



Photovoltaic (solar) Panel Inspection and Interconnection Requirements

In order to conduct inspections for Photovoltaic (solar) systems to ensure inspections are completed the following requirements need to be followed. Inspections can be requested on-line at our [ePermits](#) site, and will usually be performed the following day. All inspections will be done within 3 days.

Electrical Final Inspection Requirements:

- All equipment exceeding 8 feet above grade must be clearly photographed or recorded to show the following: (Hard copy provided to field inspector at final inspection, to be kept on file)
 - That the equipment is listed by a qualified evaluation laboratory
 - The rapid shutdown of the system at the roof
 - Inverter location
 - Type and size of conductors used
 - How the metal frame and PV system is grounded
 - All Connections (splices, terminations, joints, etc.)
 - The measurements of any items that have a distance value within the NEC
 - Mounting hardware
 - The equipment in the photographs are actually located on the property where the work is being inspected (neighboring or landmark items in some of the images should be noted)
- All electrical equipment not exceeding 8 feet in height shall be inspected in the usual manner

Building Final Inspection Requirements:

- Present a signed written document from a NC registered design professional with a valid seal stating all the following:
 - The PV equipment's structural installation has been designed in accordance with the manufacturer's installation instructions
 - The equipment will not create a negative impact on the building's structural design, including any additional loads imposed (dead, snow, wind), and
 - The installation is in compliance with the NC Residential Code or the NC Building Code.
 - A field inspection of the installation was performed by the NC registered design professional or a person under their direct supervisory control.

Once the installation has passed Final inspection the Electric Department automatically receives notification and will set / change out the meter within 3 business days.

Apex Utility Inspection Notes:

- All PV installations shall have a service disconnect within 6 feet of the customer's meter. The disconnect shall be fully accessible to and operable by the Town's 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 interconnected PV systems shall produce no voltage at the isolation switch when disconnected from the electric utility distribution system. Systems found to produce voltage at the isolation switch when disconnected will be disconnected without notice and will remain disconnected until the systems are brought into compliance with specified standards.

- PV systems shall not interfere with the power quality of any customer of the Town's electric distribution system. PV systems found to interfere with utility industry-accepted power quality standards will be disconnected from the system.
- The Town's Electric Utilities Department may design and install reasonable and practical modifications to the electric distribution system 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 will be responsible for making an advance payment to the Town 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 larger than 20 kW maximum ac output capacity may require special review, additional testing and special interconnection facilities.
- Residential Owners of PV systems shall obtain, and retain in effect as long as the PV system is interconnected, standard homeowner's liability insurance with limits of at least \$100,000 per occurrence which protects the owner from claims for bodily injury and/or property damage. This insurance shall be primary for all purposes. The owner shall provide certificates evidencing this coverage as required by the Town. The Town reserves the right to refuse to establish or to continue the interconnection of the PV system if such insurance is not in effect.
- If field installation does not match the one line diagram meter will not be installed and system will not be approved to operate until corrections in the field have been made.

The rules and reference cited above represent the state of PV technology in 2014. Information available subsequent to this writing may result in changes by the Town of Apex in order to protect the safety of the public and the Town's employees; as well as to maintain appropriate levels of power quality for all electric customers.

Questions or concerns:

- Contact us on-line here: [request for assistance](#) or call our office at 919-249-3418.