to LPC's electric system. This includes any modifications to LPC's electric system necessary to accommodate the DGS consistent with safety, reliability and power quality standards.

*Technology specific requirements.* Different technologies may require unique designs for the operation of the generator. If the standards do not address the interconnection requirements for a particular generating facility or technology, LPC and the *interconnection customer may agree upon other requirements.*

E. *Aggregated generation.* LPC reserves the right to consider the effect of the DGS in combination with any other generation on the LPC system. This review and any appropriate remedy to the effect of the aggregated generation will be done on a case-by-case basis at the sole discretion of LPC.

F. *Maintenance and safety of equipment.* The interconnection customer shall maintain the DGS including, at their sole cost and expense, to ensure operation in a safe and prudent manner and in conformance with all applicable laws, codes, and regulations. Maintenance shall include, but not be limited to, all over-current protective equipment.

(Ord. No. O-2008-65, § 7; Ord. No. O-2008-88, § 22; Ord. No. O-2010-47, § 17, 12-7-2010)