# Field Inspection Checklist for Rooftop Photovoltaic (PV) Systems

**Background**

This checklist was developed to assist in-house and hired municipal inspectors with field inspections of residential rooftop PV systems in the Delaware Valley Region. The checklist may also be a helpful resource for solar PV installers as an additional reminder of the inspection requirements that must be met for their systems. The checklist was developed in 2019, and includes relevant code requirements from the 2014 NEC, the 2015 IBC and 2015 IRC. Note that municipalities may have additional requirements in place as part of their permitting processes or zoning codes, such as a wet-stamp structural review. This checklist is only inclusive of the requirements that a field inspector needs to check were correctly completed by the installer on site. The checklist is intended to be used for an inspection that is being carried out by a single person in a single inspection. The checklist items follow the typical inspection pathway from the roof down to the service entrance, or it can be done in reverse.

**Residential Solar PV Field Inspection Checklist:**

Make sure all PV disconnects and circuit breakers are in the open position and verify the following.

1. ☐ All work done in a neat and workmanlike manner [NEC 110.12].
2. ☐ PV module model number, quantity, and location according to the approved plan.
3. ☐ Array mounting system and structural connections according to the approved plan.
4. ☐ Roof penetrations flashed/sealed according to the approved plan.
5. ☐ Array exposed cables are properly secured, supported, and routed to prevent physical damage.
6. ☐ Conduit installation according to NEC 690.31(G).
7. ☐ If applicable, firefighter access according to approved plan.

   ***Firefighter access*** *on the roof is a requirement of the 2018 IRC, which has not yet been adopted in Pennsylvania or New Jersey. Until that time, some municipalities may have firefighter access requirements in their zoning code, which the local inspector would need to be made aware of prior to inspection. Municipalities should update this checklist once the 2018 IRC is adopted in Pennsylvania or New Jersey.*

   *The NEC [705.10] requires that all Interconnected Electric Power Production Sources other than the utility must be identified in a sign at the service entrance. The locations of disconnects for any power production sources must be on that sign if those disconnects are not located at the service disconnecting means.*

8. ☐ Roof-mounted PV systems have the required fire classification [IBC 1505.9 or IRC R902.4].
9. ☐ Grounding/bonding of rack and modules according to the manufacturer's installation instructions.
10. ☐ Equipment installed, listed and labeled according to the approved plan (e.g., PV modules, dc/dc converters, combiners, inverters, rapid shutdown equipment).
11. ☐ For grid-connected systems, inverter is marked "utility interactive" or documentation is provided to show that inverter meets utility interconnection requirements.
12. ☐ Conductors, cables, and conduit types, sizes and markings according to the approved plan.
13. ☐ Overcurrent devices are the type and size according to the approved plan.
14. ☐ Disconnects according to the approved plan and properly located as required by the NEC.
15. ☐ Inverter output circuit breaker is located at opposite end of bus from utility supply at load center and/or service panelboard. If panel is center-fed, inverter output circuit breaker can be at either end of busbar [NEC 705.12(B)] (not required if the sum of the inverter and utility supply circuit breakers is less than or equal to the panelboard bus rating).
16. ☐ PV system markings, labels and signs according to the approved plan.
17. ☐ Connection of the PV system to the grounding electrode system according to the approved plan.
18. ☐ Access and working space for operation and maintenance of PV equipment such as inverters, disconnecting means and panelboards (not required for PV modules) [NEC 110.26].
19. ☐ The rapid shutdown system is installed and operational according to the approved plan [NEC 690.12].