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# **Illinois Solar for All Onsite Inspection Checklist.**

**For all solar photovoltaic systems**

## General Inspection Requirements Overview

When looking at a photovoltaic system, the system can be broken down into two types of inspections. The first type of inspection deals with the electrical portion of the system, while the second type of inspection focuses on the structural characteristics. Within every PV system there are some portions of the electrical and structural inspection processes that do not differ from one installation to the next. Some examples of inspection processes that would not change between systems are: verifying proper type of conductors, checking labeling of components, and confirming the mounting systems for the solar modules have been installed per the manufacturer's instructions. These are just a few examples of what are to be considered general inspection requirements when looking at a photovoltaic system, and the following pages provide the inspection process that is to be followed when performing these general electrical and structural inspections.

## Variance in Inspection by System and Equipment Type

Although there are similarities between all photovoltaic systems there are specific system designs that cannot be put in a general inspection process. Therefore, a second inspection process is necessary for both the electrical and structural portion of the photovoltaic system depending on certain system characteristics. The second electrical inspection process that would need to be followed is determined by what type of inverter is used within the photovoltaic system, while the second structural inspection process is determined by what surface the system is installed on. The following pages provide the specific electrical and structural inspection processes that would need to be followed depending on the system characteristics.

# Electrical Inspection Requirements for Specific Photovoltaic Installations

The following section describes the electrical inspection process that should be followed depending on the type of inverter used in the Photovoltaic (PV) System.

## INSPECTION PROCESS FOR PHOTOVOLTAIC SYSTEMS WITH STRING INVERTERS

Provide the following information for each of the installed string inverters:

- Manufacturer: \_\_\_\_\_
- Model: \_\_\_\_\_
- Max Continuous AC Output Rating: \_\_\_\_\_ Amps
- AC Output power rating: \_\_\_\_\_ Watts
- The inverter(s) has/have been properly installed and labeled according to the manufacturer, NEC, and all local AHJ codes.
  - Provide a photo showing the installation and labeling of each inverter.

String Inverter			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
The inverter installed does not match what was shown in the plans or specs.	Major	Final system approval will not be granted until one of the following happens: 1. Remove the incorrect inverter and install the correct one 2. Provide reasoning why the inverter does not match the plans.	3
The inverter has not been installed according to the manufacturer, NEC, and the local AHJ	Moderate	The inverter will need to be removed and reinstalled accordingly before the final system installation is approved	2
The information requested was not submitted.	Moderate	Final system approval will not be granted until the proper documentation is submitted.	2
The inverter has not been labeled according to NEC and the local AHJ.	Minor	System can be energized, but final approval will be pending until contractor provides photos showing proper labels have been added to the inverter.	1
<b>Total Score:</b>			___/8

- Does the inverter have an integrated DC disconnect? (Y/N)
  - If yes, provide the following:
    - A photo showing the integrated DC disconnect and labeling.
  - If no, provide the following information for the external DC disconnect(s):

- Manufacturer: \_\_\_\_\_
- Model: \_\_\_\_\_
- The external DC disconnect(s) has/have been properly installed and labeled according to the manufacturer, NEC and all local AHJ Codes.
  - Provide a photo showing the installation of the DC disconnect and labeling.
- All current carrying DC conductors are connected to the DC disconnect.
  - Provide a photo showing the installation of the DC disconnect and labeling.

DC Disconnect			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
The inverter does not have an integrated DC disconnect, and no means of a DC disconnect are installed.	Major	Contractor must install a DC disconnect and provide photos and information of the DC disconnect for final system approval.	3
The DC disconnect has not been installed according to the manufacturer, NEC, and the local AHJ	Moderate	The DC disconnect will need to be removed and reinstalled accordingly and the contractor must provide photos and information of the DC disconnect for final system approval.	2
The DC disconnect is not properly labeled according to NEC and local AHJ codes	Minor	System can be energized, but final approval will be pending until contractor provides photos showing proper labels have been added to the DC disconnect.	1
<b>Total Score:</b>			__ / 6

- Are DC/DC converters used? (Y/N)
  - If yes, provide the following information for the DC/DC converter:
    - Manufacturer: \_\_\_\_\_
    - Model #: \_\_\_\_\_
    - Max DC Input Current: \_\_\_\_\_ Amps
    - Max DC Input Voltage: \_\_\_\_\_ Volts
    - Max DC Output Current: \_\_\_\_\_ Amps
    - Max DC Output Power: \_\_\_\_\_ Watts
    - Max DC voltage from DC/DC converters to Inverter: \_\_\_\_\_ Volts
  - The DC/DC converter has been properly installed and labeled according to the manufacturer, NEC and all local AHJ Codes.
    - Provide a photo showing the installation of the DC/DC converters and labeling.

DC/DC Converters			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
The information requested regarding the DC/DC converters was not submitted	Moderate	Contractor is responsible for submitting the information for final system approval	2
The DC/DC converter has not been installed according to the manufacturer, NEC, and the local AHJ	Moderate	Contractor must remove and reinstall the DC/DC converter according to the manufacturer, NEC, and the local AHJ. A picture shall be provided after reinstallation.	2
The DC/DC converter has not been properly labeled according to NEC and the local AHJ codes.	Minor	System can be energized but final approval will be pending until contractor provides photos showing proper labels have been added to the DC/DC converters	1
<b>Total Score:</b>			__ / 5

- Are Photovoltaic Source Circuits combined prior to the central inverter? (Y/N)
  - If yes:
    - Provide the Manufacturer of the DC combiner box: \_\_\_\_\_
    - Provide the Model # of the DC combiner box: \_\_\_\_\_
    - The DC Combiner Box is listed UL 1741.
    - The appropriate size OCPD has been installed inside the DC combiner box.  
( $OCPD = 156\% \times I_{SC}$ )
      - Provide photo showing internal details of DC combiner Box
    - The DC combiner box has been properly installed and labeled according to the manufacturer, NEC and all local AHJ Codes.
      - Provide photo showing installation of DC combiner box and labeling.
  - If no:
    - The inverter has appropriately sized OCPD installed for the string of modules.  
( $OCPD = 156\% \times I_{SC}$ )
      - Provide a photo showing the OCPD inside the string inverter.

PV Source Circuit Combining			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
The DC combiner box is not listed UL 1741	Major	Final system approval will not be granted until the DC combiner box is replaced with a listed UL 1741 combiner box.	3
The overcurrent protection devices within the DC combiner box are not sized according to NEC.	Major	Final system approval will not be granted until the appropriate size OCPD have been installed, and the contractor has provided photos showing the correct OCPD installed.	3
The DC combiner box has not been installed according to the manufacturer, NEC, & local AHJ	Moderate	Final system approval will not be granted until the contractor properly installs the DC combiner box according to the manufacturer, NEC, and the local AHJ and provides photos showing proper installation.	2
The DC combiner box has not been labeled according to NEC and the local AHJ.	Minor	System can be energized but final approval will be pending until contractor provides photos showing proper labels have been added to the DC combiner box.	1
<b>Total Score:</b>			__ / 9

**IF THE PHOTOVOLTAIC SYSTEM IS A LOAD-SIDE CONNECTION :**

- Is the OCPD at the main panel located at the opposite end of the input feeder location? (Y/N)
  - If yes:
    - The inverter output OCPD is at least 125% of the rated inverter output current.
    - The (inverter output OCPD) + (Main panel OCPD)  $\leq$  the bus size rating x 120%.
      - Provide the sizes of the OCPD for the inverter output as well as the panel’s main breaker
    - Proper labels have been added to the main panel according to NEC and the local AHJ codes.
      - Provide photo showing proper labels at the main panel according to NEC and local AHJ. (Inside and Outside)
  - If no:
    - The inverter output OCPD is at least 125% of the rated inverter output current.
    - The (inverter output OCPD) + (Main panel OCPD)  $\leq$  the bus size rating x 100%.
      - Provide the sizes of the OCPD for the inverter output as well as the panel’s main breaker
    - Proper labels have been added to the main panel according to NEC and the local AHJ codes.
      - Provide photo showing proper labels at the main panel according to NEC and local AHJ. (Inside and Outside)

Load Side Connection			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
The inverter OCPD is not properly sized according to the location of the breaker in the main panel.	Major	Final system approval will not be granted until the properly sized OCPD is installed. If the panel does not have adequate space a line side connection of the inverter may be necessary	3
The main panel does not have the proper labels according to NEC and the local AHJ for identifying the PV source connection.	Minor	System can be energized but final approval will be pending until contractor provides photos showing proper labels have been added to the main panel.	1
<b>Total Score:</b>			__ / 4

**IF THE PHOTOVOLTAIC SYSTEM IS A SUPPLY-SIDE CONNECTION:**

- Appropriate connectors have been used to connect the conductors from the inverter to the supply-side utility conductors.
  - Provide following information for the connectors:
    - Manufacturer: \_\_\_\_\_
    - Model: \_\_\_\_\_
    - A photo showing the connectors installed.
- A disconnect switch, sized according to NEC and the local AHJ, has been installed between the inverter output and connection to the service entrance cables.
  - Provide the following information for the disconnect switch:
    - Manufacturer: \_\_\_\_\_
    - Model: \_\_\_\_\_
    - Photo showing the installation of the disconnect switch and labeling required by NEC and the local AHJ.
- A type of OCPD is integrated with or immediately adjacent to the disconnect switch and has at least the same current interrupting capability as the existing AC service disconnect.
  - Provide the following information of the OCPD:
    - Manufacturer: \_\_\_\_\_
    - Model: \_\_\_\_\_
    - Size of OCPD: \_\_\_\_\_ Amps

Supply Side Connection			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
A disconnect switch has not been installed between the inverter output and connection to the service entrance cables.	Major	System approval will not be granted until the proper disconnect is added between the connection to the service entrance cables and the inverter output. Photos of the installation will be required for approval.	3
A type of OCPD is not integrated with or installed adjacent to the disconnect switch.	Major	A type of OCPD is necessary for project approval and the contractor must install the OCPD and provide photos of the installation for final system approval.	3
Connectors are not approved for line side connections.	Moderate	Contractor must remove the connectors and install the proper type for final system approval.	2
<b>Total Score:</b>			__ / 8

- Does the Photovoltaic System include battery storage? (Y/N)
  - If yes:
    - Provide the battery Manufacturer: \_\_\_\_\_
    - Provide the battery Model #: \_\_\_\_\_
    - All live parts of the battery systems are guarded to prevent accidental contact by persons or objects.
    - Cables from the battery system to the battery inverter(s) and/or charge controllers are in conduit.
    - All conduits entering the battery enclosure are below the tops of the batteries to prevent accidental ventilation of gases into other electrical equipment.
    - The area is well ventilated, and the batteries are not installed in a living area.
    - A means of disconnecting the battery bank from the system inverter has been installed according to NEC and local AHJ codes.
    - Provide the charge controller Manufacturer: \_\_\_\_\_
    - Provide the charge controller Model #: \_\_\_\_\_
    - The charge controller is listed to UL Standard 1741.
    - The charge controller has been properly installed and labeled according to the manufacturer, NEC, and all local AHJ codes.
      - Provide a photo showing the installation of the charge controller and labeling.

Battery Storage			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
Charge controller is not listed to UL 1741	Major	Final system approval will not be granted until the charge controller is replaced with a listed UL 1741 charge controller.	3
Live parts of the battery system are accessible by persons or objects.	Major	Photos showing the live parts of the battery system have been covered according to NEC and any local AHJ codes are required for final system approval	3
A means of disconnecting the battery bank has not been installed.	Major	Final system approval will not be granted until a means of disconnecting the battery bank has been installed and photos have been submitted showing the installation meets NEC and local AHJ codes.	3
The battery bank or charge controller has not been installed according to the manufacturer, NEC, and local AHJ codes	Moderate	Contractor will be responsible for reinstalling the battery bank or charge controller to meet NEC and local AHJ codes and provide photos for final system approval.	2
Conduits are not entering battery enclosure at the bottom.	Moderate	Contractor must move conduit penetrations to the bottom of the battery bank enclosure and provide photos for final system approval.	2
The battery or charge controller information has not been submitted.	Minor	System can be energized but contractor is responsible for submitting the requested information for final system approval.	1
<b>Total Score:</b>			__ / 14



- Provide the following information for the rapid shutdown (RSD) equipment.
  - Manufacturer: \_\_\_\_\_
  - Model #: \_\_\_\_\_
  - The rapid shutdown equipment has been properly installed and labeled according to the manufacturer, NEC, and all local AHJ codes.
    - Provide a photo showing the installation of the rapid shutdown equipment installation

Rapid Shutdown Equipment			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
The rapid shutdown equipment has not been installed per the manufacturer, NEC and local AHJ requirements.	Moderate	Final system approval will not be granted until the contractor properly installs the rapid shutdown equipment according to the manufacturer, NEC, and the local AHJ and provides photos showing the proper installation.	2
The rapid shutdown equipment information has not been submitted.	Minor	Contractor is responsible for submitting the requested information for final system approval.	1
The proper rapid shutdown labels have not been included according to NEC and the local AHJ.	Minor	System can be energized but final approval will be pending until contractor provides photos showing proper labels have been added for the rapid shutdown equipment.	1
<b>Total Score:</b>			__ / 4

### SCORING RUBRIC FOR STRING INVERTER INSPECTION

The following table shall be filled out with the scores determined by the final inspection process above.

Inspection Category	Scores
String Inverter	/ 8
DC Disconnect	/ 6
DC/DC Converters*	/ 5
PV Source Circuit Combining	/ 9
Load Side Connection*	/ 4
Supply Side Connection*	/ 8
Battery Storage*	/ 14
Rapid Shutdown Equipment	/ 4
<b>Total Score:</b>	__ / __

\* Specific inspection category may not be necessary depending on photovoltaic (PV) system installation.

## INSPECTION PROCESS FOR PHOTOVOLTAIC SYSTEMS WITH MODULE LEVEL POWER ELECTRONICS (MLPE)

- If Microinverters are used provide the following information:
  - Number of modules installed: \_\_\_\_\_
  - Number of Microinverters installed: \_\_\_\_\_
    - Provide a photo showing the installation of one of the microinverters.
  
- Provide the following information for the Microinverters or ACM:
  - Manufacturer: \_\_\_\_\_
  - Model: \_\_\_\_\_
  - Rated (continuous) AC output power: \_\_\_\_\_ Watts
  - Nominal AC voltage rating: \_\_\_\_\_ Volts
  - Rated (continuous) AC output current: \_\_\_\_\_ Amps
  
- If installing Microinverters also provide:
  - Max DC input voltage rating: \_\_\_\_\_ Volts
  - Max AC output overcurrent protection device (OCPD) \_\_\_\_\_ Amps

Microinverters and ACMs			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
The total number of modules installed does not match what was shown on the plans.	Major	Contractor must provide reasoning as to why the number of modules differs from what was shown on the plans for final system approval.	3
The microinverter specifications do not match what was shown in the plans or specs.	Major	Contractor must remove and install the correct microinverters that were in the plans and specs and provide photos for final system approval.	3
The information requested regarding the microinverters or AC modules was not submitted.	Moderate	Contractor is responsible for submitting the requested information for final system approval	2
<b>Total Score:</b>			__ / 8

**IF THE PHOTOVOLTAIC SYSTEM IS A LOAD-SIDE CONNECTION :**

- Is the OCPD at the main panel located at the opposite end of the input feeder location? (Y/N)
  - If yes:
    - The inverter output OCPD is at least 125% of the rated inverter output current.
    - The (inverter output OCPD) + (Main panel OCPD)  $\leq$  the bus size rating x 120%.
      - Provide the sizes of the OCPD for the inverter output as well as the panel’s main breaker
      - Provide photo showing proper labels at the main panel according to NEC and local AHJ. (Inside and Outside)
  - If no:
    - The inverter output OCPD is at least 125% of the rated inverter output current.
    - The (inverter output OCPD) + (Main panel OCPD)  $\leq$  the bus size rating x 100%.
      - Provide the sizes of the OCPD for the inverter output as well as the panel’s main breaker
      - Provide photo showing proper labels at the main panel according to NEC and local AHJ. (Inside and Outside)

Load Side Interconnection			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
The inverter OCPD is not properly sized according to the location of the breaker in the main panel.	Major	Final system approval will not be granted until the properly sized OCPD is installed. If the panel does not have adequate space a line side connection of the inverter may be necessary	3
The main panel does not have the proper labels according to NEC and the local AHJ for identifying the PV source connection.	Minor	System can be energized but final approval will be pending until contractor provides photos showing proper labels have been added to the main panel.	1
<b>Total Score:</b>			__ / 4

**IF THE PHOTOVOLTAIC SYSTEM IS A SUPPLY-SIDE CONNECTION:**

- Appropriate connectors have been used to connect the conductors from the inverter to the supply-side utility conductors.
  - Provide following information for the connectors:
    - Manufacturer: \_\_\_\_\_
    - Model: \_\_\_\_\_
    - A photo showing the connectors installed.
- A disconnect switch, sized according to NEC and the local AHJ, has been installed between the inverter output and connection to the service entrance cables.
  - Provide the following information for the disconnect switch:
    - Manufacturer: \_\_\_\_\_
    - Model: \_\_\_\_\_
    - Photo showing the installation of the disconnect switch and labeling required by NEC and the local AHJ.
- A type of OCPD is integrated with or immediately adjacent to the disconnect switch and has at least the same current interrupting capability as the existing AC service disconnect.
  - Provide the following information of the OCPD:
    - Manufacturer: \_\_\_\_\_
    - Model: \_\_\_\_\_
    - Size of OCPD: \_\_\_\_\_ Amps

Supply Side Interconnection			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
A disconnect switch has not been installed between the inverter output and connection to the service entrance cables.	Major	System approval will not be granted until the proper disconnect is added between the connection to the service entrance cables and the inverter output. Photos of the installation will be required for approval.	3
A type of OCPD is not integrated with or installed adjacent to the disconnect switch.	Major	A type of OCPD is necessary for project approval and the contractor must install the OCPD and provide photos of the installation for final system approval.	3
Connectors are not approved for line side connections.	Moderate	Contractor must remove the connectors and install the proper type for final system approval.	2
<b>Total Score:</b>			__ / 8

- Does the Photovoltaic System include battery storage? (Y/N)
  - If yes:
    - Provide the battery Manufacturer: \_\_\_\_\_
  
    - Provide the battery Model #: \_\_\_\_\_
  
    - All live parts of the battery systems are guarded to prevent accidental contact by persons or objects.
    - Cables from the battery system to the battery inverter(s) and/or charge controllers are in conduit.
    - All conduits entering the battery enclosure are below the tops of the batteries to prevent accidental ventilation of gases into other electrical equipment.
    - The area is well ventilated, and the batteries are not installed in a living area.
    - A means of disconnecting the battery bank from the system inverter has been installed according to NEC and local AHJ codes.
  
    - Provide the charge controller Manufacturer: \_\_\_\_\_
  
    - Provide the charge controller Model #: \_\_\_\_\_
  
    - The charge controller is listed to UL Standard 1741.
    - The charge controller has been properly installed and labeled according to the manufacturer, NEC, and all local AHJ codes.
      - Provide a photo showing the installation of the charge controller and labeling.

Battery Storage			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
Charge controller is not listed to UL 1741	Major	Final system approval will not be granted until the charge controller is replaced with a listed UL 1741 charge controller.	3
Live parts of the battery system are accessible by persons or objects.	Major	Photos showing the live parts of the battery system have been covered according to NEC and any local AHJ codes are required for final system approval	3
A means of disconnecting the battery bank has not been installed.	Major	Final system approval will not be granted until a means of disconnecting the battery bank has been installed and photos have been submitted showing the installation meets NEC and local AHJ codes.	3
The battery bank or charge controller has not been installed according to the manufacturer, NEC, and local AHJ codes	Moderate	Contractor will be responsible for reinstalling the battery bank or charge controller to meet NEC and local AHJ codes and provide photos for final system approval.	2
Conduits are not entering battery enclosure at the bottom.	Moderate	Contractor must move conduit penetrations to the bottom of the battery bank enclosure and provide photos for final system approval.	2
The battery or charge controller information has not been submitted.	Minor	System can be energized but contractor is responsible for submitting the requested information for final system approval.	1
<b>Total Score:</b>			__ / 14

## SCORING RUBRIC FOR MODULE LEVEL POWER ELECTRONICS (MLPE) INSPECTION

The following table shall be filled out with the scores determined by the final inspection process above.

Inspection Category	Scores
Microinverters and ACMS	__ / 8
Load Side Interconnection*	__ / 4
Supply Side Interconnection*	__ / 8
Battery Storage*	__ / 14
<b>Total Score:</b>	__ / __

\* Specific inspection category may not be necessary depending on photovoltaic (PV) system installation.

## GENERAL ELECTRICAL INSPECTION PROCESS FOR PHOTOVOLTAIC SYSTEMS

- PV Array Configuration
  - The PV modules are in good condition (i.e. no broken glass or cells, no discoloration, frames not damaged, etc.).
  - Provide the following information for the solar modules installed:
    - Manufacturer: \_\_\_\_\_
    - Model #: \_\_\_\_\_
    - Module  $V_{oc}$ : \_\_\_\_\_ Volts
    - Module  $I_{sc}$ : \_\_\_\_\_ Amps
    - Module DC power under STC: \_\_\_\_\_ Watts
    - Number of Modules installed: \_\_\_\_\_
  - If AC modules are used:
    - The modules are listed to UL 1703 and UL 1741.
  - If DC modules are used:
    - The modules are listed to UL 1703.

PV Array Configuration			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
AC modules are not listed UL 1703 & UL 1741 or the DC modules are not listed UL 1703	Major	The final system approval will not be granted until the proper UL listed solar modules are installed.	3
Module information does not match what was shown in the plans and specifications.	Major	The final system approval will not be granted until the correct modules are installed, or the contractor provides valid reasoning as to why solar modules do not match plans and specs.	3
Solar array contains damaged or poor condition solar modules	Moderate	Contractor is responsible for replacing the damaged modules and submitting photos of overall array afterwards for final system approval.	2
<b>Total Score:</b>			__ / 8

- Grounding
  - The solar modules have been grounded in accordance with the manufacturer's installation instructions using the supplied hardware or listed equipment specified in the installation instructions.
    - Provide photos showing the grounding connections of the solar modules
  - The AC and DC grounding electrode conductors are properly connected according to NEC and the local AHJ.

Grounding			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
Modules and module mounts are not connected to system ground	Moderate	The final system approval will not be granted until the proper grounding connections have been made.	2
AC and DC grounding electrodes (if present) are not properly connected.	Minor	Contractor shall be responsible for making the proper connections between the electrodes for final system approval.	1
<b>Total Score:</b>			__ / 3

- Wire Management
  - Array conductors are neatly and professionally routed and held in place according to NEC and local AHJ codes.

Wire Management			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
Array conductors are sagging and not held in place.	Minor	System can be energized but contractor is responsible for going back and properly fixing conductors that are not installed according to NEC and the local AHJ codes.	1
<b>Total Score:</b>			__ / 1

- Conductors
  - Exposed single conductors are 90C, wet rated and UV resistant type USE-2 or listed PV wire.
  - Conductors in conduit are 90C, wet rated type RHW-2, THWN-2, or XHHW-2.
  - Conductors are not in contact with the roof surface.
  - DC conductors located inside a building are in a metal raceway or MC metal-clad cable that complies with NEC 250.118(10) or metal enclosures.

Conductors			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
Improper types of conductors are used	Major	All conductors that do not adhere to the NEC and local AHJ codes will need to be removed and replaced with the proper conductors. For final system approval a reinspection may be necessary.	3
DC conductors located inside a building are exposed	Major	The DC conductors must be removed and reinstalled with the proper metal raceway according to NEC and the local AHJ codes. For final system approval a reinspection may be necessary.	3
Conductors are lying on the roof	Minor	System can be energized, but the contractor is responsible for going back and mounting cables to prevent them from being in contact with the roof. Photos shall be provided proving cables are no longer lying on the roof.	1
<b>Total Score:</b>			__ / 7



- Overcurrent Protection Devices (OCPD)
  - All over current protection devices in the DC circuits are listed for DC operation.
  - All over current protection devices in the AC circuits are listed for AC operation.
  - Has the NEC exception for the requirement of over current protection devices for PV modules or PV source circuit conductors been met? (NEC 2017 690.9(A))(Y/N)
    - If yes
      - Provide necessary calculations proving the exception listed in NEC has been met.
    - If no
      - Provide the following:
        - Calculations showing DC source circuit overcurrent protection devices have been sized for 156% of the short circuit ( $I_{sc}$ ) current from the modules (NEC 690.8(B)(1)).
        - Photos showing the rating of the OCPD.

Overcurrent Protection Devices			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
PV modules or source circuit conductors OCPD do not meet the 156% requirement.	Moderate	Properly sized OCPD must be installed and a photo shall show the installation of the proper OCPD for final system approval.	2
Overcurrent protection device is used in AC system, but it is listed for DC use, or vice versa.	Minor	Contractor shall be responsible for replacing the OCPD with the appropriate type. A photo of the new OCPD shall be provided for proof and system approval.	1
<b>Total Score:</b>			__ / 3

- Electrical Connections
  - Connectors that are readily accessible and operating at over 30 volts require a tool for opening.
  - Pressure terminals are listed for the environment and tightened to manufacturer recommended torque specifications.
  - Connectors are listed for the voltage of the system and have appropriate temperature ampere ratings.
  - Twist on wire connectors are listed for the environment (i.e. wet, damp, direct burial, etc.) and installed per manufacturer's instructions.

Electrical Connections			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
Connectors readily accessible and operating at voltages greater than 30 volts do not require a tool to open.	Major	The contractor shall replace the connectors with the proper connector type and provide a photo showing the new connectors installed for final system approval.	3
<b>Total Score:</b>			__ / 3

- Signs and Labels
  - All interior and exterior DC conduit, enclosures, raceways, cable assemblies, junction boxes, combiner boxes, and disconnects are marked according to NEC and the local AHJ.

Signs and Labels			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
Some labels are missing from the PV system	Minor	System can be energized, but the final system approval will be pending until the proper labels have been added and the contractor has submitted photos showing the new labels.	1
<b>Total Score:</b>			__ / 1

- REC Production Metering
  - Is the system registered in M-RETS or PJM-GATS? (M-RETS/GATS)
    - Contractor is responsible for providing a screen shot that shows the system location is registered in one of the two tracking software
  - If registered in M-RETS provide the following information for the revenue quality meter installed:
    - Manufacturer: \_\_\_\_\_
    - Model #: \_\_\_\_\_
    - The revenue quality meter installed is non-refurbished and has an ANSI C.12 rating.
      - Contractor must provide documentation proving the meter is ANSI C.12 rated.
  - If registered in PJM-GATS and the system size is greater than 25 kW provide the following information for the revenue quality meter installed:
    - Manufacturer: \_\_\_\_\_
    - Model #: \_\_\_\_\_

- The revenue quality meter installed is non-refurbished and has an ANSI C.12 rating.
  - Contractor must provide documentation proving the meter is ANSI C.12 rated.
- If registered in PJM-GATS and the system size is greater than 10 kW and less than 25 kW provide the following information for the revenue quality meter installed:
  - Manufacturer: \_\_\_\_\_
  - Model #: \_\_\_\_\_
- The revenue quality meter installed has an ANSI C.12 rating.
  - Contractor must provide documentation proving the meter is ANSI C.12 rated.
- If registered in PJM-GATS and the system size is less than or equal to 10 kW determine whether Option 1 or 2 was used

#### **Option 1 – Revenue Quality Meter Installed**

- Meter Manufacturer: \_\_\_\_\_
- Meter Model #: \_\_\_\_\_
- The revenue quality meter installed does not exceed a  $\pm 5\%$  measurement tolerance.
  - Contractor must provide documentation proving the meter is within the  $\pm 5\%$  tolerance

#### **Option 2 – Revenue Quality Meter Not Installed**

- The inverter installed is UL-Certified.
  - Contractor must provide documentation or photo showing UL certification
- The inverter includes either a digital or web-based output display for production.
  - Contractor must provide a photo of the inverter display or a screen shot of the web-based application
- The inverter is specified by the manufacturer to be accurate to  $\pm 5\%$ .
  - Contractor must provide documentation proving the inverter is within the  $\pm 5\%$  tolerance
- The system is fully functioning and producing power per system design.
  - Contractor is responsible for providing a screenshot of the M-RETS or PJM-GATS instantaneous power production reading for the system.
  - Either a clear photo showing the LCD/LED screen of each inverter or a screen shot of the inverter's web-based interface showing instantaneous power production for the system.

<b>REC Production Metering</b>			
<b>Cause of Inspection Failure</b>	<b>Severity of Failure</b>	<b>Steps for Approval</b>	<b>Score</b>
The system has not been registered in M-RETS or PJM-GATS	Major	System needs to be registered in one of the REC tracking software for ABP approval as well as final system approval	3
The meter or inverter installed does not meet the requirements for the certain tracking software or system size	Major	The meter or inverter must be removed, and the proper meter or inverter needs to be installed for ABP approval as well as final system approval	3
The system is not fully functioning and producing power	Major	The system must be producing power at the rate in which the system was designed for	3
The contractor forgot to submit some of the required photos or documentation requested.	Minor	The final system approval will be pending on the submittal of the requested information	1
<b>Total Score:</b>			<u>    </u> / 10

## SCORING RUBRIC FOR GENERAL ELECTRICAL INSPECTION

The following table shall be filled out with the scores determined by the final inspection process above.

Inspection Category	Scores
PV Array Configuration	__ / 8
Grounding	__ / 3
Wire Management	__ / 1
Conductors	__ / 7
Over Current Protection Devices	__ / 3
Electrical Connections	__ / 3
Signs and Labels	__ / 1
REC Production Metering	__ / 10
<b>Total Score:</b>	__ / 36

# Structural Inspection Requirements for Specific Photovoltaic Installations

The following section describes the structural inspection process that should be followed depending on what surface the Photovoltaic (PV) System is installed on.

## INSPECTION PROCESS FOR PHOTOVOLTAIC SYSTEMS INSTALLED ON ANGLED ROOF

- If a ballast type mounting system is used:
  - Provide engineer’s calculations showing the roof can support a ballast type mounting system.
  - Provide engineer’s calculations used to determine the number and size of ballast needed.
  - If roof penetrations are needed:
    - Anchoring hardware has been secured to the structural members of the roof.
      - Provide a photo showing the anchoring hardware prior to flashing installed.
    - Proper weatherization techniques have been used to prevent roof leaks for all roof penetrations.
      - Provide a photo showing the proper weatherization techniques installed.

Ballast Mount			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
Calculations were not submitted for roof loads.	Major	Final system approval will be pending on the calculations submitted proving the roof can support the additional weight. Contractor must submit the calcs as soon as possible	3
Anchoring hardware was not secured to the structural members of the roof	Moderate	Contractor must remove anchoring hardware not attached to structural members and reinstall them accordingly	2
Weatherization is missing or not properly installed	Minor	Contractor is responsible for going back and installing proper weatherization techniques.	1
<b>Total Score:</b>			<u>   </u> / 6

- If a rail/shared-rail mounting system is used:
  - The rails mounting brackets have been secured to the structural members of the roof.
    - Provide a photo showing the anchoring hardware prior to flashing installed.
  - The proper weatherization techniques have been used to prevent roof leaks for all roof penetrations.
    - Provide a photo showing the proper weatherization techniques installed.

Rail Mount			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score

Anchoring hardware was not secured to the structural members of the roof	Moderate	Contractor must remove anchoring hardware not attached to structural members and reinstall them accordingly	2
Weatherization is missing or not properly installed	Minor	Contractor is responsible for going back and installing proper weatherization techniques.	1
<b>Total Score:</b>			__ / 3

- If a rail-less mounting system is used:
  - The mounting brackets have been secured to the structural members of the roof.
    - Provide a photo showing the anchoring hardware prior to flashing installed.
  - The proper weatherization techniques have been used to prevent roof leaks for all roof penetrations.
    - Provide a photo showing the proper weatherization techniques installed.

Rail-Less Mount			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
Anchoring hardware was not secured to the structural members of the roof	Moderate	Contractor must remove anchoring hardware not attached to structural members and reinstall them accordingly	2
Weatherization is missing or not properly installed	Minor	Contractor is responsible for going back and installing proper weatherization techniques.	1
<b>Total Score:</b>			__ / 3

## SCORING RUBRIC FOR ANGLED ROOF INSPECTION

The following table shall be filled out with the scores determined by the final inspection process above.

Inspection Category	Scores
Ballast Mount*	__ / 6
Rail Mount*	__ / 3
Rail-Less Mount*	__ / 3
<b>Total Score:</b>	__ / __

\* Specific inspection category may not be necessary depending on mounting system installed for the photovoltaic (PV) system array.



## INSPECTION PROCESS FOR PHOTOVOLTAIC SYSTEMS INSTALLED ON FLAT ROOF

- If a ballast type mounting system is used:
  - Provide engineer's calculations or proof from the manufacturer showing the ballast system can support the solar modules installed.
  - Provide engineer's calculations or proof from the manufacturer showing the number and size of ballast needed.
- If roof penetrations are needed:
  - Anchoring hardware has been secured to the structural members of the roof.
    - Provide a photo showing the anchoring hardware prior to flashing installed.
  - Proper weatherization techniques have been used to prevent roof leaks for all roof penetrations.
    - Provide a photo showing the proper weatherization techniques installed.
- Panels have been tilted at the angle shown in the plans and specifications.
  - Provide a photo showing the panels have been tilted according to the design plans and specs.

Ballast Mount			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
Calculations were not submitted for roof loads.	Major	Final system approval will be pending on the calculations submitted proving the roof can support the additional weight. Contractor must submit the calcs as soon as possible	3
Anchoring hardware was not secured to the structural members of the roof	Moderate	Contractor must remove anchoring hardware not attached to structural members and reinstall them accordingly	2
Panels have not been tilted according to plans or specs.	Moderate	Contractor must go back and tilt the solar modules according to the plans and specs and shall provide photos showing the panels installed at an angle for final system approval.	2
Weatherization is missing or not properly installed	Minor	Contractor is responsible for going back and installing proper weatherization techniques.	1
<b>Total Score:</b>			__ / 8

- If a rail/shared-rail mounting system is used:
  - The rails mounting brackets have been secured to the structural members of the roof.
    - Provide a photo showing the anchoring hardware prior to flashing installed.
  - The proper weatherization techniques have been used to prevent roof leaks for all roof penetrations.
    - Provide a photo showing the proper weatherization techniques installed.
  - Panels have been tilted at the angle shown in the plans and specifications.
    - Provide a photo showing the panels have been tilted according to the design plans and specs.

Rail Mount			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score

Anchoring hardware was not secured to the structural members of the roof	Moderate	Contractor must remove anchoring hardware not attached to structural members and reinstall them accordingly	2
Panels have not been tilted according to plans or specs.	Moderate	Contractor must go back and tilt the solar modules according to the plans and specs and shall provide photos showing the panels installed at an angle for final system approval.	2
Weatherization is missing or not properly installed	Minor	Contractor is responsible for going back and installing proper weatherization techniques.	1
<b>Total Score:</b>			__ / 5

- If a rail-less mounting system is used:
  - The mounting brackets have been secured to the structural members of the roof.
    - Provide a photo showing the anchoring hardware prior to flashing installed.
  - The proper weatherization techniques have been used to prevent roof leaks for all roof penetrations.
    - Provide a photo showing the proper weatherization techniques installed.
  - Panels have been tilted at the angle shown in the plans and specifications.
    - Provide a photo showing the panels have been tilted according to the design plans and specs.

Rail-Less Mount			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
Anchoring hardware was not secured to the structural members of the roof	Moderate	Contractor must remove anchoring hardware not attached to structural members and reinstall them accordingly	2
Panels have not been tilted according to plans or specs.	Moderate	Contractor must go back and tilt the solar modules according to the plans and specs and shall provide photos showing the panels installed at an angle for final system approval.	2
Weatherization is missing or not properly installed	Minor	Contractor is responsible for going back and installing proper weatherization techniques.	1
<b>Total Score:</b>			__ / 5

## SCORING RUBRIC FOR FLAT ROOF INSPECTION

The following table shall be filled out with the scores determined by the final inspection process above.

Inspection Category	Scores
Ballast Mount*	__ / 8
Rail Mount*	__ / 5
Rail-Less Mount*	__ / 5
<b>Total Score:</b>	__ / __

*\* Specific inspection category may not be necessary depending on mounting system installed for the photovoltaic (PV) system array.*

## INSPECTION PROCESS FOR GROUND MOUNTED PHOTOVOLTAIC SYSTEMS

- If a ballast type mounting system is used:
  - Provide engineer’s calculations or proof from the manufacturer showing the ballast system can support the solar modules installed.
  - Provide engineer’s calculations or proof from the manufacturer showing the number and size of ballast needed.
  - Panels have been tilted at the angle shown in the plans and specifications.
    - Provide a photo showing the panels have been tilted according to the design plans and specs.

Ballast Mount			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
Contractor has not provided any information showing the ballast system will support the solar modules.	Major	Final system approval will be pending on proof from the manufacturer or a licensed engineer showing the ballast system used can support the solar modules installed.	3
Panels have not been tilted according to plans or specs.	Moderate	Contractor must go back and tilt the solar modules according to the plans and specs and shall provide photos showing the panels installed at an angle for final system approval.	2
<b>Total Score:</b>			__ / 5

- If a tracking system is used:
  - Provide the following information for the motors used in the tracking system:
    - Manufacturer: \_\_\_\_\_
    - Model #: \_\_\_\_\_
  - Is the tracking system single or dual-axis? (Single-Axis/Dual-Axis)
  - Is the tracking system centralized or does it use distributed trackers? (Centralized/Distributed Trackers)
  - Panels have been tilted at the angle shown in the plans and specifications.
    - Provide a photo showing the panels have been tilted according to the design plans and specs.

Tracking Mount			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
Contractor has not provided any information showing the ballast system will support the solar modules.	Major	Final system approval will be pending on proof from the manufacturer or a licensed engineer showing the ballast system used can support the solar modules installed.	3
Panels have not been tilted according to plans or specs.	Moderate	Contractor must go back and tilt the solar modules according to the plans and specs and shall provide photos showing the panels installed at an angle for final system approval.	2

Contractor has failed to provide information regarding the motors used in the tracking system	Minor	System will be approved but the contractor must submit documentation of the motors used in the tracking system installed.	1
<b>Total Score:</b>			__ / 6

### SCORING RUBRIC FOR GROUND MOUNT INSPECTION

The following table shall be filled out with the scores determined by the final inspection process above.

Inspection Category	Scores
Ballast Mount*	__ / 5
Tracking Mount*	__ / 6
<b>Total Score:</b>	__ / __

*\* Specific inspection category may not be necessary depending on mounting system installed for the photovoltaic (PV) system array.*

## GENERAL STRUCTURAL INSPECTION PROCESS FOR PHOTOVOLTAIC SYSTEMS

- Provide the weight of the arrays (pounds per square foot including mounting hardware)
- Provide the following information for the PV mounting system installed:
  - Manufacturer: \_\_\_\_\_
  - Model #: \_\_\_\_\_
- The mounting system has been installed according to the manufacturer’s installation instructions and all local AHJ codes.
  - Provide photo(s) showing mounting system prior to solar module installations.
- The solar modules have been attached to the mounting system according to the manufacturer’s installation instructions.
  - Provide photo(s) showing modules attached to the mounting system
- The overall PV system array matches is installed at the location specified in the plans and in the correct orientation.
  - Provide photo(s) showing the overall array layout.

General Structural Inspection			
Cause of Inspection Failure	Severity of Failure	Steps for Approval	Score
Mounting system was poorly installed (i.e. loose connections, unsightly, not following manufacturer’s instructions)	Major	Contractor is responsible for fixing any issues with the mounting system. A reinspection may be necessary for final system approval.	3
Solar modules have not been properly secured to the mounting system.	Moderate	Contractor is responsible for fixing any issues with the installation of the solar modules	2
The pounds per square foot of the arrays and mounting hardware have not been provided.	Minor	Contractor must provide the pounds per square foot for final system approval.	1
Mounting system information was not provided.	Minor	System will be approved but contractor must submit documentation of the mounting system installed.	1
The PV solar array does not match the design shown in the plans and/or the orientation of the array is incorrect	Major	Contractor will need to do one of the following for final system approval. 1. Provide valid reasoning as to why the location or orientation of the solar array installation does not match the design plans. 2. Remove the solar array and reinstall according to the design plans.	1
<b>Total Score:</b>			__ / 8

## SCORING RUBRIC FOR GENERAL STRUCTURAL INSPECTION

The following table shall be filled out with the scores determined by the final inspection process above

Inspection Category	Scores
General Structural	__ / 8
<b>Total Score:</b>	__ / 8

## Final Scoring Rubric for Photovoltaic (PV) Installation

Approved Vendor: \_\_\_\_\_

Project Size: \_\_\_\_\_

This section of the document shall be used to combine all of the individual inspection scores into one complete score. However, before combining these scores a scaling factor should be determined from the table below. A scaling factor is necessary because larger photovoltaic systems will tend to have a higher probability of inspection failures due to the overall complexity of the system, and the fact that more components are needed for higher power outputs. For example, a 100 kW system will have ten times the solar panels of a 10 kW system. Therefore, the contractor installing the 100 kW system has much higher odds of making minor mistakes that will add up and affect their overall inspection score, which in the end affects their overall Approved Vendor rating. That is why these scaling factors will be applied to the final inspection score to help ensure fair ratings of Approved Vendors.

Project Size	Scaling Factor
Size $\leq$ 10 kW	1
10kW < Size $\leq$ 100 kW	0.9
100 kW < Size	0.8

The following table shall be filled out according to the scores determined by the specific inspection types used. Once the total score has been calculated a scaling factor, determined from the above table, will be applied to the total to achieve the final project score and percentage.



PV Installation Scoring Rubric	
Inspection Type Used	Scores
String Inverters	__ / __
Module Level Power Electronics	__ / __
General Electric	__ / __
Angled Roof	__ / __
Flat Roof	__ / __
Ground Mount	__ / __
General Structural	__ / __
<b>Total Score:</b> $\left( \frac{\sum \text{Inspection Scores}}{\sum \text{Possible Scores}} \right)$	__ / __
<b>Scaling Factor:</b>	__
<b>Adjusted Total Score:</b> $\left( \frac{\text{Scaling Factor} * \sum \text{Inspection Scores}}{\sum \text{Possible Scores}} \right)$	__ / __
<b>Project Percentage:</b> $\left( 1 - \frac{\text{Scaling Factor} * \sum \text{Inspection Scores}}{\sum \text{Possible Scores}} \right) * 100\%$	__%

\* Only fill out the scores for the types of inspections that were used in the final project inspection.

### APPROVED VENDOR RATING

Upon completion of an inspection, the Project Percentage will be evaluated to determine the overall quality of the photovoltaic (PV) system installation. ILSFA understands that unforeseen issues and/or difficult installations can lead to uncharacteristically low inspection scores. As a result, the ILSFA will conduct an average of all of the Project Percentage scores for each approved vendor to yield an Approved Vendor rating. This rating will determine if any additional steps, or corrective actions, are required for vendors whose photovoltaic (PV) systems repeatedly fail to meet the required standards.

The issue that arises when rating Approved Vendors this way is the total number of inspections can affect the overall rating. For example, if an Approved Vendor

had a total of five photovoltaic (PV) systems inspected, and all inspections except one fell within the acceptable threshold, that single inspection would have a more significant impact than it would if the Approved Vendor had a higher number of inspections completed. In order to alleviate this issue an Approved Vendor rating, and any corrective steps, will not be enforced until 15 system inspections have been completed and logged.

Once the Approved Vendor Rating is in effect, the Approved Vendor must maintain an average percentage rating of at least 80% or higher in order to ensure that the Approved Vendor is continually meeting the standards set forth by ILSFA for all photovoltaic (PV) system installations.

The following table details what corrective action will be required by Illinois Solar for All if the Approved Vendor Rating does not maintain a rating of at least 80% or higher.

Approved Vendor Percentage (AVP)	Corrective Action Required
AVP ≥ 80%	The Approved Vendor is considered to be in good standing and is meeting the standards for ILSFA. No further action is required.
70% ≤ AVP < 80%	The Approved Vendor has had minor infractions on system inspections. The Approved Vendor agrees to attend training for photovoltaic system installations conducted by the Program Administrator.
60% < AVP ≤ 70%	<p>The Approved Vendor has had multiple infractions on a number of inspections. The Approved Vendor</p> <ol style="list-style-type: none"> <li>1. Agrees to attend training for photovoltaic system installations,</li> <li>2. Will have up to 50% of projects inspected onsite until inspection rate maintains and average of 70% or higher for three months.</li> </ol>
AVP < 60%	<p>The Approved Vendor will be</p> <ol style="list-style-type: none"> <li>1. Placed on “Warning” status</li> <li>2. Agrees to attend training for photovoltaic system installations</li> <li>3. Will have up to 100% of projects inspected onsite until inspection rate maintains and average of 70% or higher for three months.</li> </ol>

# Site Suitability Inspection Requirements

## SITE SUITABILITY INSPECTION PROCESS FOR ROOF MOUNTED PHOTOVOLTAIC SYSTEMS

The following section describes the structural inspection process that should be followed to determine if the proposed site is suitable for a roof mounted photovoltaic (PV) system installation.

- What type of roof covering is installed? (Asphalt Shingles / Slate, Clay or Concrete Tiles / Metal / Built-up, Membrane or Gravel)
  - If the existing roof has asphalt shingles:
    - The shingles are not warped or curled
    - There is no moss growth
    - The shingles are not brittle and there is no significant loss of the granular coating
    - Photo(s) show the overall roof condition and the PV system
  - If the existing roof has clay, slate or concrete tiles:
    - There are no major cracks along any of the existing tiles.
    - Tiles are not misaligned, displaced, or raised at one end.
    - There are no missing tiles
    - There is no spalling on the tiles.
    - Photo(s) show the overall roof condition and the PV system
  - If the existing roof is metal:
    - The metal roof has no signs of rusting.
    - There is no corrosion or pitting.
    - The overlapping seams are not damaged and prevent moisture intrusion.
    - Roof penetrations are properly sealed
    - Photo(s) show the overall roof condition and the PV system
  - If the existing roof is built up, membrane, or gravel:
    - The membrane is not brittle or cracking in any locations
    - There is no evidence of water penetration or trapped moisture
    - There are no cracks within the roof coatings.
    - The roof has no signs of ponding
    - The roof does not have any blistering
    - Photo(s) show the overall roof condition and the PV system

- There are no signs of significant decay, dry rot, insect, fire or water damage in any of the roof components supporting the roof structure.
  - Provide photos of the roof components that show the overall condition
- There are no signs of significant sagging, movement, or sponginess of the roof surface.
- The roof structure is capable of supporting the additional loading of the PV system per ASCE-7 or local building code.
  - Provide calculations performed by a licensed structural engineer in the local AHJ that prove the roof structure is capable of supporting the additional loads.
- The rafters and trusses of the roof framing have not been modified in any way that may affect the structural integrity of these components.
- There are not three or more layers of roof materials present on the roof.
- The roof structure meets the current local structural code requirements enforced by the local AHJ.
- The expected life of the existing roof is at least 15 years.
  - Where needed, a roof condition report has been provided by a licensed, bonded, and insured roofer.
- The existing roof complies with all local building codes enforced by the AHJ.
- Issues identified in the Site Suitability Report have been remediated by a licensed, bonded, and insured roofer. Repairs have not placed an unsustainable financial burden on the building owner.

## SITE SUITABILITY INSPECTION PROCESS FOR GROUND MOUNTED PHOTOVOLTAIC SYSTEMS

The following inspection occurs in Part II of the project application process and is intended to verify the accuracy of information presented in the Part I Site Suitability Report.

- The solar array and balance of system have adequate clearances and setbacks.
  - Photo(s) show the PV system and surrounding area
- Objects or structures located near the PV system do not cast shadows on the array.
  - A shading study confirms the array(s) are shade free.
- The system location does not intrude on protected wetlands.
  - A Fish and Wildlife Service (FWS) report confirms the system does not intrude on protected wetlands.
- Flooding risk
  - A Flood Insurance Risk Map (FIRM) review or other flood risk report confirms the area is not susceptible to flooding.
  - If flood risk was identified in Part I, an approved flood mitigation plan was implemented.
- Grading plan
  - Any large elevation variations were addressed by a grading plan stamped by a civil engineer licensed to practice in the Authority Having Jurisdiction (AHJ).
- Ground Anchors
  - For non-ballasted systems the installed mounting system ground anchors conform to the stamped foundation plans approved by the Authority Having Jurisdiction (AHJ).
- Issues identified in the Site Suitability Report have been remediated by a licensed, bonded, and insured roofer. Repairs have not placed an unsustainable financial burden on the building owner.

## SITE SUITABILITY INSPECTION PROCESS OF EXISTING ELECTRICAL SYSTEM

The following inspection occurs in Part II of the project application process and is intended to verify the accuracy of information presented in the Part I Site Suitability Report.

- The existing power panel at the point of interconnection does not present any hazardous electrical conditions.
  - Photo(s) show the condition of the panel.
- The existing power panel at the point of interconnection contains circuit breakers and does not use Edison base fuses
- For load side connected PV systems confirm:
  - The service panel has incorporated the PV system back fed breaker per local code
  - The busbar capacity has not been exceeded by the PV system
- There is no active Knob and Tube (K&T) wiring inside the home.
- All exposed electrical boxes have covers properly installed.
- There is proper insulation on any of the exposed wires.
- All issues identified in the Site Suitability Report were properly remediated by a licensed, bonded, and insured electrician. The repairs did not place an unsustainable financial burden on the owner.

## SITE SUITABILITY INSPECTION PROCESS FOR SPACE AND ACCESSIBILITY

The following section describes the inspection process that should be followed to determine if the proposed site has adequate space and accessibility for a photovoltaic (PV) system installation.

- All work areas are clear of hazardous materials (flammable materials, paints, solvents, etc.)
  - Provide photos showing work areas are clear of hazardous materials

- There is sufficient mounting space and work clearances for all necessary PV system equipment

## SITE SUITABILITY INSPECTION PROCESS FOR HEALTH AND SAFETY

The following section describes the inspection process that should be followed to determine if the proposed site contains any materials that may pose health or safety concerns when installing a photovoltaic (PV) system.

- If there any potentially hazardous materials identified in the Site Suitability report confirm:
  - The hazardous material(s) were undisturbed

or

  - The hazardous material(s) were removed by a licensed remediation professional.
    - Obtain documentation from a licensed remediation professional showing the material was removed.
- If pests were identified in the Site Suitability report confirm:
  - The pest problem has been remediated.