

City of New Bern Electric Utilities
New Bern, North Carolina

Photovoltaic (PV) Interface Criteria

City of New Bern Electric Utilities supports the development of renewable resources for generation of electric power. In order to maintain current levels of safety and power quality for the general public, electric system employees' and customers' certain criteria must be applied to all alternative sources of electric power.

Specific criteria for photovoltaic solar panel (PV) installations are as follows:

- All PV installations must be connected to City of New Bern Electric Utilities electric system through a separate meter with only the PV system connected to the source side of the PV interconnection meter. See attached installation illustration and single-line diagram.
- All PV equipment must comply with the requirements of and be labeled under Underwriters Laboratories Standard 1741 "Inverters, Converters, Controllers, and Interconnection Systems Equipment for Use with Distributed Energy Resources."
- All PV installations must comply with IEEE Standard 929 "IEEE Recommended Practice for Utility Interface of Photovoltaic (PV) Systems."
- All PV systems must comply with IEEE Standard 1547 "IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems."
- All PV systems must comply with IEEE Standard 1547.1 "IEEE Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems."
- All PV installations shall be made in accordance with the National Electrical Code (NFPA 70). Specific compliance with Article 690 and Article 705 is required. Installations shall be inspected and approved by the local authority having jurisdiction.
- All PV installations shall have a service disconnect installed immediately adjacent to the meter for the PV system. The disconnect shall be fully accessible to and operable by City of New Bern Electric Utilities personnel at all times. The disconnect shall include provisions for locking in the open position. The disconnect shall be labeled in accordance with NEC 705.10.
- All PV installations are subject to review and testing by City of New Bern Electric Utilities prior to connection and at subsequent times of their choosing.
- All interconnected PV systems shall have reverse power protection schemes to prevent power flow onto utility system during outage conditions. Systems found to produce voltage when disconnected from the electric distribution system will be disconnected

without notice and will remain disconnected until installations are brought into compliance with specified standards.

- PV systems shall not interfere with the power quality of any Customer of City of New Bern Electric Utilities' distribution system. PV systems found to interfere with utility industry-accepted power quality standards will be disconnected from the system.
- City of New Bern Electric Utilities will design and install reasonable and practical modifications to the electric distribution system in order to allow the interconnection of PV resources, which would otherwise interfere with power quality delivered to other connections. In such cases, the PV system owner shall make an advance payment to City of New Bern Electric Utilities in an amount equal to the cost of the required facility modifications.
- All PV systems shall operate within the range of 0.90 lead to 0.90 lag power factor.
- Residential PV systems shall be limited to 10 kW maximum alternating current output. Special provision may be negotiated for larger PV installations on an independent connection basis. PV systems larger than 10 kW maximum alternating current output capacity may require special review, additional testing, and special interconnection facilities.
- The Customer shall obtain and retain for as long as its generator is interconnected with the City's system liability insurance, which protects the Customer from claims for bodily injury and/or property damage. For a non-residential Customer, the minimum coverage shall be comprehensive general liability insurance with coverage of at least \$300,000 per occurrence. For a residential Customer, the minimum coverage shall be at a standard homeowner's insurance policy with liability coverage in the amount of at least \$100,000 per occurrence. This insurance shall be primary for all purposes. The Customer shall provide certificates evidencing this coverage as required by the City. The City reserves the right to refuse to establish or continue the interconnection of the Customer's generator with the City's system if such insurance is not in effect.

The rules and references cited above represent the state of PV technology in October 2008. Information available subsequent to this writing may result in changes by City of New Bern Electric Utilities in order to protect the safety of the public and City of New Bern Electric Utilities' employees as well as to maintain appropriate levels of power quality for all electric customers.