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Photovoltaic Solar Inspection: Solar (client)

Property: INSPECTION – INSPECTION REPORT 00.00.2022

System Type: **Grid Tied** / ~~Off Grid~~ / ~~Battery Backup~~

MOUNTING/RACKING

1. Roof penetrations are flashed to prevent moisture from entering the roof. (IRC Chapter 9, Section R903, R324.4.3)
2. Racking and PV system support structures installed and torqued per manufacturer's instructions.

WIRING METHODS CONDUCTORS

1. All PV system conductors are identified.
2. PVC utilized to enclose grounding electrode conductors.
3. PV source and output circuits must be separated from non-PV system circuit conductors and inverter output circuit conductors.
4. DC positive and negative conductors identified with white, solidly grounded PV system.
5. Single conductor cables are secured within 12 inches of each box, cabinet, conduit body or other termination.
6. PV system conductors grouped and identified.
7. Array conductor cables secured by ties, straps, hangers at intervals that do not exceed 4.5 feet.
8. Exposed single conductor wiring is a 90ºC, wet rated and sunlight resistant type USE-2 or listed PV wire. If the wiring is in conduit, it is 90ºC, wet-rated type RHW-2, THWN-2, or XHHW-2.
9. DC conductors not located inside a building.
10. Properly sized equipment grounding conductor is routed with the circuit conductors.

CONDUIT, RACEWAYS, CABLE ASSEMBLY

1. All conduit, raceways, and cables sized and installed per the approved plans.
2. Terminals containing more than one conductor are listed for multiple conductors.
3. The markings on the conduits, raceways and cable assemblies are every 10 feet, within one foot of all turns or bends and within one foot above and below all penetrations of roof/ceiling assemblies, walls and barriers.
4. Rooftop DC Conduits are located as close as possible to the ridge or hip or valley and from the hip or valley as directly as possible to an outside wall to reduce trip hazards and maximize ventilation opportunities.
5. Underground conduits, raceways and cables are at a depth listed in the latest NEC and AHJ minimum burial depth charts.

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CONNECTORS

1. Connectors and terminals used for fine strand conductors are listed for use with such conductors.
2. Crimp on terminals are listed and installed using a listed tool specified for use in crimping those specific crimps.
3. Pressure terminals are listed for the environment and tightened to manufacturer recommended torque specifications.
4. Connectors are listed for the voltage of the system and have appropriate temperature and ampere ratings.
5. Twist on wire connectors are listed for the environment (i.e. wet, damp, direct burial, etc.) and installed per manufacturer's instructions.
6. Power distribution blocks are listed and rated for DC.

MODULES

1. Module manufacturer, make, model, and number of modules match.
2. Modules are attached to the mounting structure according to the manufacturer's instructions.
3. Module connectors are tight and secure.
4. PV modules are in good condition (i.e., no broken glass or cells, no discoloration, frames not damaged, etc.).
5. Grounding - modules are bonded in accordance with manufacturer's installation instructions using the supplied hardware or listed equipment specified in the instructions and identified for the environment.

EQUIPMENT ACCESSIBLE AT GROUND LEVEL

1. Equipment locations, models, and specifications match the approved plans.
2. Connection from PV system to grounding electrode system made per the approved plans.
3. Overcurrent devices in the PV DC circuits are listed for use in PV system and ratings match the approved plans.
4. Disconnects used in PV systems rated for the maximum short circuit current and voltage.
5. Isolating devices or disconnects are installed for the PV equipment, integrated into the equipment.
6. All exterior DC conduit, enclosures, raceways, cable assemblies, junction boxes, combiner boxes, and disconnects on buildings are marked.
7. Connectors that are readily accessible and operating at over 30 volts DC or 15 volts AC require a tool for opening.
8. PV source and output circuits in readily accessible locations and operating over 30V are guarded or in a raceway.

INVERTER

1. Inverter is properly secured with manufacturers required clearances.
2. AC and DC terminations are properly torqued.
3. Inverter or other listed equipment provides DC ground-fault protection for the DC PV array.
4. Required labels per Signage Requirements Table installed.

POINT OF UTILITY INTERCONNECTION (Instructions for Owner/Client)

1. Point of connection is on the Load/Supply/Line side of the service disconnecting means.
2. Load side connections, total rating of the overcurrent devices supplying a panelboard plus 125% of the inverter output current does not exceed 120% of the rating of the panelboard busbars.
3. Load side connections, PV interconnect breaker is located at the opposite end of the bus from the feeder connection, unless the bus assembly has ampacity rating equal to or greater than the sum of 125% of the inverter output current and the rating of the overcurrent device protecting the panelboard.
4. Supply-side connections, the sum of the ratings of all OCPDs connected to the power source must not exceed the rating of the service. Overcurrent protection for supply-side connected power source conductors must be provided within 3m (10') of the point of interconnection to the service.
5. PV system disconnecting means labeled similarly to "PV SYSTEM DISCONNECT" and readily accessible. Disconnect may be an externally operable general-use switch or circuit breaker, or other approved means.
6. Required labels per Signage Requirements Table installed.

RAPID SHUTDOWN

1. Rapid shutdown initiation device installed and located per approved plans. For one- and two-family dwellings device must be outside at a readily accessible location.
2. Installed rapid shutdown equipment, other than the initiation device, must be listed for the application.
3. Required labels per Signage Requirements Table installed.

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ENERGY STORAGE SYSTEM BATTERIES

Applicable Configuration: ~~Present~~ **/ Not Present**

1. Flexible battery cables do not leave the battery enclosure. (NEC 400.12)
2. Flexible, fine strand cables are only be used with terminals, lugs, devices, and connectors that are listed and marked for such use. (NEC 110.3(B) & 110.14)
3. Area is well ventilated and the batteries are not installed in living areas. (NEC 408.10 & 706.10(A))
4. Live parts of battery systems are guarded to prevent accidental contact by persons or objects. (NEC 706.10(B))
5. Working space and illumination are provided around the battery installation. (706.10 (C),(D) & (E)
6. Proper diagrams or placards are provided at the building electric service equipment and other power source locations. (NEC 706.11)

Owner/Installation representative present at time of inspection **X** Yes/____No

Name:

Permit/Plans present at time of inspection **X** Yes/____ No

Reviewed by: **Building & Zoning Department (City of/County)**

Manufacturer information readily available **X** Yes/____No

Manufacturer: **Inverter/Battery/Modules/ Mount**

System components were free of defects at time of inspection **X** Yes/____No

System connections and conductors/raceways appeared to be sound **X** Yes /____No

System labels were properly placed/visible at time of inspection **X** Yes /____No

Note: Inspection completed per terms of contract for purposes to verify array connections, wiring connections, equipment setup and system labeling. SIC does not warrant system functionality, service output or sizing, or damage to property as a result of installation company neglect/oversight or manufacturer products.

_____ **March 2, 2023**

Date

Re-inspection required, please notify and pay re-inspection fee when corrections are complete

Re-inspection Not required, please provide photos of corrections upon completion