

FIELD INSPECTION REFERENCE – 2023 NEC

Residential Storage



The field inspection resource is used by Residential Storage third-party QA Contractor to evaluate the quality of the Residential Storage installation. Residential Storage approved builders are encouraged to reference this resource throughout the installation process for each project to ensure compliance with the Residential Storage Program rules and requirements.

| | | Task | Defect Category | Reference |
|---|------------|--|-----------------|---|
| Overall Observations | Program | Existing service panel is not a split bus (FPE Stab-Lok, Push-O-Matic etc..). | Critical | Program requirement |
| | | PV modules, inverter(s) or racking are UL Listed (or equivalent) as per NY Sun program requirements. | Major | Program requirement |
| | | All material and equipment must be new and undamaged, per NY Sun program requirements. | Major | Program requirement |
| | | As per Program requirements, any roof damage must be repaired prior to installation. | Minor | Program requirement |
| | | Program compliant means is present for customer to verify system electricity generation. | Minor | Program requirement |
| | | Site address must match site address submitted. | Incidental | Program requirement |
| | | Inspected TSRF shall match Program records. | Incidental | Program requirement |
| | | Array azimuth (degree) matches application. | Incidental | Program requirement |
| | | Array tilt (degree) matches application. | Incidental | Program requirement |
| | | As built system capacity must match the submitted and approved plan. | Incidental | Program requirement |
| | | Array module quantity matches application. | Incidental | Program requirement |
| | | Array module manufacturer must match application. | Incidental | Program requirement |
| | | Array PV module model number matches application. | Incidental | Program requirement |
| | | Installed inverter quantity shall match Program records. | Incidental | Program requirement |
| | | Installed inverter manufacturer shall match Program records. | Incidental | Program requirement |
| | | Installed inverter model number shall match Program records. | Incidental | Program requirement |
| | | Installed battery quantity shall match Program records. | Incidental | Program requirement |
| | | Installed battery manufacturer shall match Program records. | Incidental | Program requirement |
| Installed battery model number shall match Program records. | Incidental | Program requirement | | |
| AC Combiner | Conductors | Conductors are appropriately sized for expected current. | Critical | NEC Article 310.15 and/ or 690.8(B) |
| | | A grounded conductor shall not be connected to normally non-current-carrying metal parts of equipment, to equipment grounding conductor(s), or be reconnected to ground on the load side of the service disconnecting means. | Major | NEC Article 250.24(B) |
| | | Conductor insulation type is properly rated for temperature and environmental conditions. | Major | NEC Articles 300.9, 310.10, 310.15(A)(3) and 334.12(B)(4) |

| | | Task | Defect Category | Reference |
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| AC Combiner (continued) | Conductors (continued) | In exposed work, conductors are protected from abrasion or any other physical damage. | Major | NEC Article 110.12 |
| | | Conductors are properly sized for rated terminals. | Minor | NEC Article 110.3(B) |
| | | Conductors shall be properly and firmly supported in a safe and permanent manner. | Minor | NEC Article 110.12 |
| | | Single conductor(s) connected correctly to the terminal or lug in accordance with its listing. | Minor | NEC Article 110.3(B) and 110.14(A) |
| | | The length of the free conductors within the enclosure shall meet or exceed 6" requirement. | Minor | NEC Article 300.14 |
| | | Wire cannot be bent at a tighter radius than 5x the diameter of the conductor. | Minor | NEC Article 334.24, 338.24 |
| | | Grounded (neutral) conductor is properly identified. | Incidental | NEC Article 200.6(A)&(B) |
| | | Ungrounded conductor(s) are properly identified. | Incidental | NEC Article 200.7 |
| | Conduit | Conduit below grade is installed with provisions for movement. | Minor | NEC Article 300.5(J) |
| | | Conduit fittings and connectors are designed and listed for this use. | Minor | NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC-356.6, EMT-358.6) |
| | | Conduit is adequately supported. | Minor | NEC Articles (LFMC-350.30, PVC-352.30, EMT-358.30, Metal Trough-376.30) |
| | | Conduit thermal expansion fitting is properly installed to allow for movement. | Minor | NEC Articles 300.7(B), 352.44 and tables 352.44 and 355.44 |
| | | Conduit does not meet the conditions to be used as conductor support. | Incidental | NEC Article 300.11(C) |
| | | Conduit penetrations internally sealed to prevent condensation between conditioned and unconditioned environment. | Incidental | NEC Article 300.7(A) |
| | Electrical | Equipment must be sufficiently rated for expected voltage and/or current. | Critical | NEC Article 110.3(B) |
| | | Equipment is suitable for environment. | Major | NEC Articles 314.15 and 110.3(B) |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Major | NEC Article 110.3(B) |
| | | Dissimilar metals must not be in contact and prevented from undergoing galvanic reaction. | Minor | NEC Article 110.14 (for conductors/splice components), NEC Article 344.14 (for RMC) and NEC Article 358.14 (for EMT) for conduit and surrounding materials |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Minor | NEC Article 110.3(B) |
| | | Unused openings of electrical equipment shall be properly sealed. | Minor | NEC Articles 110.12(A) or 408.7 |
| | Grounding | Equipment is properly grounded. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 |
| | | Grounded conductor(s) terminal lug is properly installed. | Major | NEC Articles 110.3(B) and 250.4 |
| | | Grounding electrode conductor is sufficiently sized. | Major | NEC Articles 250.66 and 690.47 |

| | | Task | Defect Category | Reference | |
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| AC Combiner (continued) | Grounding (continued) | Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts. | Major | NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97 | |
| | Labeling | Each PV system disconnecting means shall be permanently marked as to identify it as a photovoltaic system disconnect. | Incidental | NEC Articles 110.21(B) and 690.13(B) | |
| | | Entrances to rooms or other guarded locations that contain live parts shall be marked with conspicuous warning signs forbidding unqualified persons to enter. | Incidental | NEC 110.21(B) and 110.27(C), OSHA1910.145(f)(7) | |
| | | Every circuit and circuit modification shall be legibly identified as to its clear, evident and specific purpose or use. The identification shall include an approved degree of detail that allows each circuit to be distinguished from all others. | Incidental | NEC Articles 110.21(B) and 408.4(A) | |
| | | The manufacturer's name, trademark or other descriptive markings must be visible on all electrical equipment and, where required by the code, markings such as voltage, current, wattage or other ratings must be provided. All markings must have sufficient durability to withstand the environment involved. | Incidental | NEC Article 110.21 | |
| | | The sum of the ampere ratings of all overcurrent devices on panel boards, both load and supply devices, excluding the rating of the overcurrent device protecting the busbar, shall not exceed the ampacity of the busbar. The rating of the overcurrent device protecting the busbar shall not exceed the rating of the busbar. Permanent warning labels shall be applied to distribution equipment. | Incidental | NEC Articles 110.21(B) and 705.12(B)(3) | |
| | | Where all terminals of the disconnecting means may be energized in the open position, a warning label shall be mounted on or adjacent to the disconnecting means. | Incidental | NEC Articles 110.21(B) and 690.13(B) | |
| | | OCPD | Equipment overcurrent protection is installed as required and sized in accordance with NEC Article 240.4 | Critical | NEC Article 240.4 |
| | | Circuit Breaker shall be installed and used in accordance with any instruction included in the listing or labeling. | Major | NEC Article 110.3(B) | |
| | | PV Backfed breaker is properly sized at, or above 125% of inverter output current. | Major | NEC Article 240.4 | |
| | | The AC OCPD is properly sized for the expected output current of the PV system. | Major | NEC Article 240.4 | |
| | Structural | Equipment shall be firmly secured to the surface on which it is mounted and used in accordance with any instruction included in the listing or labeling. | Major | NEC Articles 110.3(B), 110.12 | |
| | | Equipment is installed with the appropriate clearances. | Minor | NEC Articles 110.26 and 110.27(A) | |
| | AC Disconnect | Conductors | Conductors are appropriately sized for expected current. | Critical | NEC Article 310.15 and/ or 690.8(B) |
| | | | A grounded conductor shall not be connected to normally non-current-carrying metal parts of equipment, to equipment grounding conductor(s), or be reconnected to ground on the load side of the service disconnecting means. | Major | NEC Article 250.24(B) |
| Conductor insulation type is properly rated for temperature and environmental conditions. | | | Major | NEC Articles 300.9, 310.10, 310.15(A)(3) and 334.12(B)(4) | |

| | | Task | Defect Category | Reference |
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| AC Disconnect (continued) | Conductors (continued) | If an ac system operating at 1000 volts or less is grounded at any point, the grounded conductor(s) shall be routed with the ungrounded conductors to each service disconnecting means and shall be connected to each disconnecting means grounded conductor(s) terminal or bus. A main bonding jumper shall connect the grounded conductor(s) to each service disconnecting means enclosure. The grounded conductor(s) shall be installed in accordance with 250.24(D)(1) through (D)(4). | Major | NEC Article 250.24(D) |
| | | In exposed work, conductors are protected from abrasion or any other physical damage. | Major | NEC Article 110.12 |
| | | All conductors of the same circuit and, where used, the grounded conductor and all equipment grounding conductors and bonding conductors shall be contained within the same raceway, conduit body, auxiliary gutter, cable tray, cablebus assembly, trench, cable, or cord. | Minor | NEC Article 300.3(B) |
| | | Conductors are properly sized for rated terminals. | Minor | NEC Article 110.3(B) |
| | | Conductors shall be properly and firmly supported in a safe and permanent manner. | Minor | NEC Article 110.12 |
| | | Single conductor(s) connected correctly to the terminal or lug in accordance with its listing. | Minor | NEC Article 110.3(B) and 110.14(A) |
| | | The length of the free conductors within the enclosure shall meet or exceed 6" requirement. | Minor | NEC Article 300.14 |
| | | Wire cannot be bent at a tighter radius than 5x the diameter of the conductor. | Minor | NEC Article 334.24, 338.24 |
| | | Grounded (neutral) conductor is properly identified. | Incidental | NEC Article 200.6(A)&(B) |
| | | Ungrounded conductor(s) are properly identified. | Incidental | NEC Article 200.7 |
| | | Conduit | The conduit is grounded (when required). | Major |
| | Circuit conduit or raceway is properly supported and secured. | | Minor | NEC Articles (LFMC-350.30, PVC-352.30, EMT-358.30, Metal Trough-376.30) |
| | Conduit below grade is installed with provisions for movement. | | Minor | NEC Article 300.5(J) |
| | Conduit fittings and connectors are designed and listed for this use. | | Minor | NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC-356.6, EMT-358.6) |
| | Conduit thermal expansion fitting is properly installed to allow for movement. | | Minor | NEC Articles 300.7(B), 352.44 and tables 352.44 and 355.44 |
| | The service entrance Flexible Metal Conduit (FMC) or Liquid tight Flexible Metal Conduit (LFMC) shall not exceed 6 feet. | | Minor | NEC Article 230.43(15) |
| | Conduit does not meet the conditions to be used as conductor support. | | Incidental | NEC Article 300.11(C) |
| | Conduit penetrations internally sealed to prevent condensation between conditioned and unconditioned environment. | | Incidental | NEC Article 300.7(A) |
| | Electrical | Equipment must be sufficiently rated for expected voltage and/or current. | Critical | NEC Article 110.3(B) |
| | | Disconnecting means shall be provided to disconnect ac PV modules, fuses, dc-to-dc converters, inverters, and charge controllers from all conductors that are not solidly grounded. | Major | NEC Article 690.15 |

| | | Task | Defect Category | Reference |
|----------------------------------|------------------------|--|-----------------|--|
| AC Disconnect (continued) | Electrical (continued) | Equipment intended to interrupt current at other than fault levels shall have an interrupting rating at nominal circuit voltage at least equal to the current that must be interrupted. | Major | NEC Article 230.79(D) |
| | | Equipment is suitable for environment. | Major | NEC Articles 314.15 and 110.3(B) |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Major | NEC Article 110.3(B) |
| | | The PV system disconnecting means shall simultaneously disconnect the PV system conductors that are not solidly grounded from all conductors of other wiring systems. | Major | NEC Article 690.13(E) |
| | | AC Disconnect is present and readily accessible. | Minor | NEC Article 690.13(A) |
| | | Disconnect terminals are properly wired. | Minor | NEC Article 110.3(B), (and 240.40 if fusible) |
| | | Dissimilar metals must not be in contact and prevented from undergoing galvanic reaction. | Minor | NEC Article 110.14 (for conductors/splice components), NEC Article 344.14 (for RMC) and NEC Article 358.14 (for EMT) for conduit and surrounding materials |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Minor | NEC Article 110.3(B) |
| | | Unused openings of electrical equipment shall be properly sealed. | Minor | NEC Articles 110.12(A) or 408.7 |
| | Grounding | Equipment grounding conductor is properly sized. | Major | NEC Articles 250.122 and 690.45 |
| | | Equipment is properly grounded. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 |
| | | Grounded conductor(s) terminal lug is properly installed. | Major | NEC Articles 110.3(B) and 250.4 |
| | | Grounding electrode conductor is continuous. | Major | NEC Articles 250.64(C) and 690.47 |
| | | Grounding electrode conductor is sufficiently sized. | Major | NEC Articles 250.66 and 690.47 |
| | | Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts. | Major | NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97 |
| | Labeling | Each PV system disconnecting means shall be permanently marked as to identify it as a photovoltaic system disconnect. | Incidental | NEC Articles 110.21(B) and 690.13(B) |
| | | Permanent plaques, labels, or directories shall be installed at each service equipment location, or at an approved readily visible location. | Incidental | NEC Article 110.21(B) and 705.10 |
| | | The manufacturers name, trademark or other descriptive markings must be visible on all electrical equipment and, where required by the code, markings such as voltage, current, wattage or other ratings must be provided. All markings must have sufficient durability to withstand the environment involved. | Incidental | NEC Article 110.21 |
| | | Where all terminals of the disconnecting means may be energized in the open position, a warning label shall be mounted on or adjacent to the disconnecting means. | Incidental | NEC Articles 110.21(B) and 690.13(B) |
| | OCPD | Equipment overcurrent protection is installed as required and sized in accordance with NEC Article 240.4 | Major | NEC Article 240.4 |

| | | Task | Defect Category | Reference |
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| AC Disconnect (continued) | OCPD (continued) | Fuses are present and installed in accordance with any instruction included in the listing or labeling. | Major | NEC Article 110.3(B) |
| | | No overcurrent device shall be connected in series with any conductor that is intentionally grounded, unless the overcurrent device opens all conductors of the circuit, including the grounded conductor, and is designed so that no pole can operate independently. | Major | NEC Articles 240.22 |
| | | The AC OCPD is properly sized for the expected output current of the PV system. | Major | NEC Article 240.4 |
| | | The OCPD is properly sized for the rating of the equipment. | Major | NEC Article 240.3 |
| | Structural | Equipment shall be firmly secured to the surface on which it is mounted and used in accordance with any instruction included in the listing or labeling. | Major | NEC Articles 110.3(B), 110.12 |
| | | Equipment is installed with the appropriate clearances. | Minor | NEC Articles 110.26 and 110.27(A) |
| DC Combiner | Conductors | Conductors are appropriately sized for expected current. | Critical | NEC Article 310.15 and/ or 690.8(B) |
| | | Conductor insulation type is properly rated for temperature and environmental conditions. | Major | NEC Articles 300.9, 310.10, 310.15(A)(3) and 334.12(B)(4) |
| | | Splice components are rated for environment. | Major | NEC Articles 110.3(B), 110.11, and 110.14 |
| | | Splices and connections are secure and of high integrity. | Major | NEC Article 110.14 |
| | | Conductors are properly sized for rated terminals. | Minor | NEC Article 110.3(B) |
| | | Conductors shall be properly and firmly supported in a safe and permanent manner. | Minor | NEC Article 110.12 |
| | | Single conductor(s) connected correctly to the terminal or lug in accordance with its listing. | Minor | NEC Article 110.3(B) and 110.14(A) |
| | | The length of the free conductors within the enclosure shall meet or exceed 6" requirement. | Minor | NEC Article 300.14 |
| | | Wire cannot be bent at a tighter radius than 5x the diameter of the conductor. | Minor | NEC Article 334.24, 338.24 |
| | | Ungrounded conductor(s) are properly identified. | Incidental | NEC Article 200.7 |
| | Conduit | Indoor DC source circuits are contained in metallic conduit or raceway. | Major | NEC Article 690.31(D)(1) |
| | | The conduit is grounded (when required). | Major | NEC Articles 250.4(A)(3) and 690.43 |
| | | Circuit conduit or raceway is properly supported and secured. | Minor | NEC Articles (LFMC-350.30, PVC-352.30, EMT-358.30, Metal Trough-376.30) |
| | | Conduit below grade is installed with provisions for movement. | Minor | NEC Article 300.5(J) |
| | | Conduit fittings and connectors are designed and listed for this use. | Minor | NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC-356.6, EMT-358.6) |
| | | Conduit thermal expansion fitting is properly installed to allow for movement. | Minor | NEC Articles 300.7(B), 352.44 and tables 352.44 and 355.44 |
| | | Conduit does not meet the conditions to be used as conductor support. | Incidental | NEC Article 300.11(C) |
| | | Conduit penetrations internally sealed to prevent condensation between conditioned and unconditioned environment. | Incidental | NEC Article 300.7(A) |

| | | Task | Defect Category | Reference |
|--------------------------------|------------|--|-----------------|--|
| DC Combiner (continued) | Electrical | Equipment must be sufficiently rated for expected voltage and/or current. | Critical | NEC Article 110.3(B) |
| | | Equipment is suitable for environment. | Major | NEC Articles 314.15 and 110.3(B) |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Major | NEC Article 110.3(B) |
| | | Dissimilar metals must not be in contact and prevented from undergoing galvanic reaction. | Minor | NEC Article 110.14 (for conductors/splice components), NEC Article 344.14 (for RMC) and NEC Article 358.14 (for EMT) for conduit and surrounding materials |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Minor | NEC Article 110.3(B) |
| | | Unused openings of electrical equipment shall be properly sealed. | Minor | NEC Articles 110.12(A) or 408.7 |
| | Grounding | Equipment grounding conductor is properly sized. | Major | NEC Articles 250.122 and 690.45 |
| | | Equipment is properly grounded. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 |
| | | Grounded conductor(s) terminal lug is properly installed. | Major | NEC Articles 110.3(B) and 250.4 |
| | | Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts. | Major | NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97 |
| | | Where not routed with circuit conductors, equipment grounding conductors smaller than 6AWG shall be protected from physical damage. | Minor | NEC Articles 250.120(C) |
| | | Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s). | Incidental | NEC Article 250.119 |
| | Labeling | A permanent readily visible label indicating the highest maximum dc voltage in a PV system, calculated in accordance with 690.7, shall be provided. | Incidental | NEC Articles 690.7(D) |
| | | Interruption circuit - shall be a type that requires the use of a tool to open will be marked "Do Not Disconnect Under Load" | Incidental | NEC Articles 110.21(B) and 690.33(D)(2) |
| | | The manufacturers name, trademark or other descriptive markings must be visible on all electrical equipment and, where required by the code, markings such as voltage, current, wattage or other ratings must be provided. All markings must have sufficient durability to withstand the environment involved. | Incidental | NEC Article 110.21 |
| | | Where all terminals of the disconnecting means may be energized in the open position, a warning label shall be mounted on or adjacent to the disconnecting means. | Incidental | NEC Articles 110.21(B) and 690.13(B) |
| | OCPD | DC Combiner string fuse holder is DC rated. | Critical | NEC Article 110.3(B) |
| | | Inverter string fuses are 600 or 1000 VDC rated as required. | Critical | NEC Articles 110.3(B) and 690.9(B) |
| | | PV source circuit, PV output circuit, inverter output circuit and storage battery circuit conductors and equipment shall be protected with an OCPD. | Critical | NEC Article 690.9 |
| | | Combiner string fuse is properly sized. | Major | NEC Article 690.9 |

| | | Task | Defect Category | Reference |
|--------------------------------|------------------|---|-----------------|--|
| DC Combiner (continued) | OCPD (continued) | No overcurrent device shall be connected in series with any conductor that is intentionally grounded, unless the overcurrent device opens all conductors of the circuit, including the grounded conductor, and is designed so that no pole can operate independently. | Major | NEC Articles 240.22 |
| | | Overcurrent devices used in any DC portion of the PV system shall have the appropriate voltage, current and interrupt ratings. | Major | NEC Article 690.9(B) |
| | Structural | Equipment shall be firmly secured to the surface on which it is mounted and used in accordance with any instruction included in the listing or labeling. | Major | NEC Articles 110.3(B), 110.12 |
| | Structural | Equipment is installed with the appropriate clearances. | Minor | NEC Articles 110.26 and 110.27(A) |
| DC Disconnect | Conductors | Conductors are appropriately sized for expected current. | Critical | NEC Article 310.15 and/ or 690.8(B) |
| | | Conductor insulation type is properly rated for temperature and environmental conditions. | Major | NEC Articles 300.9, 310.10, 310.15(A)(3) and 334.12(B)(4) |
| | | All conductors of the same circuit and, where used, the grounded conductor and all equipment grounding conductors and bonding conductors shall be contained within the same raceway, conduit body, auxiliary gutter, cable tray, cablebus assembly, trench, cable, or cord. | Minor | NEC Article 300.3(B) |
| | | Conductors are properly sized for rated terminals. | Minor | NEC Article 110.3(B) |
| | | Conductors shall be properly and firmly supported in a safe and permanent manner. | Minor | NEC Article 110.12 |
| | | Single conductor(s) connected correctly to the terminal or lug in accordance with its listing. | Minor | NEC Article 110.3(B) and 110.14(A) |
| | | The length of the free conductors within the enclosure shall meet or exceed 6" requirement. | Minor | NEC Article 300.14 |
| | | Wire cannot be bent at a tighter radius than 5x the diameter of the conductor. | Minor | NEC Article 334.24, 338.24 |
| | | Ungrounded conductor(s) are properly identified. | Incidental | NEC Article 200.7 |
| | Conduit | Indoor DC source circuits are contained in metallic conduit or raceway. | Major | NEC Article 690.31(D)(1) |
| | | The conduit is grounded (when required). | Major | NEC Articles 250.4(A)(3) and 690.43 |
| | | Circuit conduit or raceway is properly supported and secured. | Minor | NEC Articles (LFMC-350.30, PVC-352.30, EMT-358.30, Metal Trough-376.30) |
| | | Conduit below grade is installed with provisions for movement. | Minor | NEC Article 300.5(J) |
| | | Conduit fittings and connectors are designed and listed for this use. | Minor | NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC-356.6, EMT-358.6) |
| | | Conduit thermal expansion fitting is properly installed to allow for movement. | Minor | NEC Articles 300.7(B), 352.44 and tables 352.44 and 355.44 |
| | | Conduit does not meet the conditions to be used as conductor support. | Incidental | NEC Article 300.11(C) |
| | | Conduit penetrations internally sealed to prevent condensation between conditioned and unconditioned environment. | Incidental | NEC Article 300.7(A) |
| | Electrical | Disconnect is listed for DC use. | Critical | NEC Article 110.3(B) and 690.15 |
| | | Equipment must be sufficiently rated for expected voltage and/or current. | Critical | NEC Article 110.3(B) |

| | | Task | Defect Category | Reference |
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| DC Disconnect (continued) | Electrical (continued) | Disconnecting means shall be provided to disconnect ac PV modules, fuses, dc-to-dc converters, inverters, and charge controllers from all conductors that are not solidly grounded. | Major | NEC Article 690.15 |
| | | Equipment is suitable for environment. | Major | NEC Articles 314.15 and 110.3(B) |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Major | NEC Article 110.3(B) |
| | | The PV system disconnecting means shall simultaneously disconnect the PV system conductors that are not solidly grounded from all conductors of other wiring systems. | Major | NEC Article 690.13(E) |
| | | Disconnect is properly wired to ensure that fuses can be de-energized for service. | Minor | NEC Article 110.3(B), (and 240.40 if fusible) |
| | | Dissimilar metals must not be in contact and prevented from undergoing galvanic reaction. | Minor | NEC Article 110.14 (for conductors/splice components), NEC Article 344.14 (for RMC) and NEC Article 358.14 (for EMT) for conduit and surrounding materials |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Minor | NEC Article 110.3(B) |
| | | Means shall be provided to disconnect all ungrounded DC conductors of a PV system from all other conductors in a building or other structure. | Minor | NEC Article 690.13(A) |
| | | Unused openings of electrical equipment shall be properly sealed. | Minor | NEC Articles 110.12(A) or 408.7 |
| | Grounding | Equipment grounding conductor is properly sized. | Major | NEC Articles 250.122 and 690.45 |
| | | Equipment is properly grounded. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 |
| | | Grounded conductor(s) terminal lug is properly installed. | Major | NEC Articles 110.3(B) and 250.4 |
| | | Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts. | Major | NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97 |
| | | Where not routed with circuit conductors, equipment grounding conductors smaller than 6AWG shall be protected from physical damage. | Minor | NEC Articles 250.120(C) |
| | | Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s). | Incidental | NEC Article 250.119 |
| | Labeling | A permanent readily visible label indicating the highest maximum dc voltage in a PV system, calculated in accordance with 690.7, shall be provided by the installer at one of the following locations: (1) DC PV system disconnecting means (2) PV system electronic power conversion equipment (3) Distribution equipment associated with the PV system. | Incidental | NEC Articles 110.21(B) and 690.7(D) |
| | | Each PV system disconnecting means shall be permanently marked as to identify it as a photovoltaic system disconnect. | Incidental | NEC Articles 110.21(B) and 690.13(B) |
| | | Permanent plaques, labels, or directories shall be installed at each service equipment location, or at an approved readily visible location. | Incidental | NEC Article 110.21(B) and 705.10 |

| | | Task | Defect Category | Reference |
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| DC Disconnect (continued) | Labeling (continued) | The manufacturers name, trademark or other descriptive markings must be visible on all electrical equipment and, where required by the code, markings such as voltage, current, wattage or other ratings must be provided. All markings must have sufficient durability to withstand the environment involved. | Incidental | NEC Article 110.21 |
| | | Where all terminals of the disconnecting means may be energized in the open position, a warning label shall be mounted on or adjacent to the disconnecting means. | Incidental | NEC Articles 110.21(B) and 690.13(B) |
| | OCPD | Disconnect fuses are DC rated and properly sized for system voltage. | Critical | NEC Articles 110.3(B) and 690.9(B) |
| | | Disconnect is rated for nominal voltage and current. | Critical | NEC Article 110.3(B) and 690.15(C) |
| | Structural | Equipment shall be firmly secured to the surface on which it is mounted and used in accordance with any instruction included in the listing or labeling. | Major | NEC Articles 110.3(B), 110.12 |
| | | Equipment is installed with the appropriate clearances. | Minor | NEC Articles 110.26 and 110.27(A) |
| Energy Storage | Conductors | Battery DC conductors are properly sized for expected current load. | Major | NEC Article 480.12 |
| | | Battery DC conductors are protected from accidental contact. | Major | NEC Articles 110.27 |
| | | Conductor insulation type is properly rated for temperature and environmental conditions. | Major | NEC Articles 300.9, 310.10, 310.15(A)(3) and 334.12(B)(4) |
| | | Correct flexible cables are used for battery interconnections. | Major | NEC Article 480.12 |
| | | Installed DC battery cables are properly terminated. | Major | NEC Article 480.12 |
| | | Conductors shall be properly and firmly supported in a safe and permanent manner. | Minor | NEC Article 110.12 |
| | | Wire cannot be bent at a tighter radius than 5x the diameter of the conductor. | Minor | NEC Article 334.24, 338.24 |
| | | Ungrounded conductor(s) are properly identified. | Incidental | NEC Article 200.7 |
| | Conduit | Indoor DC source circuits are contained in metallic conduit or raceway. | Major | NEC Article 690.31(D)(1) |
| | | The conduit is grounded (when required). | Major | NEC Articles 250.4(A)(3) and 690.43 |
| | | Conduit fittings and connectors are designed and listed for this use. | Minor | NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC-356.6, EMT-358.6) |
| | | Conduit is adequately supported. | Minor | NEC Articles (LFMC-350.30, PVC-352.30, EMT-358.30, Metal Trough-376.30) |
| | | Conduit does not meet the conditions to be used as conductor support. | Incidental | NEC Article 300.11(C) |
| | Electrical | Batteries are properly ventilated. | Critical | NEC Article 480.10(A) |
| | | DC Disconnect is present for ungrounded conductors of battery systems over 60 volts DC. | Major | NEC Articles 480.7(A) |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Major | NEC Article 110.3(B) |
| | | Provisions shall be provided to control the charging process of the ESS. All adjustable means for control of the charging process shall be accessible only to qualified persons. | Major | NEC Article 706.23 |

| | | Task | Defect Category | Reference |
|-----------------------------------|------------------------|--|-----------------|--|
| Energy Storage (continued) | Electrical (continued) | Where battery connections are mating dissimilar metals, antioxidant material specified by the battery manufacturers installation instructions shall be used to prevent galvanic reaction/corrosion. | Major | NEC Article 110.3(B) and 480.4(A) |
| | | Batteries must be installed on non-conductive supports. | Minor | NEC Article 480.9 |
| | | Dissimilar metals must not be in contact and prevented from undergoing galvanic reaction. | Minor | NEC Article 110.14 (for conductors/splice components), NEC Article 344.14 (for RMC) and NEC Article 358.14 (for EMT) for conduit and surrounding materials |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Minor | NEC Article 110.3(B) |
| | | Working clearances around battery bank shall be maintained. | Minor | NEC Articles 110.26 and 480.10(C) |
| | Grounding | Equipment is properly grounded. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 |
| | | Grounded conductor(s) terminal lug is properly installed. | Major | NEC Articles 110.3(B) and 250.4 |
| | | Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts. | Major | NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97 |
| | | Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s). | Incidental | NEC Article 250.119 |
| | Labeling | The disconnecting means shall be legibly marked in the field. A label with the marking shall be placed in a conspicuous location near the battery if a disconnecting means is not provided. | Incidental | NEC Articles 110.21(B) and 480.7(F) |
| | | The manufacturers name, trademark or other descriptive markings must be visible on all electrical equipment and, where required by the code, markings such as voltage, current, wattage or other ratings must be provided. All markings must have sufficient durability to withstand the environment involved. | Incidental | NEC Article 110.21 |
| | OCPD | A circuit conductor connected at one end to a supply with integral fault protection, where the conductor is rated for the maximum circuit current from that supply, and also connected to sources having an available maximum circuit current greater than the ampacity of the conductor, shall be protected from overcurrent at the point of connection to the higher current source. | Major | NEC Article 706.31 |
| | Structural | Equipment is installed with the appropriate clearances. | Major | NEC Articles 110.26 and 110.27(A) |
| | | Equipment shall be firmly secured to the surface on which it is mounted and used in accordance with any instruction included in the listing or labeling. | Major | NEC Articles 110.3(B), 110.12 |
| | | Verify that the attachment of the Energy Storage unit to the wall or floor is per the approved plans. If the wall or floor construction differs from the approved plans a revision is required prior to inspection. | Major | Program requirement |
| | Energy Storage Tier 1 | Energy Storage Systems (ESS) shall be listed and labeled in accordance with UL 9540. | Major | 2025 Residential Code of NYS R330.2 |
| | | Individual units shall be separated from each other by not less than 3 feet (914 mm) except where other separation distances are specified by the ESS listing and the manufacturer's installation instructions. | Major | 2025 Residential Code of NYS R330.3.1 |

| | | Task | Defect Category | Reference |
|-----------------------------------|-----------------------------------|---|-----------------|---------------------------------------|
| Energy Storage (continued) | Energy Storage Tier 1 (continued) | Individual ESS units installed outdoors or on the exterior side of exterior walls located not less than 3 feet (914 mm) from doors and windows directly entering the dwelling unit, except where smaller separation distances are permitted by the UL 9540 listing and manufacturer's installation instructions. | Major | 2025 Residential Code of NYS R330.4.3 |
| | | ESS shall be installed only in the following locations: <ol style="list-style-type: none"> 1. Detached garages and detached accessory structures. 2. Attached garages separated from the dwelling unit living space in accordance with Section R302.6. 3. Outdoors or on the exterior side of exterior walls located not less than 3 feet (914 mm) from doors and windows directly entering the dwelling unit, except where smaller separation distances are permitted by the UL 9540 listing and manufacturer's installation instructions. 4. Enclosed utility closets, basements, storage or utility spaces within dwelling units with finished or noncombustible walls and ceilings. Walls and ceilings of unfinished wood-framed construction shall be provided with not less than 5/8-inch (15.9 mm) Type X gypsum wallboard. Openings into the dwelling shall be equipped with solid wood doors not less than 13/8 inches (35 mm) in thickness, solid or honeycomb-core steel doors not less than 13/8 inches (35 mm) in thickness, or doors with a 20-minute fire protection rating. Doors shall be self-latching and equipped with a self-closing or an automatic-closing device. Penetrations through the required gypsum wallboard into the dwelling shall be protected as required by Section R302.11, Item 4. ESS shall not be installed in sleeping rooms, or closets or spaces opening directly into sleeping rooms. | Major | 2025 Residential Code of NYS R330.4 |
| | | Individual ESS units shall have a maximum rating of 20 kWh. The aggregate rating of the ESS shall not exceed: <ol style="list-style-type: none"> 1. 40 kWh within utility closets, basements and storage or utility spaces. 2. 80 kWh in attached or detached garages and detached accessory structures. 3. 80 kWh on exterior walls. 4. 80 kWh outdoors on the ground. ESS installations exceeding the permitted individual or aggregate ratings shall be installed in accordance with Section 1207 of the Fire Code of New York State. | Major | 2025 Residential Code of NYS R330.5 |
| | | Rooms and areas within dwelling units, basements and attached garages in which ESS are installed shall be protected by smoke alarms in accordance with Section R310 . A heat detector, listed and interconnected to the smoke alarms, shall be installed in locations within dwelling units and attached garages where smoke alarms cannot be installed based on their listing. | Major | 2025 Residential Code of NYS R330.7 |
| | | Where an ESS is installed in the normal driving path of vehicle travel within a garage, impact protection complying with Section R330.8.3 shall be provided. The normal driving path is a space between the garage vehicle opening and the interior face of the back wall to a height of 48 inches (1219 mm) above the finished floor. The width of the normal driving path shall be equal to the width of the garage door opening. | Major | 2025 Residential Code of NYS R330.8.1 |

| | | Task | Defect Category | Reference |
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| Energy Storage (continued) | Energy Storage Tier 1 (continued) | Indoor installations of ESS that produce hydrogen or other flammable gases during charging shall be provided with mechanical ventilation in accordance with Section M1307.4. | Major | 2025 Residential Code of NYS R330.9 |
| | | The following documentation and labeling shall be provided: <ol style="list-style-type: none"> 1. A copy of the manufacturer's installation, operation, maintenance and decommissioning instructions shall be provided to the owner or placed in a conspicuous location near the ESS equipment. 2. A label on the installed system containing the contact information for the qualified maintenance and service providers. | Minor | 2025 Residential Code of NYS R330.11 |
| | | ESS that have the potential to release toxic or highly toxic gas during charging, discharging and normal use conditions shall not be installed within one- and two-family dwellings and townhouses. | Major | 2025 Residential Code of NYS R330.12 |
| | | ESS located outdoors shall be separated by a minimum of 10 feet (3048 mm) from the following exposures: <ol style="list-style-type: none"> 1. Lot lines. 2. Public ways. 3. Buildings. 4. Stored combustible materials. 5. Hazardous materials. 6. High-piled stock. 7. Other exposure hazards. Exceptions: (Material based on NFPA 855 2023 E) <ol style="list-style-type: none"> 1. Clearances are permitted to be reduced to 3 feet (914 mm) where a 1-hour free-standing fire barrier suitable for exterior use and extending 5 feet (1524 mm) above and 5 feet (1524 mm) beyond the physical boundary of the ESS installation is provided to protect the exposure. 2. Clearances to buildings are permitted to be reduced to 3 feet (914 mm) where noncombustible exterior walls with no openings or combustible overhangs are provided on the wall adjacent to the ESS and the fire-resistance rating of the exterior wall is a minimum of 2 hours. 3. Clearances to buildings are permitted to be reduced to 3 feet (914 mm) where a weatherproof enclosure constructed of noncombustible materials is provided over the ESS, and it has been demonstrated that a fire within the enclosure will not ignite combustible materials outside the enclosure based on large-scale fire testing complying with Section 1207.1.7. | Major | 2025 Fire Code of NYS 1207.8.3 |
| Feeder Tap Connection | Conductors | Conductors are appropriately sized for expected current. | Critical | NEC Article 310.15 and/ or 690.8(B) |
| | | Conductor insulation type is properly rated for temperature and environmental conditions. | Major | NEC Articles 300.9, 310.10, 310.15(A)(3) and 334.12(B)(4) |
| | | Conductors are properly spliced. | Major | NEC Articles 110.14(B) and 230.46 |

| | | Task | Defect Category | Reference |
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| Feeder Tap Connection (continued) | Conductors (continued) | If an ac system operating at 1000 volts or less is grounded at any point, the grounded conductor(s) shall be routed with the ungrounded conductors to each service disconnecting means and shall be connected to each disconnecting means grounded conductor(s) terminal or bus. A main bonding jumper shall connect the grounded conductor(s) to each service disconnecting means enclosure. The grounded conductor(s) shall be installed in accordance with 250.24(D)(1) through (D)(4). | Major | NEC Article 250.24(D) |
| | | In exposed work, conductors are protected from abrasion or any other physical damage. | Major | NEC Article 110.12 |
| | | All conductors of the same circuit and, where used, the grounded conductor and all equipment grounding conductors and bonding conductors shall be contained within the same raceway, conduit body, auxiliary gutter, cable tray, cablebus assembly, trench, cable, or cord. | Minor | NEC Article 300.3(B) |
| | | Conductors are properly sized for rated terminals. | Minor | NEC Article 110.3(B) |
| | | Conductors shall be properly and firmly supported in a safe and permanent manner. | Minor | NEC Article 110.12 |
| | | Single conductor(s) connected correctly to the terminal or lug in accordance with its listing. | Minor | NEC Article 110.3(B) and 110.14(A) |
| | | Wire cannot be bent at a tighter radius than 5x the diameter of the conductor. | Minor | NEC Article 334.24, 338.24 |
| | | Grounded (neutral) conductor is properly identified. | Incidental | NEC Article 200.6(A)&(B) |
| | | Ungrounded conductor(s) are properly identified. | Incidental | NEC Article 200.7 |
| | Conduit | The conduit is grounded (when required). | Major | NEC Articles 250.4(A)(3) and 690.43 |
| | | Conduit below grade is installed with provisions for movement. | Minor | NEC Article 300.5(J) |
| | | Conduit fittings and connectors are designed and listed for this use. | Minor | NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC-356.6, EMT-358.6) |
| | | Conduit is adequately supported. | Minor | NEC Articles (LFMC-350.30, PVC-352.30, EMT-358.30, Metal Trough-376.30) |
| | | Conduit thermal expansion fitting is properly installed to allow for movement. | Minor | NEC Articles 300.7(B), 352.44 and tables 352.44 and 355.44 |
| | | The service entrance Flexible Metal Conduit (FMC) or Liquid tight Flexible Metal Conduit (LFMC) shall not exceed 6 feet. | Minor | NEC Article 230.43(15) |
| | | Conduit does not meet the conditions to be used as conductor support. | Incidental | NEC Article 300.11(C) |
| | | Conduit penetrations internally sealed to prevent condensation between conditioned and unconditioned environment. | Incidental | NEC Article 300.7(A) |

| | | Task | Defect Category | Reference |
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| Feeder Tap Connection (continued) | Electrical | Equipment must be sufficiently rated for expected voltage and/or current. | Critical | NEC Article 110.3(B) |
| | | <p>Feeders and Feeder Taps. Where the power source output connection is made to a feeder, the following shall apply:</p> <p>(1) The feeder ampacity is greater than or equal to 125 percent of the power-source output circuit current.</p> <p>(2) Where the power-source output connection is made at a location other than the opposite end of the feeder from the primary source overcurrent device, that portion of the feeder on the load side of the power source output connection shall be protected by one of the following:</p> <p>a. The feeder ampacity shall be not less than the sum of the rating of the primary source overcurrent device and 125 percent of the power-source output circuit current.</p> <p>b. An overcurrent device at the load side of the power source connection point shall be rated not greater than the ampacity of the feeder.</p> <p>(3) For taps sized in accordance with 240.21(B)(2) or (B)(4), the ampacity of taps conductors shall not be less than one-third of the sum of the rating of the overcurrent device protecting the feeder plus the ratings of any power source overcurrent devices connected to the feeder.</p> | Major | NEC Article 705.12 |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Major | NEC Article 110.3(B) |
| | | AC Disconnect is present and readily accessible. | Minor | NEC Article 690.13(A) |
| | | Disconnect is properly wired to ensure that fuses can be de-energized for service. | Minor | NEC Article 110.3(B), (and 240.40 if fusible) |
| | | Dissimilar metals must not be in contact and prevented from undergoing galvanic reaction. | Minor | NEC Article 110.14 (for conductors/splice components), NEC Article 344.14 (for RMC) and NEC Article 358.14 (for EMT) for conduit and surrounding materials |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Minor | NEC Article 110.3(B) |
| | | Unused openings of electrical equipment shall be properly sealed. | Minor | NEC Articles 110.12(A) or 408.7 |
| | Grounding | A metal underground water pipe shall be supplemented by an additional electrode. | Major | NEC Article 250.53(D)(2) |
| | | Equipment is properly grounded. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 |
| | | Grounded conductor(s) terminal lug is properly installed. | Major | NEC Articles 110.3(B) and 250.4 |
| | | Grounding electrode conductor is properly bonded to the main premise grounding electrode system. | Major | NEC Articles 250.64(C) and 690.47 |
| | | Grounding electrode conductor is sufficiently sized. | Major | NEC Articles 250.66 and 690.47 |
| | | Water pipe electrode supplemented by other electrode. | Major | NEC Article 250.53(D)(2) |
| | | When a metal water pipe is used as a grounding electrode, there must be a ground jumper present across water meter/filter. | Major | NEC Article 250.53(D)(1) |

| | | Task | Defect Category | Reference |
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| Feeder Tap Connection (continued) | Grounding (continued) | Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts. | Major | NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97 |
| | | The ground rod (electrode) is protected from physical damage or is below/flush with the ground (8ft in contact with the soil). | Minor | NEC Article 250.53(A)(4) |
| | Labeling | Entrances to rooms or other guarded locations that contain live parts shall be marked with conspicuous warning signs forbidding unqualified persons to enter. | Incidental | NEC 110.21(B) and 110.27(C), OSHA1910.145(f)(7) |
| | | Permanent plaques, labels, or directories shall be installed at each service equipment location, or at an approved readily visible location. | Incidental | NEC Article 110.21(B) and 705.10 |
| | | The manufacturers name, trademark or other descriptive markings must be visible on all electrical equipment and, where required by the code, markings such as voltage, current, wattage or other ratings must be provided. All markings must have sufficient durability to withstand the environment involved. | Incidental | NEC Article 110.21 |
| | | The sum of the ampere ratings of all overcurrent devices on panelboards, both load and supply devices, excluding the rating of the overcurrent device protecting the busbar, shall not exceed the ampacity of the busbar. The rating of the overcurrent device protecting the busbar shall not exceed the rating of the busbar. Permanent warning labels shall be applied to distribution equipment. | Incidental | NEC Articles 110.21(B), 690.59 and 705.12(B)(3) |
| | Structural | Equipment is installed with the appropriate clearances. | Minor | NEC Articles 110.26 and 110.27(A) |
| Ground Mounted Array | Conductors | All array conductors are properly connected. | Critical | NEC Articles 110.3(B) and 110.12 |
| | | Conductors are appropriately sized for expected current. | Critical | NEC Article 310.15 and/ or 690.8(B) |
| | | Conductor insulation type is properly rated for temperature and environmental conditions. | Major | NEC Articles 300.9, 310.10, 310.15(A)(3) and 334.12(B)(4) |
| | | In exposed work, conductors are protected from abrasion or any other physical damage. | Major | NEC Article 110.12 |
| | | Splice components are rated for environment. | Major | NEC Articles 110.3(B), 110.11, and 110.14 |
| | | Splices and connections are secure and of high integrity. | Major | NEC Article 110.14 |
| | | All conductors of the same circuit and, where used, the grounded conductor and all equipment grounding conductors and bonding conductors shall be contained within the same raceway, conduit body, auxiliary gutter, cable tray, cablebus assembly, trench, cable, or cord. | Minor | NEC Article 300.3(B) |
| | | Conductors shall be properly and firmly supported in a safe and permanent manner. | Minor | NEC Article 110.12 |
| | | Outdoor wire ties/clips are UV and outdoor rated. | Minor | NEC Article 110.3(B) |
| | | Single conductor(s) connected correctly to the terminal or lug in accordance with its listing. | Minor | NEC Article 110.3(B) and 110.14(A) |
| | | Wire cannot be bent at a tighter radius than 5x the diameter of the conductor. | Minor | NEC Article 334.24, 338.24 |
| | | Grounded (neutral) conductor is properly identified. | Incidental | NEC Article 200.6(A)&(B) |
| | | Ungrounded conductor(s) are properly identified. | Incidental | NEC Article 200.7 |

| | | Task | Defect Category | Reference |
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| Ground Mounted Array (continued) | Conduit | Indoor DC source circuits are contained in metallic conduit or raceway. | Major | NEC Article 690.31(D)(1) |
| | | The conduit is grounded (when required). | Major | NEC Articles 250.4(A)(3) and 690.43 |
| | | Conduit below grade is installed with provisions for movement. | Minor | NEC Article 300.5(J) |
| | | Conduit fittings and connectors are designed and listed for this use. | Minor | NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC-356.6, EMT-358.6) |
| | | Conduit is adequately supported. | Minor | NEC Articles (LFMC-350.30, PVC-352.30, EMT-358.30, Metal Trough-376.30) |
| | | Conduit thermal expansion fitting is properly installed to allow for movement. | Minor | NEC Articles 300.7(B), 352.44 and tables 352.44 and 355.44 |
| | | Conduit does not meet the conditions to be used as conductor support. | Incidental | NEC Article 300.11(C) |
| | | Conduit penetrations internally sealed to prevent condensation between conditioned and unconditioned environment. | Incidental | NEC Article 300.7(A) |
| | Electrical | Disconnecting means shall be provided to disconnect ac PV modules, fuses, dc-to-dc converters, inverters, and charge controllers from all conductors that are not solidly grounded. | Major | NEC Article 690.15 |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Major | NEC Article 110.3(B) |
| | | A Ground Fault Circuit Interrupting (GFCI) Wet Rated (WR) receptacle is required to be installed in a wet/damp location. | Minor | NEC Articles 110.3(B), 210.8(A)(3) and 406.9(B) |
| | | Dissimilar metals must not be in contact and prevented from undergoing galvanic reaction. | Minor | NEC Article 110.14 (for conductors/splice components), NEC Article 344.14 (for RMC) and NEC Article 358.14 (for EMT) for conduit and surrounding materials |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Minor | NEC Article 110.3(B) |
| | Grounding | Equipment grounding conductor is properly sized. | Major | NEC Articles 250.122 and 690.45 |
| | | Equipment is properly grounded. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 |
| | | Grounding hardware is properly installed. | Major | NEC Articles 110.3(B) and 250.4 |
| | | Module frames must be grounded. WEEBs and other grounding devices must be installed correctly. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 |
| | | Module grounding hardware must be listed for the purpose. | Major | NEC Articles 110.3(B) and 690.43 |
| | | Where not routed with circuit conductors, equipment grounding conductors smaller than #6 AWG shall be protected from physical damage. | Minor | NEC Articles 250.120(C) |
| | | Manufacturer instructions for grounding hardware quantity must be followed. | Minor | NEC Article 110.3(B) |
| | | Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s). | Incidental | NEC Article 250.119 |
| | Labeling | Interruption circuit - shall be a type that requires the use of a tool to open will be marked "Do Not Disconnect Under Load" | Incidental | NEC Articles 110.21(B) and 690.33(D)(2) |

| | | Task | Defect Category | Reference |
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| Ground Mounted Array (continued) | OCPD | Overcurrent protective device present between parallel spliced DC string conductors. | Major | NEC Article 690.9(A) |
| | Structural | Equipment shall be firmly secured to the surface on which it is mounted and used in accordance with any instruction included in the listing or labeling. | Major | NEC Articles 110.3(B), 110.12 |
| | | Ground/pole mount support structure, anchor system, and or footings are installed and used according to manufacturer instructions. | Major | NEC Article 110.3(B) |
| Inverter | Conductors | Conductors are appropriately sized for expected current. | Critical | NEC Article 310.15 and/ or 690.8(B) |
| | | Conductor insulation type is properly rated for temperature and environmental conditions. | Major | NEC Articles 300.9, 310.10, 310.15(A)(3) and 334.12(B)(4) |
| | | All conductors of the same circuit and, where used, the grounded conductor and all equipment grounding conductors and bonding conductors shall be contained within the same raceway, conduit body, auxiliary gutter, cable tray, cablebus assembly, trench, cable, or cord. | Minor | NEC Article 300.3(B) |
| | | Conductors are properly sized for rated terminals. | Minor | NEC Article 110.3(B) |
| | | Conductors shall be properly and firmly supported in a safe and permanent manner. | Minor | NEC Article 110.12 |
| | | Single conductor(s) connected correctly to the terminal or lug in accordance with its listing. | Minor | NEC Article 110.3(B) and 110.14(A) |
| | | Wire cannot be bent at a tighter radius than 5x the diameter of the conductor. | Minor | NEC Article 334.24, 338.24 |
| | | Grounded (neutral) conductor is properly identified. | Incidental | NEC Article 200.6(A)&(B) |
| | | Ungrounded conductor(s) are properly identified. | Incidental | NEC Article 200.7 |
| | Conduit | Indoor DC source circuits are contained in metallic conduit or raceway. | Major | NEC Article 690.31(D)(1) |
| | | The conduit is grounded (when required). | Major | NEC Articles 250.4(A)(3) and 690.43 |
| | | Circuit conduit or raceway is properly supported and secured. | Minor | NEC Articles (LFMC-350.30, PVC-352.30, EMT-358.30, Metal Trough-376.30) |
| | | Conduit below grade is installed with provisions for movement. | Minor | NEC Article 300.5(J) |
| | | Conduit fittings and connectors are designed and listed for this use. | Minor | NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC-356.6, EMT-358.6) |
| | | Conduit thermal expansion fitting is properly installed to allow for movement. | Minor | NEC Articles 300.7(B), 352.44 and tables 352.44 and 355.44 |
| | | Conduit does not meet the conditions to be used as conductor support. | Incidental | NEC Article 300.11(C) |
| | | Conduit penetrations internally sealed to prevent condensation between conditioned and unconditioned environment. | Incidental | NEC Article 300.7(A) |
| | Electrical | PV array maximum DC string voltage complies with inverter maximum input voltage rating. | Critical | NEC Articles 110.3(B) and 690.7 |
| | | Equipment is suitable for environment. | Major | NEC Articles 314.15 and 110.3(B) |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Major | NEC Article 110.3(B) |

| | | Task | Defect Category | Reference |
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| Inverter (continued) | Electrical (continued) | Dissimilar metals must not be in contact and prevented from undergoing galvanic reaction. | Minor | NEC Article 110.14 (for conductors/splice components), NEC Article 344.14 (for RMC) and NEC Article 358.14 (for EMT) for conduit and surrounding materials |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Minor | NEC Article 110.3(B) |
| | | Input string voltage is suitable for inverter rated minimum operating voltage. | Minor | NEC Article 110.3(B) |
| | | Unused openings of electrical equipment shall be properly sealed. | Minor | NEC Articles 110.12(A) or 408.7 |
| | Grounding | Equipment grounding conductor is properly sized. | Major | NEC Articles 250.122 and 690.45 |
| | | Equipment is properly grounded. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 |
| | | Grounded conductor(s) terminal lug is properly installed. | Major | NEC Articles 110.3(B) and 250.4 |
| | | Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts. | Major | NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97 |
| | | Where not routed with circuit conductors, equipment grounding conductors smaller than #6 AWG shall be protected from physical damage. | Minor | NEC Articles 250.120(C) |
| | | Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s). | Incidental | NEC Article 250.119 |
| | Labeling | A permanent readily visible label indicating the highest maximum dc voltage in a PV system, calculated in accordance with 690.7, shall be provided by the installer at one of the following locations: (1) DC PV system disconnecting means (2) PV system electronic power conversion equipment (3) Distribution equipment associated with the PV system. | Incidental | NEC Articles 110.21(B) and 690.7 |
| | | A rapid shutdown switch shall have a label located on or no more than 1 m (3 ft) from the switch that includes the following wording: RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM | Incidental | NEC Article 110.21(B) and 690.12(D)(2) |
| | | Each PV system disconnecting means shall be permanently marked as to identify it as a photovoltaic system disconnect. | Incidental | NEC Articles 110.21(B) and 690.13(B) |
| | | The manufacturers name, trademark or other descriptive markings must be visible on all electrical equipment and, where required by the code, markings such as voltage, current, wattage or other ratings must be provided. All markings must have sufficient durability to withstand the environment involved. | Incidental | NEC Article 110.21 |
| | OCPD | Inverter string fuses are 600 or 1000 VDC rated as required. | Critical | NEC Articles 110.3(B) and 690.9(B) |
| | | Inverter string fuse size matches module string series fuse rating. | Major | NEC Article 690.9(B) |
| | Structural | Equipment shall be firmly secured to the surface on which it is mounted and used in accordance with any instruction included in the listing or labeling. | Major | NEC Articles 110.3(B), 110.12 |
| | | Equipment is installed with the appropriate clearances. | Minor | NEC Articles 110.26 and 110.27(A) |

| | | Task | Defect Category | Reference |
|---------------------|---|--|---|--|
| Junction Box | Conductors | Conductors are appropriately sized for expected current. | Critical | NEC Article 310.15 and/ or 690.8(B) |
| | | A grounded conductor shall not be connected to normally non-current-carrying metal parts of equipment, to equipment grounding conductor(s), or be reconnected to ground on the load side of the service disconnecting means. | Major | NEC Article 250.24(B) |
| | | Conductor insulation type is properly rated for temperature and environmental conditions. | Major | NEC Articles 300.9, 310.10, 310.15(A)(3) and 334.12(B)(4) |
| | | In exposed work, conductors are protected from abrasion or any other physical damage. | Major | NEC Article 110.12 |
| | | Splice components are rated for environment. | Major | NEC Articles 110.3(B), 110.11, and 110.14 |
| | | Splices and connections are secure and of high integrity. | Major | NEC Article 110.14 |
| | | Circuit conductors are properly supported and secured. | Minor | NEC Article 110.12 |
| | | Conductors shall be properly and firmly supported in a safe and permanent manner. | Minor | NEC Article 110.12 |
| | | The length of the free conductors within the enclosure shall meet or exceed 6" requirement. | Minor | NEC Article 300.14 |
| | | Wire cannot be bent at a tighter radius than 5x the diameter of the conductor. | Minor | NEC Article 334.24, 338.24 |
| | | Grounded (neutral) conductor is properly identified. | Incidental | NEC Article 200.6(A)&(B) |
| | | Ungrounded conductor(s) are properly identified. | Incidental | NEC Article 200.7 |
| | | Conduit | Indoor DC source circuits are contained in metallic conduit or raceway. | Major |
| | The conduit is grounded (when required). | | Major | NEC Articles 250.4(A)(3) and 690.43 |
| | Circuit conduit or raceway is properly supported and secured. | | Minor | NEC Articles (LFMC-350.30, PVC-352.30, EMT-358.30, Metal Trough-376.30) |
| | Conduit below grade is installed with provisions for movement. | | Minor | NEC Article 300.5(J) |
| | Conduit fittings and connectors are designed and listed for this use. | | Minor | NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC-356.6, EMT-358.6) |
| | Conduit thermal expansion fitting is properly installed to allow for movement. | | Minor | NEC Articles 300.7(B), 352.44 and tables 352.44 and 355.44 |
| | Conduit does not meet the conditions to be used as conductor support. | | Incidental | NEC Article 300.11(C) |
| | Conduit penetrations internally sealed to prevent condensation between conditioned and unconditioned environment. | | Incidental | NEC Article 300.7(A) |
| | Electrical | Equipment is suitable for environment. | Major | NEC Articles 314.15 and 110.3(B) |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Major | NEC Article 110.3(B) |
| | | Dissimilar metals must not be in contact and prevented from undergoing galvanic reaction. | Minor | NEC Article 110.14 (for conductors/splice components), NEC Article 344.14 (for RMC) and NEC Article 358.14 (for EMT) for conduit and surrounding materials |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Minor | NEC Article 110.3(B) |

| | | Task | Defect Category | Reference |
|---------------------------------|------------------------|--|-----------------|--|
| Junction Box (continued) | Electrical (continued) | Junction box must be accessible. | Minor | NEC Article 690.34 |
| | | Unused openings of electrical equipment shall be properly sealed. | Minor | NEC Articles 110.12(A) or 408.7 |
| | Grounding | Equipment grounding conductor is properly sized. | Major | NEC Articles 250.122 and 690.45 |
| | | Equipment is properly grounded. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 |
| | | Grounded conductor(s) terminal lug is properly installed. | Major | NEC Articles 110.3(B) and 250.4 |
| | | Grounding electrode conductor is continuous. | Major | NEC Articles 250.64(C) and 690.47 |
| | | Grounding electrode conductor is sufficiently sized. | Major | NEC Articles 250.66 and 690.47 |
| | | Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts. | Major | NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97 |
| | | Where not routed with circuit conductors, equipment grounding conductors smaller than #6 AWG shall be protected from physical damage. | Minor | NEC Articles 250.120(C) |
| | | Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s). | Incidental | NEC Article 250.119 |
| | Labeling | The manufacturers name, trademark or other descriptive markings must be visible on all electrical equipment and, where required by the code, markings such as voltage, current, wattage or other ratings must be provided. All markings must have sufficient durability to withstand the environment involved. | Incidental | NEC Article 110.21 |
| | | Where all terminals of the disconnecting means may be energized in the open position, a warning label shall be mounted on or adjacent to the disconnecting means. | Incidental | NEC Articles 110.21(B) and 690.13(B) |
| | Structural | Equipment shall be firmly secured to the surface on which it is mounted and used in accordance with any instruction included in the listing or labeling. | Major | NEC Articles 110.3(B), 110.12 |
| | | Roof penetrations are properly sealed and flashed. | Major | IBC Section 1503.2, IPC 903, and NEC Article 110.3(B) |
| | | Equipment is installed with the appropriate clearances. | Minor | NEC Articles 110.26 and 110.27(A) |
| Load Side Connection | Conductors | Conductors are appropriately sized for expected current. | Critical | NEC Article 310.15 and/ or 690.8(B) |
| | | Conductor insulation type is properly rated for temperature and environmental conditions. | Major | NEC Articles 300.9, 310.10, 310.15(A)(3) and 334.12(B)(4) |
| | | If an ac system operating at 1000 volts or less is grounded at any point, the grounded conductor(s) shall be routed with the ungrounded conductors to each service disconnecting means and shall be connected to each disconnecting means grounded conductor(s) terminal or bus. A main bonding jumper shall connect the grounded conductor(s) to each service disconnecting means enclosure. The grounded conductor(s) shall be installed in accordance with 250.24(D)(1) through (D)(4). | Major | NEC Article 250.24(D) |
| | | In exposed work, conductors are protected from abrasion or any other physical damage. | Major | NEC Article 110.12 |

| | | Task | Defect Category | Reference |
|---|------------------------|---|-----------------|--|
| Load Side Connection (continued) | Conductors (continued) | All conductors of the same circuit and, where used, the grounded conductor and all equipment grounding conductors and bonding conductors shall be contained within the same raceway, conduit body, auxiliary gutter, cable tray, cablebus assembly, trench, cable, or cord. | Minor | NEC Article 300.3(B) |
| | | Conductors are properly sized for rated terminals. | Minor | NEC Article 110.3(B) |
| | | Conductors shall be properly and firmly supported in a safe and permanent manner. | Minor | NEC Article 110.12 |
| | | Single conductor(s) connected correctly to the terminal or lug in accordance with its listing. | Minor | NEC Article 110.3(B) and 110.14(A) |
| | | Wire cannot be bent at a tighter radius than 5x the diameter of the conductor. | Minor | NEC Article 334.24, 338.24 |
| | | Grounded (neutral) conductor is properly identified. | Incidental | NEC Article 200.6(A)&(B) |
| | | Ungrounded conductor(s) are properly identified. | Incidental | NEC Article 200.7 |
| | Conduit | Circuit conduit or raceway is properly supported and secured. | Minor | NEC Articles (LFMC-350.30, PVC-352.30, EMT-358.30, Metal Trough-376.30) |
| | | Conduit below grade is installed with provisions for movement. | Minor | NEC Article 300.5(J) |
| | | Conduit fittings and connectors are designed and listed for this use. | Minor | NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC-356.6, EMT-358.6) |
| | | Conduit thermal expansion fitting is properly installed to allow for movement. | Minor | NEC Articles 300.7(B), 352.44 and tables 352.44 and 355.44 |
| | | Conduit does not meet the conditions to be used as conductor support. | Incidental | NEC Article 300.11(C) |
| | | Conduit penetrations internally sealed to prevent condensation between conditioned and unconditioned environment. | Incidental | NEC Article 300.7(A) |
| | Electrical | Dissimilar metals must not be in contact and prevented from undergoing galvanic reaction. | Minor | NEC Article 110.14 (for conductors/splice components), NEC Article 344.14 (for RMC) and NEC Article 358.14 (for EMT) for conduit and surrounding materials |
| | | Unused openings of electrical equipment shall be properly sealed. | Minor | NEC Articles 110.12(A) or 408.7 |
| | Grounding | A metal underground water pipe shall be supplemented by an additional electrode. | Major | NEC Article 250.53(D)(2) |
| | | Equipment is properly grounded. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 |
| | | Grounded conductor(s) terminal lug is properly installed. | Major | NEC Articles 110.3(B) and 250.4 |
| | | Water pipe electrode supplemented by other electrode. | Major | NEC Article 250.53(D)(2) |
| | | When a metal water pipe is used as a grounding electrode, there must be a ground jumper present across water meter/filter. | Major | NEC Article 250.53(D)(1) |
| | | The ground rod (electrode) is protected from physical damage or is below/flush with the ground (8ft in contact with the soil). | Minor | NEC Article 250.53(A)(4) |

| | | Task | Defect Category | Reference |
|---|----------------------|--|--|---|
| Load Side Connection (continued) | Labeling | Every circuit and circuit modification shall be legibly identified as to its clear, evident and specific purpose or use. The identification shall include an approved degree of detail that allows each circuit to be distinguished from all others. | Incidental | NEC Articles 110.21(B) and 408.4(A) |
| | | Permanent plaques, labels, or directories shall be installed at each service equipment location, or at an approved readily visible location. | Incidental | NEC Article 110.21(B), and 705.10 |
| | | The manufacturer's name, trademark or other descriptive markings must be visible on all electrical equipment and, where required by the code, markings such as voltage, current, wattage or other ratings must be provided. All markings must have sufficient durability to withstand the environment involved. | Incidental | NEC Article 110.21 |
| | | The sum of the ampere ratings of all overcurrent devices on panelboards, both load and supply devices, excluding the rating of the overcurrent device protecting the busbar, shall not exceed the ampacity of the busbar. The rating of the overcurrent device protecting the busbar shall not exceed the rating of the busbar. Permanent warning labels shall be applied to distribution equipment. | Incidental | NEC Articles 110.21(B), 690.59 and 705.12(B)(3) |
| | | Where two sources, one a primary power source and the other another power source, are located at opposite ends of a busbar that contains loads, a permanent warning label shall be applied to the distribution equipment adjacent to the back-fed breaker from the inverter. | Incidental | NEC Articles 110.21(B), 408.4(A) and 705.12 (B)(2) |
| | | OCPD | Inverter-interactive output circuit load side connection overcurrent protective device must be properly sized. | Critical |
| | | Main panel overcurrent protection is sufficient. | Critical | NEC Article 240.4 |
| | | Circuit Breaker shall be installed and used in accordance with any instruction included in the listing or labeling. | Major | NEC Article 110.3(B) |
| | | Load Side connection of a utility-interactive output circuit must be properly located at the point of connection. | Major | NEC Article 705.12(B)(4) |
| | | The AC OCPD is properly sized for the expected output current of the PV system. | Major | NEC Article 240.4 |
| | | Back-fed plug in devices shall be secured in place by additional fastener. | Minor | NEC Article 408.36(D) |
| | Structural | Equipment shall be firmly secured to the surface on which it is mounted and used in accordance with any instruction included in the listing or labeling. | Major | NEC Articles 110.3(B), 110.12 |
| | | Equipment is installed with the appropriate clearances. | Minor | NEC Articles 110.26 and 110.27(A) |
| | Microinverter | Conductors | All array conductors are properly connected. | Critical |
| Conductors are appropriately sized for expected current. | | | Critical | NEC Article 310.15 and/ or 690.8(B) |
| Conductor insulation type is properly rated for temperature and environmental conditions. | | | Major | NEC Articles 300.9, 310.10, 310.15(A)(3) and 334.12(B)(4) |
| In exposed work, conductors are protected from abrasion or any other physical damage. | | | Major | NEC Article 110.12 |
| Splice components are rated for environment. | | | Major | NEC Articles 110.3(B), 110.11, and 110.14 |
| Splices and connections are secure and of high integrity. | | | Major | NEC Article 110.14 |

| | | Task | Defect Category | Reference |
|---|------------------------|--|--|--|
| Microinverter (continued) | Conductors (continued) | Wire cannot be bent at a tighter radius than 5x the diameter of the conductor. | Minor | NEC Article 334.24, 338.24 |
| | | Conductors shall be properly and firmly supported in a safe and permanent manner. | Minor | NEC Article 110.12 |
| | | Outdoor wire ties/clips are UV and outdoor rated. | Minor | NEC Article 110.3(B) |
| | | Grounded (neutral) conductor is properly identified. | Incidental | NEC Article 200.6(A)&(B) |
| | | Ungrounded conductor(s) are properly identified. | Incidental | NEC Article 200.7 |
| | Conduit | Circuit conduit or raceway is properly supported and secured. | Minor | NEC Articles (LFMC-350.30, PVC-352.30, EMT-358.30, Metal Trough-376.30) |
| | | Conduit fittings and connectors are designed and listed for this use. | Minor | NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC-356.6, EMT-358.6) |
| | | Conduit does not meet the conditions to be used as conductor support. | Incidental | NEC Article 300.11(C) |
| | Electrical | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Major | NEC Article 110.3(B) |
| | | Dissimilar metals must not be in contact and prevented from undergoing galvanic reaction. | Minor | NEC Article 110.14 (for conductors/splice components), NEC Article 344.14 (for RMC) and NEC Article 358.14 (for EMT) for conduit and surrounding materials |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Minor | NEC Article 110.3(B) |
| | Grounding | Equipment is properly grounded. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 |
| | | Grounded conductor(s) terminal lug is properly installed. | Major | NEC Articles 110.3(B) and 250.4 |
| | | Grounding electrode conductor is sufficiently sized. | Major | NEC Articles 250.66, and 690.47 |
| | | Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts. | Major | NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97 |
| | Structural | Equipment shall be firmly secured to the surface on which it is mounted and used in accordance with any instruction included in the listing or labeling. | Major | NEC Articles 110.3(B), 110.12 |
| | Optimizer | Conductors | All array conductors are properly connected. | Critical |
| Conductors are appropriately sized for expected current. | | | Critical | NEC Article 310.15 and/ or 690.8(B) |
| Conductor insulation type is properly rated for temperature and environmental conditions. | | | Major | NEC Articles 300.9, 310.10, 310.15(A)(3) and 334.12(B)(4) |
| In exposed work, conductors are protected from abrasion or any other physical damage. | | | Major | NEC Article 110.12 |
| Splice components are rated for environment. | | | Major | NEC Articles 110.3(B), 110.11, and 110.14 |
| Splices and connections are secure and of high integrity. | | | Major | NEC Article 110.14 |
| Conductors shall be properly and firmly supported in a safe and permanent manner. | | | Minor | NEC Article 110.12 |
| Outdoor wire ties/clips are UV and outdoor rated. | | | Minor | NEC Article 110.3(B) |

| | | Task | Defect Category | Reference | |
|--|-------------------------|--|--|--|-------------------------------------|
| Optimizer (continued) | Conductors (continued) | Wire cannot be bent at a tighter radius than 5x the diameter of the conductor. | Minor | NEC Article 334.24, 338.24 | |
| | | Ungrounded conductor(s) are properly identified. | Incidental | NEC Article 200.7 | |
| | Conduit | Circuit conduit or raceway is properly supported and secured. | Minor | NEC Articles (LFMC-350.30, PVC-352.30, EMT-358.30, Metal Trough-376.30) | |
| | | Conduit fittings and connectors are designed and listed for this use. | Minor | NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC-356.6, EMT-358.6) | |
| | | Conduit does not meet the conditions to be used as conductor support. | Incidental | NEC Article 300.11(C) | |
| | Electrical | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Major | NEC Article 110.3(B) | |
| | | Dissimilar metals must not be in contact and prevented from undergoing galvanic reaction. | Minor | NEC Article 110.14 (for conductors/splice components), NEC Article 344.14 (for RMC) and NEC Article 358.14 (for EMT) for conduit and surrounding materials | |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Minor | NEC Article 110.3(B) | |
| | Grounding | Equipment is properly grounded. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 | |
| | | Grounded conductor(s) terminal lug is properly installed. | Major | NEC Articles 110.3(B) and 250.4 | |
| | | Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts. | Major | NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97 | |
| | | Where not routed with circuit conductors, equipment grounding conductors smaller than #6 AWG shall be protected from physical damage. | Minor | NEC Articles 250.120(C) | |
| | | Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s). | Incidental | NEC Article 250.119 | |
| | Structural | Equipment shall be firmly secured to the surface on which it is mounted and used in accordance with any instruction included in the listing or labeling. | Major | NEC Articles 110.3(B), 110.12 | |
| | Production Meter | Conductors | Conductors are appropriately sized for expected current. | Critical | NEC Article 310.15 and/ or 690.8(B) |
| | | | A grounded conductor shall not be connected to normally non-current-carrying metal parts of equipment, to equipment grounding conductor(s), or be reconnected to ground on the load side of the service disconnecting means. | Major | NEC Article 250.24(B) |
| Conductor insulation type is properly rated for temperature and environmental conditions. | | | Major | NEC Articles 300.9, 310.10, 310.15(A)(3) and 334.12(B)(4) | |
| Conductors are properly sized for rated terminals. | | | Minor | NEC Article 110.3(B) | |
| Conductors shall be properly and firmly supported in a safe and permanent manner. | | | Minor | NEC Article 110.12 | |
| Single conductor(s) connected correctly to the terminal or lug in accordance with its listing. | | | Minor | NEC Article 110.3(B) and 110.14(A) | |
| Wire cannot be bent at a tighter radius than 5x the diameter of the conductor. | | | Minor | NEC Article 334.24, 338.24 | |

| | | Task | Defect Category | Reference |
|---|------------|--|------------------------|--|
| Production Meter (continued) | Conductors | Grounded (neutral) conductor is properly identified. | Incidental | NEC Article 200.6(A)&(B) |
| | | Ungrounded conductor(s) are properly identified. | Incidental | NEC Article 200.7 |
| | Conduit | The conduit is grounded (when required). | Major | NEC Articles 250.4(A)(3) and 690.43 |
| | | Circuit conduit or raceway is properly supported and secured. | Minor | NEC Articles (LFMC-350.30, PVC-352.30, EMT-358.30, Metal Trough-376.30) |
| | | Conduit below grade is installed with provisions for movement. | Minor | NEC Article 300.5(J) |
| | | Conduit fittings and connectors are designed and listed for this use. | Minor | NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC-356.6, EMT-358.6) |
| | | Conduit thermal expansion fitting is properly installed to allow for movement. | Minor | NEC Articles 300.7(B), 352.44 and tables 352.44 and 355.44 |
| | | Conduit does not meet the conditions to be used as conductor support. | Incidental | NEC Article 300.11(C) |
| | | Conduit penetrations internally sealed to prevent condensation between conditioned and unconditioned environment. | Incidental | NEC Article 300.7(A) |
| | Electrical | Equipment must be sufficiently rated for expected voltage and/or current. | Critical | NEC Article 110.3(B) |
| | | Equipment is suitable for environment. | Major | NEC Articles 314.15 and 110.3(B) |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Major | NEC Article 110.3(B) |
| | | Dissimilar metals must not be in contact and prevented from undergoing galvanic reaction. | Minor | NEC Article 110.14 (for conductors/splice components), NEC Article 344.14 (for RMC) and NEC Article 358.14 (for EMT) for conduit and surrounding materials |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Minor | NEC Article 110.3(B) |
| | Grounding | Equipment is properly grounded. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 |
| | | Grounding electrode conductor is continuous. | Major | NEC Articles 250.64(C) and 690.47 |
| | | Grounding electrode conductor is sufficiently sized. | Major | NEC Articles 250.66, and 690.47 |
| | | Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts. | Major | NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97 |
| | Structural | Equipment shall be firmly secured to the surface on which it is mounted and used in accordance with any instruction included in the listing or labeling. | Major | NEC Articles 110.3(B), 110.12 |
| | | Equipment is installed with the appropriate clearances. | Minor | NEC Articles 110.26 and 110.27(A) |
| Rapid Shutdown Device | Conductors | Conductors are appropriately sized for expected current. | Critical | NEC Article 310.15 and/ or 690.8(B) |
| | | Conductor insulation type is properly rated for temperature and environmental conditions. | Major | NEC Articles 300.9, 310.10, 310.15(A)(3) and 334.12(B)(4) |

| | | Task | Defect Category | Reference |
|--|------------------------|--|-----------------|--|
| Rapid Shutdown Device (continued) | Conductors (continued) | All conductors of the same circuit and, where used, the grounded conductor and all equipment grounding conductors and bonding conductors shall be contained within the same raceway, conduit body, auxiliary gutter, cable tray, cablebus assembly, trench, cable, or cord. | Minor | NEC Article 300.3(B) |
| | | Conductors are properly sized for rated terminals. | Minor | NEC Article 110.3(B) |
| | | Conductors shall be properly and firmly supported in a safe and permanent manner. | Minor | NEC Article 110.12 |
| | | Single conductor(s) connected correctly to the terminal or lug in accordance with its listing. | Minor | NEC Article 110.3(B) and 110.14(A) |
| | | Wire cannot be bent at a tighter radius than 5x the diameter of the conductor. | Minor | NEC Article 334.24, 338.24 |
| | | Ungrounded conductor(s) are properly identified. | Incidental | NEC Article 200.7 |
| | Conduit | Indoor DC source circuits are contained in metallic conduit or raceway. | Major | NEC Article 690.31(D)(1) |
| | | The conduit is grounded (when required). | Major | NEC Articles 250.4(A)(3) and 690.43 |
| | | Circuit conduit or raceway is properly supported and secured. | Minor | NEC Articles (LFMC-350.30, PVC-352.30, EMT-358.30, Metal Trough-376.30) |
| | | Conduit fittings and connectors are designed and listed for this use. | Minor | NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC-356.6, EMT-358.6) |
| | | Conduit thermal expansion fitting is properly installed to allow for movement. | Minor | NEC Articles 300.7(B), 352.44 and tables 352.44 and 355.44 |
| | | Conduit does not meet the conditions to be used as conductor support. | Incidental | NEC Article 300.11(C) |
| | | Conduit penetrations internally sealed to prevent condensation between conditioned and unconditioned environment. | Incidental | NEC Article 300.7(A) |
| | Electrical | Equipment must be sufficiently rated for expected voltage and/or current. | Critical | NEC Article 110.3(B) |
| | | Equipment is suitable for environment. | Major | NEC Articles 314.15 and 110.3(B) |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Major | NEC Article 110.3(B) |
| | | PV system circuits installed on or in buildings shall include a rapid shutdown function to reduce shock hazard for firefighters in accordance with 690.12(A) through (D). | Major | NEC Article 690.12(B)(2)(2) |
| | | Where circuits identified in 690.12(A) are required to meet the requirements in 690.12(B), an initiation device(s) shall be provided and shall initiate the rapid shutdown function. The device's "off" position shall indicate that the rapid shutdown function has been initiated for all PV systems connected to that device. For one-and two-family dwellings, an initiation device(s), where required, shall be located at a readily accessible outdoor location. | Major | NEC Article 690.12(C) |
| | | Dissimilar metals must not be in contact and prevented from undergoing galvanic reaction. | Minor | NEC Article 110.14 (for conductors/splice components), NEC Article 344.14 (for RMC) and NEC Article 358.14 (for EMT) for conduit and surrounding materials |

| | | Task | Defect Category | Reference |
|--|------------------------|--|-----------------|--|
| Rapid Shutdown Device (continued) | Electrical (continued) | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Minor | NEC Article 110.3(B) |
| | | Unused openings of electrical equipment shall be properly sealed. | Minor | NEC Articles 110.12(A) or 408.7 |
| | Grounding | Equipment grounding conductor is properly sized. | Major | NEC Articles 250.122 and 690.45 |
| | | Equipment is properly grounded. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 |
| | | Grounded conductor(s) terminal lug is properly installed. | Major | NEC Articles 110.3(B) and 250.4 |
| | | Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts. | Major | NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97 |
| | | Where not routed with circuit conductors, equipment grounding conductors smaller than 6AWG shall be protected from physical damage. | Minor | NEC Articles 250.120(C) |
| | | Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s). | Incidental | NEC Article 250.119 |
| | Labeling | A rapid shutdown switch shall have a label located on or no more than 1 m (3 ft) from the switch that includes the following wording: RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM | Incidental | NEC Article 110.21(B) and 690.12(D)(2) |
| | | PV power source labels shall appear on every section of the wiring system that is separated by enclosures, walls, partitions, ceilings or floors. Spacing between labels not to exceed 10 feet (3M). They shall be affixed to (1) Exposed raceways, cable trays, and other wiring methods (2) Covers or enclosures of pull boxes and junction boxes (3) Conduit bodies in which any of the available conduit openings are unused | Incidental | NEC Articles 110.21(B) and 690.31(D)(2) |
| | | The manufacturers name, trademark or other descriptive markings must be visible on all electrical equipment and, where required by the code, markings such as voltage, current, wattage or other ratings must be provided. All markings must have sufficient durability to withstand the environment involved. | Incidental | NEC Article 110.21 |
| | Structural | Equipment shall be firmly secured to the surface on which it is mounted and used in accordance with any instruction included in the listing or labeling. | Major | NEC Articles 110.3(B), 110.12 |
| | | Equipment is installed with the appropriate clearances. | Minor | NEC Articles 110.26 and 110.27(A) |
| Roof Mounted Array | Conductors | All array conductors are properly connected. | Critical | NEC Articles 110.3(B) and 110.12 |
| | | Conductors are appropriately sized for expected current. | Critical | NEC Article 310.15 and/ or 690.8(B) |
| | | Conductor insulation type is properly rated for temperature and environmental conditions. | Major | NEC Articles 300.9, 310.10, 310.15(A)(3) and 334.12(B)(4) |
| | | In exposed work, conductors are protected from abrasion or any other physical damage. | Major | NEC Article 110.12 |
| | | Splice components are rated for environment. | Major | NEC Articles 110.3(B), 110.11, and 110.14 |
| | | Splices and connections are secure and of high integrity. | Major | NEC Article 110.14 |
| | | All conductors of the same circuit and, where used, the grounded conductor and all equipment grounding conductors and bonding conductors shall be contained within the same raceway, conduit body, auxiliary gutter, cable tray, cablebus assembly, trench, cable, or cord. | Minor | NEC Article 300.3(B) |

| | | Task | Defect Category | Reference |
|---------------------------------------|------------------------|---|-----------------|--|
| Roof Mounted Array (continued) | Conductors (continued) | Conductors shall be properly and firmly supported in a safe and permanent manner. | Minor | NEC Article 110.12 |
| | | Outdoor wire ties/clips are UV and outdoor rated. | Minor | NEC Article 110.3(B) |
| | | Single conductor(s) connected correctly to the terminal or lug in accordance with its listing. | Minor | NEC Article 110.3(B) and 110.14(A) |
| | | Wire cannot be bent at a tighter radius than 5x the diameter of the conductor. | Minor | NEC Article 334.24, 338.24 |
| | | Grounded (neutral) conductor is properly identified. | Incidental | NEC Article 200.6(A)&(B) |
| | | Ungrounded conductor(s) are properly identified. | Incidental | NEC Article 200.7 |
| | Conduit | Indoor DC source circuits are contained in metallic conduit or raceway. | Major | NEC Article 690.31(D)(1) |
| | | The conduit is grounded (when required). | Major | NEC Articles 250.4(A)(3) and 690.43 |
| | | Circuit conduit or raceway is properly supported and secured. | Minor | NEC Articles (LFMC-350.30, PVC-352.30, EMT-358.30, Metal Trough-376.30) |
| | | Conduit below grade is installed with provisions for movement. | Minor | NEC Article 300.5(J) |
| | | Conduit fittings and connectors are designed and listed for this use. | Minor | NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC-356.6, EMT-358.6) |
| | | Conduit thermal expansion fitting is properly installed to allow for movement. | Minor | NEC Articles 300.7(B), 352.44 and tables 352.44 and 355.44 |
| | | Conduit does not meet the conditions to be used as conductor support. | Incidental | NEC Article 300.1(C) |
| | | Conduit penetrations internally sealed to prevent condensation between conditioned and unconditioned environment. | Incidental | NEC Article 300.7(A) |
| | Electrical | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Major | NEC Article 110.3(B) |
| | | Dissimilar metals must not be in contact and prevented from undergoing galvanic reaction. | Minor | NEC Article 110.14 (for conductors/splice components), NEC Article 344.14 (for RMC) and NEC Article 358.14 (for EMT) for conduit and surrounding materials |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Minor | NEC Article 110.3(B) |
| | Grounding | Equipment is properly grounded. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 |
| | | Grounding hardware is properly installed. | Major | NEC Articles 110.3(B) and 250.4 |
| | | Module frames must be grounded. WEEBs and other grounding devices must be installed correctly. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 |
| | | Module grounding hardware must be listed for the purpose. | Major | NEC Articles 110.3(B) and 690.43 |
| | | The metal roof panels beneath the array shall be bonded together and to an equipment grounding conductor. | Major | NEC Articles 690.43(B) and 250.110 |
| | | Manufacturer instructions for grounding hardware quantity must be followed. | Minor | NEC Article 110.3(B) |
| | | Where not routed with circuit conductors, equipment grounding conductors smaller than #6 AWG shall be protected from physical damage. | Minor | NEC Articles 250.120(C) |

| | | Task | Defect Category | Reference |
|---------------------------------------|-----------------------|--|-----------------|---|
| Roof Mounted Array (continued) | Grounding (continued) | Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s). | Incidental | NEC Article 250.119 |
| | Labeling | Interruption circuit - shall be a type that requires the use of a tool to open will be marked "Do Not Disconnect Under Load" | Incidental | NEC Articles 110.21(B) and 690.33(D)(2) |
| | | PV power source labels shall appear on every section of the wiring system that is separated by enclosures, walls, partitions, ceilings or floors. Spacing between labels not to exceed 10 feet (3M). They shall be affixed to (1) Exposed raceways, cable trays, and other wiring methods (2) Covers or enclosures of pull boxes and junction boxes (3) Conduit bodies in which any of the available conduit openings are unused | Incidental | NEC Articles 110.21(B) and 690.31(D)(2) |
| | | The manufacturers name, trademark or other descriptive markings must be visible on all electrical equipment and, where required by the code, markings such as voltage, current, wattage or other ratings must be provided. All markings must have sufficient durability to withstand the environment involved. | Incidental | NEC Article 110.21 |
| | OCPD | Overcurrent protective device present between parallel spliced DC string conductors. | Major | NEC Article 690.9(A) |
| | Structural | All open vent pipes on roof are free from modules and racking system obstructions. | Major | In violation of IBC 903 and/or vent pipe has been modified in violation IBC 903 |
| | | Equipment shall be firmly secured to the surface on which it is mounted and used in accordance with any instruction included in the listing or labeling. | Major | NEC Articles 110.3(B), 110.12 |
| | | Roof penetrations are properly sealed and flashed. | Major | IBC Section 1503.2, IPC 903, and NEC Article 110.3(B) |
| Source Connection | Conductors | Conductors are appropriately sized for expected current. | Critical | NEC Article 310.15 and/ or 690.8(B) |
| | | Conductor insulation type is properly rated for temperature and environmental conditions. | Major | NEC Articles 300.9, 310.10, 310.15(A)(3) and 334.12(B)(4) |
| | | If an ac system operating at 1000 volts or less is grounded at any point, the grounded conductor(s) shall be routed with the ungrounded conductors to each service disconnecting means and shall be connected to each disconnecting means grounded conductor(s) terminal or bus. A main bonding jumper shall connect the grounded conductor(s) to each service disconnecting means enclosure. The grounded conductor(s) shall be installed in accordance with 250.24(D)(1) through (D)(4). | Major | NEC Article 250.24(D) |
| | | In exposed work, conductors are protected from abrasion or any other physical damage. | Major | NEC Article 110.12 |
| | | Service entrance conductors are properly spliced. | Major | NEC Articles 110.14(B) and 230.46 |
| | | The service conductors connected to the power production source service disconnecting means shall be sized in accordance with 705.28 and not be smaller than 6 AWG copper or 4 AWG aluminum or copper-clad aluminum. | Major | NEC Article 705.11(B) |
| | | Wire cannot be bent at a tighter radius than 5x the diameter of the conductor. | Minor | NEC Article 334.24, 338.24 |
| | | Conductors shall be properly and firmly supported in a safe and permanent manner. | Minor | NEC Article 110.12 |

| | | Task | Defect Category | Reference |
|--------------------------------------|---|---|---|--|
| Source Connection (continued) | Conductors (continued) | Single conductor(s) connected correctly to the terminal or lug in accordance with its listing. | Minor | NEC Article 110.3(B) and 110.14(A) |
| | | Grounded (neutral) conductor is properly identified. | Incidental | NEC Article 200.6(A)&(B) |
| | | Ungrounded conductor(s) are properly identified. | Incidental | NEC Article 200.7 |
| | Conduit | The conduit is grounded (when required). | Major | NEC Articles 250.4(A)(3) and 690.43 |
| | | Circuit conduit or raceway is properly supported and secured. | Minor | NEC Articles (LFMC-350.30, PVC-352.30, EMT-358.30, Metal Trough-376.30) |
| | | Conduit below grade is installed with provisions for movement. | Minor | NEC Article 300.5(J) |
| | | Conduit fittings and connectors are designed and listed for this use. | Minor | NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC-356.6, EMT-358.6) |
| | | The service entrance Flexible Metal Conduit (FMC) or Liquid tight Flexible Metal Conduit (LFMC) shall not exceed 6 feet. | Minor | NEC Article 230.43(15) |
| | | Conduit does not meet the conditions to be used as conductor support. | Incidental | NEC Article 300.11(C) |
| | | Conduit penetrations internally sealed to prevent condensation between conditioned and unconditioned environment. | Incidental | NEC Article 300.7(A) |
| | | Electrical | A disconnecting means in accordance with Parts VI through VII of Article 230 shall be provided to disconnect all ungrounded conductors of a power production source from the conductors of other systems. | Major |
| | Equipment must be installed in accordance with its listing and manufacturer's instructions. | | Major | NEC Article 110.3(B) |
| | Service disconnect is properly rated for the application. | | Major | NEC Article 230.79(D) |
| | The PV system disconnecting means shall simultaneously disconnect the PV system conductors that are not solidly grounded from all conductors of other wiring systems. | | Major | NEC Article 690.13(E) |
| | AC Disconnect is present and readily accessible. | | Minor | NEC Article 690.13(A) |
| | Disconnect is properly wired to ensure that fuses can be de-energized for service. | | Minor | NEC Article 110.3(B), (and 240.40 if fusible) |
| | Dissimilar metals must not be in contact and prevented from undergoing galvanic reaction. | | Minor | NEC Article 110.14 (for conductors/splice components), NEC Article 344.14 (for RMC) and NEC Article 358.14 (for EMT) for conduit and surrounding materials |
| | Equipment must be installed in accordance with its listing and manufacturer's instructions. | | Minor | NEC Article 110.3(B) |
| | Service Disconnects are properly grouped. | | Minor | NEC Article 230.72 |
| | Unused openings of electrical equipment shall be properly sealed. | | Minor | NEC Articles 110.12(A) or 408.7 |
| | Grounding | A metal underground water pipe shall be supplemented by an additional electrode. | Major | NEC Article 250.53(D)(2) |
| | | All metal enclosures, metal wiring methods, and metal parts associated with the service connected to a power production source shall be bonded in accordance with Parts II through V and VIII of Article 250. | Major | NEC Articles 110.3(B), 705.11(E) and 250.4 |

| | | Task | Defect Category | Reference | |
|--------------------------------------|-----------------------|--|--|--|-------------------------------------|
| Source Connection (continued) | Grounding (continued) | Equipment is properly grounded. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 | |
| | | Grounding electrode conductor is properly bonded to the main premise grounding electrode system. | Major | NEC Articles 250.64(C) and 690.47 | |
| | | Grounding electrode conductor is sufficiently sized. | Major | NEC Articles 250.66, and 690.47 | |
| | | Water pipe electrode supplemented by other electrode. | Major | NEC Article 250.53(D)(2) | |
| | | When a metal water pipe is used as a grounding electrode, there must be a ground jumper present across water meter/filter. | Major | NEC Article 250.53(D)(1) | |
| | | Where operating voltage is 250V or greater and enclosure knockouts are not listed to carry fault current, metallic conduit is properly bonded to maintain electrical continuity around eccentric and concentric knockouts. | Major | NEC Articles 250.4(A)(5) and 250.64(E). Ground fault path cannot include eccentric or concentric knockouts, per NEC Article 250.97 | |
| | | The ground rod (electrode) is protected from physical damage or is below/flush with the ground. (8ft in contact with the soil). | Minor | NEC Article 250.53(A)(4) | |
| | Labeling | Permanent plaques, labels, or directories shall be installed at each service equipment location, or at an approved readily visible location. | Incidental | NEC Article 110.21(B), and 705.10 | |
| | | The manufacturers name, trademark or other descriptive markings must be visible on all electrical equipment and, where required by the code, markings such as voltage, current, wattage or other ratings must be provided. All markings must have sufficient durability to withstand the environment involved. | Incidental | NEC Article 110.21 | |
| | OCPD | The service overcurrent device shall be an integral part of the service disconnecting means or shall be located immediately adjacent thereto. | Critical | NEC Articles 230.91 and/ or 110.3(B) | |
| | | Equipment intended to interrupt current at fault levels shall have an interrupting rating at nominal circuit voltage at least equal to the available fault current at the line terminals of the equipment. | Major | NEC Articles 110.9, 110.10 and 230.82(6) | |
| | | Fused AC Disconnect shall be installed and used in accordance with any instruction included in the listing or labeling and Fuses are present. | Major | NEC Article 110.3(B) | |
| | | Fuses are present and installed in accordance with any instruction included in the listing or labeling. | Major | NEC Article 110.3(B) | |
| | | No overcurrent device shall be connected in series with any conductor that is intentionally grounded, unless the overcurrent device opens all conductors of the circuit, including the grounded conductor, and is designed so that no pole can operate independently. | Major | NEC Articles 240.22 | |
| | | The AC OCPD is properly sized for the expected output current of the PV system. | Major | NEC Article 240.4 | |
| | Structural | Equipment shall be firmly secured to the surface on which it is mounted and used in accordance with any instruction included in the listing or labeling. | Major | NEC Articles 110.3(B), 110.12 | |
| | | Equipment is installed with the appropriate clearances. | Minor | NEC Articles 110.26 and 110.27(A) | |
| | Subpanel | Conductors | Conductors are appropriately sized for expected current. | Critical | NEC Article 310.15 and/ or 690.8(B) |
| | | | A grounded conductor shall not be connected to normally non-current-carrying metal parts of equipment, to equipment grounding conductor(s), or be reconnected to ground on the load side of the service disconnecting means. | Major | NEC Article 250.24(B) |

| | | Task | Defect Category | Reference |
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| Subpanel (continued) | Conductors (continued) | Conductor insulation type is properly rated for temperature and environmental conditions. | Major | NEC Articles 300.9, 310.10, 310.15(A)(3) and 334.12(B)(4) |
| | | In exposed work, conductors are protected from abrasion or any other physical damage. | Major | NEC Article 110.12 |
| | | All conductors of the same circuit and, where used, the grounded conductor and all equipment grounding conductors and bonding conductors shall be contained within the same raceway, conduit body, auxiliary gutter, cable tray, cablebus assembly, trench, cable, or cord. | Minor | NEC Article 300.3(B) |
| | | Conductors are properly sized for rated terminals. | Minor | NEC Article 110.3(B) |
| | | Conductors shall be properly and firmly supported in a safe and permanent manner. | Minor | NEC Article 110.12 |
| | | Single conductor(s) connected correctly to the terminal or lug in accordance with its listing. | Minor | NEC Article 110.3(B) and 110.14(A) |
| | | Wire cannot be bent at a tighter radius than 5x the diameter of the conductor. | Minor | NEC Article 334.24, 338.24 |
| | | Grounded (neutral) conductor is properly identified. | Incidental | NEC Article 200.6(A)&(B) |
| | | Ungrounded conductor(s) are properly identified. | Incidental | NEC Article 200.7 |
| | Conduit | The conduit is grounded (when required). | Major | NEC Articles 250.4(A)(3) and 690.43 |
| | | Circuit conduit or raceway is properly supported and secured. | Minor | NEC Articles (LFMC-350.30, PVC-352.30, EMT-358.30, Metal Trough-376.30) |
| | | Conduit below grade is installed with provisions for movement. | Minor | NEC Article 300.5(J) |
| | | Conduit fittings and connectors are designed and listed for this use. | Minor | NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC-356.6, EMT-358.6) |
| | | Conduit thermal expansion fitting is properly installed to allow for movement. | Minor | NEC Articles 300.7(B), 352.44 and tables 352.44 and 355.44 |
| | | Conduit does not meet the conditions to be used as conductor support. | Incidental | NEC Article 300.11(C) |
| | | Conduit penetrations internally sealed to prevent condensation between conditioned and unconditioned environment. | Incidental | NEC Article 300.7(A) |
| | Electrical | Equipment must be sufficiently rated for expected voltage and/or current. | Critical | NEC Article 110.3(B) |
| | | Equipment is suitable for environment. | Major | NEC Articles 314.15 and 110.3(B) |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Major | NEC Article 110.3(B) |
| | | A Ground Fault Circuit Interrupting (GFCI) Wet Rated (WR) receptacle is required to be installed in a wet/damp location. | Minor | NEC Articles 110.3(B), 210.8(A)(3) and 406.9(B) |
| | | Dissimilar metals must not be in contact and prevented from undergoing galvanic reaction. | Minor | NEC Article 110.14 (for conductors/splice components), NEC Article 344.14 (for RMC) and NEC Article 358.14 (for EMT) for conduit and surrounding materials |
| | | Equipment must be installed in accordance with its listing and manufacturer's instructions. | Minor | NEC Article 110.3(B) |
| | | Unused openings of electrical equipment shall be properly sealed. | Minor | NEC Articles 110.12(A) or 408.7 |

| | | Task | Defect Category | Reference |
|-------------------------|------------|--|-----------------|---|
| Subpanel (continued) | Grounding | Equipment is properly grounded. | Major | NEC Articles 250.4, 250.8, 250.12 and 690.43 |
| | | Grounded conductor(s) terminal lug is properly installed. | Major | NEC Articles 110.3(B) and 250.4 |
| | Labeling | Each PV system disconnecting means shall be permanently marked as to identify it as a photovoltaic system disconnect. | Incidental | NEC Articles 110.21(B) and 690.13(B) |
| | | Every circuit and circuit modification shall be legibly identified as to it's clear, evident and specific purpose or use. The identification shall include an approved degree of detail that allows each circuit to be distinguished from all others. | Incidental | NEC Articles 110.21(B) and 408.4(A) |
| | | The manufacturers name, trademark or other descriptive markings must be visible on all electrical equipment and, where required by the code, markings such as voltage, current, wattage or other ratings must be provided. All markings must have sufficient durability to withstand the environment involved. | Incidental | NEC Article 110.21 |
| | | The sum of the ampere ratings of all overcurrent devices on panel boards, both load and supply devices, excluding the rating of the overcurrent device protecting the busbar, shall not exceed the ampacity of the busbar. The rating of the main overcurrent device protecting the busbar shall not exceed the rating of the busbar. Permanent warning labels shall be applied to distribution equipment. | Incidental | NEC Articles 110.21(B) and 705.12(B)(3) |
| | | The sum of the ampere ratings of all overcurrent devices on panelboards, both load and supply devices, excluding the rating of the overcurrent device protecting the busbar, shall not exceed the ampacity of the busbar. The rating of the overcurrent device protecting the busbar shall not exceed the rating of the busbar. Permanent warning labels shall be applied to distribution equipment. | Incidental | NEC Articles 110.21(B), 690.59 and 705.12(B)(3) |
| | OCPD | Circuit Breaker shall be installed and used in accordance with any instruction included in the listing or labeling. | Major | NEC Article 110.3(B) |
| | | The AC OCPD is properly sized for the expected output current of the PV system. | Major | NEC Article 240.4 |
| | Structural | Equipment shall be firmly secured to the surface on which it is mounted and used in accordance with any instruction included in the listing or labeling. | Major | NEC Articles 110.3(B), 110.12 |
| | | Equipment is installed with the appropriate clearances. | Minor | NEC Articles 110.26 and 110.27(A) |