Appendix 3: Inspection Checklists Description RFQL4272 Standards and Quality Assurance

_

	Page
Scoring Definitions and Matrix	2
Combined Heat and Power Commissioning Report Template	3-15
Combined Heat and Power Inspection Report Template Energy	16-25
Storage Field Inspection Checklist	26-59
Energy Storage Photo Inspection Checklist	60-68
New York State Healthy Homes Value-Based Payment Pilot	
Field Inspection Checklist	69-107
NY-Sun NEC 2014 Field Inspection Checklist	108-154
NY-Sun NEC 2014 Photo Inspection Checklist	155-173
NY-Sun NEC 2017 Field Inspection Checklist	174-219
NY-Sun NEC 2017 Photo Inspection Checklist	220-237

Scoring Definitions and Matrix

Field Definitions:	
Inspection Category	The Category field represents the highest level of the inspection checklist hierarchy and may include one or more measures
Measure	The Measure field falls under a Category and represents a specific component that you are inspecting
Task Requirement	The Task Requirement field falls under a Measure and represent the specific inspection checkpoints that an inspector would rate as Pass or Fail for a given component
Task Description	Task descriptions provide more detail on the Task Requirement and are used by inspectors to determine the task rating
Reference	Each task requirement needs to be tied back to either a code reference, Program Manual, or Manufacturer instructions (page 5 PM)
Deficiency Category	Each task requirement is assigned a deficiency category of either incidental, minor, major or critical. Refer to the Deficiency Category Descriptions section below for additional detail. Generally speaking, NYSERDA will require an applicant to document through pictures and/or notes verification of resolution of all major and critical deficiencies. Minor and Incidental deficiencies need to be corrected but NYSERDA will not be verifying resolution
Canned Failure Description	Deficiency descriptions will be made available to the inspector to select from when a specific Task Requirement is rated as Failed. To the extent possible, NYSERDA prefers to use canned deficiency descriptions to describe to the applicant why a given task has failed
Non-Conformance Category Descriptions:	
Incidental	Not expected, on its own, to pose a substantial risk of system failure or hazard.
Minor	Requires modifications to address but not expected to pose a substantial risk of system failure or hazard.
Major	Presents an increased risk of system failure or hazard but not determined to be in imminent danger of failure or hazard.
Critical	Presents an imminent hazard and/or probability of system failure.

QA Scoring Matrix						
Score	Score Incidental Minor Major					
5	Up to 3	Up to 2	0	0		
4	More than 3	Up to 3	0	0		
3	N/A	More than 3	0	0		
2	N/A	N/A	Up to 1	0		
1	N/A	N/A	More than 1	More than 0		

CHP Re-Commissioning Report

for

XYZ Building

RCx Visit Date: September 25, 2015

September 2015

Prepared for:

New York State Energy Research and Development Authority Paul Vainauskas Project Manager NYSERDA Contract 68174

Prepared by:

[Type text]

Executive Summary

This CHP unit is a ### kW reciprocating engine generator from...

The CHP system recovers heat from the engine jacket and an exhaust heat exchanger to provide heat to...

Monitored data on CHP operation is collected by...since... The quality of this data is....

Summary of problems...

Summary of reasons and proposed solutions...

We recommend that...

Table of Contents

Acronyms and Abbreviations

kWh	kilowatt hours
kW	kilowatt
Btu	British thermal unit
MBtu	1000 British thermal units
НХ	heat exchanger
НР	horsepower
СНР	combined heat and power
СТ	current transformer
VAC	volts alternating current
M&V	monitoring and verification
DAS	data acquisition system
GPM	gallons per minute
Deg F	degrees Fahrenheit
CF	cubic feet
CF/h	cubic feet per hour
FPM	feet per minute

Site Contacts

NYSERDA PM:	Paul Vainauskas, 518-862-1090, <u>paul.vainauskas@nyerda.ny.gov</u>
Facility Staff:	
Vendor Name:	

1. Building and CHP Description

Most of this section is taken from sections 1-6 in the Inspection Report

Facility and Project Details



Figure 1. Photos of XYZ Building (the blue dots show where the CHP system is located)

Table 1. Facility Details

Facility Name:	
Building Type:	Multi-use, Multi-family
Address or Location:	
Con-Ed Targeted Load Zone:	Unknown
Location of CHP in Building:	Third floor setback roof
Location of Heat Recovery Tie-In:	Basement boiler room
Location of Electrical Tie-in:	First floor switchgear room

The CHP system was conceived or developed by....describe proposed concept and equipment used.

Provide any pertinent history about the development and construction process....

Describe who designed and installed the system ...

What NYSERDA Program provided funding....

Responsibilities and relationships between all the project participants..

Table 2. Project Contacts

Feasibility Study / Conceptual Design	Engineering Design		
Name Company Address Contact info	Name Company Address Contact info		
Equipment Vendor	Other Parties		
Name Company Address Contact info	(as appropriate)		

Briefly describe the CHP system...including all its equipment and components. How is it electrically connected to the building, how is the heat used to beneficially meet loads in the building, how is heat rejected. Where is all the equipment located. Complete the tables below and provide annotated photos and schematics as appropriate to describe the system.

Indicate the state of the system on date of inspection. Provide runtime hours or other appropriate information or evidence that the system is operating.

The following figures and tables provide further detail on the CHP equipment installed at the facility.

Manufacturer:	Capstone	
Model:	C65	
Gross Electrical Output:	65 kW	
Rated Efficiency:	27.2% HHV at ISO conditions	
Prime Mover Type:	Microturbine	
Grid Connection Type:	Inverter	
Standby Power Capability:	Black start capable, limited emergency power duty	
Heat Recovery Method:	Exhaust to hot water	

Table 3. Prime Mover Details

Electrical Details

Describe the electrical connection of the CHP system to the building. Is the unit black start capable? Is there a protective relay? What circuits or equipment are powered during an outage? What electrical metering is in place? Provide a basic summary one-line and/or attach electrical drawings as an Appendix.

Table 4. CHP System Electrical Components

Panels and Other Electrical Equipment	Protection Relay
	Dual Mode Controller
	Remote Shunt Trip Breaker (52IT)
	208/480 VAC transformer

Include photos of electrical system components of CHP system as appropriate.



Figure 2. One Line Schematic of Building Electrical Distribution System and CHP Unit. Instrumentation Points are Shown as Blue.

Thermal System Configuration and Details

Describe how the CHP system is connected into the building thermal loads. Provide schematics and annotated photos as appropriate. Describe systems and components on the CHP loop side as well as components and systems on the load or building side such as boilers, DHW tanks, etc. Describe system operation and control sequences.



Figure 3. Schematic Diagram of CHP Unit integrated with Building Hydronic Distribution System. Instrumentation Points are Shown at Blue.



Photo caption 1 Figure 4. Photos of Key Thermal Components (rename)



Photo caption 2

Fuel System

Describe the gas train including meters and any compressors in the system. Indicate whether service is on main meter of a separate cogen meter. Report gas pressures, rated gas flow and whether the meter has a pulse output.

M&V Meters and Measurements

Sensor locations can be annotated in the schematics in the previous sections or they can be described here Provide a photo of each sensor. Note all sensors or CTs that could not be located.

Table 5. CHP M&V Instrumentation

Data Point	Description	Sensor	Output	Accuracy
WG	Gross Microturbine Output	Veris H8035-300	Modbus kW/kWh	ANSI C12.1 1%
WPAR	Heat Recovery Pump Power	Veris H8035-100	Modbus kW/kWh	ANSI C12.1 1%
TLS	Heat Recovery Supply Temperature	Onicon RTD	Read by BTU meter	1%
TLR	Heat Recovery Return Temperature	Onicon RTD	Read by BTU meter	1%
FL	Heat Recovery Flow	Onicon F1100	Read by BTU meter	1%
QU	Integrated Heat Recovery	Onicon System 10 BTU Meter	Modbus °F, GPM, MBtu	1% Rated, 3% aggregate of sensors
FG	Microtubine Gas Consumption	Onicon F5000 Thermal Mass Meter	Modbus CF/h & CF	2% with typical flow rate of 390 FPM
WT	Import Power	Shark 100	Modbus	ANSI C12.20 Class 2 0.2%

2. Summary of Monthly Performance

Provide a summary of the monthly data from the CHP system during the first year of operation.

Table 6. CHP M&V Instrumentation

	[WG _{net}]	[FG]	[QU]	[FCE _{elec}]	[FCE _{chp}]	[WT]
Date	DG Generator Output	DG Gas Input	Useful Heat Recovery	Electrical Efficiency HHV	Total Efficiency HHV	PLP Account Purchased Energy
	(kWh x 10^3)	(cf x 10^3)	(MBtu x 10^3)	(%)	(%)	(kWh x 10^3)
November 2013	24.96	464.4	7.9	17.8%	19.4%	17.44
December 2013	26.38	487.1	43.8	17.9%	26.6%	19.46
January 2014	28.34	512.2	146.3	18.3%	46.0%	19.45
February 2014	25.76	464.8	57	18.3%	30.2%	17.56
March 2014	28.17	509.6	162.7	18.3%	49.2%	19.43
April 2014	18.05	374.2	117.4	16.0%	46.4%	18.84
May 2014	13.04	314.1	118.8	13.7%	50.4%	19.44
June 2014	13.85	320.1	120.8	14.3%	50.9%	18.78
July 2014	18.95	391.6	140.2	16.0%	50.7%	16.38
August 2014	18.73	389.2	146.7	15.9%	52.4%	16.39
September 2014	17.33	366	131.1	15.7%	50.4%	15.84
October 2014	18.44	387.1	70.9	15.8%	33.5%	16.36
November 2014	16.87	315.2	40.9	17.7%	30.3%	24.82
December 2014	29.96	520.7	185.6	19.0%	53.6%	15.94
January 2015	28.84	496.9	175.1	19.2%	53.3%	20.1
February 2015	29.47	504.2	177.1	19.3%	53.4%	14.74
March 2015	26.65	477.4	182.3	18.5%	55.5%	19.67
April 2015	18.31	380.5	145.5	15.9%	53.0%	17.32
May 2015	14.61	333.6	138	14.5%	54.6%	17.41
June 2015	14.85	330.8	97.1	14.8%	43.3%	13.32
July 2015	18.28	384.7	125	15.7%	47.2%	18.48
August 2015	18.62	395	111.2	15.6%	42.9%	18.5
Total	468.46	9,119.4	2,641.4	17.0%	45.1%	395.7
Past 12-months	252.23	4,892.1	1,579.8	17.1%	48.3%	212.5

3. Performance Trends Based on Observations and Detailed Data

Provide a summary of the monthly data from the CHP system during the first year of operation.

Electricity Data

Trends of electric output

Natural Gas Data

Trends of gas use

Heat Recovery Data

Trends of heat recovery data, dumped heat



Figure 5 Cogen Heat Output

Prime Mover and Heat Recovery Performance Trends

Trends of efficiency with operating conditions and loading (compared to expected performance)

Reported Operating Issues

M&V Meters and Data Collection

Table of data points, Photos of tags of installed metering

Analysis of Heat Recovery Performance Trends

4. Recommendations

This section provides recommendations for how CHP system operation can be improved.

APPENDIX

Specification Sheets for...

CHP Site Inspection Report

for

XYZ Building

Inspection Date: September 25, 2015

Revised

September 2015

Prepared for:

New York State Energy Research and Development Authority

Paul Vainauskas

Project Manager

1 SUMMARY ASSESSMENT

ERS/CDH inspected the CHP system installed at the site on xyz date. The installed CHP system is comprised of two 50 kW reciprocating engines along with a heat recovery package. Heat recovered from the engines is used to preheat hot water used to support the space heating and domestic hot water loads in the building. The system was operational during our site visit and the installed CHP system components matched with the project documents. Based on a review of the historical CHP system trend data, this system has been operational producing about xyz kWh in power and recovering xyz MBH over the past six months. We recommend paying the remaining portion of the incentive for this project.

If applicable, describe any noteworthy deviations of the actual system from the design documents or other information that was provided. Note any potential performance issues that that should be tracked or monitored during the first year of operation.

2 FACILITY DESCRIPTION

The host facility for the CHP system isprovide an overview of the facility including building purpose and function, gross floor area, number of apartments (or other descriptive metrics), major energy using systems. Photo 1 shows the overhead view of the facility.



Photo 1. Photo of XYZ Building (The blue dot shows where the CHP system is located)

Facility name	
Building type	Multi-use, Multifamily
Address or location	
Con-Edison targeted load zone	Unknown
СНР Туре	Mictrobine, RICE, ORC
Total gross nameplate electric output (kW)	
Location of CHP in building	Third floor setback roof
Is CHP size less than the maximum allowed for streamlined application?	Yes/No

3 EQUIPMENT VENDOR INFORMATION AND BACKGROUND

The project contacts associated with this project are listed in Table 2.

Feasibility Study / Conceptual Design	Engineering Design
Name	Name
Company	Company
Address	Address
Contact info	Contact info
Equipment Vendor	NYSERDA PM
Name	Name
Company	Company
Address	Address
Contact info	Contact info
Site Contact	
Name	
Company	
Address	
Contact info	

Table 2. Project Contacts

4 CHP SYSTEM DESCRIPTION

Briefly describe the CHP system...including all its equipment and components. How is it electrically connected to the building, how is the heat used to meet loads in the building, how is heat rejected. Where is all the equipment located. Complete the tables below and provide annotated photos and schematics as appropriate to describe the system.

Indicate the state of the system on date of inspection. Provide runtime hours or other appropriate information or evidence that the system is operating.

The following tables and photos provide further detail on the CHP equipment installed at the facility.

ID	Manuf.	Model	Serial No.	Gross Electrical Output	Rated Efficiency	Prime Mover Type	Grid Connection Type	Stand-by Power Capability	Heat Recovery Method
	Capstone	C65		65 kW	27.2% HHV at ISO conditions	Microturbine	Inverter	Black start capable, limited emergency power duty	Exhaust to hot water

Table 3. Prime Mover Details

Table 4. Inverter Details (if Available)

Brand	Model	Serial Number	Rated Thermal Output
Capstone	ICHP Integrated HX		345 MBtu/h @ 185°F entering water

Table 5. Ancillary Equipment/Pump Details

Equipment Type	HP	Quantity	Additional Notes	
Heat recovery pumps	1.5	2	Lead/lag	

Table 6. Heat Rejection/Radiator Equipment Details

Equipment Type/Make	Model	HP	Quantity	Additional Notes
Radiator fan		N/A	1	No dedicated heat rejection equipment used.



Photo 2. Rooftop Unit and Piping

5 ELECTRICAL INTERCONNECTION DETAILS

The following sections cover information related to the electrical interconnection and observations of the installed CHP system.

5.1 Electrical Interconnection Details

Describe the electrical connection of the CHP system to the building. Is the unit black start capable? Is there a protective relay? What circuits or equipment are powered during an outage? What electrical metering is in place? Table 8 shows information on the function and location of the panel(s) and other electrical equipment related to CHP system.

Equipment	Function	Location
Beckwith M-3410A protection relay	Provides reverse power protection and other generator protection controls	Located in enclosure in main switchgear room on first floor CTs located on main service for PPL panel
Dual-mode controller	Detects utility outage, activates shut trip breaker for emergency/island mode operation	Adjacent to microturbine
Remote shunt trip breaker (52IT)	Automatic breaker used for emergency power isolation	Boiler room
208/480 VAC transformer	Microturbine produces power at 480 VAC, and uses transformer to interface with building service, which is 208 VAC	

 Table 7. CHP System Electrical Panel Inventory

Photo 3 shows the read out at the CHP unit

Photo 3. CHP Readout



5.2 Electrical Line Diagram

If available from the project documents, please insert in this section with appropriate notes.

5.3 Electrical Observations

Provide any observations about how the system and its design may or may not provide the expected performance. Summarize any readings or measurements taken at the site. Compare readings to data from the CHP web site.

Table 8. Electrical Output

Power Reading Value	
Generator display	59 kW at 3:19 p.m. Sep-19-2015
Handheld power meter	62 kW at 3:19 p.m. Sep-19-2015
CHP website reading	61.3 kW for 15:00 on Sep-19-2015

6 THERMAL SYSTEM CONFIGURATION

The following section presents information on the thermal configuration of the installed CHP system.

6.1 Thermal System Configuration and Details

Provide schematics and annotated photos as appropriate. Verify the plumbing setup. Describe systems and components on the CHP loop side as well as components and systems on the load or building side such as boilers, DHW tanks, etc. Describe system operation and control sequences.





Photo 4 shows the heating system and its associated components.



Photo 4. Boiler

6.2 Thermal System Observations

Provide any observations about how the system and its design may or may not provide the expected performance.

Summarize any readings or measurements taken at the site to verify expected performance. Compare to readings from the CHP website.

Thermal System Reading	Value (at 3:30 PM Sep-19-2015)
Supply temperature	170°F
Return temperature	159°F
Flow rate	41.5 GPM (<i>mention no reading if a read out is not available</i>)
Heat recovery rate	282.25 MBtu/h (<i>will depend on the availability of the flow reading</i>)
CHP website	260 MBtu/h at 15:00

Table 9. CHP System Thermal System Observations

7 FUEL DELIVERY SYSTEMS

This section provides a brief description of the fuel systems serving the CHP plant.

7.1 Fuel System

Describe the gas train including meters and any compressors in the system. Indicate whether service is on main meter of a separate cogen meter. Report gas pressures, rated gas flow and whether the meter has a pulse output.



Photo 5. Cogen Gas Meter

7.2 Fuel Observations

Provide any observations about how the system and its design may or may not provide the expected performance. Use a stop watch method to estimate gas consumption rate during part of the site inspection period. Compare to readings from CHP website.

Time	Gas Meter Reading (CF)
12/1/15 @ 1:51 p.m.	1,977,300 cf
12/1/15 @ 4:56 p.m.	1,979,300 cf
Difference (185 minutes)	2,000 cf, 666 cf/h average rate
CHP website	680 cf/h at 15:00

8 MONITORING SYSTEM INFORMATION

Describe the data acquisition system, what does it measure, what data collection interval, how does the system send data out to NYSERDA. Is there an integrating BTU meter. Check to see if the monitoring system is able to operate during an outage. How is net power output measured, are there separate meters for parasitic power. Do flow meters and temperature sensors capture the useful and dumped thermal energy. The M&V table is mostly available from the project files.

Sensor locations can be annotated in the schematics in the previous sections or they can be described here. Provide photos of sensors if possible. Note all sensors or CTs that could not be located.

Data Point	Description	Sensor	Output
WG	Gross microturbine output	Veris H8035-300	Modbus
			kW/kWh
WPAR	Heat recovery pump power	Not accessible	Modbus
			kW/kWh
TLS	Heat recovery supply temperature	Not accessible	Read by BTU meter
TLR	Heat recovery return temperature	Onicon RTD	Read by BTU meter
FL	Heat recovery flow	Onicon F1100	Read by BTU meter
QU	Integrated heat recovery	Onicon System 10	Modbus
		BTU Meter	°F, GPM, MBtu
FG	Microturbine gas	Onicon F5000	Modbus
	consumption	Thermal Mass Meter	CFH/CF
WT	Import power	Shark 100	Modbus

Table 11. CHP M&V Instrumentation

Photo 6. Sensor Type and Location



APPENDIX A: CITED DOCUMENTS AND MATERIALS

List all design documents, drawings, reports, specifications, or other info that was used in preparing this inspection report (indicate which documents were posted to the project website).

FIELD INSPECTION REFERENCE – 2017 NEC Energy Storage



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

		Requirement	Defect Category	Code Reference
Overall Observations	Program	Program compliant means is present for customer to verify system electricity generation.	Minor	Energy Storage System Program
		As built system capacity must match the submitted and approved plan.	Incidental	Energy Storage System Program
		As built system capacity must match the submitted and approved plan.	Incidental	Energy Storage System Program
		Existing Service Panel is not a split bus (FPE Stab-Lok, Push-O-Matic etc.,).	Critical	Energy Storage System Program
		All Material and equipment must be new and undamaged, per NY Sun program requirements.	Major	Energy Storage System Program
		Installed Battery manufacturer shall match Program records.	Incidental	Energy Storage System Program
		Installed Battery model number shall match Program records.	Incidental	Energy Storage System Program
		Installed Battery quantity shall match Program records.	Incidental	Energy Storage System Program
		As per Program requirements, any roof damage must be repaired prior to installation.	Minor	Energy Storage System Program
		Site address must match site address submitted.	Critical	Energy Storage System Program
		Current Transformers are installed and meet Program requirements.	Major	Energy Storage System Program
		Energy Storage System Discharge Test is required.	Major	Energy Storage System Program
		Battery storage system includes a manual (system description, operating and safety instructions, maintenance requirements, safe battery handling requirements and recommendations).	Minor	Energy Storage System Program

		Requirement	Defect Category	Code Reference
AC Combiner	Conductors	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)
		AC Combiner circuit conductors are properly sized for expected current load.	Critical	NEC Article 310.15
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surfaces and the ground terminal inside combiner box.	Major	[NEC Article 250.24(A)(5)]
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		The length of the free conductors within the enclosure shall meet or exceed 6" requirement.	Minor	NEC Article 300.14
		The neutral conductor is connected at its own dedicated terminal isolated from metal enclosure.	Minor	NEC Article 408.41
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		AC conduit is adequately supported.	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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3)
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	Electrical	AC Combiner is suitable for environment.	Major	NEC Articles 314.15 and 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 it's listing and manufacturers instructions.	Minor	NEC Article 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7

		Requirement	Defect Category	Code Reference
AC Combiner (continued)	Grounding	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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Grounding electrode conductor is continuous.	Major	NEC Article 250.64(C)
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66 and 250.166
		AC Combiner is properly grounded.	Major	NEC Articles 250.4, 250.8 and 250.12
	Labeling	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)(2)(3)(c)]
		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
	OCPD	AC Combiner Overcurrent protection is sufficient.	Critical	NEC Article 240.4
		Energy Storage System Backfed breaker is properly sized at, or above 125% of inverter output current	Major	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)
	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 and 110.13(A)
		Combiner box is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and NEC 110.27(A)

		Requirement	Defect Category	Code Reference
AC Disconnect	Conductors	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)
		ESS AC output conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductors are isolated from enclosure and ground terminal.	Major	NEC Article 250.24(A)(5)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		The length of the free conductors within the enclosure shall meet or exceed 6" requirement.	Minor	NEC Article 300.14
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment	Incidental	NEC Article 300.7(A)
		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 conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
		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)

		Requirement	Defect Category	Code Reference
AC Disconnect (continued)	Electrical	AC Disconnect enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		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 it's listing and manufacturers instructions.	Minor	NEC Article 110.3(B)
		AC Disconnect is properly rated for expected current load.	Critical	NEC Articles 110.3(B), 705.60 (125% of the inverter output) and 705.65(OCP), 706.7 and 706.21
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		A disconnecting means shall be provided for all ungrounded conductors derived from an energy storage system.	Major	NEC Articles 706.7(A)
		Service disconnect is properly rated for the application.	Major	NEC Article 230.79(D)
		Service Disconnects are properly grouped.	Minor	NEC Article 230.72
	Grounding	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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Grounding electrode conductor must be continuous.	Major	NEC Article 250.64(C)
		Grounding electrode conductor is properly bonded to the main premises grounding electrode system.	Major	NEC Article 250.64
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, and 250.166
		AC Disconnect is grounded.	Major	NEC Articles 250.4, 250.8 and 250.12
		Equipment grounding conductor is properly sized.	Major	NEC Article 250.122
	Labeling	A permanent plaque or directory denoting all electric power sources on or in the premises shall be installed at each service equipment location and at locations of all electric power production sources capable of being interconnected. Exception: Installations with large numbers of power production sources shall be permitted to be designated by groups. (B) Facilities with Stand- Alone Systems. Any structure or building with an ESS that is not connected to a utility service source and is a stand-alone system shall have a permanent plaque or directory installed on the exterior of the building or structure at a readily visible location acceptable to the authority having jurisdiction. The plaque or directory shall indicate the location of system disconnecting means and that the structure	Incidental	NEC Article 110.21(B) and 706.11

		Requirement	Defect Category	Code Reference
AC Disconnect (continued)	OCPD	Conductors shall be protected against overcurrent in accordance with their ampacity.	Critical	NEC Article 240.4 and 706.21(B)
		The AC OCPD is properly sized for the expected output current of the ESS system.	Major	NEC Article 706.21(B)
		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)
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Article 240.22
		Fuses are present and installed in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Equipment intended to interrupt current at fault levels shall have an interrupting rating sufficient for the current that is available at the line terminals of the equipment.	Major	NEC Articles 110.9, 110.10 and 230.82
		The service overcurrent device shall be an integral part of the service disconnecting means or shall be located immediately adjacent.	Critical	NEC Articles 230.91 and/ or 110.3(B)
	Structural	AC disconnect is installed in accordance with its listing and installation instructions.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)
		AC Disconnect is installed with the appropriate clearances and protection measures.	Minor	NEC Articles 110.26 and NEC 110.27(A)

		Requirement	Defect Category	Code Reference
DC Combiner	Conductors	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)
		DC Combiner splice components are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		DC Combiner splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		DC conductors are sized properly.	Critical	NEC Article 310.15
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		The length of the free conductors within the enclosure shall meet or exceed 6" requirement.	Minor	NEC Article 300.14
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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 conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	Electrical	Combiner box is suitable for environment.	Major	NEC Articles 314.15 and 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 it's listing and manufacturers instructions.	Minor	NEC Article 110.3(B)
		Enclosure rating is sufficient for expected current load in accordance with its listing.	Critical	NEC Article 110.3(B)
		DC Combiner is properly identified and listed.	Major	NEC Articles 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7

		Requirement	Defect Category	Code Reference
DC Combiner (continued)	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than 6AWG shall be protected from physical damage.	Minor	NEC Article 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		DC Combiner box is grounded.	Major	NEC Articles 250.4, 250.8 and 250.12
		Equipment grounding conductor is properly sized.	Major	NEC Article 250.122
	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
	OCPD	Overcurrent devices used in any DC portion of the ESS shall have the appropriate voltage, current and interrupt ratings.	Major	[NEC Article 706.21(C)]
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Article 240.22
		Energy storage system circuit conductors shall be protected.	Critical	NEC Article 706.21(A)
	Structural	Combiner box is properly secured in place.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)
		Combiner box is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and NEC 110.27(A)

		Requirement	Defect Category	Code Reference
DC Disconnect	Conductors	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)
		DC circuit conductors are properly sized for expected current load.	Critical	NEC Article 310.15
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		The length of the free conductors within the enclosure shall meet or exceed 6" requirement.	Minor	NEC Article 300.14
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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 conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	Electrical	DC Disconnect enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		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 it's listing and manufacturers instructions.	Minor	NEC Article 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Disconnect is listed for DC use.	Critical	NEC Article 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		A disconnecting means shall be provided for all ungrounded conductors derived from an Energy Storage System.	Major	NEC Articles 706.7(A)

		Requirement	Defect Category	Code Reference
DC Disconnect (continued)	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than 6AWG shall be protected from physical damage.	Minor	NEC Article 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		DC Disconnect is properly grounded.	Major	NEC Articles 250.4, 250.8 and 250.12
		Equipment grounding conductor is properly sized.	Major	NEC Article 250.122
	Labeling	A directory is required at each dc PV system disconnecting means, ac disconnecting means for mini- and micro-inverters, and service disconnecting means showing the location of all dc and ac PV system disconnecting means in the building/ structure.	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	Disconnect is rated for nominal voltage and current.	Critical	NEC Article 110.3(B)
		Disconnect fuses are DC rated and properly sized for system voltage.	Critical	NEC Article 110.3(B)
	Structural	Disconnect is properly secured in place.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)
		Disconnect is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and NEC 110.27(A)

		Requirement	Defect Category	Code Reference
Feeder Tap Connection	Conductors	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)
		Feeder conductors are properly sized for expected current load.	Critical	NEC Article 310.15
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Conductors are properly spliced.	Major	NEC Articles 110.3(B) and 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		AC conduit is adequately supported.	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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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 conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
		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)
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 110.3(B)
		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 it's listing and manufacturers instructions.	Minor	NEC Article 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		Requirement	Defect Category	Code Reference
--	------------	--	--------------------	---------------------------------------
Feeder Tap Connection (contiued)	Grounding	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 premises grounding electrode system.	Major	NEC Article 250.64
		Grounding electrode conductor is present and sufficiently sized.	Major	NEC Articles 250.66, and 250.166
		Enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8 and 250.12
		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(G)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)
	Labeling	A directory is required at each dc PV system disconnecting means, ac disconnecting means for mini- and micro-inverters, and service disconnecting means showing the location of all dc and ac PV system disconnecting means in the building/ structure.	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
	Structural	Feeder connection is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and NEC 110.27(A)

		Requirement	Defect Category	Code Reference
Junction Box	Conductors	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)
		Junction Box circuit conductors are properly sized for expected current load.	Critical	NEC Article 310.15
		Junction Box splice components are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surfaces and the ground terminal inside Junction Box.	Minor	[NEC Article 250.24(A)(5)]
		Circuit conductors are properly supported and protected.	Minor	NEC Article 334.30
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		The length of the free conductors within the enclosure shall meet or exceed 6" requirement.	Minor	NEC Article 300.14
	Conduit	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 below grade is installed with provisions for movement.	Minor	NEC Article 300.5(J)
		Conduit penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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 conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	Electrical	Junction Box is suitable for environment.	Major	NEC Articles 314.15 and 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
		Junction Box is properly identified and listed.	Major	NEC Articles 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7

		Requirement	Defect Category	Code Reference
Junction Box (continued)	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than #6 AWG shall be protected from physical damage.	Minor	NEC Article 250.120(C)
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Listed means used to ground enclosure.	Major	NEC Articles 250.4, 250.8 and 250.12
		Equipment grounding conductor is properly sized.	Major	NEC Article 250.122
	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
	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 and 110.13(A)
		Junction Box is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and NEC 110.27(A)
		Roof penetrations are properly sealed and flashed.	Major	NYS Uniform Building Code and NEC Article 110.3(B)

		Requirement	Defect Category	Code Reference
Load Side Connection	Conductors	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 appropriately sized for expected current load.	Critical	NEC Article 310.15
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		The Neutral (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.	Major	NEC Article 300.20
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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 conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	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

		Requirement	Defect Category	Code Reference
Load Side Connection (continued)	Labeling	A directory is required at each dc PV system disconnecting means, ac disconnecting means for mini- and micro-inverters, and service disconnecting means showing the location of all dc and ac PV system disconnecting means in the building/structure.	Incidental	NEC Article 110.21(B) and 705.10
		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
	OCPD	Main panel overcurrent protection is sufficient.	Critical	NEC Article 240.4
		ESS Backfed breaker is properly sized at, or above 125% of inverter output current.	Major	NEC Article 240.4 and 706.21(C)
		Back-fed plug in devices shall be secured in place by additional fastener.	Minor	NEC Article 408.36(D)
		Circuit Breaker shall be installed and used in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Where two sources, one a primary source and the other another source are located at opposite ends of a busbar that contains loads, the sum of 125 percent of the power device protecting the busbar shall not exceed 120 percent of the ampacity of the busbar.	Major	NEC Article 705.12(B)(2)(3)(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 and 110.13(A)
		Main Panel is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and NEC 110.27(A)

		Requirement	Defect Category	Code Reference
Production Meter	Conductors	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)
		ESS AC output conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surface and ground terminal inside meter enclosure.	Minor	[NEC Article 250.24(A)(5)]
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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 conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	Electrical	Meter enclosure is suitable for environment.	Major	NEC Articles 314.15 and 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
		Meter is installed in accordance with its listing and manufacturer instructions.	Minor	NEC Article 110.3(B)
		Meter is rated for expected current load.	Critical	NEC Article 110.3(B)
	Grounding	Grounding means for enclosure installed.	Major	NEC Articles 250.4, 250.8 and 250.12
	Structural	Meter Enclosure is properly suited for conditions and mounted to maintain listing.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)
		Meter is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and NEC 110.27(A)

		Requirement	Defect Category	Code Reference
Subpanel	Conductors	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)
		ESS AC conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surface and ground terminal inside meter enclosure.	Minor	NEC Article 250.24(A)(5)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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 conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 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 sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		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)

		Requirement	Defect Category	Code Reference
Subpanel (continued)	Grounding	Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Subpanel is properly grounded.	Major	NEC Articles 250.4, 250.8 and 250.12
	Labeling	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)(2)(3)(c)]
		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
	OCPD	Subpanel Overcurrent protection is sufficient.	Critical	NEC Article 240.4
		ESS Backfed breaker is properly sized at, or above 125% of inverter output current.	Major	NEC Article 240.4 and 706.21(C)
		Back-fed plug in devices shall be secured in place by additional fastener.	Minor	NEC Article 408.36(D)
		Circuit Breaker shall be installed and used in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(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 and 110.13(A)
		Subpanel is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and NEC 110.27(A)

		Requirement	Defect Category	Code Reference
Supply Side Connection	Conductors	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)
		ESS AC conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Service entrance conductors are properly spliced.	Major	NEC Articles 110.3(B) and 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		The conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
		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)
	Electrical	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 it's listing and manufacturers 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
		Service disconnect is properly rated for the application.	Major	NEC Article 230.79(D)
		Service Disconnects are properly grouped.	Minor	NEC Article 230.72

		Requirement	Defect Category	Code Reference
Supply Side Connection (continued)	Grounding	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
		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 Article 250.64(C)
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, and 250.166
		Disconnect enclosure is properly grounded using a listed grounding method.	Major	NEC Articles 250.4, 250.8 and 250.12
		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(G)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)
	Labeling	A directory is required at each dc PV system disconnecting means, ac disconnecting means for mini- and micro-inverters, and service disconnecting means showing the location of all dc and ac PV system disconnecting means in the building/structure.	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 AC OCPD is properly sized for the expected output current of the ESS system.	Major	NEC Article 706.21(B)
		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)
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Article 240.22
		Fuses are present and installed in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Equipment intended to interrupt current at fault levels shall have an interrupting rating sufficient for the current that is available at the line terminals of the equipment.	Major	NEC Articles 110.9, 110.10 and 230.82
		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)
	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 and 110.13(A)
		Equipment is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and NEC 110.27(A)

		Requirement	Defect Category	Code Reference
Energy Storage	Counductors	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)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Energy storage system conductors are protected from accidental contact.	Major	NEC Articles 110.27 and 706.10(B)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		Correct flexible cables are used for battery interconnections.	Major	NEC Article 706.32
		Battery DC conductors are properly sized for expected current load.	Major	NEC Article 706.32
		Installed DC Battery cables are properly terminated.	Major	NEC Article 706.32
	Conduit	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)
		The conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	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
		Equipment must be installed in accordance with it's listing and manufacturers instructions.	Minor	NEC Article 110.3(B)
		A disconnecting means shall be provided for all ungrounded conductors derived from an Energy Storage System.	Major	NEC Articles 706.7(A)
		Working clearances around battery bank shall be maintained.	Minor	NEC Articles 110.26 and 480.10(C)
		Batteries are properly ventilated.	Critical	NEC Article 480.10(A)
		Batteries must be installed on non-conductive supports.	Minor	NEC Article 480.9
		Energy storage system charge controller(s) properly regulate the battery charging process.	Major	NEC Article 706.23
		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)
		Electrical connections do not put mechanical strain on battery.	Major	NEC Articles 706.31(C) and 110.14(A)
		Charge Controller shall be compatible with the Energy Storage manufacturer's electrical ratings and charging specifications.	Major	NEC article 110.3(B) and IFC 2018, 1206.2.4

		Requirement	Defect Category	Code Reference
Energy Storage (continue)	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Battery enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8 and 250.12
	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
		The disconnecting means shall be legibly marked in the field and shall include Nominal Energy Storage System Voltage, Maximum Available Short Circuit Current and The Date The Short-Circuit Calculation Was Performed.	Incidental	NEC Articles 110.21(B) and 480.7(D)
	Structural	Charge controllers and related components mounted/installed in accordance with its listing and manufacturer instructions.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)
		Battery Bank is mounted in accordance with its listing and manufacturer instructions.	Major	NEC Articles 110.26 and NEC 110.27(A)
		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
		Rooms or spaces containing energy storage systems shall be separated from other areas of the building by fire barriers with a minimum fire resistance rating of two hours and horizontal assemblies with a minimum fire resistance rating of two hours constructed IAW NY State Uniform Building Code, local laws and ordinances.	Major	IFC 2018 1206.2.8.2, NFP 855 Section 4.3.6

		Requirement	Defect Category	Code Reference
Energy Storage Tier 1	NYS Residential Building CodeEnergy st accordan their listinIndividual separated space un 	Energy storage systems shall be installed in accordance with the manufacturer's instructions and their listing.	Major	NYS 2019 Code Suplement R327.3
		Individual energy storage system units shall be separated from each other by at least 3 feet of space unless smaller separation distances are documentedto be adequate based on largescale fire testingcomplying with Section 608.6 of the International Fire Code (as amended by the 2019 Energy Storage System Supplement).	Major	NYS 2019 Code Suplement R327.3.1
		Energy storage systems shall only be installed in the following locations: 1. Detached garages and detached accessory structures. 2. Attached garages separated from the dwelling unit living space and sleeping units in accordance with Section R302 of this code. 3. Outdoors on exterior walls located a minimum 3 ft. from doors and windows. 4. Utility closets and storage or utility spaces within dwelling units and sleeping units	Major	NYS 2019 Code Suplement R327.4
		Individual energy storage system units shall have a maximum rating of 20 kWh. The aggregate rating shall not exceed: 1. 40 kWh within utility closets 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	Major	NYS 2019 Code Suplement R327.5
		Energy storage systems shall be installed in accordance with NFPA 70. Inverters shall be listed and labeled in accordance with UL 1741 or provided as part of the UL 9540 listing. Systems connected to the utility grid shall use inverters listed for utility interaction.	Major	NYS 2019 Code Suplement R327.6
		Rooms and areas in which energy storage systems are installed shall be protected by smoke alarms in accordance with Section R314. A heat detector or heat alarm listed and interconnected to the smoke alarms shall be installed in locations where smoke alarms cannot be installed based on their listing.	Major	NYS 2019 Code Suplement R327.7
		Rooms and areas containing energy storage systems shall be protected on the system side by no less than 5/8-inch Type X gypsum board or equivalent, installed on the walls and ceiling of the room or area. Attached garages containing energy storage systems shall be protected on the system side by fire-resistant construction in accordance with Section R302.	Major	NYS 2019 Code Suplement R327.8
		Energy storage systems installed in a location subject to vehicle damage shall be protected by approved barriers.	Major	NYS 2019 Code Suplement R327.9
		Indoor installations of energy storage systems that include batteries that produce hydrogen or other flammable gases during charging shall be provided with exhaust ventilation in accordance with Section 608.13.1 of the International Fire Code (as amended by the 2019 Energy Storage System Supplement).	Major	NYS 2019 Code Suplement R327.10

		Requirement	Defect Category	Code Reference
Energy Storage Teir 1 (continued)	NYS Residential Building Code	Energy storage systems 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	NYS 2019 Code Suplement R327.11
		The temporary use of an owner or occupant's electric powered vehicle to power a dwelling unit or sleeping unit while parked in an attached or detached garage or outside shall comply with the vehicle manufacturer's instructions and NFPA 70. The batteries on electric vehicles shall not contribute to the aggregate energy limitations in Section R327.5.	Major	NYS 2019 Code Suplement R327.12
Energy Storage	Operations &	Operation and Maintenance Manual: An	Minor	NYS 2019 Code Supplement
Energy Storage Tier 2 & 3	Maintenance Manual	Operation and Maintenance Manual (O&M) shall be provided to both the energy storage system owner or their authorized agent and to the energy storage system operator before the energy storage system is put into operation. The energy storage system shall be operated and maintained in accordance with the manual. A copy of the manual shall be retained at an approved onsite location and be available to the fire code official. The O&M shall include all items listed in NYS 2019 Code supplement 608.9.2(1) thru 608.9.2(7)		608.9.2
		Operation and Maintenance Manual: Battery energy storage system Operations Plan shall include design, construction, installation, testing, and commissioning information associated with the battery.	Minor	Program requirement
	Emergency Operations Plan	Emergency Operations Plan: An emergency operations plan should be given to the owner and a copy placed in an approved location to be accessible to facility personnel, fire code officials, and emergency responders.	Minor	Program requirement
	Equipment	Energy Storage Management System: Where required by the energy storage system listing, an approved energy storage management system shall be provided that monitors and balances cell voltages, current, and temperatures within manufacturers specifications, the system shall disconnect electrical connections to the BESS or otherwise place in a safe condition if potentially hazardous temperatures or other conditions such as short circuits, over voltage, or under voltage are detected.	Major	NYS 2019 Code Supplement 608.10.4 and Manufacturers Listing

		Requirement	Defect Category	Code Reference
Energy Storage Tier 2 & 3 (continued)	General Installation Requirements	Electrical Disconnects: Where the energy storage system disconnecting means is not within sight of the main electrical service disconnecting means, placards or directories shall be installed at the location of the main electrical service disconnecting means indicating the location of stationary storage battery system disconnecting means, in accordance with NFPA 70. Exception: Electrical disconnects for lead-acid and nickel-cadmium battery systems at facilities under the exclusive control of communications utilities and operating at less than 50 VAC and 60 VDC shall be permitted to have electrical disconnects signage in accordance with NFPA 76.	Incidental	NYS 2019 Code Supplement 608.11.1 NFPA 70; 2017 NEC Arti- cle 706.11
		Working Clearances: Access and working space shall be provided and maintained about all electrical equipment to permit ready and safe operation and maintenance of such equipment, in accordance with NFPA 70 and the manufacturer's instructions.	Minor	NYS 2019 Code Supplement 608.11.2 NFPA 70; 2017 NEC 706.33, 706.10(C) and 110.26
		Fire-resistance Rated Construction: Rooms and other indoor areas containing energy storage systems shall be separated from other areas of the building in accordance with Section 608.14.4 and Chapter 7 of this code. Energy storage systems shall be permitted to be in the same room as the equipment they support.	Major	NYS 2019 Code Supplement 608.11.3
		Seismic and Structural Design: Stationary energy storage systems shall comply with the seismic design requirements in Chapter 16 of the International Building Code and shall not exceed the floor loading limitation of the building.	Major	NYS 2019 Code Supplement 608.11.4 and IBC Chapter 16
		Vehichle Impact Protection: Where energy storage systems are subject to impact by a motor vehicle, including fork lifts, vehicle impact protection shall be provided in accordance with Section 312 of the NYS 2019 Code Supplement.	Major	NYS 2019 Code Supplement 608.11.5
		Combustible Storage: Combustible materials shall not be stored in Energy Storage System rooms, areas, or walk-in Energy Storage System units. Combustible materials in occupied work centers covered by Section 608.11.10 are stored at least 3 feet (914mm) from Energy Storage System cabinets.	Major	NYS 2019 Code Supplement 608.11.6
		Toxic and Highly Toxic Gases: Energy storage systems installed indoors and that have the potential to release toxic and highly toxic gas during charging, discharging and normal use conditions shall be provided with a hazardous exhaust system in accordance with Section 502.8 of the International Mechanical Code.	Critical	NYS 2019 Code Supplement 608.11.7 andIMC Section 502.8
		Signage: Approved signs shall be provided on or adjacent to all entry doors to energy storage system rooms or areas, to walk-in energy storage system units located outdoors, on rooftops, or in open parking garages, and on enclosures of energy storage system cabinets. Signs shall be designed to meet both the requirements of this section and of NFPA 70. The signage shall include the following or equivalent. "Energy Storage System", "Battery Storage System", "Capacitor Energy Storage System", or the equivalent.	Incidental	NYS 2019 Code Supplement 608.11.8(1) and NFPA 70

		Requirement	Defect Category	Code Reference
Energy Storage Tier 2 & 3 (continued)	General Installation Requirements	Signage: Approved signs shall be provided on or adjacent to all entry doors to energy storage system rooms or areas, to walk-in energy storage system units located outdoors, on rooftops, or in open parking garages, and on enclosures of energy storage system cabinets. Signs shall be designed to meet both the requirements of this section and of NFPA 70. The signage shall include the following or equivalent. The identification of the electrochemical energy storage system technology present and its rated capacity.	Incidental	NYS 2019 Code Supplement 608.11.8(2) and NFPA 70
		Signage: Approved signs shall be provided on or adjacent to all entry doors to energy storage system rooms or areas, to walk-in energy storage system units located outdoors, on rooftops, or in open parking garages, and on enclosures of energy storage system cabinets. Signs shall be designed to meet both the requirements of this section and of NFPA 70. The signage shall include the following or equivalent. "Energized Electrical Circuits"	Incidental	NYS 2019 Code Supplement 608.11.8(3) andNFPA 70
		Signage: Approved signs shall be provided on or adjacent to all entry doors to energy storage system rooms or areas, to walk-in energy storage system units located outdoors, on rooftops, or in open parking garages, and on enclosures of energy storage system cabinets. Signs shall be designed to meet both the requirements of this section and of NFPA 70. The signage shall include the following or equivalent. If water-reactive electrochemical BESS are present, "APPLY NO WATER"	Incidental	NYS 2019 Code Supplement 608.11.8(4) and NFPA 70
		Signage: Approved signs shall be provided on or adjacent to all entry doors to energy storage system rooms or areas, to walk-in energy storage system units located outdoors, on rooftops, or in open parking garages, and on enclosures of energy storage system cabinets. Signs shall be designed to meet both the requirements of this section and of NFPA 70. The signage shall include the following or equivalent. Current contact information including phone number, for personnel with the technical knowledge of the system who is authorized to service the equipment and for any fire mitigation personnel required by Section 608.7.1 of the NYS 2019 Code Supplement	Incidental	NYS 2019 Code Supplement 608.11.8(5) and NFPA 70
		Security of Installations: Rooms, areas and walk-in energy storage system units in which electrochemical energy storage systems are located shall be secured against unauthorized entry and safeguarded in an approved manner. Security barriers, fences, landscaping, and other enclosures shall not inhibit the required air flow to or exhaust from the electrochemical energy storage system and its components.	Minor	NYS 2019 Code Supplement 608.11.9

		Requirement	Defect Category	Code Reference
Energy Storage Tier 2 & 3 (continued)	General Installation Requirements	Occupied Work Centers: Electrochemical energy storage systems located in rooms or areas occupied by personnel not directly involved with maintenance, service and testing of the systems shall comply with the following: Electrochemical energy storage systems located in occupied work centers shall be housed in locked noncombustible cabinets or other enclosures to prevent access by unauthorized personnel.	Major	NYS 2019 Code Supplement 608.11.10.1
		Occupied Work Centers: Electrochemical energy storage systems located in rooms or areas occupied by personnel not directly involved with maintenance, service and testing of the systems shall comply with the following: Electrochemical energy storage systems contained in cabinets in occupied work centers, shall be within 10 feet (3,048mm) of the equipment they support.	Minor	NYS 2019 Code Supplement 608.11.10.2
		Occupied Work Centers: Electrochemical energy storage systems located in rooms or areas occupied by personnel not directly involved with maintenance, service and testing of the systems shall comply with the following: Cabinets shall include signage complying with Section 608.11.8.	Incidental	NYS 2019 Code Supplement 608.11.10.3
		Emergency Egress Doors: A personnel door(s) intended for entrance to and egress from rooms designed as BESS rooms shall open in the direction of egress and shall be equipped with listed panic hardware.		2017 NEC Article 706.10(D)
		Enclosures: Enclosures of energy storage systems are of noncombustible construction.	Major	2017 NEC Article 480.9
	EESS Protection	 Size and seperation: Electrochemical energy storage systems shall be segregated into groups not exceeding 50 kWh (180 Mega joules). Each group shall be separated a minimum 3 feet (914 mm) from other groups and from walls in the storage room or area. The storage arrangements shall comply with Chapter 10 of this code. Not applicable to remote installations, see Table 608.15. Exceptions: Lead-acid and nickel-cadmium battery systems in facilities under the exclusive control of communications utilities and operating at less than 50 VAC and 60 VDC in accordance with NFPA 76. Larger capacities or smaller separation distances shall be permitted based on large scale fire testing complying with Section 608.6. 	Major	NYS 2019 Code Supplement 608.12.1
		Maxium Allowable Quantities: Where rooms, areas and walk-in energy storage system units contain different types of electrochemical energy technologies, the total aggregate quantities of the systems shall be determined based on the sum of percentages of each technology type quantity divided by the maximum allowable quantity of each technology type. The sum of the percentages shall not exceed 100 percent of the maximum allowable quantity. Not applicable to remote installations, see Table 608.15.	Major	NYS 2019 Code Suplement 608.12.2.1

		Requirement	Defect Category	Code Reference
Energy Storage Tier 2 & 3 (continued)	EESS Protection	Elevation: Electrochemical energy storage systems shall not be located where the floor is located more than 75 feet (22,860 mm) above the lowest level of fire department vehichle access OR where the floor is located below the lowest level of exit discharge. See Exception NYS 2019 Code Supplement 608.12.3 Exceptions 1-3. Not applicable to remote installations, see Table 608.15.	Major	NYS 2019 Code Supplement 608.12.3 and NFPA 76
		Fire Detection: An approved automatic smoke detection system or radiant energy–sensing fire detection system complying with Section 907 shall be installed in rooms, indoor areas, and walk-in energy storage system units containing electrochemical energy–sensing fire detection system shall be installed to protect open parking garage and rooftop installations. Alarm signals from detection systems shall be monitored by an approved supervising station in accordance with NFPA 72.	Critical	NYS 2019 Code Suplement 608.12.4, NFPA 72 and IFC 907.2.23
		Fire Suppression System: Rooms and areas within buildings and walk-in energy storage system units containing electrochemical energy storage systems shall be protected by an automatic fire suppression system designed and installed in accordance with one of the following found in NYS 2019 Code Supplement 608.12.5 (1 thru 3).	Critical	NYS 2019 Code Suplement 608.12.5 (1-3)
		Fire Suppression System: Where an electrochemical energy storage system that utilizes water reactive materials is approved based on large-scale fire testing complying with Section 608.6, it shall be protected by an approved alternative automatic fire extinguishing system in accordance with Section 904.	Critical	NYS 2019 Code Supplement 608.12.5.1
		Maximum Enclosure Size: Outdoor walk-in energy storage system units housing energy storage systems shall not exceed 4,028 cubic feet, not including bolt-on HVAC and related equipment, as approved. Outdoor walk-in energy storage system units exceeding these limitations shall be considered indoor installations and comply with the requirements in Section 608.14.	Major	NYS 2019 Code Supplement 608.12.6
		Vegetation Control: Areas within 10 feet (3 m) on each side of outdoor energy storage system shall be cleared of combustible vegetation and other combustible growth. Single specimens of trees, shrubbery, or cultivated ground cover such as green grass, ivy, succulents, or similar plants used as ground covers shall be permitted, provided that they do not form a means of readily transmitting fire. Exception: A reduced clearance to combustible vegetation shall be permitted based on large scale fire testing complying with Section 608.6	Major	NYS 2019 Code Supplement 608.12.7
		Means of Egress Seperation: Energy storage systems located outdoors and in open parking garages shall be separated from any means of egress to ensure safe egress under fire conditions by no less than 10 feet (3048 mm). Exception: The fire code official may approve a reduced separation distance if large scale fire testing complying with Section 608.6 is provided that shows that a fire involving the energy storage system will not adversely impact occupant egress.	Major	NYS 2019 Code Supplement 608.12.8

		Requirement	Defect Category	Code Reference
Energy Storage Tier 2 & 3 (continued)	EESS Technology Specific Protection	Exhaust Ventilation: Where required by Table 608.13 or elsewhere in this code, exhaust ventilation shall be provided for rooms, areas, and walk-in energy storage system units containing electrochemical energy storage systems in accordance with the International Mechanical Code and Section 608.13.1.1 or 608.13.1.2	Critical	NYS 2019 Code Supplement 608.13.1, Table 608.13 and IMC Table 1206.6
		Exhaust Ventilation: The exhaust ventilation system shall be designed to limit the maximum concentration of flammable gas to 25% of the Lower Flammable Limit (LFL) of the total volume of the room, area, or walk-in Energy Storage System unit during the worst-case event of simultaneous charging of batteries at the maximum charge rate, in accordance with nationally recognized standards. <i>Applies to all Electrochemical BESS</i> <i>except Lithium-Ion.</i>	Critical	NYS 2019 Code Supplement 608.13.1.1
		Exhaust Ventilation: Mechanical exhaust ventilation shall be provided at a rate of no less than 1 ft3/ minute/sq. Ft of floor area of the room, area, or walk-in unit. The ventilation shall be either continuous or shall be activated by a gas detection system. <i>Applies to all Electrochemical BESS except Lithium-Ion.</i>	Critical	NYS 2019 Code Supplement 608.13.1.2
		Exhaust Ventilation: Mechanical exhaust ventilation shall be provided with a minimum of two hours of standby power in accordance with Section 604.2.17. <i>Applies to all Electrochemical BESS except Lithium-Ion.</i>	Critical	NYS 2019 Code Supplement 608.13.1.2.1
		Exhaust Ventilation: Required mechanical exhaust ventilation systems shall be supervised by an approved supervising station in accordance with NFPA 72. <i>Applies to all Electrochemical BESS except Lithium-Ion.</i>	Major	NYS 2019 Code Supplement 608.13.1.2.3 and NFPA 72
		 Exhaust Ventilation: Where required by Section 608.13.1.2, rooms, areas, and walk-in energy storage system units containing energy storage systems shall be protected by an approved continuous gas detection system that complies with Section 916 of this code and with the following: <i>Applies to all Electrochemical BESS except Lithium-Ion.</i> 1. The gas detection system shall be designed to activate the mechanical ventilation system when the level of flammable gas in the room, area, or walk-in energy storage system unit exceeds 25 percent of the LFL. 2. The mechanical ventilation system shall remain on until the flammable gas detected is less than 25 percent of the LFL. 3. The gas detection system shall be provided with a minimum of 2 hours of standby power in accordance with requirements for emergency and standby power systems for gas detection system shall annunciate a trouble signal at an approved supervising station in accordance with NFPA 72. 	Major	NYS 2019 Code Supplement 608.13.1.2.4

		Requirement	Defect Category	Code Reference
Energy Storage Tier 2 & 3 (continued)	EESS Technology Specific Protection	Spill Control and Neutralization: Where required by NYS 2019 Code Supplement Table 608.13 or elsewhere in this code, areas containing free-flowing liquid electrolyte or hazardous materials shall be provided with spill control and neutralization. <i>Applies to all Electrochemical BESS</i> <i>except Lithium-Ion.</i>	Major	NYS 2019 Code Supplement 608.13.2
		Spill Control and Neutralization: Spill control shall be provided to prevent the flow of liquid electrolyte or hazardous materials to adjoining rooms or areas. The method shall be capable of containing a spill from the single largest battery or vessel. <i>Applies to</i> <i>all Electrochemical BESS except Lithium-Ion.</i>	Major	NYS 2019 Code Supplement 608.13.2.1
		Spill Control and Neutralization: An approved method to neutralize spilled liquid electrolyte shall be provided that is capable of neutralizing a spill from the largest battery or vessel to a pH between 5.0 and 9.0. <i>Applies to all Electrochemical BESS except Lithium-Ion.</i>	Major	NYS 2019 Code Supplement 608.13.2.2
		 Explosion Control: Where required by Table 608.13 or elsewhere in this code, explosion control complying with Section 911 shall be provided for rooms, areas or walk-in energy storage system units containing electrochemical energy storage system technologies. <i>Applies to all Electrochemical BESS except Flow Batteries. Outdoor Cabinets are not specifically addressed under the current version.</i> Exceptions: Where approved by the fire code official, explosion control may be waived based on large scale fire testing complying with Section 608.6 which demonstrates that flammable gases are not liberated from electrochemical energy storage system cells or modules. Where approved by the fire code official, explosion control may be waived based on documentation provided that demonstrates that the electrochemical energy storage system technology to be used does not have the potential to release flammable gas concentrations in excess of 25 percent of the LFL anywhere in the room, area, walk-in energy storage system unit or structure under thermal runaway or other fault conditions. 	Critical	NYS 2019 Code Suplement 608.13.3 and UL 9540A
		Safety Caps: Where required by NYS 2019 Code Supplement Table 608.13 or elsewhere in this code, vented batteries and other energy storage systems shall be provided with flame arresting safety caps. <i>Applies to all Electrochemical BESS except</i> <i>Lithium-Ion and Flow Batteries.</i>	Major	NYS 2019 Code Suplement 608.13.4
		Thermal Runaway: Where required by NYS 2019 Code Supplement Table 608.13 or elsewhere in this code, batteries and other energy storage systems shall be provided with a listed device or other approved method to prevent, detect and minimize the impact of thermal runaway. <i>Applies to all</i> <i>Electrochemical BESS except Flow Batteries.</i>	Major	NYS 2019 Code Supplement 608.13.5

		Requirement	Defect Category	Code Reference
Energy Storage Tier 2 & 3 (continued)	Indoor Installations	Dedicated Use Buildings: Dedicated use buildings in compliance with NYS 2019 Code Supplement 608.14.1 shall be classified as Group F-1 occupancies. For the purpose of Table 608.14, dedicated use energy storage system buildings shall comply with NYS 2019 Code Supplement 608.14.1(1) thru 608.14.1(4)	Major	NYS 2019 Code Supplement 608.14.1
	Outdoor Installations	Remote Outdoor Installations: For the purpose of Table 608.15, remote outdoor installations include energy storage systems located more than 100 feet (30.5 M) from buildings, lot lines, public ways, stored combustible materials, hazardous materials, high piled stock and other exposure hazards.	Major	NYS 2019 Code Supplement 608.15.1
		Clearance to Exposure: Energy storage systems located outdoors shall be separated by at least 10 ft (3,048 mm) from the following exposures: lot lines, public ways, buildings, stored combustible materials, hazardous materials, high-piled stock, other exposure hazards. See NYS 2019 Code Supplement 6.8.15.3 for Exceptions.	Major	NYS 2019 Code Supplement 608.15.3
		 Exterior Wall Installations: Energy storage systems shall be permitted to be installed outdoors on exterior walls of buildings when ALL of the following conditions are met: 1. The maximum energy capacity of individual energy storage system units shall not exceed 20 kWh. 2. The energy storage system shall comply with applicable requirements in section 608.15 3. The energy Storage System shall be installed in accordance with manufacturer instructions and their listing. 4. Individual energy storage system units shall be separated from each other by at least 3 ft (914 mm). 5. The energy storage system shall be separated from doors, windows, operable openings into buildings, or HVAC inlets by at least 5 ft (1,524 mm) Exception: smaller separation distances in Items 4 and 5 shall be permitted based on large scale fire testing complying with Section 608.6. 	Major	NYS 2019 Code Supplement 608.15.4(1) thru 608.15.4(5)
	Special Installations	 Clearance to Exposure: Energy storage systems located on rooftops and in open parking garages shall be separated by a minimum 10 feet (3048 mm) from the following exposures: 1. Buildings, except the building on which a rooftop energy storage system is mounted 2. Any portion of the building on which a rooftop system is mounted that is elevated above the rooftop on which the system is installed 3. Lot lines 4. Public ways 5. Stored combustible materials 6. Locations where motor vehicles can be parked 7. Hazardous materials 8. Other exposure hazards See NYS 2019 Code Supplement 608.16.3 for Exceptions 	Major	NYS 2019 Code Supplement 608.16.3

		Requirement	Defect Category	Code Reference
Energy Storage Tier 2 & 3 (continued)	Special Installations	Fire Suppression System: Energy storage systems located in walk-in energy storage system units on rooftops or in walk-in energy storage system units in open parking garages shall be provided with automatic fire suppression systems within the energy storage system enclosure in accordance with Section 608.12.5. Areas containing energy storage systems other than walk-in energy storage system units in open parking structures on levels not open above to the sky shall be provided with an automatic fire suppression system complying with Section 608.12.5. Exception: A fire suppression system is not required in open parking garages if large scale fire testing complying with Section 608.6 is provided that shows that a fire will not impact the exposures in Section 608.16.3.	Major	NYS 2019 Code Supplement 608.16.4
		Rooftop: Energy storage systems and associated equipment that are located on rooftops and not enclosed by building construction shall maintain stairway access to the roof for emergency response and fire department personnel shall be provided either through a bulkhead from the interior of the building or a stairway on the exterior of the building.	Major	NYS 2019 Code Supplement 608.16.5(1)
		Rooftop: Energy storage systems and associated equipment that are located on rooftops and not enclosed by building construction shall maintain service walkways at least 5 feet (1524 mm) in width shall be provided for service and emergency personnel from the point of access to the roof to the system.	Major	NYS 2019 Code Supplement 608.16.5(2)
		Rooftop: Energy storage systems and associated equipment that are located on rooftops and not enclosed by building construction shall be located from the edge of the roof a distance equal to at least the height of the system, equipment, or component but not less than 5 feet (1.5 m).	Major	NYS 2019 Code Supplement 608.16.5(3)
		Rooftop: Energy storage systems and associated equipment that are located on rooftops and not enclosed by building construction shall have roofing materials under and within 5 feet (1524 mm) horizontally and shall be noncombustible or shall have a Class A rating when tested in accordance with ASTM E108 or UL 790.	Major	NYS 2019 Code Supplement 608.16.5(4) and ASTM E108; UL 790
		Rooftop: A Class I standpipe outlet shall be installed at an approved location on the roof levelof the building or in the stairway bulkhead at the top level.	Major	NYS 2019 Code Supplement 608.16.5(5)
		Rooftop: Energy storage systems and associated equipment that are located on rooftops and not enclosed by building construction shall be the minimum of 10 feet from the fire service access point on the roof top.	Major	NYS 2019 Code Supplement 608.16.5(6)

		Requirement	Defect Category	Code Reference
Energy Storage Tier 2 & 3 (continued)	Special Installations	 Rooftop: Energy storage systems and associated equipment that are located on rooftops and not enclosed by building construction shall not be located within 50 feet (15,240 mm)of air inlets for building HVAC systems. Exception: This distance shall be permitted to be reduced to 25 feet (7.620 mm) if the automatic fire alarm system monitoring the radiant-energy sensing detectors deenergizes the ventilation system connected to the air intakes upon detection of fire. 	Major	NYS 2019 Code Supplement 608.16.5(7)
		Open Parking Garages: Energy storage systems and associated equipment that are located in open parking garages shall not be located within 50 feet (15,240 mm) of air inlets for building HVAC systems. Exception: This distance shall be permitted to be reduced to 25 feet (7.620 mm) if the automatic fire alarm system monitoring the radiant-energy sensing detectors deenergizes the ventilation system connected to the air intakes upon detection of fire.	Major	NYS 2019 Code Supplement 608.16.6(1)
		Open Parking Garages: Energy storage systems and associated equipment that are located in open parking garages shall not be located within 25 feet (7620 mm) of exits where located on a covered level of the parking structure not directly open to the sky above.	Major	NYS 2019 Code Supplement 608.16.6(2)
		Open Parking Garages: Energy storage systems and associated equipment that are located in open parking garages shall have an approved fence with a locked gate or other approved barrier shall be provided to keep the general public at least 5 feet (1024 mm) from the outer enclosure of the energy storage system.	Major	NYS 2019 Code Supplement 608.16.6(3)
	Gas Detection System	Signage: Signs shall be provided adjacent to gas detection system alarm signaling devices that advise occupants of the nature of the signals and actions to take in response to the signal.	Incidental	NYS 2019 Code Supplement 916.9



PHOTO INSPECTION REFERENCE – 2017 NEC Energy Storage



The photo inspection resource is used by Energy Storage's third-party QA Contractor to evaluate the quality of the battery installation. Participating contractors are encouraged to reference this resource throughout the installation process for each project to ensure compliance with the Energy Storage program rules and requirements.

		Requirement	Defect Category	Code Reference
Overall Observation	Program	Existing Service Panel is not a split bus (FPE Stab-Lok, Push-O-Matic etc.,).	Critical	Energy Storage System Program
		Installed Battery manufacturer shall match Program records.	Incidental	Energy Storage System Program
		Installed Battery model number shall match Program records.	Incidental	Energy Storage System Program
		Installed Battery quantity shall match Program records.	Incidental	Energy Storage System Program
		As per Program requirements, any roof damage must be repaired prior to installation.	Minor	Energy Storage System Program
		Site address must match site address submitted.	Critical	Energy Storage System Program
		Current Transformers are installed and meet Program requirements.	Major	Energy Storage System Program

		Requirement	Defect Category	Code Reference
AC Combiner	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surfaces and the ground terminal inside combiner box.	Major	NEC Article 250.24(A)(5)
		The neutral conductor is connected at its own dedicated terminal isolated from metal enclosure.	Minor	NEC Article 408.41
	Conduit	The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3)
	Electrical	AC Combiner is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
	Grounding	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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Grounding electrode conductor is continuous.	Major	NEC Article 250.64(C)
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66 and 250.166
		AC Combiner is properly grounded.	Major	NEC Articles 250.4, 250.8 and 250.12
	OCPD	AC Combiner Overcurrent protection is sufficient.	Critical	NEC Article 240.4
		Energy Storage System Backfed breaker is properly sized at, or above 125% of inverter output current	Major	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)

		Requirement	Defect Category	Code Reference
AC Disconnect	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductors are isolated from enclosure and ground terminal.	Major	NEC Article 250.24(A)(5)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Conduit	The conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
	Electrical	AC Disconnect enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		AC Disconnect is properly rated for expected current load.	Critical	NEC Articles 110.3(B), 705.60 (125% of the inverter output) and 705.65(OCP), 706.7 and 706.21
		A disconnecting means shall be provided for all ungrounded conductors derived from an energy storage system.	Major	NEC Articles 706.7(A)
		Service disconnect is properly rated for the application.	Major	NEC Article 230.79(D)
	Grounding	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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Grounding electrode conductor must be continuous.	Major	NEC Article 250.64(C)
		Grounding electrode conductor is properly bonded to the main premises grounding electrode system.	Major	NEC Article 250.64
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, and 250.166
		AC Disconnect is grounded.	Major	NEC Articles 250.4, 250.8 and 250.12
		Equipment grounding conductor is properly sized.	Major	NEC Article 250.122
	OCPD	Conductors shall be protected against overcurrent in accordance with their ampacity.	Critical	NEC Article 240.4 and 706.21(B)
		The AC OCPD is properly sized for the expected output current of the ESS system.	Major	NEC Article 706.21(B)
		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)
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Article 240.22
		Fuses are present and installed in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Equipment intended to interrupt current at fault levels shall have an interrupting rating sufficient for the current that is available at the line terminals of the equipment.	Major	NEC Articles 110.9, 110.10 and 230.82
		The service overcurrent device shall be an integral part of the service disconnecting means or shall be located immediately adjacent.	Critical	NEC Articles 230.91 and/ or 110.3(B)

		Requirement	Defect Category	Code Reference
DC Combiner	Conductors	DC Combiner splice components are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		DC Combiner splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
	Conduit	The conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
	Electrical	Combiner box is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Enclosure rating is sufficient for expected current load in accordance with its listing.	Critical	NEC Article 110.3(B)
		DC Combiner is properly identified and listed.	Major	NEC Articles 110.3(B)
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		DC Combiner box is grounded.	Major	NEC Articles 250.4, 250.8 and 250.12
		Equipment grounding conductor is properly sized.	Major	NEC Article 250.122
	OCPD	Overcurrent devices used in any DC portion of the ESS shall have the appropriate voltage, current and interrupt ratings.	Major	[NEC Article 706.21(C)]
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Article 240.22
		Energy storage system circuit conductors shall be protected.	Critical	NEC Article 706.21(A)

		Requirement	Defect Category	Code Reference
DC Disconnect	Conductors	Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
	Conduit	The conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
	Electrical	DC Disconnect enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Disconnect is listed for DC use.	Critical	NEC Article 110.3(B)
		A disconnecting means shall be provided for all ungrounded conductors derived from an energy storage system.	Major	NEC Articles 706.7(A)
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		DC Disconnect is properly grounded.	Major	NEC Articles 250.4, 250.8 and 250.12
		Equipment grounding conductor is properly sized.	Major	NEC Article 250.122
	OCPD	Disconnect is rated for nominal voltage and current.	Critical	NEC Article 110.3(B)
		Disconnect fuses are DC rated and properly sized for system voltage.	Critical	NEC Article 110.3(B)
Feeder Tap	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
Connection		Conductors are properly spliced.	Major	NEC Articles 110.3(B) and 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
	Conduit	The conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
	Grounding	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 premises grounding electrode system.	Major	NEC Article 250.64
		Grounding electrode conductor is present and sufficiently sized.	Major	NEC Articles 250.66, and 250.166
		Enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8 and 250.12
		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)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)

		Requirement	Defect Category	Code Reference
Junction Box	Conductors	Junction Box splice components are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surfaces and the ground terminal inside Junction Box.	Minor	[NEC Article 250.24(A)(5)]
	Conduit	The conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
	Electrical	Junction Box is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Junction Box is properly identified and listed.	Major	NEC Articles 110.3(B)
	Grounding	Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Listed means used to ground enclosure.	Major	NEC Articles 250.4, 250.8 and 250.12
		Equipment grounding conductor is properly sized.	Major	NEC Article 250.122
	Structural	Roof penetrations are properly sealed and flashed.	Major	NYS Uniform Building Code and NEC Article 110.3(B)
	Conductors	Grounded (neutral) conductor is properly identified	Incidental	NEC Article 200 6(A)&/B)
Connection	Conductors	Lingrounded conductor(s) are properly identified		NEC Article 200.7
		The Neutral (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.	Major	NEC Article 300.20
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Conduit	The conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
	Grounding	Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Enclosure is properly grounded using a listed grounding method.	Major	NEC Articles 250.4, 250.8 and 250.12
		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)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)
	OCPD	Main panel overcurrent protection is sufficient.	Critical	NEC Article 240.4
		ESS Backfed breaker is properly sized at, or above 125% of inverter output current.	Major	NEC Article 240.4 and 706.21(C)
		Back-fed plug in devices shall be secured in place by additional fastener.	Minor	NEC Article 408.36(D)
		Where two sources, one a primary source and the other another source are located at opposite ends of a busbar that contains loads, the sum of 125 percent of the power device protecting the busbar shall not exceed 120 percent of the ampacity of the busbar.	Major	NEC Article 705.12(B)(2)(3)(b)

		Requirement	Defect Category	Code Reference
Production	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
Meter		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surface and ground terminal inside meter enclosure.	Minor	[NEC Article 250.24(A)(5)]
	Conduit	The conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
	Electrical	Meter enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Meter is rated for expected current load.	Critical	NEC Article 110.3(B)
	Grounding	Grounding means for enclosure installed.	Major	NEC Articles 250.4, 250.8 and 250.12
Subpanel	Conductors	Grounded (neutral) conductor is properly identified	Incidental	NEC Article 200 6(A)&(B)
ouspaner		Ungrounded conductor(s) are properly identified	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surface and ground terminal inside meter enclosure.	Minor	NEC Article 250.24(A)(5)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Conduit	The conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
	Grounding	Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Subpanel is properly grounded.	Major	NEC Articles 250.4, 250.8 and 250.12
	OCPD	Subpanel Overcurrent protection is sufficient.	Critical	NEC Article 240.4
		ESS Backfed breaker is properly sized at, or above 125% of inverter output current.	Major	NEC Article 240.4 and 706.21(C)
		Back-fed plug in devices shall be secured in place by additional fastener.	Minor	NEC Article 408.36(D)

		Requirement	Defect Category	Code Reference
Supply Side Connection	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Service entrance conductors are properly spliced.	Major	NEC Articles 110.3(B) and 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
	Conduit	The conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
	Electrical	Service disconnect is properly rated for the application.	Major	NEC Article 230.79(D)
	Grounding	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
		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 Article 250.64(C)
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, and 250.166
		Disconnect enclosure is properly grounded using a listed grounding method.	Major	NEC Articles 250.4, 250.8 and 250.12
		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)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)
	OCPD	The AC OCPD is properly sized for the expected output current of the ESS system.	Major	NEC Article 706.21(B)
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Article 240.22
		Fuses are present and installed in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Equipment intended to interrupt current at fault levels shall have an interrupting rating sufficient for the current that is available at the line terminals of the equipment.	Major	NEC Articles 110.9, 110.10 and 230.82
		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)

		Requirement	Defect Category	Code Reference
Energy Storage	Conductors	Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Energy Storage System conductors are protected from accidental contact.	Major	NEC Articles 110.27 and 706.10(B)
		Correct flexible cables are used for battery interconnections.	Major	NEC Article 706.32
		Battery DC conductors are properly sized for expected current load.	Major	NEC Article 706.32
	Conduit	The conduit is grounded (when required).	Major	NEC Article 250.4(A)(3)
	Electrical	A disconnecting means shall be provided for all ungrounded conductors derived from an energy storage system.	Major	NEC Articles 706.7(A)
		Batteries are properly ventilated.	Critical	NEC Article 480.10(A)
		Charge Controller shall be compatible with the energy storage manufacturer's electrical ratings and charging specifications.	Major	NEC article 110.3(B) and IFC 2018, 1206.2.4
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Battery enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8 and 250.12



Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Assessment Quality	Data Collection	Energy Action Plan Completed	Incidental	EmPower Action Plan completed by customer; customer can identify actions they have completed or will be completing
Assessment Quality	Data Collection	Building Specifications Depicted Accurately	Major	Measurements provided by contractor for heat loss and savings calculations, building components, etc. are accurate
Assessment Quality	Data Collection	Ventilation Requirement Calculation Correct	Minor	Where ventilation is required the auditor and inspector should arrive at same ventilation requirement
Assessment Quality	Data Collection	Preexisting Conditions Accurately Depicted	Major	The pre-existing conditions as recorded by the contractor must match site conditions as they exist
Assessment Quality	Data Collection	Heating System Accurately Depicted	Major	Nameplate efficiency and age of unit matches contractor's documented numbers
Assessment Quality	Data Collection	Blower Door Test Results Submitted	Major	Blower door test-in and test-out results were submitted
Assessment Quality	Data Collection	Comprehensive Audit Submitted	Incidental	Customer received the audit report and felt it was it was adequately explained to them by the contractor
Assessment Quality	Data Collection	Customer Signature Verified	Major	Customer signatures provided by contractor are authentic
Assessment Quality	Data Collection	Contracted Costs Verified	Major	N/A for EmPower - Confirm with the customer that the contracted costs for each measure are accurate and do not include work performed for measures not listed. For Assisted and Coordinated projects, verify that the customer incurred out of pocket expenses (unless there was a loan).
Assessment Quality	Data Collection	Combustion Safety Testing Results Submitted	Major	Testing results must be complete and submitted to the program
Assessment Quality	Data Collection	Coordinated Project - No Out Of Pocket Option Offered	Incidental	Contractors must offer a No Out of Pocket "Empower Only" option for AHP-Empower combined projects. Only score if customer is certain the contractor did or did not offer an EmPower only option
Assessment Quality	Recommendati ons	Smoke Detector	Incidental	At least one smoke detector detector shall be installed according to manufacturer's instructions in every home
Assessment Quality	Recommendati ons	CO Detector	Critical	At least one CO detector meeting UL-2034 requirements shall be installed according to manufacturer's instructions in every home with an attached garage and/or combustion appliances.
Assessment Quality	Recommendati ons	Air Sealing	Incidental	If reduction is available and there are no unresolved roadblocks, air sealing should have been recommended. Air sealing opportunities must always follow the pressure envelope. Lack of air sealing between a semi-conditioned basement and upstairs should not be considered a "missed opportunity" unless the leak extends beyond the conditioned space such as basement to attic bypasses.

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Assessment Quality	Recommendati ons	Insulation	Incidental	If insulation is cost-effective and there are no roadblocks preventing upgrades insulation should have been recommended
Assessment Quality	Recommendati ons	Insulation Voids Identified	Incidental	Voids in insulation must be accounted for by determining the net square footage of uninsulated area and recording it as a separate component of the building
Assessment Quality	Recommendati ons	Domestic Hot Water	Incidental	If the existing system is in poor condition or is an electric tank that could have advanced controls installed, upgrades should have been recommended
Assessment Quality	Recommendati ons	Heating System(s)	Incidental	If existing system is in poor condition, improperly sized or creating a health risk, replacement should have been recommended
Assessment Quality	Recommendati ons	Windows and Doors	Incidental	Windows and doors should be evaluated for performance, operation, and air sealing, resulting in appropriate recommendations
Assessment Quality	Recommendati ons	Appliances	Incidental	If existing refrigerator or freezer was manufactured prior to 2000 or other major appliances (dw, washing machine, dehumidifier etc.) are not ENERGY STAR®, upgrades to ENERGY STAR® models should have been recommended
Assessment Quality	Recommendati ons	Direct Install Measures	Incidental	Covers CFLs, LEDs, light fixtures, aerators, showerheads, CO and smoke detectors, tank wrap, pipe insulation, programmable thermostats, window insulation, and DHW temp setback. If existing conditions meet eligibility requirements for replacement, replacements should have been recommended or installed
Assessment Quality	Recommendati ons	Distribution Systems: Ducts	Incidental	If duct system leakage exceeds 10% of the nominal air flow of the system and the ducts are located in an unconditioned space or semi-conditioned space (unvented and adjoined to the tempered earth) then duct sealing should have been recommended. If the ducts are not insulated to current code levels duct insulation should have been recommended
Assessment Quality	Recommendati ons	Distribution Systems: Hydronic	Incidental	Hydronic heating system pipes in unconditioned spaces that are not insulated should have had pipe insulation specified unless this could cause water pipes to freeze
Combustion Appliance Testing	Testing Inspection	Gas Leak Testing - Pre-Existing Lines	Minor	Indoor ambient air sampled at each floor of the home with a Combustion Gas Detector has a LEL of 0%
Combustion Appliance Testing	Testing Inspection	Gas Leak Testing - Contractor Installed Lines	Major	Gas leak testing preformed on all gas lines and combustion appliances (existing and new) per ANSI/BPI-1200-S-2017 Section 7.5, no gas leaks identified.
Combustion Appliance Testing	Testing Inspection	Correctly Measured CAZ(s) De-pressurization	Major	CAZ passes the depressurization limit and the appliances pass spillage and draft under worst case

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Combustion Appliance Testing	Testing Inspection	Spillage Test Safe	Major	All combustion applinaces draft properly without spillage per BPI-1200
Combustion Appliance Testing	Testing Inspection	Appliance CO Measurements Safe	Major	Appliance CO measurements match the Contractor's measurements and is not above 400ppm. The appliance must pass spillage under natural conditions
Combustion Appliance Testing	Testing Inspection	Smoke Reading Acceptable	Major	Smoke reading of fuel oil units within manufacturers specifications, typically be between 0-1
Combustion Appliance Testing	Testing Inspection	Gas Line Capped	Critical	Each outlet, including a valve, shall be closed gastight with a thread plug or cap immediately after installation and shall be left closed until the appliance or equipment is connected
Combustion Appliance Testing	Testing Inspection	Oil Leakage Testing	Minor	Fuel oil piping is leak free
Combustion Appliance Testing	Visual Inspection	Unvented Space Heater Identified	Minor	If measures were completed that impact air movement in the home any unvented space heaters must be disconnected and the fuel supply line capped. If no measures were completed that effect air movement in the home, but an unvented space heater exists, the contractor must make a recommendation to the homeowner to disable it.
Combustion Appliance Testing	Visual Inspection	Attic Space Accessible	Major	Contractor must not seal off access to the attic when attic insulation and/or air sealing was a contracted measure. In the event that a contractor creates an access to the attic that must be permanently sealed (such as access through drywall, or situations where the contractor insulates the attic through a vent), the contractor must provide pre and post photos of the installed insulation and submit per Program Guidelines
Combustion Appliance Testing	Visual Inspection	Correct Fuel Identified	Critical	The contractor indicated the correct fuel(s) on the test out paperwork
Combustion Appliance Testing	Visual Inspection	Located All Combustion Appliance Zones	Minor	All equipment was tested and the depressurization set up accurately defined the Combustion Appliance Zone
Combustion Appliance Testing	Visual Inspection	Correct Venting Type Identified	Minor	The contractor indicated the correct vent type on the test out paperwork
Combustion Appliance Testing	Visual Inspection	CAZ and Appliances Related Safety Issues Identified	Major	Contractor should have identified and recommended a fix for any CAZ and Appliance related safety issues, including, detached or corroded flue pipes or problems with size or pitch, problems with DHW relief valve, broken or kinked oil lines, water leakage, open returns, no air filter, etc
rieaiur & Sarety	Asuima		Inajui	Involced window all conditioner has been installed

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Health & Safety	Roadblocks	Property Damage	Major	Mark as failed if there is clear evidence the contractor has caused significant damage to the property (holes in walls, damage to woodwork, spray foam insulation blew out a wall, etc.). In all cases, it is important to document the customer's comments in the failure description
Health & Safety	Roadblocks	Friable PACM	Major	Contractor did not depressurize home using Blower Door or conduct Air Sealing in areas containing friable PACM that was in poor condition and at risk of becoming airborne.
Health & Safety	Roadblocks	Mold like substance - Greater Than 10 Square Feet	Major	Contractor did not depressurize home using Blower Door or conduct Air Sealing in areas containing mold like substance. The conditioned space may be depressurized if MLS is not within the conditioned space.
Health & Safety	Roadblocks	Knob & Tube Wiring	Major	Knob and tube wiring has been either removed or permanently de-activated wherever insulation was completed or no insulation/air sealing materials were installed within 3 inches of active knob and tube wiring
Health & Safety	Roadblocks	Moisture Mitigated Properly	Major	Contractor identified all sources of moisture problems, and source mitigation or necessary repairs performed
Health & Safety	Roadblocks	Exhaust Fans Vented Properly	Major	All exhaust fans (bath fans, kitchen fans, clothes dryers) must be vented to the outside of the structure in all cases where measures will be installed that will change the air movement in the home
Asthma	Room Air Conditioner	Contracted Window Air Conditioner Installed	Major	Invoiced window air conditioner has been installed
Asthma	Room Air Conditioner	Installed Unit Is ENERGY STAR	Incidental	Window air conditioner is Energy Star Certified
Asthma	Room Air Conditioner	Owners Manual Provided	Incidental	The owners manual has been provided to the customer
Asthma	Ventilation System	Contracted Ventilation System Installed	Major	Invoiced HRV/ERV system has been installed
Asthma	Ventilation System	Properly Installed	Minor	HRV/ERV system installed per manufacturers specifications and NREL SWS 6.6202.2
Asthma	Ventilation System	Ventilation Rates Verified	Minor	HRV/ERV system meets minimum CFM requirement per BPI- 1200
Asthma	Ventilation System	Duct Supports	Minor	Flexible and metal ducts supported per NREL SWS 6.6002.1
Asthma	Ventilation System	Duct Connections	Minor	Duct connections per NREL SWS 6.6202.2
Asthma	Ventilation System	Ductwork	Minor	Ductwork installed per manufacturers specifications and NREL SWS 6.6202.2
Asthma	Ventilation System	Owners manual provided	Incidental	The owners manual has been provided to the customer
Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
---------------------	--------------------------------------	---	--------------------------	--
Asthma	Ventilation System	Electrical	Major	Wiring installed in accordance with original equipment manufacturer specifications, local and NYS electrical and mechanical codes
Asthma	Repairs to Roof	Contracted Roof Repairs Completed	Major	Invoiced roof repairs have been completed and roof is leak free
Asthma	Repairs to Roof	Properly Installed	Minor	All roofing repair materials have been installed/applied per manufacturers specifications
Asthma	Repairs to Steam System	Contracted Steam System Repairs Completed	Major	Invoiced steam system repairs have been completed and the system is leak free. Piping, radiator connections, radiator vents and master vents do not leak
Asthma	Repairs to Condensate Drain	Contracted Condensate Drain Repairs Completed	Major	Invoiced condensate drain repairs have been completed and the drain is leak free
Asthma	Plumbing Repair Faucet Install	Contracted Faucet Installed	Major	Invoiced kitchen and/or bathroom faucet has been installed
Asthma	Plumbing Repair Faucet Install	Faucet Operates Properly	Minor	Even flow from aerator and no leaks at piping connections
Asthma	Plumbing Repair	Contracted Plumbing Repairs Completed	Major	Invoiced plumbing repairs have been completed and are leak free
Asthma	Mold Remediation (> 10 ft2)	Contracted Mold Remediation Completed	Major	Verify post-remediation assessment has been submitted (on portal)
Asthma	Mold Remediation (< 10 ft2)	Contracted Mold Remediation Completed	Major	Verify post-remediation assessment has been submitted (on portal)
Asthma	Kitchen Exhaust Fan - Repair	Contracted Exhaust Fan Repairs Completed	Major	Invoiced exhaust fan repairs have been completed
Asthma	Kitchen Exhaust Fan - Repair	Exhaust Fan Vented Properly	Major	Exhaust fan discharges to exterior with wall termination. Backdraft damper is not obstructed (opens and closes)
Asthma	Kitchen Exhaust Fan	Contracted Exhaust Fan Installed	Major	Invoiced exhaust fan has been installed
Asthma	Kitchen Exhaust Fan	Exhaust Fan Vented Properly	Major	Exhaust fan discharges to exterior with wall termination. Backdraft damper is not obstructed (opens and closes)
Asthma	Integrated Pest Management	Integrated Pest Management Plan Implemented	Major	If invoiced; interview customer and verify the integrated pest management plan has been implemented
Asthma	Humidifier - Whole Home	Contracted Humidifier Installed	Major	Invoiced humidifier has been installed

Inspection Category Measure Requirement **Non-Conformance Category Pass Summary** Humidifier -Asthma **Owners Manual Provided** Incidental The owners manual has been provided to the customer Whole Home Humidifier -Electrical and plumbing installed as specified by the Asthma Properly Installed Minor manufacturer and per NYS plumbing and electrical code Whole Home Humidifier -Asthma Contracted Humidifier Provided Major Invoiced humidifier has been provided Room Humidifier -Asthma **Owners Manual Provided** Incidental The owners manual has been provided to the customer Room Gutter/Downsp Invoiced gutters, downspouts and guards have been Asthma Contracted Gutter/Downspouts/Guards Installed Major outs/Guards installed Gutter/Downsp Gutter is pitched properly; typically gutters pitched 1/2 inch Gutter Pitched and Drained Properly Asthma Minor outs/Guards every 10 feet, 40 feet of gutter per down spout Gutters fastened per manufactures specifications; typically Gutter/Downsp Asthma Properly Fastened Minor outs/Guards every 24 inches to support snow and ice loads Gutter/Downsp Downspout Discharge Location Water drains away from foundation, 5 to 8 feet from home Asthma Minor outs/Guards Gutter/Downsp Downspout discharge is arranged to avoid erosion using a Downspout Discharge Erosion Asthma Incidental outs/Guards splash block or other means Gutter/Downsp Site Restored to Tidy Condition Asthma Minor All construction debris have been removed outs/Guards Gutter/Downsp Invoiced gutter, downspout and/or gutter guards have been Asthma outs/Guards -Contracted Gutter/Downspouts/Guards Repairs Completed Major repaired as invoiced Repair Gutter/Downsp Invoiced cleaning has been completed and gutter guards Contracted Gutter/Downspouts/Guards Cleaned Asthma outs/Guards -Major have been installed Cleaning Verify the furnace filter has been replaced and six (6) Asthma Furnace Filters Correct Quantity Provided Major additional filters have been provided to the occupant Existing carpet removed and replacement flooring installed Contracted Flooring Completed as contracted. Verify the square feet of flooring treated is Asthma Flooring Major within 90% of the invoiced area in each room specified New flooring has been installed in a workman like manner Asthma Flooring Properly Installed Minor according to the manufacturers specifications Asthma Flooring Site Restored to Tidy Condition Minor Removed carpeting has been disposed of properly A vapor barrier must be installed on exposed dirt floors Dirt Floor Vapor Ground Cover Installed and Sealed Asthma Major within the envelope. Vapor barrier shall be installed in Barrier accordance with NREL SWS 2.0403.2 Dehumidifier -Asthma Contracted Dehumidifier Provided Invoiced dehumidifier has been provided Major Room Dehumidifier -Asthma Installed Unit Is ENERGY STAR Incidental Dehumidifier is Energy Star Certified Room

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Asthma	Dehumidifier - Room	Owners manual provided	Incidental	The owners manual has been provided to the customer
Asthma	Dehumidifier - Basement	Contracted Dehumidifier Installed	Major	Invoiced dehumidifier has been installed
Asthma	Dehumidifier - Basement	Properly Installed	Minor	Unit installed per manufactures specifications and NREL SWS 2.0404.4
Asthma	Dehumidifier - Basement	Dehumidifier Discharge	Minor	Dehumidifier discharges to an appropriate location
Asthma	Dehumidifier - Basement	Installed Unit Is ENERGY STAR	Incidental	Dehumidifier is Energy Star Certified
Asthma	Dehumidifier - Basement	Owners manual provided	Incidental	The owners manual has been provided to the customer
Asthma	Carpet Steam Cleaning	Contracted Carpet Steam Cleaning Completed	Major	Interview occupant and verify carpet steam cleaning has been completed as invoiced (all rooms indicated)
Asthma	Bathroom Exhaust Fan - Repair	Contracted Exhaust Fan Repairs Completed	Major	Invoiced exhaust fan repairs have been completed
Asthma	Bathroom Exhaust Fan - Repair	Exhaust Fan Vented Properly	Major	Exhaust fan discharges to exterior with wall termination. Backdraft damper is not obstructed (opens and closes)
Asthma	Bathroom Exhaust Fan	Contracted Exhaust Fan Installed	Major	Invoiced exhaust fan has been installed
Asthma	Bathroom Exhaust Fan	Exhaust Fan Vented Properly	Major	Exhaust fan discharges to exterior with wall termination. Backdraft damper is not obstructed (opens and closes)
Asthma	Basement Water Proofing Sump Pump	Contracted Sump Pump Installed	Major	Invoiced sump pump installed
Asthma	Basement Water Proofing Sump Pump	Contracted Sump Pump Repairs Completed	Major	Invoiced sump pump repairs have been completed
Asthma	Basement Water Proofing Sump Pump	Discharge Appropriate	Minor	Sump pump discharges away from foundation, 5 to 8 feet from home and is protected from freezing. Discharge piping shall have a full flow check valve located near the discharge of the pump.
Asthma	Basement Water Proofing Sump Pump	Electrical	Major	There are no electrical safety issues
Asthma	Basement Water Proofing Drainage Systems	Contracted Drainage System Installed	Major	Invoiced basement drainage system has been installed

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Asthma	Basement Water Proofing Drainage Systems	Properly Installed	Major	Basement drainage system installed per manufacturers specifications
Asthma	Basement Water Proofing Coatings	Contracted Waterproofing Installed	Major	Invoiced basement waterproof coating has been installed as invoiced (within 90% of square feet specified)
Asthma	Basement Water Proofing Coatings	Properly Installed	Major	Waterproof coating has been applied evenly and no pinholes are visible
Asthma	Basement Water Proofing Coatings	Site Restored to Tidy Condition	Minor	All project debris have been removed
General	Range Stove	Clean and Tune	Major	Range/Stove have been cleaned and tuned, verify per BPI- 1200.
General	Range Stove	Contracted Range Stove Installed	Major	Invoiced range/stove has been installed
General	Range Stove	Properly Installed	Major	Range Stove has been installed per manufacturer specifications and NYS electrical and plumbing code. Verify gas connections are leak free if applicable
Injury Prevention	Walkway Repair	Contracted Walkway Repairs Completed	Major	Invoiced walkway repairs have been completed
Injury Prevention	Walkway Repair	Walkway Repaired per ADA	Minor	Walkway surface is smooth. All changes in level comply with 2010 ADA Standards for Accessible Design, section 303
Injury Prevention	Toilet Safety Frame/Rail	Contracted Toilet Safety Frame/Rail Installed	Major	Invoiced toilet safety frame/rail has been installed
Injury Prevention	Toilet Safety Frame/Rail	Properly Installed	Minor	Toilet safety frame/rail installed per manufacturers specifications
Injury Prevention	Threshold	Contracted Threshold Lowering/Repairs Completed	Major	Invoiced threshold lowering and/or repairs have been completed
Injury Prevention	Threshold	Threshold Lowered/Repaired per ADA	Minor	The threshold has been lower or repaired in accordance with 2010 ADA Standards for Accessible Design, section 404.2.5 and 608.7 as applicable
Injury Prevention	Shower Seat	Contracted Shower Seat Provided	Major	Invoiced shower seat has been provided. The shower seat shall have feet grips
Injury Prevention	Safety Grab Bar	Contracted Safety Grab Bars Installed	Major	Quantity and location of safety grab bars installed as invoiced
Injury Prevention	Safety Grab Bar	Safety grab bars installed per ADA	Major	Safety grab bars have been installed per 2010 ADA Standards for Accessible Design sections 604.5, 607.4.1, and 607.4.2 as applicable
Injury Prevention	Porch Repair	Contracted Porch Repairs Completed	Major	Invoiced porch repairs have been completed and the fall hazard(s) has been corrected

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Injury Prevention	Nightlights	Correct Quantity Installed	Major	Invoiced number of nightlights with motion sensors have been installed
Injury Prevention	Staircase Handrail	Contracted Interior Handrail Repaired	Minor	Invoiced interior handrail repairs have been completed
Injury Prevention	Staircase Handrail	Correct Quantity Installed	Major	Invoiced number of interior handrail(s) have been installed
Injury Prevention	Staircase Handrail	Properly Installed	Major	Interior handrail(s) installed per NYS Code R311.7.8
Injury Prevention	Staircase Handrail	Contracted Exterior Handrail Repaired	Minor	Invoiced exterior handrail(s) have been repaired
Injury Prevention	Staircase Handrail	Correct Quantity Installed	Major	Invoiced number of exterior handrail(s) have been installed
Injury Prevention	Staircase Handrail	Properly Installed	Major	Exterior handrail(s) installed per NYS Code R311.7.8
Injury Prevention	Anti-Slip Stair Treads	Correct Quantity Installed	Major	Invoiced number of anti-slip stair treads installed
Injury Prevention	Anti-Slip Stair Treads	Properly Installed	Minor	Anti-slip stair treads are securely fastened and located on stair per manufacturers specifications
Injury Prevention	Anti-Slip Bathtub Treads	Correct Quantity Installed	Major	Invoiced number of bathtubs treated
Injury Prevention	Anti-Slip Bathtub Treads	Properly Installed	Minor	Anti-slip bathtub treads are securely fastened and appropriately located per manufacturers specifications
Injury Prevention	Furniture Anchors	Correct Quantity Installed	Major	Quantity and location of furniture anchors installed as invoiced
Injury Prevention	Furniture Anchors	Properly Installed	Minor	Furniture anchors installed per manufacturers specifications
Injury Prevention	Bump Guards	Correct Quantity Installed	Minor	Invoiced number of table corner bump guards have been installed, if missing verify the customer did not remove them.
Injury Prevention	Bump Guards	Properly Installed	Minor	Bump guards installed per manufacturers specifications
Injury Prevention	Exterior Motion Sensor LEDs	Correct Quantity Installed	Major	Quantity of exterior LED fixtures with motion sensor installed as invoiced
Injury Prevention	Exterior Motion Sensor LEDs	Motion Sensor Functions Properly	Minor	Motion sensor and timer operate properly (daylight sensor will have to be covered to verify proper operation). Exterior lighting located appropriately to illuminate path to entrance.
Injury Prevention	Exterior Motion Sensor LEDs	Energy Star Certified	Incidental	Fixture is and Energy Star certified

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Injury Prevention	Electrical Outlet Covers	Correct Quantity Installed	Major	Invoiced number of electrical outlet covers have been installed. Outlet plugs are not acceptable (choke hazard); the covers should be the sliding, self closing type.
Injury Prevention	Electrical Hazard Mitigation	Electrical Hazard(s) Removed	Major	Invoiced electrical hazards have been addressed, cords under carpets have been removed, no exposed wires present, etc.
Injury Prevention	Floor Repairs	Contracted Floor Repairs Completed	Major	Invoiced floor repairs have been completed and the trip hazard(s) have been mitigated
Injury Prevention	Stair Repairs	Contracted Stair Repairs Completed	Major	Invoiced stair repairs have been completed and the trip hazard(s) have been mitigated
Injury Prevention	Child Safety Gates	Contracted Child Safety Gate Installed	Major	Invoiced child safety gate(s) have been installed
Injury Prevention	Child Safety Gates	Properly Installed	Major	Child safety gates must be bolted variation only, no pressure mounted. Hinges and locking mechanism to be securely fasted and the gate operates smoothly. Gate installed per manufacturers specifications
Injury Prevention	Cabinet Safety Latches	Correct Quantity Installed	Major	Invoiced number of safety latches have been installed, if missing verify the customer did not remove them.
Injury Prevention	Anti-Scalding Devices	Contracted Anti-Scalding Devices Installed	Major	Invoiced anti-scalding devices have been installed
Injury Prevention	Anti-Scalding Devices	Properly Installed	Minor	Anti-scalding devices have been installed per manufacturer specifications and NYS plumbing code
Appliances	Clothes Washer	Contracted Clothes Washer Unit Installed	Major	The make and model number of the installed equipment match the approved contract
Appliances	Clothes Washer	Installed unit is ENERGY STAR	Major	Installed unit is ENERGY STAR
Appliances	Clothes Washer	Hose connections - Hose connections are secure and show no signs of leaking	Incidental	Hose connections are secure and show no signs of leaking
Appliances	Clothes Washer	Machine sits evenly on floor and shows no sign of rocking	Incidental	Machine sits evenly on floor and shows no sign of rocking
Appliances	Dehumidifier	Contracted Dehumidifier Unit Installed	Major	The make and model number of the installed equipment match the approved contract
Appliances	Dehumidifier	Installed Unit Is ENERGY STAR	Major	Installed Unit Is ENERGY STAR
Appliances	Dishwasher	Contracted Dishwasher Unit Installed	Major	The make and model number of the installed equipment match the approved contract
Appliances	Dishwasher	Installed Unit Is ENERGY STAR	Major	Installed Unit Is ENERGY STAR
Appliances	Dryer	Moisture Sensor Control	Major	A mositure sensure control is present
Appliances	Dryer	Vent Installation Acceptable	Major	Dryer vents must be installed in a manner that allows air to flow freely through it.
Appliances	Dryer	Code-Compliant Vent	Major	Solid vent pipe with minimal flexible metal were installed
Appliances	Dryer	Passes CAZ and CO Testing	Major	Dryer location max depressurization is -15 and CO levels are acceptable

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Appliances	Dryer	Contracted Dryer Unit Installed	Major	The make and model number of the installed equipment match the approved contract
Appliances	Fridge and Freezer	Contracted Fridge or Freezer Unit Installed	Major	The make and model number of the installed equipment match the approved contract
Appliances	Fridge and Freezer	Installed Unit Is ENERGY STAR	Major	Installed Unit Is ENERGY STAR
Appliances	Room A/C	Contracted AC Unit Installed	Major	The make and model number of the installed equipment match the approved contract
Appliances	Room A/C	Installed Unit Is ENERGY STAR	Major	Installed Unit Is ENERGY STAR
Appliances	Room A/C	Unit Installed Securely	Minor	Unit is secured in the window according to manufacturer's installation specifications
Appliances	Timers for Appliances	Contracted Timer(s) Installed	Major	Timers should have been installed on appliances that the home owner indicated stayed on even when no one was using them. (TV, computer, DVD player)
Appliances	Timers for Appliances	Make and Model Number Match Contractor Invoice	Minor	The make and model number of the installed equipment match the approved contract
Direct Install Measures	Bathroom Faucet Aerator	Meets Program Requirements	Minor	Installed aerator has the required gpm
Direct Install Measures	Bathroom Faucet Aerator	Aerator Is Leak Free	Incidental	Aerator Is Leak Free
Direct Install Measures	Bathroom Faucet Aerator	Aerator Finish is Unmarked	Incidental	Aerator Finish is Unmarked
Direct Install Measures	Bathroom Faucet Aerator	Teflon Tape Neatly Installed	Incidental	Teflon Tape Neatly Installed
Direct Install Measures	Bathroom Faucet Aerator	Water Stream Straight	Incidental	Water Stream Straight
Direct Install Measures	Bathroom Faucet Aerator	Correct Quantity Installed	Major	There should be the same number and type of items installed as the contractor reported and invoiced for. If the numbers do not match, ask the customer if they removed any. If customer cannot remember whether they or someone else removed any, rate this as 'Not Inspected'
Direct Install Measures	CFL's	Installed Location is Appropriate	Incidental	CFLs must be matched to their location to perform properly. Exterior bulbs should be exterior rated and only dimmable bulbs in fixtures with dimmers
Direct Install Measures	CFL's	CFL(s) Function Properly	Incidental	The bulb energizes and comes to its full brightness
Direct Install Measures	CFL's	CFL(s) Equal Wattage Of Replaced Bulb	Incidental	The replacement bulb should be close in Lumens to the bulb that it replaces
Direct Install Measures	CFL's	Meets Program Requirements	Incidental	Meets Program Requirements
Direct Install Measures	CFL's	Approved Socket Extender Installed	Incidental	Only socket extenders that have been approved by the program should be installed

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Direct Install Measures	CFL's	Correct Quantity Installed	Major	There should be the same number and type of items installed as the contractor reported and invoiced for. If the numbers do not match, ask the customer if they removed any. If customer cannot remember whether they or someone else removed any, rate this as 'Not Inspected'
Direct Install Measures	CO Detector	Contracted CO Detector Present	Critical	If the contract included installation of one or more CO detectors, verify that all have been installed.
Direct Install Measures	CO Detector	Powered by Lithium Battery	Incidental	Powered by Lithium Battery
Direct Install Measures	CO Detector	Meets Program Eligibility Requirements	Incidental	Employs an electro-chemical sensor
Direct Install Measures	CO Detector	CO Detector Installation	Incidental	CO Detector Installed Per Manufacturer's Requirements
Direct Install Measures	Combo Detector	Contracted Combination Smoke/CO Detector Present	Critical	If the contract included installation of one or more Combo Smoke/CO detectors, verify that all have been installed.
Direct Install Measures	Combo Detector	Combination Smoke/CO Detector Installation	Major	Combination Smoke/CO detector must be installed per manufacturer's specifications
Direct Install Measures	Combo Detector	Powered by Lithium battery	Major	Powered by Lithium battery
Direct Install Measures	Combo Detector	Make and Model Program Approved	Major	Make and Model Program Approved
Direct Install Measures	DHW Tank Wrap	Tank Wrap Not Compressed	Incidental	Tank wrap should be installed tight enough not to sag but not so tight that the fiber glass is compressed which would reduce the R-value
Direct Install Measures	DHW Tank Wrap	Contracted Tank Wrap Installed	Major	Tank wrap was installed and the r-value matches the contracted value
Direct Install Measures	DHW Tank Wrap	Seam Are Folded Neatly & Stapled At 2" Intervals	Incidental	When installing a tank wrap, the wrap should have enough excess material to neatly fold the seam over (hiding the fiber glass and completing the vapor retarder.) This seam should be kept straight and fastened every 2".
Direct Install Measures	DHW Tank Wrap	Tank Wrap Clear Of Heat Sources	Minor	The tank wrap should not be closer than 6" to any flue pipe or the air intake at the bottom of a fossil fuel water heater. The top of a fossil fuel water heater should not be insulated.
Direct Install Measures	DHW Tank Wrap	Electric Water Heater - Tank Wrap Installed on Top Of Tank Done Properly	Incidental	The top should be insulated and all seams and penetrations tightly sealed
Direct Install Measures	DHW Tank Wrap	Control Access Cut-out Done Properly	Incidental	The control panel must be exposed. It should be cut in an "I" pattern
Direct Install Measures	DHW Tank Wrap	Pressure Relief Cut-out Done Properly	Incidental	The tank wrap should not encompass the pressure relief valve or piping
Direct Install Measures	DHW Tank Wrap	Seams Sealed With Vinyl Tape	Incidental	The seams of the tank wrap should be sealed with the vinyl tape supplied in the tank wrap kit. No duct tape
Direct Install Measures	Fluorescent Torchieres	Replacement Torchiere Is ENERGY STAR Rated	Incidental	Replacement Torchiere Is ENERGY STAR Rated

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Direct Install Measures	Fluorescent Torchieres	Fixture Has Comparable Luminescence	Incidental	Fixture Has Comparable Luminescence
Direct Install Measures	Fluorescent Torchieres	Dimmer Appropriate	Incidental	Circuit Not On A Dimmer Unless Lamp Is Rated For Dimmer
Direct Install Measures	Fluorescent Torchieres	Existing Torchiere Disabled	Incidental	The contractor is required to dispose of the old bulb and cut the cord on the existing torchiere. He may leave it with the homeowner. If he did not, just mark this as NI.
Direct Install Measures	Fluorescent Torchieres	Correct Quantity Installed	Major	There should be the same number of items installed as the contractor reported and invoiced for. If the numbers do not match, ask the customer if they removed any. If customer cannot remember whether they or someone else removed any, rate this as 'Not Inspected'
Direct Install Measures	Hot Water Pipe Insulation	Billed Insulation Installed	Major	At least 90% of the pipe insulation was installed as contracted
Direct Install Measures	Hot Water Pipe Insulation	Pipe Insulation Has Necessary Clearance To Heat Sources	Minor	Pipe insulation was installed more than 3" from double a wall vent or 6" from a single wall vent
Direct Install Measures	Hot Water Pipe Insulation	Correct Material Used	Incidental	R-3 neoprene or closed cell foam
Direct Install Measures	Hot Water Pipe Insulation	Elbows Mitered Neatly	Incidental	Elbows should be cut at 45 degree angles and fitted together to minimize gaps at elbows
Direct Install Measures	Hot Water Pipe Insulation	T Connections Cut Properly	Incidental	T connections should have the main branch notch as small as possible and still accommodate the intersecting pipe. The intersecting pipe insulation should have the end cut in a "V" pattern and pushed into place to minimize gaps at T connections
Direct Install Measures	Hot Water Pipe Insulation	Insulation Fastened Securely	Incidental	Zip ties installed at least every 12" and within 2" of the end of any piece.
Direct Install Measures	Hot Water Pipe Insulation	Seams Are On Bottom Of Pipe	Incidental	Seams Are On Bottom Of Pipe
Direct Install Measures	Hot Water Temperature Setback	Hot Water Temperature Is Set For Approximately 120 Degrees	Incidental	Hot Water Temperature Is Set For Approximately 120 Degrees
Direct Install Measures	Hot Water Temperature Setback	Homeowner Was Instructed How To Set Temperature To Original Setting	Incidental	Verify with the homeowner. If the homeowner cannot recall, the task should be rated as Not Inspected
Direct Install Measures	Kitchen Faucet Aerator	Meets Program Requirements	Incidental	Installed aerator has the required gpm
Direct Install Measures	Kitchen Faucet Aerator	Aerator Is Leak Free	Incidental	Aerator Is Leak Free
Direct Install Measures	Kitchen Faucet Aerator	Aerator Finish Is Unmarked	Incidental	Aerator Finish Is Unmarked

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Direct Install Measures	Kitchen Faucet Aerator	Teflon Tape Neatly Installed	Incidental	Teflon Tape Neatly Installed
Direct Install Measures	Kitchen Faucet Aerator	Water Stream Straight	Incidental	Water Stream Straight
Direct Install Measures	Kitchen Faucet Aerator	Correct Quantity Installed	Major	There should be the same number and type of items installed as the contractor reported and invoiced for. If the numbers do not match, ask the customer if they removed any. If customer cannot remember whether they or someone else removed any, rate this as 'Not Inspected'
Direct Install Measures	LED's	Installed Bulb(s) Are ENERGY STAR rated	Incidental	Installed Bulb(s) Are ENERGY STAR rated
Direct Install Measures	LED's	LED Location Appropriate	Incidental	LEDs should be installed in high use areas and should not be installed where used less than 2 hours a day (average) such as in closets, pantries, etc.
Direct Install Measures	LED's	Night Light Replaced Incandescent Bulb	Incidental	Only existing night lights can be replaced
Direct Install Measures	LED's	Night Light Functions	Incidental	The bulb energizes and comes to full brightness
Direct Install Measures	LED's	Correct Quantity Installed	Major	There should be the same number of items installed as the contractor reported and invoiced for. If the numbers do not match, ask the customer if they removed any. If customer cannot remember whether they or someone else removed any, rate this as 'Not Inspected'
Direct Install Measures	Light Fixtures	Fixture Meets Rating Or Ballast Standards	Incidental	Must be ENERGY STAR rated or must have an electronic ballast
Direct Install Measures	Light Fixtures	Fixture Not On A Dimmer	Incidental	Fixture not installed on a dimmer controlled circuit
Direct Install Measures	Light Fixtures	Correct Quantity Installed	Major	There should be the same number and type of items installed as the contractor reported and invoiced for. If the numbers do not match, ask the customer if they removed any. If customer cannot remember whether they or someone else removed any, rate this as 'Not Inspected'
Direct Install Measures	LowFlow Showerhead	Meets Program Requirements	Incidental	Meets Program Requirements
Direct Install Measures	LowFlow Showerhead	Showerhead Is Leak Free	Incidental	Showerhead Is Leak Free
Direct Install Measures	LowFlow Showerhead	Showerhead Finish Is Unmarked	Incidental	Showerhead Finish Is Unmarked
Direct Install Measures	LowFlow Showerhead	Teflon Tape Neatly Installed	Incidental	Teflon Tape Neatly Installed
Direct Install Measures	LowFlow Showerhead	Water Stream Even	Incidental	Water Stream Even

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Direct Install Measures	LowFlow Showerhead	Correct Quantity Installed	Major	There should be the same number and type of items installed as the contractor reported and invoiced for. If the numbers do not match, ask the customer if they removed any. If customer cannot remember whether they or someone else removed any, rate this as 'Not Inspected'
Direct Install Measures	Motion Sensor Timer	Motion Sensor Timer Installed As Contracted	Major	Motion Sensor Timer Installed As Contracted
Direct Install Measures	Motion Sensor Timer	Motion Sensor Functions Properly	Incidental	Motion Sensor Functions Properly
Direct Install Measures	Moveable Window Insulation	Installed Panel Is R-3 Or Greater	Incidental	Panel should have documentation showing it is R-3 or has a U-factor of .33 or less
Direct Install Measures	Moveable Window Insulation	Panel Securely Fastened To Interior Finish	Incidental	Panel Securely Fastened To Interior Finish
Direct Install Measures	Moveable Window Insulation	Fastening System Allows For Easy Removal	Incidental	Window insulation should be screwed or clipped in place rather than nailed or glued
Direct Install Measures	Moveable Window Insulation	Panel Is Gasketed And Appears To Be Air Tight	Incidental	Where panel meets interior finish there should be a gasket that is fully engaged around the panel and compressed
Direct Install Measures	Moveable Window Insulation	Correct Number Of Windows Treated	Minor	Correct Number Of Windows Treated
Direct Install Measures	Programmable Thermostats	Installed Thermostat Has Been Programmed	Incidental	The installed thermostat has been programmed and is running on the program. If it is not running on the program, the inspector should ask the customer whether they turned it off. If customer cannot remember whether they or someone else turned it off, rate this as 'Not Inspected.'
Direct Install Measures	Programmable Thermostats	Fan-Only Switch Functions	Incidental	The thermostat should have a "fan only" switch that turns the fan on high speed without calling for heating or cooling. Verify that it works properly
Direct Install Measures	Programmable Thermostats	Equipment Cycles In The Correct Order	Incidental	When equipment is turned on in heating mode, the inducer fan or power vent should turn on first, followed by the heat exchanger and finally blower fan
Direct Install Measures	Programmable Thermostats	Surrounding Finish Returned To Original Condition	Incidental	Surrounding Finish Returned To Original Condition

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Direct Install Measures	Programmable Thermostats	Correct Quantity Installed	Major	There should be the same number and type of items installed as the contractor reported and invoiced for. If the numbers do not match, ask the customer if they removed any. If customer cannot remember whether they or someone else removed any, rate this as 'Not Inspected'
Direct Install Measures	Smoke Detector	Contracted Smoke Detector Present	Critical	If the contract included installation of one or more Smoke detectors, verify that all have been installed.
Direct Install Measures	Smoke Detector	Smoke Detector Installation	Incidental	Smoke Detector must be installed per manufacturer's specifications
Direct Install Measures	Smoke Detector	Powered by Lithium battery	Incidental	Powered by Lithium battery
Direct Install Measures	Smoke Detector	Make and Model Program Approved	Incidental	Make and Model Program Approved
Duct Work	Duct Insulation	Correct R-Value And Amount Installed	Major	At least 90% of insulation was installed and meets or exceeds the r-value specified, if applicable
Duct Work	Duct Insulation	Insulation Not Compressed	Incidental	Insulation should not sag, but should not be pulled so tight it is compressed
Duct Work	Duct Insulation	Seams Stapled Securely	Incidental	Excess material should be left when the insulation is cut. This excess should be folded neatly at the seams to hide the fiberglass and complete the vapor barrier. The seams should be stapled every 2" with a cinch stapler
Duct Work	Duct Insulation	Vapor Retarder Continuous	Incidental	Once the seams are folded and stapled securely the seam should be sealed with vinyl tape to complete the vapor barrier. This is especially crucial with AC.
Duct Work	Duct Insulation	Vapor Retarder Sealed With Vinyl Tape	Incidental	Vapor Retarder Sealed With Vinyl Tape
Duct Work	Duct Sealing	Duct Sealing Completed as Contracted	Major	At least 90% of duct sealing in accessible areas was completed
Duct Work	Duct Sealing	Sealant Material Was Appropriate	Incidental	Materials used were UL181B-FX or UL181A-M listed
Duct Work	Duct Sealing	All Field Seams Sealed	Incidental	35 mil thick layer of mastic on all accessible seams
Duct Work	Duct Sealing	Coil Housing Connections Sealed	Incidental	Connections between furnace and coil housing are sealed with silicone caulk
Duct Work	Duct Sealing	Filter Slot Treated	Incidental	A gasketed door or panel that is permanent may act as a filter slot cover
Duct Work	Duct Sealing	Furnace Box Sealed Beneath (at Ground Level)	Incidental	Air handler cabinets which do not have "bottoms" should be sealed at their connection to the substrate or a fireproof material should be fastened and air sealed.
Duct Work	Flex Duct Installation	Flexible Ducts Installed as Invoiced	Major	Flexible Ducts Installed as Invoiced
Duct Work	Flex Duct Installation	Flexible Duct Location Appropriate	Incidental	Flexible duct is installed in a location where not subject to degradation

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Duct Work	Flex Duct Installation	Flexible Ducts Supported	Incidental	Flexible duct is fully extended, not compressed and has proper support at correct intervals per NYS RC Section M1601.4.4
Duct Work	Metal Duct Installation	Joints, Seams and Connections	Incidental	All joints, seams and connections are mechanically fastened and sealed with mastic, or other approved material per NYS RC Section M1601.4.1
Duct Work	Metal Duct Installation	Ducts and Plenum Metal Thickness	Incidental	Metal duct is of the correct thickness per NYS RC Section M1601.1.1
Duct Work	Metal Duct Installation	Metal Ducts Properly Supported	Incidental	Ducts are supported at the proper intervals per NYS RC Section M1601.4.4
Duct Work	Metal Duct Installation	Ducts Installed as Invoiced	Minor	Ducts Installed as Invoiced
Duct Work	Rigid Fibrous Duct Installation	Rigid Fibrous Duct Installed as Invoiced	Major	Rigid Fibrous Duct Installed as Invoiced
Duct Work	Rigid Fibrous Duct Installation	Duct Installation Appropriate	Minor	Ducts are installed per NYS RC Sections M1601.1.1 and M1601.4
Duct Work	Rigid Fibrous Duct Installation	Location of Installation	Minor	Rigid fibrous glass duct must not be used in concrete, buried below grade, or any other location where it may be exposed to weather or physical abuse.
Heating System	Air Conditioner Replacement	Contracted Equipment Installed	Major	Verified that all contracted items were installed as per contract
Heating System	Air Conditioner Replacement	Equipment Sizing is Appropriate	Major	Equipment Sizing is Appropriate
Heating System	Air Conditioner Replacement	Air Filter Accessible	Minor	Air Filter Accessible
Heating System	Air Conditioner Replacement	Maintenance Access Is Accessible	Major	Maintenance Access Is Accessible
Heating System	Air Conditioner Replacement	Electric	Major	There are no electrical safety issues and and there is a shut off installed and within reach for the customer
Heating System	Air Conditioner Replacement	Condensate Drain	Minor	Condensate drain installed properly and discharges with air gap or other approved place of disposal. Preferred areas to drain condensate include service sinks, French drains/ground water ejector pits
Heating System	Air Conditioner Replacement	Heat Rise Test	Major	Delta T from heat rise test must fall within manufacturer's specifications
Heating System	Air Conditioner Replacement	Dedicated Duct System	Major	Installed equipment must not share a duct vent with another equipment
Heating System	Air Conditioner Replacement	Duct System Airflow	Major	Airflow through duct system must meet manufacturer's specifications

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Heating System	Air Conditioner Replacement	Duct Connections	Major	All ducts are properly connected
Heating System	Air Conditioner Replacement	Duct - Unit Connection	Major	Duct must be properly sealed at connection with unit
Heating System	Air Conditioner Replacement	Duct Insulation	Minor	Ducts in semi or unconditioned space must be insulated to a minimum R-value
Heating System	Air Conditioner Replacement	Duct Return Appropriate	Major	Duct return must not be installed in CAZ
Heating System	Air Conditioner Replacement	Equipment Removal	Major	If included as part of the contract, the furnace, including all other items related to the furnace must be removed from the home
Heating System	Clean and Tune	Heating Appliance Clean and Tune	Major	Heating appliance cleaned and tuned as contracted
Heating System	Gas Hearth	Contracted Equipment Installed	Major	Verified that all contracted items were installed as per contract
Heating System	Gas Hearth	Equipment Sizing is Appropriate	Major	Equipment Sizing is Appropriate
Heating System	Gas Hearth	Air Filter Accessible	Minor	Air Filter Accessible
Heating System	Gas Hearth	Proper Clearance To Combusibles	Major	Proper Clearance To Combusibles
Heating System	Gas Hearth	Maintenance Access Is Accessible	Minor	Maintenance Access Is Accessible
Heating System	Gas Hearth	Venting - Sealed Combustion Units	Major	Units capable of sealed combustion must be setup to draw outside air
Heating System	Gas Hearth	Venting - Natural Draft	Major	Venting must maintain proper clearance to combustibles
Heating System	Gas Hearth	Gas Line Properly Sized	Major	Gas Line Properly Sized
Heating System	Gas Hearth	Gas Line - CCST Properly Grounded	Major	Gas Line - CCST Properly Grounded
Heating System	Gas Hearth	Electric	Major	There are no electrical safety issues and and there is a shut off installed and within reach for the customer
Heating System	Gas Hearth	Heat Rise Test	Major	Delta T from heat rise test must fall within manufacturer's specifications
Heating System	Gas Hearth	Equipment Removal	Major	If included as part of the contract, the orginal equipment being replaced and all related items must be removed from the home
Heating System	Gas/Propane Furnace	Contracted Furnace Installed	Major	Verified that the contracted furnace was installed. Do not mark this task as failed if the heating unit was installed but ancillary equipment was not installed.
Heating System	Gas/Propane Furnace	Ancillary Equipment Installed	Incidental	All ancillary equipment related to the installed furnace must be installed as contracted for.
Heating System	Gas/Propane Furnace	Equipment Sizing is Appropriate	Major	Equipment Sizing is Appropriate

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Heating System	Gas/Propane Furnace	Air Filter and Accessible	Minor	All air filters must be installed in the return air system in a location that is easily accessible for the homeowner to change. All return air must pass through the return air system. All new duct systems installed must include minimum MERV 6 with design accounting for filter pressure drop @ design airflow.
Heating System	Gas/Propane Furnace	Proper Clearance To Combustibles	Major	Proper Clearance To Combustibles
Heating System	Gas/Propane Furnace	Maintenance Access Is Accessible	Minor	Maintenance Access Is Accessible
Heating System	Gas/Propane Furnace	Venting Acceptable - Sealed Combustion Units	Minor	Units capable of sealed combustion must be setup to draw outside air
Heating System	Gas/Propane Furnace	Venting Acceptable - Natural Draft	Minor	Inspect the venting system for proper size and horizontal pitch, as required in the latest edition of the National Fuel Gas Code (NFPA 54). Venting must maintain proper clearance to combustibles
Heating System	Gas/Propane Furnace	Gas Line Properly Sized	Major	Gas Line Properly Sized
Heating System	Gas/Propane Furnace	Gas Line - CCST Properly Grounded	Minor	Gas Line - CCST Properly Grounded
Heating System	Gas/Propane Furnace	Electrical	Major	There are no electrical safety issues and and there is a shut off installed and within reach for the customer
Heating System	Gas/Propane Furnace	Condensate Drain	Minor	Condensate drain installed per manufacturer's specifications and discharges with air gap or other approved place of disposal. Preferred areas to drain condensate include service sinks, French drains/ground water ejector pits
Heating System	Gas/Propane Furnace	Heat Rise Test	Minor	Delta T from heat rise test must fall within manufacturer's specifications
Heating System	Gas/Propane Furnace	Dedicated Duct System	Minor	Installed equipment must not share a duct vent with another equipment
Heating System	Gas/Propane Furnace	Duct System Airflow	Minor	On installation where a new duct system is installed the following must be met: The individual room airflows are within the greater of \pm 20% or 25CFM of the design/application requirements for the supply and return ducts. Contractor must measure airflow and adjust to above specifications along with providing air balancing report.
Heating System	Gas/Propane Furnace	Duct Connections	Minor	All ducts are properly connected
Heating System	Gas/Propane Furnace	Duct - Unit Connection	Minor	Duct must be properly sealed at connection with unit

Inspection Category Measure Requirement **Non-Conformance Category Pass Summary** Gas/Propane Ducts in semi or unconditioned space must be insulated to a Duct Insulation Heating System Minor Furnace minimum R-value Gas/Propane Heating System Duct Return Appropriate Minor Duct return must not be installed in CAZ Furnace If included as part of the contract, the orginal equipment Gas/Propane Heating System Equipment Removal Minor being replaced and all related items must be removed from Furnace the home The installed system is functioning to manufacturer Gas/Propane Heating System System Functioning Properly Major Furnace specifications Boiler, pump and system piping must be sized per Gas/Propane Equipment Sizing is Appropriate Heating System Major HW Boiler manufacturer's specifications, IBR or approved equivalent. Gas/Propane Heating System Proper Clearance To Combustibles Proper Clearance To Combustibles Major HW Boiler Gas/Propane Heating System Maintenance Access Is Accessible Minor Maintenance Access Is Accessible HW Boiler Units capable of sealed combustion must be setup to draw Gas/Propane Heating System Venting Acceptable - Sealed Combustion Units Maior HW Boiler outside air Gas/Propane Heating System Venting Acceptable - Natural Draft Major Venting must maintain proper clearance to combustibles HW Boiler Gas/Propane Heating System Gas Line Properly Sized Major Gas Line Properly Sized HW Boiler Gas/Propane Heating System Gas Line - CCST Properly Grounded Gas Line - CCST Properly Grounded Major HW Boiler Gas/Propane There are no electrical safety issues and and there is a shut Electric Heating System Major HW Boiler off installed and within reach for the customer Water testing has been completed. If the water is not within Gas/Propane the boiler manufacturers specifications, water treatment has Heating System Water Testing and Treatment Minor HW Boiler been provided and documented Delta T from heat rise test must fall within manufacturer's Gas/Propane Heating System Heat Rise Test Major HW Boiler specifications If included as part of the contract, the orginal equipment Gas/Propane being replaced and all related items must be removed from Heating System Equipment Removal Major HW Boiler the home Gas/Propane TPRV and down tube piping is installed to proper Heating System Temperature-Pressure Relief Valve Major HW Boiler specifications Verified that the contracted boiler was installed. Do not mark Gas/Propane Heating System Contracted Boiler Installed this task as failed if the heating unit was installed but Major HW Boiler ancillary equipment was not installed. Gas/Propane All ancillary equipment related to the installed furnace must Ancillary Equipment Installed Heating System Incidental HW Boiler be installed as contracted for.

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Heating System	Gas/Propane HW Boiler	Pipe Insulation	Major	Boiler piping installed in unconditioned spaces must be insulated with a minimum of R-4. Existing boiler piping installed in unconditioned spaces must be insulated to a minimum of R-4.
Heating System	Gas/Propane Steam Boiler	All Exposed Pipes Insulated	Major	All Exposed Pipes Insulated
Heating System	Gas/Propane Steam Boiler	Ancillary Equipment Installed	Incidental	All ancillary equipment related to the installed furnace must be installed as contracted for.
Heating System	Gas/Propane Steam Boiler	Contracted Steam Boiler Installed	Major	Verified that the contracted boiler was installed. Do not mark this task as failed if the heating unit was installed but ancillary equipment was not installed.
Heating System	Gas/Propane Steam Boiler	Equipment Sizing is Appropriate	Major	Equipment Sizing is Appropriate
Heating System	Gas/Propane Steam Boiler	Proper Clearance To Combustibles	Major	Proper Clearance To Combustibles
Heating System	Gas/Propane Steam Boiler	Maintenance Access Is Accessible	Minor	Maintenance Access Is Accessible
Heating System	Gas/Propane Steam Boiler	Venting - Sealed Combustion Units	Minor	Units capable of sealed combustion must be setup to draw outside air
Heating System	Gas/Propane Steam Boiler	Venting - Natural Draft	Major	Venting must maintain proper clearance to combustibles
Heating System	Gas/Propane Steam Boiler	Gas Line Properly Sized	Major	Gas Line Properly Sized
Heating System	Gas/Propane Steam Boiler	Gas Line - CCST Properly Grounded	Major	Gas Line - CCST Properly Grounded
Heating System	Gas/Propane Steam Boiler	Electric	Major	There are no electrical safety issues and and there is a shut off installed and within reach for the customer
Heating System	Gas/Propane Steam Boiler	Water Testing and Treatment	Minor	Water testing has been completed. If the water is not within the boiler manufacturers specifications, water treatment has been provided and documented
Heating System	Gas/Propane Steam Boiler	Temperature-Pressure Relief Valve	Major	TPRV and down tube piping is installed to proper specifications
Heating System	Gas/Propane Steam Boiler	Heat Rise Test	Minor	Delta T from heat rise test must fall within manufacturer's specifications
Heating System	Gas/Propane Steam Boiler	Equipment Removal	Minor	If included as part of the contract, the orginal equipment being replaced and all related items must be removed from the home
Heating System	Oil Furnace	Ancillary Equipment Installed	Incidental	All ancillary equipment related to the installed furnace must be installed as contracted for.

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Heating System	Oil Furnace	Air Filter	Major	All air filters must be installed in the return air system in a location that is easily accessible for the homeowner to change. All return air must pass through the return air system. All new duct systems installed must include minimum MERV 6 with design accounting for filter pressure drop @ design airflow.
Heating System	Oil Furnace	Fuel Oil Storage System	Major	The integrity of the fuel oil storage system must be checked and repairs/replacement included with new installation. New oil storage system must be installed in accordance with the latest edition of NFPA 31.
Heating System	Oil Furnace	Fuel Oil Piping	Major	All oil piping to be leak-free and must be sized to provide adequate oil supply to all connected oil appliances. Oil line piping design, materials, and construction must be in accordance with the latest edition of NFPA 31
Heating System	Oil Furnace	Contracted Equipment Installed	Major	Verified that the contracted furnace was installed. Do not mark this task as failed if the heating unit was installed but ancillary equipment was not installed.
Heating System	Oil Furnace	Equipment Sizing is Appropriate	Major	Equipment Sizing is Appropriate
Heating System	Oil Furnace	Proper Clearance To Combustibles	Major	Proper Clearance To Combustibles
Heating System	Oil Furnace	Maintenance Access Is Accessible	Major	Units capable of sealed combustion must be setup to draw outside air
Heating System	Oil Furnace	Venting Acceptable - Natural Draft	Major	Inspect the venting system for proper size and horizontal pitch, as required in the latest edition of the National Fuel Gas Code (NFPA 54). Venting must maintain proper clearance to combustibles
Heating System	Oil Furnace	Electric	Major	There are no electrical safety issues and and there is a shut off installed and within reach for the customer
Heating System	Oil Furnace	Condensate Drain	Minor	Condensate drain installed per manufacturer's specifications and discharges with air gap or other approved place of disposal. Preferred areas to drain condensate include service sinks, French drains/ground water ejector pits
Heating System	Oil Furnace	Heat Rise Test	Major	System passes heat rise test
Heating System	Oil Furnace	Dedicated Duct System	Major	Installed equipment must not share a duct vent with another equipment
Heating System	Oil Furnace	Duct System Airflow	Major	On installation where a new duct system is installed the following must be met: The individual room airflows are within the greater of \pm 20% or 25CFM of the design/application requirements for the supply and return ducts. Contractor must measure airflow and adjust to above specifications along with providing air balancing report.
Heating System	Oil Furnace	Duct Connections	Major	All ducts are properly connected

Inspection Category Measure Requirement **Non-Conformance Category Pass Summary** Heating System Oil Furnace Duct - Unit Connection Duct must be properly sealed at connection with unit Major Ducts installed in semi or unconditioned space must be Heating System Oil Furnace Duct Insulation Minor insulated to a minimum R-value Duct return must not be installed in CAZ Heating System Oil Furnace Duct Return Appropriate Major If included as part of the contract, the furnace, including all Heating System Oil Furnace Equipment Removal Major other items related to the furnace must be removed from the home Oil HW Boiler Maintenance Access Is Accessible Maintenance Access Is Accessible Heating System Major Units capable of sealed combustion must be setup to draw Oil HW Boiler Heating System Venting Acceptable - Sealed Combustion Units Major outside air Venting must maintain proper clearance to combustibles. Inspect the venting system for proper size and horizontal Heating System Oil HW Boiler Venting Acceptable - Natural Draft Major pitch, as required in the latest edition of the National Fuel Gas Code (NFPA 54). There are no electrical safety issues and and there is a shut Oil HW Boiler Electric Heating System Major off installed and within reach for the customer Water testing has been completed per manufacturers specifications. If the water is not within the boiler Heating System Oil HW Boiler Water Testing and Treatment Major manufacturers specifications, water treatment has been provided and documented Delta T from heat rise test must fall within manufacturer's Heating System Oil HW Boiler Heat Rise Test Major specifications If included as part of the contract, the orginal equipment being replaced and all related items must be removed from Heating System Oil HW Boiler Equipment Removal Major the home Proper Clearance To Combustibles Heating System Oil HW Boiler Proper Clearance To Combustibles Major Verified that the contracted boiler was installed. Do not mark Heating System Oil HW Boiler Contracted Boiler Installed Major this task as failed if the heating unit was installed but ancillary equipment was not installed. TPRV and down tube piping is installed to proper Heating System Oil HW Boiler Temperature-Pressure Relief Valve Major specifications All oil piping to be leak-free and must be sized to provide adequate oil supply to all connected oil appliances. Oil line Fuel Oil Piping Heating System Oil HW Boiler Major piping design, materials, and construction must be in accordance with the latest edition of NFPA 31 The integrity of the fuel oil storage system must be checked and repairs/replacement included with new installation. New Heating System Fuel Oil Storage System Oil HW Boiler Major oil storage system must be installed in accordance with the latest edition of NFPA 31.

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Heating System	Oil HW Boiler	Pipe Insulation	Major	Boiler piping installed in unconditioned spaces must be insulated with a minimum of R-4. Existing boiler piping installed in unconditioned spaces must be insulated to a minimum of R-4.
Heating System	Oil HW Boiler	Ancillary Equipment Installed	Incidental	All ancillary equipment related to the installed furnace must be installed as contracted for.
Heating System	Oil HW Boiler	Equipment Sizing is Appropriate	Major	Equipment Sizing is Appropriate
Heating System	Oil Steam Boiler	Ancillary Equipment Installed	Incidental	All ancillary equipment related to the installed furnace must be installed as contracted for.
Heating System	Oil Steam	All Exposed Pipes Insulated	Major	All Exposed Pipes Insulated
Heating System	Oil Steam Boiler	Fuel Oil Storage Tank	Major	The integrity of the fuel oil storage system must be checked and repairs/replacement included with new installation. New oil storage system must be installed in accordance with the latest edition of NFPA 31.
Heating System	Oil Steam Boiler	Contracted Steam Boiler Installed	Major	Verified that the contracted boiler was installed. Do not mark this task as failed if the heating unit was installed but ancillary equipment was not installed.
Heating System	Oil Steam	Equipment Sizing is Appropriate	Major	Equipment Sizing is Appropriate
Heating System	Oil Steam	Proper Clearance To Combustibles	Major	Proper Clearance To Combustibles
Heating System	Oil Steam	Maintenance Access Is Accessible	Minor	Maintenance Access Is Accessible
Heating System	Oil Steam Boiler	Venting - Sealed Combustion Units	Minor	Units capable of sealed combustion must be setup to draw outside air
Heating System	Oil Steam	Venting - Natural Draft	Major	Venting must maintain proper clearance to combustibles
Heating System	Oil Steam Boiler	Electric	Major	There are no electrical safety issues and and there is a shut off installed and within reach for the customer
Heating System	Oil Steam Boiler	Water Testing and Treatment	Major	Water testing has been completed per manufacturers specifications. If the water is not within the boiler manufacturers specifications, water treatment has been provided and documented
Heating System	Oil Steam Boiler	Heat Rise Test	Minor	Delta T from heat rise test must fall within manufacturer's specifications
Heating System	Oil Steam Boiler	Equipment Removal	Minor	If included as part of the contract, the orginal equipment being replaced and all related items must be removed from the home
Heating System	Oil Steam Boiler	Fuel Oil Piping	Major	All oil piping to be leak-free and must be sized to provide adequate oil supply to all connected oil appliances. Oil line piping design, materials, and construction must be in accordance with the latest edition of NFPA 31
Heating System	Oil Steam Boiler	Temperature-Pressure Relief Valve	Major	TPRV and down tube piping is installed to proper specifications
Heating System	Solid Fuel Hearth	Contracted Equipment Installed	Major	Verified that all contracted items were installed as per contract

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Heating System	Solid Fuel Hearth	Equipment Sizing is Appropriate	Major	Equipment Sizing is Appropriate
Heating System	Solid Fuel Hearth	Air Filter Accessible	Minor	Air Filter Accessible
Heating System	Solid Fuel Hearth	Proper Clearance To Combustibles	Major	Proper Clearance To Combustibles
Heating System	Solid Fuel Hearth	Maintenance Access Is Accessible	Major	Maintenance Access Is Accessible
Heating System	Solid Fuel Hearth	Venting - Natural Draft	Major	Venting must maintain proper clearance to combustibles
Heating System	Solid Fuel Hearth	Gas Line Properly Sized	Major	Gas Line Properly Sized
Heating System	Solid Fuel Hearth	Electrical	Major	There are no electrical safety issues and and there is a shut off installed and within reach for the customer
Heating System	Solid Fuel Hearth	Heat Rise Test	Major	Delta T from heat rise test must fall within manufacturer's specifications
Heating System	Solid Fuel Hearth	Equipment Removal	Major	If included as part of the contract, the orginal equipment being replaced and all related items must be removed from the home
Hot Water System	Air Source Heat Pump	Contracted Item Installed Per Contract	Major	Verified that all contracted items were installed as per contract. Installed systems must be ENERGY STAR ® rated.and only integrated heat pumps allowed, no add-on products (do not include storage tanks)
Hot Water System	Air Source Heat Pump	Tank Installed in Proper Location	Major	Installed systems must be located outside of the conditioned area. Installed system must be located in space temperatures between 45-90 degrees or for a system that uses inlet air ducts the entering air must be between $40 - 90$ degrees. Water heater location to be a 750 - 1,000 cubic feet of area or as required by manufacturer's specifications.
Hot Water System	Air Source Heat Pump	Modes of Operation	Major	Heat Pump Water Heaters must have at the minimum the following modes of operation:- HEAT PUMP ONLY- HYBRID: This mode uses the heat pump as the primary heating source. The heating element will heat water if demand exceeds a predetermined level so that the set point temperature can be recovered more quickly ELECTRIC: The water heater functions as a conventional electric unit, relying totally on the elements to heat the water in the tank VACATION: Unit off or set for very low temperature
Hot Water System	Air Source Heat Pump	Manual Provided	Incidental	OEM manuals must be left with the installed tank

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Hot Water System	Air Source Heat Pump	DHW Tank Removal	Major	Unless the contract specifies otherwise the contractor is responsible for removal of the old DHW tank
Hot Water System	Air Source Heat Pump	Temperature-Pressure Relief Valve	Major	TPRV and down tube piping installed with proper specifications
Hot Water System	Air Source Heat Pump	Ancillary Equipment Installed	Incidental	All ancillary equipment related to the installed furnace must be installed as contracted for.
Hot Water System	Boiler Reset Control	Contracted Equipment Installed	Major	Contracted Equipment Installed
Hot Water System	Boiler Reset Control	Boiler Is In Good Working Condition	Minor	Boiler Is In Good Working Condition
Hot Water System	Boiler Reset Control	Boiler SSE 75% Or Greater	Minor	Boiler SSE 75% Or Greater
Hot Water System	Boiler Reset Control	Venting System Is In Good Working Order	Major	Venting System Is In Good Working Order
Hot Water System	Boiler Reset Control	No Tankless Coil Present	Major	No Tankless Coil Present
Hot Water System	Boiler Reset Control	Programmable thermostats setback temp less than 5 degrees	Incidental	Programmable thermostats setback temp less than 5 degrees
Hot Water System	Boiler Reset Control	Manufacturer Warranty Left With Customer	Incidental	Manufacturer Warranty Left With Customer
Hot Water System	Electric DHW Tank	Temperature-Pressure Relief Valve	Major	TPRV and down tube piping installed with proper specifications
Hot Water System	Electric DHW Tank	Contracted Items Installed	Major	Verified that all contracted items were installed as per contract
Hot Water System	Electric DHW Tank	Access Panel Is Accessible	Major	Access Panel Is Accessible
Hot Water System	Electric DHW Tank	DHW Tank Removal	Major	Unless the contract specifies otherwise the contractor is responsible for removal of the old DHW tank
Hot Water System	Electric DHW Tank	Manual Provided	Incidental	OEM manuals must be left with the installed tank
Hot Water System	Electric DHW Tank	Leak Free	Major	Water heater and system must be leak-free. All water leaks must be identified and repaired
Hot Water System	Electric DHW Tank	Drain Free	Major	A drain pan must be installed underneath the water heater if it is located where leaks could cause damage. A 1-inch line must be installed between the pan and an appropriate drain
Hot Water System	Electric DHW Tank	Location	Major	If possible, water heater must be placed where leakage from the relief valve, leakage from the related piping, or leakage from the tank or connections, will not result in damage to the surrounding areas, or to the lower floors of the building

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Hot Water System	Electric DHW Tank	Ancillary Equipment Installed	Incidental	All ancillary equipment related to the installed furnace must be installed as contracted for.
Hot Water System	Gas/Propane DHW Tank	Ancillary Equipment Installed	Incidental	All ancillary equipment related to the installed furnace must be installed as contracted for.
Hot Water System	Gas/Propane DHW Tank	Temperature-Pressure Relief Valve	Major	TPRV and down tube piping installed with proper specifications
Hot Water System	Gas/Propane DHW Tank	Contracted Items Installed	Major	Verified that all contracted items were installed as per contract and are functioning properly
Hot Water System	Gas/Propane DHW Tank	Appropriate Clearance to Combustibles Maintained	Major	Appropriate Clearance to Combustibles Maintained
Hot Water System	Gas/Propane DHW Tank	Access Panel Is Accessible	Minor	Access Panel Is Accessible
Hot Water System	Gas/Propane DHW Tank	DHW Tank Removal	Major	Unless the contract specifies otherwise the contractor is responsible for removal of the old DHW tank
Hot Water System	Gas/Propane DHW Tank	Manual Provided	Incidental	OEM manuals must be left with the installed tank
Hot Water System	Gas/Propane DHW Tank	Leak Free	Minor	Water heater and system must be leak-free. All water leaks must be identified and repaired
Hot Water System	Gas/Propane DHW Tank	Drain Pan	Minor	A drain pan must be installed underneath the water heater if it is located where leaks could cause damage. A 1-inch line must be installed between the pan and an appropriate drain.
Hot Water System	Gas/Propane DHW Tank	Location	Minor	If possible, water heater must be placed where leakage from the relief valve, leakage from the related piping, or leakage from the tank or connections, will not result in damage to the surrounding areas, or to the lower floors of the building.
Hot Water System	Gas/Propane DHW Tank	Combustion Safety Testing	Major	Unit passes all combustion safety tests
Hot Water System	Gas/Propane DHW Tank	Venting	Major	Venting must have the proper sizing, design, material selection and assembly for the combustion gas venting system. Locate termination consistent with the latest edition of the National Fuel Gas Code (NFPA 54) and manufacturer's specifications

Inspection Category Measure Requirement **Non-Conformance Category Pass Summary** All gas piping to be leak-free / tested and must be sized to provide adequate gas supply to all connected gas appliances. Refer to the current National Fuel Gas Code (NFPA 54) (and for Propane NFPA 58) and local codes for gas piping requirements and sizing. Gas piping systems must Gas/Propane be of such size and installed as to provide a supply of gas Gas Piping Hot Water System Maior DHW Tank necessary to meet the maximum demand of the all gas appliances at the proper pressures. Gas pipe and connectors must have the appropriate support, hangers, anchors and gas pipe sealant. The new furnace must have a manual "equipment" shut-off valve in the gas supply line immediately upstream of union. All contracted items were installed as described. Was not Gas/Propane Hot Water System All Contracted Items Installed Major Tankless DHW installed in conjunction with new boiler. Gas/Propane Manual Provided Incidental OEM manuals must be left with the installed tank Hot Water System Tankless DHW Gas/Propane Unless the contract specifies otherwise the contractor is DHW Tank Removal Hot Water System Major Tankless DHW responsible for removal of the old DHW tank Gas/Propane System is sized properly to provide adequate flow rate to Hot Water System Sufficient Flow Major Tankless DHW meet DHW load of household All ancillary equipment related to the installed furnace must Gas/Propane Ancillary Equipment Installed Hot Water System Incidental Tankless DHW be installed as contracted for. Water testing has been completed. If the water is not within Gas/Propane Hot Water System Water testing and Treatment Minor the boiler manufacturers specifications, water treatment has Tankless DHW been provided and documented. Gas/Propane Tankless Water Heater is Sealed Combustion Minor Tankless Water Heater is Sealed Combustion Hot Water System Tankless DHW Gas/Propane Proper Clearance to Combustibles Hot Water System Proper Clearance to Combustibles Major Tankless DHW Gas/Propane Hot Water System Maintenance Access Panels are Accessible Minor Maintenance Access Panels are Accessible Tankless DHW Gas/Propane All connections are sealed, sturdy and PVC glued. Sealed Hot Water System Venting Major Tankless DHW combustion units are vented to the outside. Gas/Propane Gas Lines are properly sized for demand, have no leaks and Hot Water System Gas Lines Major Tankless DHW CCST is properly grounded No electrical safety issues exist and the shutoff switch is Gas/Propane Hot Water System Electrical Major? Tankless DHW within reach for the customer Water line is properly sized for the distance before on Gas/Propane Hot Water System Water Line Major Tankless DHW demand unit Gas/Propane

Minor

Condensate does not drain below slab

New York State Healthy Homes Value-Based Payment Pilot Inspection Checklist

Hot Water System

Drain

Tankless DHW

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Hot Water System	Gas/Propane Tankless DHW	Temperature-Pressure Relief Valve	Major	TPRV and down tube piping installed with proper specifications
Hot Water System	Gas/Propane Tankless DHW	Distribution Insulation	Minor	Hot water distribution is insulated to the minimum required r- value if unit is in semi or non-conditioned space
Hot Water System	Indirect-Fired DHW Tank	Ancillary Equipment Installed	Incidental	All ancillary equipment related to the installed furnace must be installed as contracted for.
Hot Water System	Indirect-Fired DHW Tank	DHW Tank Removal	Major	Unless the contract specifies otherwise the contractor is responsible for removal of the old DHW tank
Hot Water System	Indirect-Fired DHW Tank	Primary Zone Piping	Major	Indirect water heater must be piped as priority zone on boiler.
Hot Water System	Indirect-Fired DHW Tank	Piping Controls and Pumping	Major	Boiler piping, controls and pumping must be installed to provide the proper flow through the indirect coil, specified by the indirect manufacturer. Cold-start control strategy must be used.
Hot Water System	Indirect-Fired DHW Tank	Indirect DHW Tank Installed	Major	All contracted items were installed as described
Hot Water System	Indirect-Fired DHW Tank	Manual Provided	Incidental	OEM manuals must be left with the installed tank
Hot Water System	Indirect-Fired DHW Tank	Temperature-Pressure Relief Valve	Major	TPRV and down tube piping is installed to proper specifications
Hot Water System	Oil DHW Tank	Contracted Items Installed	Major	Verified that all contracted items were installed as per contract
Hot Water System	Oil DHW Tank	Temperature-Pressure Relief Valve	Major	TPRV and down tube piping installed with proper specifications
Hot Water System	Oil DHW Tank	Ancillary Equipment Installed	Incidental	All ancillary equipment related to the installed furnace must be installed as contracted for.
Hot Water System	Oil DHW Tank	Appropriate Clearance to Combustibles Maintained	Major	Appropriate Clearance to Combustibles Maintained
Hot Water System	Oil DHW Tank	Access Panel Is Accessible	Major	Access Panel Is Accessible
Hot Water System	Oil DHW Tank	DHW Tank Removal	Major	Unless the contract specifies otherwise the contractor is responsible for removal of the old DHW tank
Hot Water System	Oil DHW Tank	Manual Provided	Incidental	OEM manuals must be left with the installed tank
Hot Water System	Oil DHW Tank	Leak Free	Major	Water heater and system must be leak-free. All water leaks must be identified and repaired
Hot Water System	Oil DHW Tank	Drain Pan	Major	A drain pan must be installed underneath the water heater if it is located where leaks could cause damage. A 1-inch line must be installed between the pan and an appropriate drain.
Hot Water System	Oil DHW Tank	Location Appropriate	Major	If possible, water heater must be placed where leakage from the relief valve, leakage from the related piping, or leakage from the tank or connections, will not result in damage to the surrounding areas, or to the lower floors of the building.

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Hot Water System	Oil DHW Tank	Combustion Safety Testing	Major	Unit passes all combustion safety tests
Hot Water System	Oil DHW Tank	Venting	Major	Venting must have the proper sizing, design, material selection and assembly for the combustion gas venting system. Locate termination consistent with the latest edition of the National Fuel Gas Code (NFPA 54) and manufacturer's specifications
Hot Water System	Timer – Electric DHW Tank	Meter is Time of Use or Peak On/Off Rates	Major	Meter is Time of Use or Peak On/Off Rates
Hot Water System	Timer – Electric DHW Tank	Hot Water Tank Is 80 Gallons Or More	Major	Hot Water Tank Is 80 Gallons Or More
Hot Water System	Timer – Electric DHW Tank	Battery Backup Installed	Major	Battery Backup Installed
Hot Water System	Well Pump Repair	Repairs Completed Per Contract	Major	All repairs were completed as per the contractor's invoice
Hot Water System	Well Pump Repair	Well Pump Runs Correctly	Minor	The well pump should not run continously.
Leakage Testing	Blower Door Testing	Blower Door Test Results Are Accurate	Major	Blower door results were submitted by the contractor and are within 10% of the inspector's numbers.
Leakage Testing	Blower Door Testing	Building Airflow Standard Acceptable	Major	Post-test results are above 70% of BAS
Leakage Testing	Blower Door Testing	Air Leakage Reduction Target Achieved	Minor	Inspector's cfm50 number indicates the contractor achieved their contracted air leakage reduction target within 10%. Mark this task as N/A if air sealing was a contracted measure but no quantitative cfm50 reduction was given.
Leakage Testing	Duct Testing	BPI Distribution Efficiency Look-Up Table	Major	Program contractors are encouraged to use the Look-up table method whenever duct system improvements are being performed and the lesser of 10 feet or 10% of total ductwork in the vicinity of the air handler will be affected (Greater than 10 feet or 10% of ductwork affected, a ductblaster or Delta Q test is required.)
Leakage Testing	Duct Testing	Test-Out Numbers Are Accurate	Major	Contractor's Post-Test results must be within 10% of Inspector's Post-Test
Leakage Testing	Duct Testing	Delta Q	Major	Ducts pass delta Q test
Leakage Testing	Duct Testing	Leakage is less than or equal to 10% system airflow on test out	Major	This is based on a TDL – Total Duct Leakage test using a duct blaster. To calculate this value, multiply the system airflow by 0.1. If measured TDL is less than this product, then the system passes this BPI standard.
Shell Measures	Attic Air Sealing	Air Sealing Work Completed As Contracted	Major	Air sealing work must be completed as contracted. If specific areas were mentioned in the contract, they must be completed. If the contract refers to a CFM reduction work must be completed within 90% of what was contracted for.

Inspection Category Measure Requirement **Non-Conformance Category Pass Summary** If contracted, balloon framed top plates should have an approved backer securely fastened or friction fit and all edges sealed with 1 or 2-part foam. Platform framing top Shell Measures Attic Air Sealing Top Plates Sealed Incidental plates should have had all debris moved away from seam bewteen top plate and drywall and a continuous bead of 1part foam applied along all the seams. If 2-part foam is used there should be only foam and drywall visible when finished If contracted, the knee wall transition area should be sealed with an approved backer that is either mechanically fastened into place or friction fit. The seams and edges between the Shell Measures Attic Air Sealing Knee Wall Transition Sealed Incidental backer and the surrounding framing and sheathing should be sealed with 1 or 2-part foam. Inaccessible knee wall tranistions should be sealed using dense pack insulation installed to a density of at least 3.5 lbs/cuft. If contracted, plumbing wet walls are sealed including vent Attic Air Sealing Plumbing Wet Walls Sealed Shell Measures Incidental penetration A clearance of three inches must be maintained between masonry chimneys or double wall metal vents and combustible materials, and six inches between single wall vents and combustible materials. The material used to seal this gap must be non-combustible air-tight material, such as Attic Air Sealing Chimney Penetrations Sealed Shell Measures Major metal flashing. The gaps between the flashing and the venting are 1/4 inch or less and sealed with high temperature sealants (ASTM E136 for oil or wood flues, 500F RTV silicone for gas flues). Other sealants can be used on the side of the sheet metal that is fastened to the framing. If contracted, unless a recessed light is ICAT (Insulation Contact Air Tight), there will be air leakage through this fixture. An airtight box will need to be built that maintains a clearance of at least 3 inches to any part of the light fixture. The sides of the box can be made of any rigid, air barrier Attic Air Sealing Recessed Lights Covered/Sealed Shell Measures Incidental material. For non-IC rated lights the top of the box must have an R-value of 0.5 or less and be vapor permeable. Boxes for non-IC rated lights cannot be insulated over. For IC rated lights the top of the box should be vapor permeable and this box can be insulated over.

Inspection Category Measure Requirement **Non-Conformance Category Pass Summary** All gaps around attic access are weather-stripped in a manner that that allows no more that 2" of air leakage area between the conditioned space and the attic when a blower Attic Air Sealing Attic Access(s) Sealed Shell Measures Major door is running @CFM50. Weather-stripping is permanently mounted to the access and secured with metal fastenings that keep the access secure through repeated use. If contracted, dropped ceiling/soffit areas should be bridged with an approved backer that is supported appropriately or at a minimum every 24 inches. The backer should lap the Shell Measures Attic Air Sealing Drop Ceilings And Soffits Sealed Incidental edges of the opening at least an inch to allow for secure fastening. All edges and seams should be sealed with an approved sealant. If contracted, large chases that allow mechanicals to pass from the conditioned space to the attic should be bridged by an approved backer. This backer should be adequately supported at a minimum of every 24 inches. The backer Attic Air Sealing Open Mechanical Chases Sealed Incidental Shell Measures should overlap the chase it spans by at least one inch and be fastened securely. The perimeter and seams of the backer as well as any penetrations should be well sealed with 1-part foam. If contracted, all on-fan perforations & knockouts and areas Shell Measures Attic Air Sealing Bath Fans Sealed Incidental around unit are sealed The air barrier must be continous before insulating the attic Shell Measures Attic Insulation Continuous Air Barrier Present Incidental space At least 90% of insulation was installed and meets or Shell Measures Attic Insulation Specified R-Value And Quantity Installed Major exceeds the r-value specified, if applicable Shell Measures Attic Insulation Specified Material Type Installed Major Installed material matches contract Loose fill blown in insulation must be installed according to manufacturer's specifications and installed to a level condition. All openings into the cavity of blown-in insulation Shell Measures Attic Insulation Installation Quality Major in restricted or dense packed applications must be sealed in such a manner as to prohibit the insulation from coming out of the cavity. Blown in insulation must be contained using damming at the following areas and listed clearances: chimneys & double Shell Measures Attic Insulation Heat Source(s) Dammed Major wall flues (3 inches), single wall flues (6 inches), Recessed lights or bath fans with heat lamps or lights (3 inches).

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Shell Measures	Attic Insulation	Mechanical Systems dammed	Major	Blow in insulation is dammed to allow maintenance access and manufacturer required clearances from combustibles. Damming installed to prevent intrusion of insulation into whole house fans, condensate pans, etc.
Shell Measures	Attic Insulation	Access Treated as Specified	Minor	If attic insulation is contracted the attic access is insulated with R-14 or greater.
Shell Measures	Attic Insulation	Wind Baffles Installed	Minor	Baffles must be installed at each soffit vent unless appropriate structural barriers exist to ensure appropriate air flow and protection from wind-washing. Baffles must be permanent, mechanically fastened at sides and at bottom, and ensure the free movement of air through soffit vents into the attic; they must extend above the final level of insulation by at least four inches. Baffles must be rigid enough to restrain loose-fill insulation from congesting the soffit vents at the eaves and obstructing ventilation. Baffles shall made using rigid foam board, structural insulated sheathing, framing lumber, plywood, OSB or the pre- formed/manufactured type.
Shell Measures	Attic Insulation	Storage Area Dammed and Clean	Minor	Blown in insulation must be contained using damming around storage areas.
Shell Measures	Attic Insulation	Sufficient Ventilation	Major	Sufficient ventilation (net free area) provided per NYS RC section R806
Shell Measures	Attic Insulation	Densepack Insulation	Minor	Blown in insulation in restricted or dense packed applications must be 3.5 lbs./cu. ft. for cellulose and 2.2 lbs./cu. ft. for blown fiber that is manufactured for dense pack installation.
Shell Measures	Attic Insulation	No Air Leakage Paths	Major	This would indicate if a full cavity was insulated. Loose filled cavities would reveal air leakage path ways
Shell Measures	Attic Insulation	Site Restored to Tidy Condition	Minor	Site Restored to Tidy Condition
Shell Measures	Attic Insulation	Kneewall Insulation	Major	Attic knee walls may be insulated with batt insulation, blown in insulation held in place by a restraining mesh, foam boards, or 2-part spray foam. Batt insulation must be protected from wind washing with an air barrier. Dense- packed cellulose may be deemed sufficient to protect the installation from the effect of wind washing if held in place a restraining mesh. Appropriate materials for wind wash protection are building wrap, extruded poly styrene, insulated structural sheathing, plywood or OSB, or wall board.

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Shell Measures	Basement Air Sealing	Air Sealing Work Completed As Contracted	Major	Air sealing work must be completed as contracted for. If specific areas were mentioned in the contract, they must be completed. If the contract refers to a CFM reduction, work must be completed within 90% of what was contracted for.
Shell Measures	Basement Air Sealing	Plumbing Penetrations Sealed	Minor	Plumbing penetrations can be sealed based on their size. Gaps less than 1/4 inch can be sealed with caulk. Gaps between a 1/4 inch and 1 inch can be sealed with 1-part foam and gaps greater than 1 inch should be sealed with a moisture resistant backer and caulk or foam.
Shell Measures	Basement Air Sealing	Wiring Penetrations Sealed	Minor	Small openings such as wire penetrations that are less than 1 inch in diameter can be sealed using either fire rated caulk or fire block foam.
Shell Measures	Basement Air Sealing	Chimney Chases Sealed	Minor	If the gap around the chimney is too great for sealant alone, the gap must be closed with non-combustible material, such as metal flashing mechanically fastened to surrounding framing. If the appliance burns solid fuel or oil, the edges and gaps must be sealed using fire-rated caulk meeting ASTM E136. If the appliance burns natural gas or propane, the edges and seams must be sealed with high temperature silicone RTV meeting ASTM C920.
Shell Measures	Basement Air Sealing	Mechanical Chases Sealed	Minor	Large openings between the basement and the 1st floor should be sealed using moisture and fire resistant materials. The gap should be overlapped by at least one inch and securely fastened. The edges and seams should be sealed with caulk or 1-part foam.
Shell Measures	Basement Air Sealing	Basement Access Sealed	Minor	Basement Access Sealed
Shell Measures	Basement Air Sealing	Ground Cover Installed and Sealed	Minor	A vapor barrier must be installed on exposed dirt floors using 6 mil polyethylene (minimum) or equivalent. Installed neatly and covering the entire area, with seams lapped a minimum of 12 inches. Seams sealed with a tape or sealant that provides a permanent, durable seal. Penetrations sealed with foam, acoustic sealant, or compatible roofing mastic. Perimeter edges run 10 inches minimum up wall and sealed to walls with acoustic sealant or roofing mastic. Exceptions made only where access is impossible due to low clearance.
Shell Measures	Basement Air Sealing	Windows Sealed	Minor	Basement windows, within the conditioned space, that have gaps between the window frame and the surrounding framing should be sealed using an approved backer (if necessary) and sealant.

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Shell Measures	Basement Air Sealing	Air Barrier Properly Installed on Underside of Floor Framing	Minor	Air Barrier Properly Installed on Underside of Floor Framing
Shell Measures	Basement Ceiling Insulation	Specified R-Value And Quantity Installed	Major	At least 90% of insulation was installed and meets or exceeds the r-value specified, if applicable
Shell Measures	Basement Ceiling Insulation	Specified Material Type Installed	Major	Installed material matches contract
Shell Measures	Basement Ceiling Insulation	No Gaps, Voids or Compression	Minor	No Gaps, Voids or Compression
Shell Measures	Basement Ceiling Insulation	Insulation Contact Warm Surface	Incidental	Insulation should be touching the floor it is keeping warm. No gaps between the insulation and the floor sheathing
Shell Measures	Basement Ceiling Insulation	Vapor Retarder on Correct Surface	Incidental	Vapor retarder should be against the building surface exposed to warmer conditions for the majority of the year
Shell Measures	Basement Ceiling Insulation	Insulation Adequately Supported	Incidental	Must have adequate support, using wire, rods Tyvek, etc.
Shell Measures	Basement Ceiling Insulation	Rigid Board Insulation is Continuous Without Gaps or Voids	Incidental	This includes sealed seams and edges, as well as properly covering exposed edges of foil-faced and FSK board with foil tape. (not required on extruded polystyrene)
Shell Measures	Basement Ceiling Insulation	Densepack Insulation	Minor	Blown in insulation in restricted or dense packed applications must be 3.5 lbs./cu. ft. for cellulose and 2.2 lbs./cu. ft. for blown fiber that is manufactured for dense pack installation.
Shell Measures	Basement Ceiling Insulation	Densepack Insulation: Sheathing Properly Repaired	Incidental	Wood plugs in wood surfaces or plugs placed in rigid insulation board
Shell Measures	Basement Ceiling Insulation	Site Restored to Tidy Condition	Minor	Site Restored to Tidy Condition
Shell Measures	Basement Wall insulation	Specified R-Value And Quantity Installed	Major	At least 90% of insulation was installed and meets or exceeds the R-value specified, if applicable
Shell Measures	Basement Wall insulation	Specified Material Installed	Major	Installed material matches contract
Shell Measures	Basement Wall insulation	Insulation Is Continuous Without Gaps or Voids	Incidental	Insulation Is Continuous Without Gaps or Voids
Shell Measures	Basement Wall insulation	Seams in Rigid board Insulation are properly sealed	Incidental	Seams should be sealed with 1-part foam or siliconized caulk

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Shell Measures	Basement Wall insulation	Wall Assembly Meets Program Requirements	Major	A drainage plane or waterproof membrane has been installed between the insulation and the basement wall. Wood framing and batt insulation are isolated and do not contact the concrete wall or floor. Non-absorbent insulation has been used. a continuous air barrier has been provided on the warm side of the insulation.
Shell Measures	Basement Wall insulation	Rigid Board Attached Properly	Incidental	Rigid board insulation must be securely connected to concrete walls with approved fasteners that are properly spaced
Shell Measures	Basement Wall insulation	Thermal Boundary Between Rim Joist and Basement is Continuous	Incidental	The insulation and air barrier material used on the rim and band areas must be connected to the insulation and air barrier used on the foundation wall
Shell Measures	Basement Wall insulation	Exposed Rigid Foam Board or Spray Foam Has Required Barrier	Major	Exposed rigid foam board or spray foam has a thermal or ignition barrier as required per code
Shell Measures	Basement Wall insulation	Spray Foam Insulation Is Closed Cell	Incidental	Foam must be high density, and water resistant below grade
Shell Measures	Exhaust Fan	Contracted Exhaust Fan Installed	Major	Contracted exhaust fan(s) installed
Shell Measures	Exhaust Fan	Venting	Major	Exhaust vents must be vented to either a roof flapper vent, an end wall flapper vent or if neither of these two options is available, to an exhaust vent designed to be installed in a soffit. All exterior flapper vents must be equipped with a back draft damper that works smoothly. Back draft dampers at the fan unit must be removed. Vent outlets must be properly flashed and sealed into roof or siding materials so water will not leak into the assembly.
Shell Measures	Exhaust Fan	Ducting	Major	Exhaust ducting must be attached to the fan outlet and the flapper vent connector with metal clamps. The duct must be insulated to current code levels for the location it passes through. The duct insulation must have a vapor retarder covering. Hard duct must be supported every 10 feet with 1" metal straps. Flex duct must be supported according to manufacturer's instructions.
Shell Measures	Exhaust Fan	Fan Specifications are Appropriate	Minor	They must be rated for continuous use and they must have a noise rating of 1.0 sones or less.
Shell Measures	Exhaust Fan	Installation Quality	Minor	Exhaust fans and 24 hour timers must be installed neatly and according to manufacturer's installation instructions. Gaps between the fan housing and surrounding finishes must be sealed with caulk or 1-part foam.
Shell Measures	Exhaust Fan	Timer	Minor	Fans must have an on/off switch separate from the timer that occupants will use for spot ventilation.
Shell Measures	Floor Insulation	Contracted Floor Insulation Installed	Major	At least 90% of insulation was installed and meets or exceeds the R-value specified, if applicable

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Shell Measures	Floor Insulation	Specified Material Type Installed	Major	Installed material matches contract
Shell Measures	Floor Insulation	No Air Leakage Paths	Major	IR scans indicate little to no air leakage pathways
Shell Measures	Floor Insulation	Densepack Insulation	Minor	Blown in insulation in restricted or dense packed applications must be 3.5 lbs./cu. ft. for cellulose and 2.2 lbs./cu. ft. for blown fiber that is manufactured for dense pack installation.
Shell Measures	Floor Insulation	Site Restored to Tidy Condition	Minor	Site Restored to Tidy Condition
Shell Measures	Floor Insulation	Insulation Contact Warm Surface	Major	Insulation should be touching the floor it is keeping warm. No gaps between the insulation and the floor sheathing
Shell Measures	Living Space Air Sealing	Air Sealing Work Completed As Contracted	Major	Air sealing work must be completed as contracted for. If specific areas were mentioned in the contract, they must be completed. If the contract refers to a CFM reduction, work must be completed within 90% of what was contracted for.
Shell Measures	Living Space Air Sealing	Baseboards Caulked	Incidental	Any measure that is visible or used by a customer should have been approved by with the customer before installation. If customer cannot remember whether they were asked or were not present during the installation, rate this as 'Not Inspected.'
Shell Measures	Living Space Air Sealing	Window and Door Trim Caulked	Incidental	Any measure that is visible or used by a customer should have been approved by with the customer before installation. If customer cannot remember whether they were asked or were not present during the installation, rate this as 'Not Inspected.'
Shell Measures	Living Space Air Sealing	Plumbing Penetration Sealed	Incidental	Plumbing Penetration Sealed
Shell Measures	Living Space Air Sealing	Boots Sealed to Interior Material	Incidental	The register should be removed and the boot sealed to the surrounding air barrier
Shell Measures	Living Space Air Sealing	Interior Sheathing Voids Repaired	Incidental	Use a compatible material that can be finished by the homeowner
Shell Measures	Living Space Air Sealing	Exterior Doors Swept and Weather stripped	Incidental	Doors to the exterior can be weather stripped and swept at the customers request. Doors to the garage should always be weather stripped and swept. Weather stripping should be permanently attached, allow the door to still function as intended and remain flexible in cold weather.
Shell Measures	Living Space Air Sealing	Doors to Attached Garage Weather stripped	Major	Doors to the attached garage should always be weather stripped and swept. Weather stripping should be high quality, permanently attached, allow the door to function as intended and remain flexible in cold weather.

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Shell Measures	Living Space Air Sealing	Windows Weather Stripped	Incidental	All weather-stripping should be permanently installed with fasteners (tacks, staples, brads, etc.) and should make positive contact between surfaces to prevent air leakage. The weather-stripping should form an airtight seal when the window is closed and latched. A small bead of caulk should be applied as necessary to prevent air leakage behind the weather-stripping.
Shell Measures	Replacement Doors & Windows	Correct Quantity Installed	Major	Correct Quantity Installed
Shell Measures	Replacement Doors & Windows	Correct U-Factor & SHGC Installed	Major	The U-factor and SHGC on the NFRC sticker should be equal to the window specified on the approved contract
Shell Measures	Replacement Doors & Windows	Window(s) Function Properly	Minor	The window should open, close, tilt-in etc smoothly and easily. When closed and locked the meeting points of the window should be even and square. Blower door testing indicates that the windows have little to no air leakage.
Shell Measures	Replacement Doors & Windows	Window Perimeter Sealed & Insulated	Minor	The rough opening around the window should be air sealed and insulated with an air impervious material such as 1-part foam. If the windows are already trimmed at inspection, this can be verified by spot checking or asking the installer to take photos during installation. Other wise it would be rated as N/I.
Shell Measures	Replacement Doors & Windows	Exterior Finish Restored	Minor	The exterior siding and trim has been replaced and repaired to the extent that it is indistinguishable from the surrounding finish.
Shell Measures	Replacement Doors & Windows	Interior Finish Restored	Minor	The exterior siding and trim has been replaced and repaired to the extent that it is indistinguishable from the surrounding finish.
Shell Measures	Rim Joist Insulation	Specified R-Value And Quantity Installed	Major	At least 90% of insulation was installed and meets or exceeds the R-value specified, if applicable
Shell Measures	Rim Joist Insulation	Specified Material Installed	Major	Installed material matches contract
Shell Measures	Rim Joist Insulation	Spray Foam Insulation Is Closed Cell	Major	Spray Foam Insulation Is Closed Cell
Shell Measures	Rim Joist Insulation	Site Restored to Tidy Condition	Minor	Site Restored to Tidy Condition
Shell Measures	Wall Insulation	Specified R-Value And Quantity Installed	Major	At least 90% of insulation was installed and meets or exceeds the R-value specified, if applicable
Shell Measures	Wall Insulation	Specified Material Type Installed	Major	Installed material type matches contract
Shell Measures	Wall Insulation	No Air Leakage Paths	Major	IR scans indicate little to no air leakage path ways

Inspection Category	Measure	Requirement	Non-Conformance Category	Pass Summary
Shell Measures	Wall Insulation	Densepack Insulation	Minor	Blown in insulation in restricted or dense packed applications must be 3.5 lbs./cu. ft. for cellulose and 2.2 lbs./cu. ft. for blown fiber that is manufactured for dense pack installation.
Shell Measures	Wall Insulation	Drill Holes Patched Properly	Minor	The exterior walls of a home are sided with exterior grade plywood type siding and have been filled with dense pack insulation using a drill and plug installation method. The drill holes are cleanly cut and have been re-sealed neatly with an approved sealant and the holes were drilled in a level line across the wall areas.
Shell Measures	Wall Insulation	Drainage Plane Repaired	Major	Drainage plane repaired using appropriate materials (Tyvek, felt, flashing, etc.) after blowing in insulation from the exterior.
Shell Measures	Wall Insulation	Cladding/Sheathing Properly Repaired	Major	An inspection of the seams on the aluminum or vinyl siding show that all the seam are interlocked. Pulling on the siding shows the siding is firmly attached to the building but can move side to side about an inch. None of the siding is dented or damaged. The single nailed asbestos siding has been re-insalled. There are no damaged pieces. The siding is straight and firmly attached to the building.
Shell Measures	Wall Insulation	Site Restored to Tidy Condition	Minor	Site Restored to Tidy Condition
Shell Measures	Wall Insulation	Band Joist Insulated	Major	Band Joist Insulated
Shell Measures	Replacement Doors & Windows	Correct Quantity Installed	Major	Correct Quantity Installed
Shell Measures	Replacement Doors & Windows	Correct U-Factor & SHGC Installed	Major	Correct U-Factor & SHGC Installed
Shell Measures	Replacement Doors & Windows	Window(s) Function Properly	Minor	Window(s) Function Properly
Shell Measures	Replacement Doors & Windows	Window Perimeter Sealed & Insulated	Minor	Window Perimeter Sealed & Insulated
Shell Measures	Replacement Doors & Windows	Exterior Finish Restored	Minor	Exterior Finish Restored
Shell Measures	Replacement Doors & Windows	Interior Finish Restored	Minor	Interior Finish Restored
Shell Measures	Window Repair	Correct Quantity Repaired	Major	Correct Quantity Repaired
Shell Measures	Window Repair	Repaired Window(s) Function Properly	Minor	Repaired Window(s) Function Properly
Shell Measures	Window Repair	Replacement Panes Installed Properly	Minor	Replacement Panes Installed Properly

FIELD INSPECTION REFERENCE – NEC 2014 NY-Sun



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

		Requirements	Defect Category	Code Reference
Overall Observations	Program	PV Modules are UL Listed per NY Sun program requirements.	Minor	NY-Sun Program
		Program compliant means is present for customer to verify system electricity generation.	Minor	NY-Sun Program
		As built system capacity must match the submitted and approved plan.	Incidental	NY-Sun Program
		As built system capacity must match the submitted and approved plan.	Incidental	NY-Sun Program
		Inspected TSRF shall match Program records.	Incidental	NY-Sun Program
		Inspected TSRF shall match Program records.	Incidental	NY-Sun Program
		Existing Service Panel is not a split bus (FPE Stab-Lok, Push-O-Matic etc.,).	Critical	NY-Sun Program
		Array Module Manufacturer must match application.	Incidental	NY-Sun Program
		Array Azimuth (degree) matches application.	Incidental	NY-Sun Program
		Array Module Number matches application.	Incidental	NY-Sun Program
		Array Module Quantity matches application.	Incidental	NY-Sun Program
		Array Tilt (degree) matches application.	Incidental	NY-Sun Program
		All Material and equipment must be new and undamaged, per NY Sun program requirements.	Major	NY-Sun Program
		Installed Battery manufacturer shall match Program records.	Incidental	NY-Sun Program
		Installed Battery model number shall match Program records.	Incidental	NY-Sun Program
		Installed Battery quantity shall match Program records.	Incidental	NY-Sun Program
		Installed Inverter manufacturer shall match Program records.	Incidental	NY-Sun Program
		Installed Inverter quantity shall match Program records.	Incidental	NY-Sun Program
		Installed Inverter model number shall match Program records.	Incidental	NY-Sun Program
		As per Program requirements, any roof damage must be repaired prior to installation.	Minor	NY-Sun Program
		Site address must match site address submitted.	Critical	NY-Sun Program
		Current Transformers are installed and meet Program requirements.	Major	NY-Sun Program
		Energy Storage System Discharge Test is required.	Major	Energy Storage System Program
		Battery storage system includes a manual (system description, operating and safety instructions, maintenance requirements, safe battery handling requirements and recommendations).	Minor	Program requirement
		Requirements	Defect Category	Code Reference
-------------	------------	--	--------------------	---
AC Combiner	Conductors	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)
		AC Combiner circuit conductors are properly sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surfaces and the ground terminal inside combiner box.	Major	NEC Article 250.24(A)(5)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		The length of the free conductors within the enclosure shall meet or exceed 6" requirement.	Minor	NEC Article 300.14
		The neutral conductor is connected at its own dedicated terminal isolated from metal enclosure.	Minor	NEC Article 408.41
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		AC conduit is adequately supported.	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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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)
	Electrical	AC Combiner is suitable for environment.	Major	NEC Articles 314.15 and 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 it's listing and manufacturers instructions.	Minor	NEC Article 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7

		Requirements	Defect Category	Code Reference
AC Combiner (continued)	Grounding	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
		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, 250.122, 250.166 and 690.47
		AC Combiner is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	Labeling	All interactive system points of interconnection with other sources shall be marked at an accessible location at the disconnecting means as the power source and with the rated AC output current and the nominal operating AC voltage.	Incidental	NEC Articles 110.21(B) and/or 690.54
		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)
		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/or 690.17(E)
		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)(2)(3)(c)
		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
		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), OS- HA1910.145(F)(7)

		Requirements	Defect Category	Code Reference
AC Combiner	OCPD	AC Combiner Overcurrent protection is sufficient.	Critical	NEC Article 240.4 and 690.9
(continued)		PV Backfed breaker is properly sized at, or above 125% of inverter output current	Major	NEC Article 240.4 and 690.9
		The AC OCPD is properly sized for the expected output current of the PV system.	Major	NEC Article 690.9
		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 source circuit, PV output circuit, inverter output circuit and storage battery circuit conductors and equipment shall be protected with an OCPD.	Critical	NEC Articles 690.9 and 690.35(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 and 110.13(A)
		Combiner box is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirements	Defect Category	Code Reference
AC Disconnect	Conductors	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)
		PV system AC output conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductors are isolated from enclosure and ground terminal.	Major	NEC Article 250.24(A)(5)
		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.	Major	NEC Article 250.24(C)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		The length of the free conductors within the enclosure shall meet or exceed 6" requirement.	Minor	NEC Article 300.14
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment	Incidental	NEC Article 300.7(A)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
		The service entrance Flexible Metal Conduit (FMC) or Liquidtight Flexible Metal Conduit (LFMC) shall not exceed 6 feet.	Minor	NEC Article 230.43(15)

		Requirements	Defect Category	Code Reference
AC Disconnect (continued)	Electrical	AC Disconnect enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		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 it's listing and manufacturers instructions.	Minor	NEC Article 110.3(B)
		AC Disconnect is properly rated for expected current load.	Critical	NEC Articles 230.79, 690.17(E) and 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
		AC Disconnect is present.	Minor	NEC Article 690.13(A)
		AC Disconnect Switch must break the ungrounded conductor and keeps the grounded conductor properly grounded and unenergized.	Major	NEC Articles 690.13 and 690.17(B)
		Service disconnect is properly rated for the application.	Major	NEC Article 230.79(D)
		Service Disconnects are properly grouped.	Minor	NEC Article 230.72
	Grounding	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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Grounding electrode conductor must be continuous.	Major	NEC Articles 250.64(C) and 690.47
		Grounding electrode conductor is properly bonded to the main premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		AC Disconnect is grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45

		Requirements	Defect Category	Code Reference
AC Disconnect (continued)	Labeling	All interactive system points of interconnection with other sources shall be marked at an accessible location at the disconnecting means as the power source and with the rated AC output current and the nominal operating AC voltage.	Incidental	NEC Articles 110.21(B) and/or 690.54
		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)
		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/or 690.17(E)
		A directory is required at each dc PV system disconnecting means, ac disconnecting means for mini- and micro-inverters, and service disconnecting means showing the location of all dc and ac PV system disconnecting means in the building/ structure.	Incidental	NEC Article 110.21(B) and 705.10
	OCPD	Conductors shall be protected against overcurrent in accordance with their ampacity.	Critical	NEC Article 240.4 and 690.9
		The AC OCPD is properly sized for the expected output current of the PV system.	Major	NEC Article 690.9
		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)
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Articles 240.22 and 690.17(D)
		PV source circuit, PV output circuit, inverter output circuit and storage battery circuit conductors and equipment shall be protected with an OCPD.	Critical	NEC Articles 690.9 and 690.35(B)
		The OCPD is properly sized for the rating of the equipment.	Major	NEC Article 240.3
		Fuses are present and installed in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Equipment intended to interrupt current at fault levels shall have an interrupting rating sufficient for the current that is available at the line terminals of the equipment.	Major	NEC Articles 110.9, 110.10 and 230.82
		The service overcurrent device shall be an integral part of the service disconnecting means or shall be located immediately adjacent.	Critical	NEC Articles 230.91 and/ or 110.3(B)
	Structural	AC disconnect is installed in accordance with its listing and installation instructions.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)
		AC Disconnect is installed with the appropriate clearances and protection measures.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirements	Defect Category	Code Reference
AC Module	Conductors	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)
		Inverter PV system AC output conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Microinverter output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		All array conductors are properly connected.	Critical	NEC Articles 110.3(B) and 110.12
		Circuit conductors are properly supported and protected.	Minor	NEC Article 334.30
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Outdoor wire ties/clips are UV and outdoor rated.	Minor	NEC Article 110.3(B)
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
	Conduit	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)
		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 does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	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
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Minor	NEC Article 110.3(B)

		Requirements	Defect Category	Code Reference
AC Module (continued)	Grounding	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
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Major	NEC Articles 110.3(B) and 690.47
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Microinverter grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Listed means used to ground Microinverter chassis.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	Labeling	AC modules shall be marked with identification terminals or leads with the ratings shown on the labels.	Incidental	NEC Articles 110.21(B) and 690.52
	Structural	Power electronics are mounted/installed in accordance with its listing and manufacturer instructions.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)

		Requirements	Defect Category	Code Reference
DC Combiner	Conductors	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)
		DC Combiner (aggregated) output circuit conductors are properly sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		DC Combiner splice components are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		DC Combiner splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		DC string conductors are sized properly.	Critical	NEC Articles 690.8 and/or 310.15
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		The length of the free conductors within the enclosure shall meet or exceed 6" requirement.	Minor	NEC Article 300.14
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	Electrical	Combiner box is suitable for environment.	Major	NEC Articles 314.15 and 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 it's listing and manufacturers instructions.	Minor	NEC Article 110.3(B)
		Enclosure rating is sufficient for expected current load in accordance with its listing.	Critical	NEC Article 110.3(B)
		DC Combiner is properly identified and listed.	Major	NEC Articles 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7

		Requirements	Defect Category	Code Reference
DC Combiner (continued)	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than 6AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		DC Combiner box is grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45
	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(E)(2)
		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/or 690.17(E)
		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
		A PV power sources shall be labeled at each junction box, combiner box or disconnect and device where energized, ungrounded circuits may be exposed during service.	Incidental	NEC Articles110.21(B) and 690.35(F)
	OCPD	Combiner string fuse is properly sized.	Major	NEC Article 690.9
		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(C)
		Inverter string fuses are 600 or 1000 VDC rated as required.	Critical	NEC Articles 110.3(B) and 690.9(C)
		DC Combiner string fuse holder is DC rated.	Critical	NEC Articles 110.3(B) and 690.9(C)
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Articles 240.22 and 690.17(D)
		PV source circuit, PV output circuit, inverter output circuit and storage battery circuit conductors and equipment shall be protected with an OCPD.	Critical	NEC Articles 690.9 and 690.35(B)
	Structural	Combiner box is properly secured in place.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)
		Combiner box is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirements	Defect Category	Code Reference
DC Disconnect	Conductors	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)
		DC circuit conductors are properly sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		The length of the free conductors within the enclosure shall meet or exceed 6" requirement.	Minor	NEC Article 300.14
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)

		Requirements	Defect Category	Code Reference
DC Disconnect (continue)	Electrical	DC Disconnect enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		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 it's listing and manufacturers instructions.	Minor	NEC Article 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Disconnect is listed for DC use.	Critical	NEC Article 110.3(B) and 690.17
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
		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)
		The PV disconnect means shall disconnect all ungrounded conductors.	Major	NEC Articles 690.13 and 690.17(B)
	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than 6AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		DC Disconnect is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45

		Requirements	Defect Category	Code Reference
DC Disconnect (continued)	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)
		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/or 690.17(E)
		A permanent label for the direct-current PV power source shall be provided by the installer at the PV disconnecting means.	Incidental	NEC Articles 110.21(B) and/or 690.53
		A directory is required at each dc PV system disconnecting means, ac disconnecting means for mini- and micro-inverters, and service disconnecting means showing the location of all dc and ac PV system disconnecting means in the building/ structure.	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	Disconnect is rated for nominal voltage and current.	Critical	NEC Articles 110.3(B) and 690.17
		Disconnect fuses are DC rated and properly sized for system voltage.	Critical	NEC Articles 110.3(B) and 690.9(C)
	Structural	Disconnect is properly secured in place.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)
		Disconnect is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirements	Defect Category	Code Reference
Energy Storage	Conductors	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)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Battery DC conductors are protected from accidental contact.	Major	NEC Article 690.71(B)(2)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		Correct flexible cables are used for battery interconnections.	Major	NEC Article 690.74
		Battery DC conductors are properly sized for expected current load.	Major	NEC Articles 400.7(A)(10) and 690.74(A)
		Installed DC Battery cables are properly terminated.	Major	NEC Articles 110.14(A) and 690.74(A)
	Conduit	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)
		Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)

		Requirements	Defect Category	Code Reference
Energy Storage (continued)	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
		Equipment must be installed in accordance with it's listing and manufacturers instructions.	Minor	NEC Article 110.3(B)
		Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
		Working clearances around battery bank shall be maintained.	Minor	NEC Articles 110.26 and 480.9
		Batteries are properly ventilated.	Critical	NEC Article 480.10
		Batteries must be installed on non-conductive supports.	Minor	NEC Articles 480.8 or 690.71(D)
		Battery backup system charge controller(s) properly regulate the battery charging process.	Major	NEC Article 690.72
		DC Disconnect is present for ungrounded conductors of battery banks over 30V.	Major	NEC Articles 480.6 and 690.71
		Battery backup system voltage is limited to 50VDC nominal.	Major	NEC Article 690.71(B)(1)
		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 480.3(A)
		Electrical connections do not put mechanical strain on battery.	Major	NEC Articles 706.31 and 110.14(A)
		Charge Controller shall be compatible with the Energy Storage manufacturer's electrical ratings and charging specifications.	Major	NEC article 110.3(B) and IFC 2018, 1206.2.4
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Battery enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	Labeling	PV power systems employing energy storage shall also be marked with the maximum operating voltage, including any equalization voltage and polarity of the grounded circuit conductors.	Incidental	NEC Articles 110.21(B) and/or 690.55
		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 disconnecting means shall be legibly marked in the field and shall include Nominal Energy Storage System Voltage and Maximum Available Short Circuit Current.	Incidental	NEC Articles 110.21(B) and 480.6(D)

		Requirements	Defect Category	Code Reference
Energy Storage (continued)	OCPD	A listed, current-limiting, overcurrent device shall be installed in each circuit adjacent to the batteries where the available short circuit from a battery or battery bank exceeds the interrupting or withstand rating of other equipment in that circuit.	Major	NEC Articles 690.16 and 690.71(C)
	Structural	Charge controllers and related components mounted/installed in accordance with its listing and manufacturer instructions.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)
		Battery Bank is mounted in accordance with its listing and manufacturer instructions.	Major	NEC Article 110.3(B)
		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
		Rooms or spaces containing Energy Storage Systems shall be separated from other areas of the building by fire barriers with a minimum fire resistance rating of two hours and horizontal assemblies with a minimum fire resistance rating of two hours constructed IAW NY State Uniform Building Code, local laws and ordinances.	Major	IFC 2018 1206.2.8.2, NFP 855 Section 4.3.6
	Program	Battery storage system includes a manual (system description, operating and safety instructions, maintenance requirements, safe battery handling requirements and recommendations).	Minor	Program requirement

		Requirements	Defect Category	Code Reference
Feeder Tap Connection	Conductors	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)
		Feeder conductors are properly sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Conductors are properly spliced.	Major	NEC Articles 110.3(B) and 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		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.	Major	NEC Article 250.24(C)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		AC conduit is adequately supported.	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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
		The service entrance Flexible Metal Conduit (FMC) or Liquidtight Flexible Metal Conduit (LFMC) shall not exceed 6 feet.	Minor	NEC Article 230.43(15)

		Requirements	Defect Category	Code Reference
Feeder Tap Connection (continued)	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 110.3(B)
		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 it's listing and manufacturers instructions.	Minor	NEC Article 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		PV Disconnect is readily accessible.	Minor	NEC Article 690.13(A)
	Grounding	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
		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 premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is present and sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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(G)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)

		Requirements	Defect Category	Code Reference
Feeder Tap Connection (continued)	Labeling	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/or 690.17(E)
		Equipment containing overcurrent devices in circuits supplying power to a busbar or conductor supplied from multiple sources shall be marked to indicate the presence of all sources.	Incidental	NEC Articles 110.21(B), 690.64 and 705.12(D)(3)
		A directory is required at each dc PV system disconnecting means, ac disconnecting means for mini- and micro-inverters, and service disconnecting means showing the location of all dc and ac PV system disconnecting means in the building/ structure.	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
		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 Articles 110.21(B) and 690.7(E)(3)
		Bipolar photovoltaic systems shall be clearly marked by a permanent, legible warning notice indicating that the disconnection of the grounded conductor(s) may result in overvoltage on the equipment.	Incidental	NEC Articles 110.21(B) and 690.52
	Structural	Feeder connection is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirements	Defect Category	Code Reference
Ground Mounted	Conductors	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 appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		DC circuit conductors are properly sized for expected current load. (1.25 x sum of parallel module lsc)	Critical	NEC Article 310.15 and/ or 690.8(B)
		Splice components must be rated for the environment they are installed.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Splices and/ or connectors must be properly secured.	Major	NEC Article 110.14
		DC string conductors meet or exceed ampacity requirements.	Critical	NEC Articles 690.8 and/or 310.15
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		All array conductors are properly connected.	Critical	NEC Articles 110.3(B) and 110.12
		Circuit conductors are properly supported and protected.	Minor	NEC Article 334.30
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		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 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
	Conduit	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)
		DC PV source 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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)

		Requirements	Defect Category	Code Reference
Ground Mounted (continued)	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
		Equipment must be installed in accordance with it's listing and manufacturers instructions.	Minor	NEC Article 110.3(B)
		Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
		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)
	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than #6 AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Grounding hardware is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Manufacturer instructions for grounding hardware quantity must be followed.	Minor	NEC Article 110.3(B)
		Racking system and support structure are properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45
		Module grounding hardware must be listed for the purpose.	Major	NEC Articles 110.3(B) and 690.43
	OCPD	Overcurrent protective device present between parallel spliced DC string conductors.	Major	NEC Articles 690.8(B) and 690.9(A)
	Structural	PV Module shall be installed and used in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Ground/pole mount support structure, anchor system, and or footings are installed and used according to manufacturer instructions.	Major	NEC Article 110.3(B)

		Requirements	Defect Category	Code Reference
Junction Box	Conductors	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)
		Junction Box circuit conductors are properly sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Junction Box splice components are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surfaces and the ground terminal inside Junction Box.	Minor	NEC Article 250.24(A)(5)
		Circuit conductors are properly supported and protected.	Minor	NEC Article 334.30
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		The length of the free conductors within the enclosure shall meet or exceed 6" requirement.	Minor	NEC Article 300.14
	Conduit	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 below grade is installed with provisions for movement.	Minor	NEC Article 300.5(J)
		Conduit penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)

		Requirements	Defect Category	Code Reference
Junction Box	Electrical	Junction Box is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
(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
		Junction Box is properly identified and listed.	Major	NEC Articles 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		Junction box must be accessible.	Minor	NEC Article 690.34
	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than #6 AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		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, 250.122, 250.166 and 690.47
		Listed means used to ground enclosure.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45
	Labeling	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/or 690.17(E)
		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
		A PV power sources shall be labeled at each junction box, combiner box or disconnect and device where energized, ungrounded circuits may be exposed during service.	Incidental	NEC Articles 110.21(B) and 690.35(F)
	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 and 110.13(A)
		Junction Box is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)
		Roof penetrations are properly sealed and flashed.	Major	NYS Uniform Building Code and NEC Article 110.3(B)

		Requirements	Defect Category	Code Reference
Load Side Connection	Conductors	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 appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(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
		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.	Major	NEC Article 250.24(C)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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)
	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

		Requirements	Defect Category	Code Reference
Load Side Connection (continued)	Grounding	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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		GEC is continuous/irreversibly spliced.	Major	NEC Articles 250.64(C) and 690.47
		Grounding electrode conductor is properly bonded to the main premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Enclosure is properly grounded using a listed grounding method.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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(G)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)
	Labeling	All interactive system points of interconnection with other sources shall be marked at an accessible location at the disconnecting means as the power source and with the rated AC output current and the nominal operating AC voltage.	Incidental	NEC Articles 110.21(B) and/or 690.54
		Where two sources, one utility and the other an inverter, 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 that displays the following or equivalent wording.	Incidental	NEC Articles 110.21(B), 408.4(A) and 705.12 (D)(2)(3)(b)
		Equipment containing overcurrent devices in circuits supplying power to a busbar or conductor supplied from multiple sources shall be marked to indicate the presence of all sources.	Incidental	NEC Articles 110.21(B), 690.64 and 705.12(D)(3)
		A directory is required at each dc PV system disconnecting means, ac disconnecting means for mini- and micro-inverters, and service disconnecting means showing the location of all dc and ac PV system disconnecting means in the building/ structure.	Incidental	NEC Article 110.21(B) and 705.10
		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

		Requirements	Defect Category	Code Reference
Load Side	OCPD	Main panel overcurrent protection is sufficient.	Critical	NEC Article 240.4 and 690.9
Connection (continued)		PV Backfed breaker is properly sized at, or above 125% of inverter output current.	Major	NEC Article 240.4 and 690.9
		PV Backfed breaker rating size is properly sized to protect circuit conductors.	Critical	NEC Articles 310.15 and/or 690.8(B)
		Back-fed plug in devices shall be secured in place by additional fastener.	Minor	NEC Article 408.36(D)
		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 Articles 690.64 and 705.12(D)(2)(3)(b)
		Inverter-interactive output circuit load side connection overcurrent protective device must be properly sized.	Critical	NEC Articles 690.64 and 705.12(D)(2)(3)(b)
		Fuses are present and installed in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(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 and 110.13(A)
		Main Panel is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirements	Defect Category	Code Reference
Microinverter	Conductors	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)
		Inverter PV system AC output conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Microinverter output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		All array conductors are properly connected.	Critical	NEC Articles 110.3(B) and 110.12
		Circuit conductors are properly supported and protected.	Minor	NEC Article 334.30
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Outdoor wire ties/clips are UV and outdoor rated.	Minor	NEC Article 110.3(B)
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
	Conduit	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)
		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 does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	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
		Microinverter wiring is installed in accordance with manufacturers installation instructions.	Minor	NEC Article 110.3(B)
	Grounding	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
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Major	NEC Articles 110.3(B) and 690.47
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Microinverter grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Listed means used to ground Microinverter chassis.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	Structural	Microinverter is mounted/installed in accordance with its listing and manufacturer instructions.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)

		Requirements	Defect Category	Code Reference
Optimizer	Conductors	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)
		Optimizer output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		Optimizer PV system DC output conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15 and/or 690.8(A)(3)
		All array conductors are properly connected.	Critical	NEC Articles 110.3(B) and 110.12
		Circuit conductors are properly supported and protected.	Minor	NEC Article 334.30
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Outdoor wire ties/clips are UV and outdoor rated.	Minor	NEC Article 110.3(B)
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
	Conduit	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)
		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 does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	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
		Optimizer grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Minor	NEC Article 110.3(B)
	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than #6 AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Optimizer is properly bonded to the EGC.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Listed means used to ground Optimizer chassis per manufacturer instructions.	Major	NEC Articles 110.3(B), 250.4 and 690.43
	Structural	Optimizer is mounted/installed in accordance with its listing and manufacturer instructions.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)

		Requirements	Defect Category	Code Reference
Production Meter	Conductors	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)
		PV system AC output conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(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
		Grounded conductor(s) are insulated from metal enclosure surface and ground terminal inside meter enclosure.	Minor	NEC Article 250.24(A)(5)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	Electrical	Meter enclosure is suitable for environment.	Major	NEC Articles 314.15 and 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
		Meter is installed in accordance with its listing and manufacturer instructions.	Minor	NEC Article 110.3(B)
		Meter is rated for expected current load.	Critical	NEC Article 110.3(B)
	Grounding	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
		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, 250.122, 250.166 and 690.47
		Grounding means for enclosure installed.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	Structural	Meter Enclosure is properly suited for conditions and mounted to maintain listing.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)
		Meter is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirements	Defect Category	Code Reference
Rapid Shutdown Device	Conductors	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 appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		DC string conductors are sized properly.	Critical	NEC Articles 690.8 and/or 310.15
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 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 it's listing and manufacturers instructions.	Minor	NEC Article 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		Rapid shutdown device controls conductors of more than 5 feet inside a building and more than 10 feet outside a building.	Major	NEC Article 690.12(1).
		Rapid shutdown device decreases PV output conductors to less than 30 volts within 10 seconds of initiation.	Major	NEC Article 690.12(2)

		Requirements	Defect Category	Code Reference
Rapid Shutdown Device (continued)	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than 6AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45
	Labeling	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).	Incidental	NEC Articles 110.21(B) and 690.31(G)(3)(4)
		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).	Incidental	NEC Articles 110.21(B) and 690.31(G)(3)(4)
		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
		Each rapid shutdown switch shall be permanently marked to identify it as a photovoltaic rapid shutdown. The sign or placard shall be marked as "PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SHUTDOWN"	Incidental	NEC Article 110.21(B) and 690.56(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 and 110.13(A)
		Rapid Shutdown is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirements	Defect Category	Code Reference
Roof Mounted	Conductors	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 appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		DC Combiner (aggregated) output circuit conductors are properly sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Splice components must be rated for the environment they are installed.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Splices and/ or connectors must be properly secured.	Major	NEC Article 110.14
		DC string conductors meet or exceed ampacity requirements.	Critical	NEC Articles 690.8 and/or 310.15
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		All array conductors are properly connected.	Critical	NEC Articles 110.3(B) and 110.12
		Circuit conductors are properly supported and protected.	Minor	NEC Article 334.30
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		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 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		As required, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
	Conduit	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)
		DC PV source 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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)

		Requirements	Defect Category	Code Reference
Roof Mounted (continued)	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
		Equipment must be installed in accordance with it's listing and manufacturers instructions.	Minor	NEC Article 110.3(B)
	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than #6 AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Grounding hardware is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Manufacturer instructions for grounding hardware quantity must be followed.	Minor	NEC Article 110.3(B)
		Racking system and support structure are properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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
	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(E)(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).	Incidental	NEC Articles 110.21(B) and 690.31(G)(3)(4)
		Where circuits are embedded in build up, laminate or membrane roofing materials not covered by PV modules and associated equipment, the location of the circuits shall be clearly marked.	Incidental	NEC Articles 110.21(B) and 690.31(G)(I)
		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
		A PV power sources shall be labeled at each junction box, combiner box or disconnect and device where energized, ungrounded circuits may be exposed during service.	Incidental	NEC Articles110.21(B) and 690.35(F)

		Requirements	Defect Category	Code Reference
Roof Mounted (continued)	OCPD	Overcurrent protective device present between parallel spliced DC string conductors.	Major	NEC Articles 690.8(B) and 690.9(A)
	Structural	Module is properly secured to the racking system per manufacturer instructions.	Major	NEC Article 110.3(B)
	Racking system shall be installed and used accordance with any instruction included i listing or labeling. Roof penetrations are properly sealed and	Racking system shall be installed and used in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Roof penetrations are properly sealed and flashed.	Major	IBC Section 1503.2, IPC 903, and NEC Article 110.3(B).
		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

		Requirements	Defect Category	Code Reference
String Inverter	Conductors	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 appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(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
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	Circuit 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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		Indoor DC source circuits are contained in metallic conduit or raceway	Major	NEC Article 690.31(G)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 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 it's listing and manufacturers instructions.	Minor	NEC Article 110.3(B)
		PV array maximum DC string voltage complies with inverter maximum input voltage rating.	Critical	NEC Articles 110.3(B) and 690.7
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		Input string voltage is suitable for inverter rated minimum operating voltage.	Minor	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)

		Requirements	Defect Category	Code Reference
String Inverter (continued)	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than 6AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Array equipment grounding conductor is installed/ terminated in inverter according to manufacturer's instruction.	Major	NEC Article 110.3(B)
		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, 250.122, 250.166 and 690.47
		Inverter metal enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45
	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)
		A label shall appear on the utility interactive inverter or be applied by the installer near the ground fault indicator at a visible location.	Incidental	NEC Article 110.21(B) and 690.5(C)
		A permanent label for the direct-current PV power source shall be provided by the installer at the PV disconnecting means.	Incidental	NEC Articles 110.21(B) and/or 690.53
		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
		Each rapid shutdown switch shall be permanently marked to identify it as a photovoltaic rapid shutdown. The sign or placard shall be marked as "PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SHUTDOWN"	Incidental	NEC Article 110.21(B) and 690.56(C)
	OCPD	Inverter string fuses are 600 or 1000 VDC rated as required.	Critical	NEC Articles 110.3(B) and 690.9(C)
		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 and 110.13(A)
		Equipment is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)
		Requirements	Defect Category	Code Reference
----------	------------	--	--------------------	---
Subpanel	Conductors	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)
		PV system AC conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(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
		Grounded conductor(s) are insulated from metal enclosure surface and ground terminal inside meter enclosure.	Minor	NEC Article 250.24(A)(5)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 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 sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		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)

		Requirements	Defect Category	Code Reference
Subpanel (continued)	Grounding	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
		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 bonded to the main premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Subpanel is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	Labeling	All interactive system points of interconnection with other sources shall be marked at an accessible location at the disconnecting means as the power source and with the rated AC output current and the nominal operating AC voltage.	Incidental	NEC Articles 110.21(B) and/or 690.54
		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 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)(2)(3)(c)
		Equipment containing overcurrent devices in circuits supplying power to a busbar or conductor supplied from multiple sources shall be marked to indicate the presence of all sources.	Incidental	NEC Articles 110.21(B), 690.64 and 705.12(D)(3)
		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

		Requirements	Defect Category	Code Reference
Subpanel (continued)	OCPD	Subpanel Overcurrent protection is sufficient.	Critical	NEC Article 240.4 and 690.9
		PV Backfed breaker is properly sized at, or above 125% of inverter output current.	Major	NEC Article 240.4 and 690.9
		PV Backfed breaker rating size is properly sized to protect circuit conductors.	Critical	NEC Articles 310.15 and/or 690.8(B)
		Back-fed plug in devices shall be secured in place by additional fastener.	Minor	NEC Article 408.36(D)
		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 source circuit, PV output circuit, inverter output circuit and storage battery circuit conductors and equipment shall be protected with an OCPD.	Critical	NEC Articles 690.9 and 690.35(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 and 110.13(A)
		Subpanel is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirements	Defect Category	Code Reference
Supply Side Connection	Conductors	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)
		PV system AC conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Service entrance conductors are properly spliced.	Major	NEC Articles 110.3(B) and 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		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.	Major	NEC Article 250.24(C)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
		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)
	Electrical	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 it's listing and manufacturers 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
		AC Disconnect is in a readily accessible location.	Minor	NEC Article 690.13(A)
		Service disconnect is properly rated for the application.	Major	NEC Article 230.79(D)
		The PV disconnect means shall disconnect all ungrounded conductors.	Major	NEC Articles 690.13 and 690.17(B)
		Service Disconnects are properly grouped.	Minor	NEC Article 230.72

		Requirements	Defect Category	Code Reference
Supply Side Connection (continued)	Grounding	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
		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, 250.122, 250.166 and 690.47
		Disconnect enclosure is properly grounded using a listed grounding method.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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(G)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)
	Labeling	All interactive system points of interconnection with other sources shall be marked at an accessible location at the disconnecting means as the power source and with the rated AC output current and the nominal operating AC voltage.	Incidental	NEC Articles 110.21(B) and/or 690.54
		If equipment is energized from more than one source, the disconnecting means must be grouped and identified.	Incidental	NEC Articles 110.21(B) and 690.15
		A directory is required at each dc PV system disconnecting means, ac disconnecting means for mini- and micro-inverters, and service disconnecting means showing the location of all dc and ac PV system disconnecting means in the building/ structure.	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
		Bipolar photovoltaic systems shall be clearly marked by a permanent, legible warning notice indicating that the disconnection of the grounded conductor(s) may result in overvoltage on the equipment.	Incidental	NEC Articles 110.21(B) and 690.7(E)(3)

		Requirements	Defect Category	Code Reference
Supply Side Connection (continued)	OCPD	The AC OCPD is properly sized for the expected output current of the PV system.	Major	NEC Article 690.9
		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)
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Articles 240.22 and 690.17(D)
		PV source circuit, PV output circuit, inverter output circuit and storage battery circuit conductors and equipment shall be protected with an OCPD.	Critical	NEC Articles 690.9 and 690.35(B)
		Fuses are present and installed in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Equipment intended to interrupt current at fault levels shall have an interrupting rating sufficient for the current that is available at the line terminals of the equipment.	Major	NEC Articles 110.9, 110.10 and 230.82
		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)
	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 and 110.13(A)
		Equipment is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirements	Defect Category	Code Reference
Xformerless Inverter	Conductors	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 appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Inverter DC ungrounded conductors are correctly identified.	Incidental	NEC Article 200.7
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	Circuit 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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)

		Requirements	Defect Category	Code Reference
Xformerless Inverter (continued)	Electrical	The Inverter enclosure employs an approved moisture accumulation prevention method.	Major	NEC Articles 314.15 and 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
		Inverter is installed properly according to the manufacturer installation instructions.	Minor	NEC Article 110.3(B)
		PV array maximum DC string voltage complies with inverter maximum input voltage rating.	Critical	NEC Articles 110.3(B) and 690.7
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		Input string voltage is suitable for inverter rated minimum operating voltage.	Minor	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)
	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than #6 AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Inverter array frame grounding conductor is installed in accordance with manufacturers instruction.	Major	NEC Article 110.3(B)
		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, 250.122, 250.166 and 690.47
		Inverter metal enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45

		Requirements	Defect Category	Code Reference
Xformerless Inverter (continued)	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)
		A permanent label for the direct-current PV power source shall be provided by the installer at the PV disconnecting means.	Incidental	NEC Articles 110.21(B) and/or 690.53
		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
		A PV power sources shall be labeled at each junction box, combiner box or disconnect and device where energized, ungrounded circuits may be exposed during service.	Incidental	NEC Articles 110.21(B) and 690.35(F)
		Each rapid shutdown switch shall be permanently marked to identify it as a photovoltaic rapid shutdown. The sign or placard shall be marked as "PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SHUTDOWN"	Incidental	NEC Article 110.21(B) and 690.56(C)
	OCPD	Inverter string fuses are 600 or 1000 VDC rated as required.	Critical	NEC Articles 110.3(B) and 690.9(C)
		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 and 110.13(A)
		Equipment is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirements	Defect Category	Code Reference
Xformerless Microinverter	Conductors	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)
		Inverter PV system AC output conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Microinverter output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		All array conductors are properly connected.	Critical	NEC Articles 110.3(B) and 110.12
		Circuit conductors are properly supported and protected.	Minor	NEC Article 334.30
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Outdoor wire ties/clips are UV and outdoor rated.	Minor	NEC Article 110.3(B)
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
	Conduit	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)
		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 does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	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
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Minor	NEC Article 110.3(B)
	Grounding	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
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Major	NEC Articles 110.3(B) and 690.47
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Microinverter grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Listed means used to ground Microinverter chassis.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	Structural	Microinverter is mounted/installed in accordance with its listing and manufacturer instructions	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)



PHOTO INSPECTION REFERENCE – 2014 NEC NY-Sun



The photo inspection resource is used by NY-Sun's third-party QA Contractor to evaluate the quality of the solar electric installation. NY-Sun approved builders are encouraged to reference this resource throughout the installation process for each project to ensure compliance with the NY-Sun Program rules and requirements.

		Requirement	Defect Category	Code Reference
Overall Observation	Program	PV Modules are UL Listed per NY Sun program requirements.	Minor	NY-Sun Program
		Existing Service Panel is not a split bus (FPE Stab-Lok, Push-O-Matic etc.,).	Critical	NY-Sun Program
		Array Module Manufacturer must match application.	Incidental	NY-Sun Program
		Array Module Number matches application.	Incidental	NY-Sun Program
		Array Module Quantity matches application.	Incidental	NY-Sun Program
		Installed Battery manufacturer shall match Program records.	Incidental	NY-Sun Program
		Installed Battery model number shall match Program records.	Incidental	NY-Sun Program
		Installed Battery quantity shall match Program records.	Incidental	NY-Sun Program
		Installed Inverter manufacturer shall match Program records.	Incidental	NY-Sun Program
		Installed Inverter quantity shall match Program records.	Incidental	NY-Sun Program
		Installed Inverter model number shall match Program records.	Incidental	NY-Sun Program
		As per Program requirements, any roof damage must be repaired prior to installation.	Minor	NY-Sun Program
		Site address must match site address submitted.	Critical	NY-Sun Program
		Current Transformers are installed and meet Program requirements.	Major	NY-Sun Program

		Requirement	Defect Category	Code Reference
AC Combiner	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surfaces and the ground terminal inside combiner box.	Major	NEC Article 250.24(A)(5)
		The neutral conductor is connected at its own dedicated terminal isolated from metal enclosure.	Minor	NEC Article 408.41
	Electrical	AC Combiner is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
	Grounding	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
		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, 250.122, 250.166 and 690.47
		AC Combiner is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	OCPD	AC Combiner Overcurrent protection is sufficient.	Critical	NEC Article 240.4 and 690.9
		PV Backfed breaker is properly sized at, or above 125% of inverter output current	Major	NEC Article 240.4 and 690.9
		The AC OCPD is properly sized for the expected output current of the PV system.	Major	NEC Article 690.9
		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 source circuit, PV output circuit, inverter output circuit and storage battery circuit conductors and equipment shall be protected with an OCPD.	Critical	NEC Articles 690.9 and 690.35(B)

		Requirement	Defect Category	Code Reference
AC Disconnect	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductors are isolated from enclosure and ground terminal.	Major	NEC Article 250.24(A)(5)
		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.	Major	NEC Article 250.24(C)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Conduit	The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	AC Disconnect enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		AC Disconnect is properly rated for expected current load.	Critical	NEC Articles 230.79, 690.17(E) and 110.3(B)
		Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
		AC Disconnect Switch must break the ungrounded conductor and keeps the grounded conductor properly grounded and unenergized.	Major	NEC Articles 690.13 and 690.17(B)
		Service disconnect is properly rated for the application.	Major	NEC Article 230.79(D)
	Grounding	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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Grounding electrode conductor must be continuous.	Major	NEC Articles 250.64(C) and 690.47
		Grounding electrode conductor is properly bonded to the main premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		AC Disconnect is grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45

		Requirement	Defect Category	Code Reference
AC Disconnect (continued)	OCPD	Conductors shall be protected against overcurrent in accordance with their ampacity.	Critical	NEC Article 240.4 and 690.9
		The AC OCPD is properly sized for the expected output current of the PV system.	Major	NEC Article 690.9
		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)
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Articles 240.22 and 690.17(D)
		PV source circuit, PV output circuit, inverter output circuit and storage battery circuit conductors and equipment shall be protected with an OCPD.	Critical	NEC Articles 690.9 and 690.35(B)
		The OCPD is properly sized for the rating of the equipment.	Major	NEC Article 240.3
		Fuses are present and installed in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Equipment intended to interrupt current at fault levels shall have an interrupting rating sufficient for the current that is available at the line terminals of the equipment.	Major	NEC Articles 110.9, 110.10 and 230.82
		The service overcurrent device shall be an integral part of the service disconnecting means or shall be located immediately adjacent.	Critical	NEC Articles 230.91 and/ or 110.3(B)
			1	
AC Module	Conductors	Microinverter output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
	Grounding	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
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Major	NEC Articles 110.3(B) and 690.47
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Microinverter grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Listed means used to ground Microinverter chassis.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43

		Requirement	Defect Category	Code Reference
DC Combiner	Conductors	DC Combiner splice components are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		DC Combiner splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Combiner box is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Enclosure rating is sufficient for expected current load in accordance with its listing.	Critical	NEC Article 110.3(B)
		DC Combiner is properly identified and listed.	Major	NEC Articles 110.3(B)
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		DC Combiner box is grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45
	OCPD	Combiner string fuse is properly sized.	Major	NEC Article 690.9
		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(C)
		Inverter string fuses are 600 or 1000 VDC rated as required.	Critical	NEC Articles 110.3(B) and 690.9(C)
		DC Combiner string fuse holder is DC rated.	Critical	NEC Articles 110.3(B) and 690.9(C)
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Articles 240.22 and 690.17(D)
		PV source circuit, PV output circuit, inverter output circuit and storage battery circuit conductors and equipment shall be protected with an OCPD.	Critical	NEC Articles 690.9 and 690.35(B)

		Requirement	Defect Category	Code Reference
DC Disconnect	Conductors	Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	DC Disconnect enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Disconnect is listed for DC use.	Critical	NEC Article 110.3(B) and 690.17
		Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
		The PV disconnect means shall disconnect all ungrounded conductors.	Major	NEC Articles 690.13 and 690.17(B)
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		DC Disconnect is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45
	OCPD	Disconnect is rated for nominal voltage and current.	Critical	NEC Articles 110.3(B) and 690.17
		Disconnect fuses are DC rated and properly sized for system voltage.	Critical	NEC Articles 110.3(B) and 690.9(C)

		Requirement	Defect Category	Code Reference
Energy Storage	Conductors	Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Battery DC conductors are protected from accidental contact.	Major	NEC Article 690.71(B)(2)
		Correct flexible cables are used for battery interconnections.	Major	NEC Article 690.74
		Battery DC conductors are properly sized for expected current load.	Major	NEC Articles 400.7(A)(10) and 690.74(A)
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
		Batteries are properly ventilated.	Critical	NEC Article 480.10
		DC Disconnect is present for ungrounded conductors of battery banks over 30V.	Major	NEC Articles 480.6 and 690.71
		Battery backup system voltage is limited to 50VDC nominal.	Major	NEC Article 690.71(B)(1)
		Charge Controller shall be compatible with the Energy Storage manufacturer's electrical ratings and charging specifications.	Major	NEC article 110.3(B) and IFC 2018, 1206.2.4
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Battery enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	OCPD	A listed, current-limiting, overcurrent device shall be installed in each circuit adjacent to the batteries where the available short circuit from a battery or battery bank exceeds the interrupting or withstand rating of other equipment in that circuit.	Major	NEC Articles 690.16 and 690.71(C)

		Requirement	Defect Category	Code Reference
Feeder Tap Connection	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Conductors are properly spliced.	Major	NEC Articles 110.3(B) and 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		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.	Major	NEC Article 250.24(C)
	Conduit	The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
	Grounding	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
		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 premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is present and sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)

		Requirement	Defect Category	Code Reference
Ground Mounted	Conductors	Splice components must be rated for the environment they are installed.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Splices and/ or connectors must be properly secured.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Grounding hardware is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Racking system and support structure are properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45
		Module grounding hardware must be listed for the purpose.	Major	NEC Articles 110.3(B) and 690.43
	Structural	PV Module shall be installed and used in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Ground/pole mount support structure, anchor system, and or footings are installed and used according to manufacturer instructions.	Major	NEC Article 110.3(B)

		Requirement	Defect Category	Code Reference
Junction Box	Conductors	Junction Box splice components are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surfaces and the ground terminal inside Junction Box.	Minor	NEC Article 250.24(A)(5)
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Junction Box is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Junction Box is properly identified and listed.	Major	NEC Articles 110.3(B)
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		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, 250.122, 250.166 and 690.47
		Listed means used to ground enclosure.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45
	Structural	Roof penetrations are properly sealed and flashed.	Major	NYS Uniform Building Code and NEC Article 110.3(B)

		Requirement	Defect Category	Code Reference
Load Side Connection	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
		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.	Major	NEC Article 250.24(C)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Grounding	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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		GEC is continuous/irreversibly spliced.	Major	NEC Articles 250.64(C) and 690.47
		Grounding electrode conductor is properly bonded to the main premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Enclosure is properly grounded using a listed grounding method.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)
	OCPD	Main panel overcurrent protection is sufficient.	Critical	NEC Article 240.4 and 690.9
		PV Backfed breaker is properly sized at, or above 125% of inverter output current.	Major	NEC Article 240.4 and 690.9
		PV Backfed breaker rating size is properly sized to protect circuit conductors.	Critical	NEC Articles 310.15 and/or 690.8(B)
		Back-fed plug in devices shall be secured in place by additional fastener.	Minor	NEC Article 408.36(D)
		Load Side connection of a utility-interactive output circuit must be properly located at the point of connection.	Major	NEC Articles 690.64 and 705.12(D)(2)(3)(b)
		Inverter-interactive output circuit load side connection overcurrent protective device must be properly sized.	Critical	NEC Articles 690.64 and 705.12(D)(2)(3)(b)
		Fuses are present and installed in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)

		Requirement	Defect Category	Code Reference
Microinverter	Conductors	Microinverter output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
	Grounding	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
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Major	NEC Articles 110.3(B) and 690.47
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Microinverter grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Listed means used to ground Microinverter chassis.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
			1	
Optimizer	Conductors	Optimizer output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Optimizer is properly bonded to the EGC.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Listed means used to ground Optimizer chassis per manufacturer instructions.	Major	NEC Articles 110.3(B), 250.4 and 690.43

		Requirement	Defect Category	Code Reference
Production Meter	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
		Grounded conductor(s) are insulated from metal enclosure surface and ground terminal inside meter enclosure.	Minor	NEC Article 250.24(A)(5)
	Conduit	The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Meter enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Meter is rated for expected current load.	Critical	NEC Article 110.3(B)
	Grounding	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
		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, 250.122, 250.166 and 690.47
		Grounding means for enclosure installed.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
Banid	Conductors	Lingrounded conductor properly identified	Incidental	NEC Article 2007
Shutdown Device	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 200.7
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Rapid shutdown device controls conductors of more than 5 feet inside a building and more than 10 feet outside a building.	Major	NEC Article 690.12(1) .
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45

		Requirement	Defect Category	Code Reference
Roof Array	Conductors	Splice components must be rated for the environment they are installed.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Splices and/ or connectors must be properly secured.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Grounding hardware is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Racking system and support structure are properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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
	Structural	Module is properly secured to the racking system per manufacturer instructions.	Major	NEC Article 110.3(B)
		Racking system shall be installed and used in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Roof penetrations are properly sealed and flashed.	Major	IBC Section 1503.2, IPC 903, and NEC Article 110.3(B) .
		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

		Requirement	Defect Category	Code Reference
String Inverter	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
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 110.3(B)
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Array equipment grounding conductor is installed/ terminated in inverter according to manufacturer's instruction.	Major	NEC Article 110.3(B)
		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, 250.122, 250.166 and 690.47
		Inverter metal enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45
	OCPD	Inverter string fuses are 600 or 1000 VDC rated as required.	Critical	NEC Articles 110.3(B) and 690.9(C)
		Inverter string fuse size matches module string series fuse rating.	Major	NEC Article 690.9(B)

		Requirement	Defect Category	Code Reference
Subpanel	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
		Grounded conductor(s) are insulated from metal enclosure surface and ground terminal inside meter enclosure.	Minor	NEC Article 250.24(A)(5)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Conduit	The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
	Grounding	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
		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 bonded to the main premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Subpanel is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	OCPD	Subpanel Overcurrent protection is sufficient.	Critical	NEC Article 240.4 and 690.9
		PV Backfed breaker is properly sized at, or above 125% of inverter output current.	Major	NEC Article 240.4 and 690.9
		PV Backfed breaker rating size is properly sized to protect circuit conductors.	Critical	NEC Articles 310.15 and/or 690.8(B)
		Back-fed plug in devices shall be secured in place by additional fastener.	Minor	NEC Article 408.36(D)
		PV source circuit, PV output circuit, inverter output circuit and storage battery circuit conductors and equipment shall be protected with an OCPD.	Critical	NEC Articles 690.9 and 690.35(B)

		Requirement	Defect Category	Code Reference
Supply Side	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
Connection		Service entrance conductors are properly spliced.	Major	NEC Articles 110.3(B) and 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		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.	Major	NEC Article 250.24(C)
	Conduit	The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Service disconnect is properly rated for the application.	Major	NEC Article 230.79(D)
		The PV disconnect means shall disconnect all ungrounded conductors.	Major	NEC Articles 690.13 and 690.17(B)
	Grounding	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
		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, 250.122, 250.166 and 690.47
		Disconnect enclosure is properly grounded using a listed grounding method.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)
	OCPD	The AC OCPD is properly sized for the expected output current of the PV system.	Major	NEC Article 690.9
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Articles 240.22 and 690.17(D)
		PV source circuit, PV output circuit, inverter output circuit and storage battery circuit conductors and equipment shall be protected with an OCPD.	Critical	NEC Articles 690.9 and 690.35(B)
		Fuses are present and installed in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Equipment intended to interrupt current at fault levels shall have an interrupting rating sufficient for the current that is available at the line terminals of the equipment.	Major	NEC Articles 110.9, 110.10 and 230.82
		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)

		Requirement	Defect Category	Code Reference
Xformerless Microinverter	Conductors	Microinverter output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
	Grounding	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
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Major	NEC Articles 110.3(B) and 690.47
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Microinverter grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Listed means used to ground Microinverter chassis.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43

		Requirement	Defect Category	Code Reference
Xformerless Inverter	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Inverter DC ungrounded conductors are correctly identified.	Incidental	NEC Article 200.7
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	The Inverter enclosure employs an approved moisture accumulation prevention method.	Major	NEC Articles 314.15 and 110.3(B)
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Inverter array frame grounding conductor is installed in accordance with manufacturers instruction.	Major	NEC Article 110.3(B)
		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, 250.122, 250.166 and 690.47
		Inverter metal enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Article 690.45
	OCPD	Inverter string fuses are 600 or 1000 VDC rated as required.	Critical	NEC Articles 110.3(B) and 690.9(C)
		Inverter string fuse size matches module string series fuse rating.	Major	NEC Article 690.9(B)



FIELD INSPECTION REFERENCE – 2017 NEC NY-Sun



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

		Requirement	Defect Category	Code Reference
Overall Observations	Program	Existing Service Panel is not a split bus (FPE Stab-Lok, Push-O-Matic etc.,).	Critical	NY-Sun Program
		Array Module Manufacturer must match application.	Incidental	NY-Sun Program
		Array Azimuth (degree) matches application.	Incidental	NY-Sun Program
		Array Module Number matches application.	Incidental	NY-Sun Program
		Array Module Quantity matches application.	Incidental	NY-Sun Program
		Array Tilt (degree) matches application.	Incidental	NY-Sun Program
		All Material and equipment must be new and undamaged, per NY Sun program requirements.	Major	NY-Sun Program
		Installed Battery manufacturer shall match Program records.	Incidental	NY-Sun Program
		Installed Battery model number shall match Program records.	Incidental	NY-Sun Program
		Installed Battery quantity shall match Program records.	Incidental	NY-Sun Program
		Installed Inverter manufacturer shall match Program records.	Incidental	NY-Sun Program
		Installed Inverter quantity shall match Program records.	Incidental	NY-Sun Program
		Installed Inverter model number shall match Program records.	Incidental	NY-Sun Program
		As per Program requirements, any roof damage must be repaired prior to installation.	Minor	NY-Sun Program
		Site address must match site address submitted.	Critical	NY-Sun Program
		Current Transformers are installed and meet Program requirements.	Major	NY-Sun Program
		Energy Storage System Discharge Test is required.	Major	Energy Storage System Program
		Battery storage system includes a manual (system description, operating and safety instructions, maintenance requirements, safe battery handling requirements and recommendations).	Minor	Program Requirement

		Requirement	Defect Category	Code Reference
AC Combiner	Conductors	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)
		AC Combiner circuit conductors are properly sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surfaces and the ground terminal inside combiner box.	Major	NEC Article 250.24(A)(5)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		The length of the free conductors within the enclosure shall meet or exceed 6" requirement.	Minor	NEC Article 300.14
		The neutral conductor is connected at its own dedicated terminal isolated from metal enclosure.	Minor	NEC Article 408.41
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		AC conduit is adequately supported.	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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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)
	Electrical	AC Combiner is suitable for environment.	Major	NEC Articles 314.15 and 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)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7

		Requirement	Defect Category	Code Reference
AC Combiner (continued)	Grounding	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
		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, 250.122, 250.166 and 690.47
		AC Combiner is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	Labeling	All interactive system points of interconnection with other sources shall be marked at an accessible location at the disconnecting means as the power source and with the rated AC output current and the nominal operating AC voltage.	Incidental	NEC Articles 110.21(B) and/or 690.54
		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)
		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)
		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)(2)(3)(c)]
		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
		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), OS- HA1910.145(f)(7)

		Requirement	Defect Category	Code Reference
AC Combiner	OCPD	AC Combiner Overcurrent protection is sufficient.	Critical	NEC Article 240.4 and 690.9
(continued)		PV Backfed breaker is properly sized at, or above 125% of inverter output current	Major	NEC Article 240.4 and 690.9
		The AC OCPD is properly sized for the expected output current of the PV system.	Major	NEC Article 690.9
		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 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
	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 and 110.13(A)
		Combiner box is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirement	Defect Category	Code Reference
AC Disconnect	Conductors	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)
		PV system AC output conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductors are isolated from enclosure and ground terminal.	Major	NEC Article 250.24(A)(5)
		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.	Major	NEC Article 250.24(C)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		The length of the free conductors within the enclosure shall meet or exceed 6" requirement.	Minor	NEC Article 300.14
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment	Incidental	NEC Article 300.7(A)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
		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)

		Requirement	Defect Category	Code Reference
AC Disconnect (continued)	Electrical	AC Disconnect enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		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)
		AC Disconnect is properly rated for expected current load.	Critical	NEC Articles 230.79, 690.13(E) and 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
		AC Disconnect is present.	Minor	NEC Article 690.13(A)
		AC Disconnect Switch must break the ungrounded conductor and keeps the grounded conductor properly grounded and unenergized.	Major	NEC Article 690.13
		Service disconnect is properly rated for the application.	Major	NEC Article 230.79(D)
		Service Disconnects are properly grouped.	Minor	NEC Article 230.72
	Grounding	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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Grounding electrode conductor must be continuous.	Major	NEC Articles 250.64(C) and 690.47
		Grounding electrode conductor is properly bonded to the main premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		AC Disconnect is grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Articles 250.122 and 690.45

		Requirement	Defect Category	Code Reference
AC Disconnect (continued)	Labeling	All interactive system points of interconnection with other sources shall be marked at an accessible location at the disconnecting means as the power source and with the rated AC output current and the nominal operating AC voltage.	Incidental	NEC Articles 110.21(B) and/or 690.54
		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)
		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)
		A directory is required at each DC PV system disconnecting means, AC disconnecting means for mini- and micro-inverters, and service disconnecting means showing the location of all DC and AC PV system disconnecting means in the building/structure.	Incidental	NEC Article 110.21(B), 690.56(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	Conductors shall be protected against overcurrent in accordance with their ampacity.	Critical	NEC Article 240.4 and 690.9
		The AC OCPD is properly sized for the expected output current of the PV system.	Major	NEC Article 690.9
		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)
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Articles 240.22 and 690.13
		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
		The OCPD is properly sized for the rating of the equipment.	Major	NEC Article 240.3
		Fuses are present and installed in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Equipment intended to interrupt current at fault levels shall have an interrupting rating sufficient for the current that is available at the line terminals of the equipment.	Major	NEC Articles 110.9, 110.10 and 230.82
		The service overcurrent device shall be an integral part of the service disconnecting means or shall be located immediately adjacent.	Critical	NEC Articles 230.91 and/ or 110.3(B)
	Structural	AC disconnect is installed in accordance with its listing and installation instructions.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)
		AC Disconnect is installed with the appropriate clearances and protection measures.	Minor	NEC Articles 110.26 and 110.27(A)
		Requirement	Defect Category	Code Reference
-----------	------------	---	--------------------	---
AC Module	Conductors	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)
		Inverter PV system AC output conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Microinverter output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		All array conductors are properly connected.	Critical	NEC Articles 110.3(B) and 110.12
		Circuit conductors are properly supported and protected.	Minor	NEC Article 334.30
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Outdoor wire ties/clips are UV and outdoor rated.	Minor	NEC Article 110.3(B)
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
	Conduit	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)
		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 does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	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
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Minor	NEC Article 110.3(B)

		Requirement	Defect Category	Code Reference
AC Module (continued)	Grounding	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
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Major	NEC Articles 110.3(B) and 690.47
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Microinverter grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Listed means used to ground Microinverter chassis.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	Labeling	AC modules shall be marked with identification terminals or leads with the ratings shown on the labels.	Incidental	NEC Articles 110.21(B) and 690.52
	Structural	Power electronics are mounted/installed in accordance with its listing and manufacturer instructions.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)

		Requirement	Defect Category	Code Reference
DC Combiner	Conductors	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)
		DC Combiner (aggregated) output circuit conductors are properly sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		DC Combiner splice components are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		DC Combiner splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		DC string conductors are sized properly.	Critical	NEC Articles 690.8 and/or 310.15
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		The length of the free conductors within the enclosure shall meet or exceed 6" requirement.	Minor	NEC Article 300.14
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	Electrical	Combiner box is suitable for environment.	Major	NEC Articles 314.15 and 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)
		Enclosure rating is sufficient for expected current load in accordance with its listing.	Critical	NEC Article 110.3(B)
		DC Combiner is properly identified and listed.	Major	NEC Articles 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7

		Requirement	Defect Category	Code Reference
DC Combiner (continued)	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than 6AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		DC Combiner box is grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Articles 250.122 and 690.45
	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(E)(2)
		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)
		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	Combiner string fuse is properly sized.	Major	NEC Article 690.9
		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)
		Inverter string fuses are 600 or 1000 VDC rated as required.	Critical	NEC Articles 110.3(B) and 690.9(B)
		DC Combiner string fuse holder is DC rated.	Critical	NEC Article 110.3(B)
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Articles 240.22 and 690.13
		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
	Structural	Combiner box is properly secured in place.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)
		Combiner box is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirement	Defect Category	Code Reference
DC Disconnect	Conductors	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)
		DC circuit conductors are properly sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		The length of the free conductors within the enclosure shall meet or exceed 6" requirement.	Minor	NEC Article 300.14
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	Conduit fittings and connectors are designed and listed for this use.	Minor	NEC Article 110.3(B) NEC Articles 110.3(B), 300.15 and (LFMC-350.6, PVC-352.6, LFNC- 356.6, EMT-358.6)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)

		Requirement	Defect Category	Code Reference
DC Disconnect (continued)	Electrical	DC Disconnect enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		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)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Disconnect is listed for DC use.	Critical	NEC Article 110.3(B) and 690.15
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
		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)
		The PV disconnect means shall disconnect all ungrounded conductors.	Major	NEC Article 690.13
	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than 6AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		DC Disconnect is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Articles 250.122 and 690.45

		Requirement	Defect Category	Code Reference
DC Disconnect (continued)	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)
		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)
		A permanent label for the direct-current PV power source shall be provided by the installer at the PV disconnecting means.	Incidental	NEC Articles 110.21(B) and/or 690.53
		A directory is required at each DC PV system disconnecting means, AC disconnecting means for mini- and micro-inverters, and service disconnecting means showing the location of all DC and AC PV system disconnecting means in the building/structure.	Incidental	NEC Article 110.21(B), 690.56(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	Disconnect is rated for nominal voltage and current.	Critical	NEC Article 110.3(B) and 690.15
		Disconnect fuses are DC rated and properly sized for system voltage.	Critical	NEC Articles 110.3(B) and 690.9(B)
	Structural	Disconnect is properly secured in place.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)
		Disconnect is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirement	Defect Category	Code Reference
Energy Storage	Conductors	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)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Battery DC conductors are protected from accidental contact.	Major	NEC Articles 110.27 and 706.10(B)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		Correct flexible cables are used for battery interconnections.	Major	NEC Article 706.32
		Battery DC conductors are properly sized for expected current load.	Major	NEC Article 706.32
		Installed DC Battery cables are properly terminated.	Major	NEC Article 706.32
	Conduit	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)
		Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	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
		Equipment must be installed in accordance with its listing and manufacturer's instructions.	Minor	NEC Article 110.3(B)
		Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
		Working clearances around battery bank shall be maintained.	Minor	NEC Articles 110.26 and 480.10(C)
		Batteries are properly ventilated.	Critical	NEC Article 480.10(A)
		Batteries must be installed on non-conductive supports.	Minor	NEC Article 480.9
		Battery backup system charge controller(s) properly regulate the battery charging process.	Major	NEC Article 706.23
		DC Disconnect is present for ungrounded conductors of battery systems over 60 volts DC.	Major	NEC Articles 480.7(A)
		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)
		Electrical connections do not put mechanical strain on battery.	Major	NEC Articles 706.31(C) and 110.14(A)
		Charge Controller shall be compatible with the Energy Storage manufacturer's electrical ratings and charging specifications.	Major	NEC article 110.3(B) and IFC 2018, 1206.2.4

		Requirement	Defect Category	Code Reference
Energy Storage (continued)	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Battery enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	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
		The disconnecting means shall be legibly marked in the field and shall include Nominal Energy Storage System Voltage and Maximum Available Short Circuit Current.	Incidental	NEC Articles 110.21(B) and 480.7(D)
	OCPD	A listed, current-limiting, overcurrent device shall be installed in each circuit adjacent to the batteries where the available short circuit from a battery or battery bank exceeds the interrupting or withstand rating of other equipment in that circuit.	Major	NEC Article 690.15
	Structural	Charge controllers and related components mounted/installed in accordance with its listing and manufacturer instructions.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)
		Battery Bank is mounted in accordance with its listing and manufacturer instructions.	Major	NEC Article 110.3(B)
		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
		Rooms or spaces containing Energy Storage Systems shall be separated from other areas of the building by fire barriers with a minimum fire resistance rating of two hours and horizontal assemblies with a minimum fire resistance rating of two hours constructed IAW NY State Uniform Building Code, local laws and ordinances.	Major	IFC 2018 1206.2.8.2, NFP 855 Section 4.3.6
	Program	Battery storage system includes a manual (system description, operating and safety instructions, maintenance requirements, safe battery handling requirements and recommendations).	Minor	Program requirement

		Requirement	Defect Category	Code Reference
Feeder Tap	Conductors	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)
		Feeder conductors are properly sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Conductors are properly spliced.	Major	NEC Articles 110.3(B) and 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		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.	Major	NEC Article 250.24(C)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		AC conduit is adequately supported.	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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
		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)

		Requirement	Defect Category	Code Reference
Feeder Tap (continued)	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 110.3(B)
		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)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		PV Disconnect is readily accessible.	Minor	NEC Article 690.13(A)
	Grounding	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
		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 premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is present and sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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(G)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)

_		Requirement	Defect Category	Code Reference
Feeder Tap (continued)	Labeling	Equipment containing overcurrent devices in circuits supplying power to a busbar or conductor supplied from multiple sources shall be marked to indicate the presence of all sources.	Incidental	NEC Articles 110.21(B), 690.59 and 705.12(B)(3-4)
		A directory is required at each DC PV system disconnecting means, AC disconnecting means for mini- and micro-inverters, and service disconnecting means showing the location of all DC and AC PV system disconnecting means in the building/structure.	Incidental	NEC Article 110.21(B), 690.56(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
		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), OS- HA1910.145(f)(7)
	Structural	Feeder connection is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirement	Defect Category	Code Reference
Ground Array	Conductors	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 appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		DC circuit conductors are properly sized for expected current load. (1.25 x sum of parallel module lsc)	Critical	NEC Article 310.15 and/ or 690.8(B)
		Splice components must be rated for the environment they are installed.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Splices and/ or connectors must be properly secured.	Major	NEC Article 110.14
		DC string conductors meet or exceed ampacity requirements.	Critical	NEC Articles 690.8 and/or 310.15
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		All array conductors are properly connected.	Critical	NEC Articles 110.3(B) and 110.12
		Circuit conductors are properly supported and protected.	Minor	NEC Article 334.30
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		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 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
	Conduit	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)
		DC PV source 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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)

		Requirement	Defect Category	Code Reference
Ground Array (continued)	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
		Equipment must be installed in accordance with its listing and manufacturer's instructions.	Minor	NEC Article 110.3(B)
		Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
		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)
	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than #6 AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Grounding hardware is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Manufacturer instructions for grounding hardware quantity must be followed.	Minor	NEC Article 110.3(B)
		Racking system and support structure are properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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
		Equipment grounding conductor is properly sized.	Major	NEC Articles 250.122 and 690.45
		Module grounding hardware must be listed for the purpose.	Major	NEC Articles 110.3(B) and 690.43
	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(E)(2)
	OCPD	Overcurrent protective device present between parallel spliced DC string conductors.	Major	NEC Article 690.9(A)
	Structural	PV Module shall be installed and used in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Ground/pole mount support structure, anchor system, and or footings are installed and used according to manufacturer instructions.	Major	NEC Article 110.3(B)

		Requirement	Defect Category	Code Reference
Junction Box	Conductors	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)
		Junction Box circuit conductors are properly sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Junction Box splice components are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surfaces and the ground terminal inside Junction Box.	Minor	NEC Article 250.24(A)(5)
		Circuit conductors are properly supported and protected.	Minor	NEC Article 334.30
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		The length of the free conductors within the enclosure shall meet or exceed 6" requirement.	Minor	NEC Article 300.14
	Conduit	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 below grade is installed with provisions for movement.	Minor	NEC Article 300.5(J)
		Conduit penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)

		Requirement	Defect Category	Code Reference
Junction Box	Electrical	Junction Box is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
(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
		Junction Box is properly identified and listed.	Major	NEC Articles 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		Junction box must be accessible.	Minor	NEC Article 690.34
	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than #6 AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		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, 250.122, 250.166 and 690.47
		Listed means used to ground enclosure.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Articles 250.122 and 690.45
	Labeling	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)
		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 and 110.13(A)
		Junction Box is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)
		Roof penetrations are properly sealed and flashed.	Major	NYS Uniform Building Code and NEC Article 110.3(B)

		Requirement	Defect Category	Code Reference
Load Side Connection	Conductors	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 appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(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
		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.	Major	NEC Article 250.24(C)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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)
	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

		Requirement	Defect Category	Code Reference
Load Side Connection (continued)	Grounding	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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		GEC is continuous/irreversibly spliced.	Major	NEC Articles 250.64(C) and 690.47
		Grounding electrode conductor is properly bonded to the main premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Enclosure is properly grounded using a listed grounding method.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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(G)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)
	Labeling	All interactive system points of interconnection with other sources shall be marked at an accessible location at the disconnecting means as the power source and with the rated AC output current and the nominal operating AC voltage.	Incidental	NEC Articles 110.21(B) and/or 690.54
		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)(3)(b)
		Equipment containing overcurrent devices in circuits supplying power to a busbar or conductor supplied from multiple sources shall be marked to indicate the presence of all sources.	Incidental	NEC Articles 110.21(B), 690.59 and 705.12(B)(3-4)
		A directory is required at each DC PV system disconnecting means, AC disconnecting means for mini- and micro-inverters, and service disconnecting means showing the location of all DC and AC PV system disconnecting means in the building/structure.	Incidental	NEC Article 110.21(B), 690.56(B) and 705.10
		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

		Requirement	Defect Category	Code Reference
Load Side	OCPD	Main panel overcurrent protection is sufficient.	Critical	NEC Article 240.4 and 690.9
Connection (continued)		PV Backfed breaker is properly sized at, or above 125% of inverter output current.	Major	NEC Article 240.4 and 690.9
		PV Backfed breaker rating size is properly sized to protect circuit conductors.	Critical	NEC Articles 310.15 and/or 690.9(B)
		Back-fed plug in devices shall be secured in place by additional fastener.	Minor	NEC Article 408.36(D)
		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)(2)(3)(b)
		Inverter-interactive output circuit load side connection overcurrent protective device must be properly sized.	Critical	NEC Article 705.12(B)(2)(3)(b)
		Fuses are present and installed in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(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 and 110.13(A)
		Main Panel is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirement	Defect Category	Code Reference
Microinverter	Conductors	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)
		Inverter PV system AC output conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Microinverter output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		All array conductors are properly connected.	Critical	NEC Articles 110.3(B) and 110.12
		Circuit conductors are properly supported and protected.	Minor	NEC Article 334.30
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Outdoor wire ties/clips are UV and outdoor rated.	Minor	NEC Article 110.3(B)
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
	Conduit	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)
		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 does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	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
		Microinverter wiring is installed in accordance with manufacturers installation instructions.	Minor	NEC Article 110.3(B)
	Grounding	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
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Major	NEC Articles 110.3(B) and 690.47
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Microinverter grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Listed means used to ground Microinverter chassis.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	Structural	Microinverter is mounted/installed in accordance with its listing and manufacturer instructions.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)

		Requirement	Defect Category	Code Reference
Optimizer	Conductors	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)
		Optimizer output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		Optimizer PV system DC output conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15 and/or 690.8(A)(3)
		All array conductors are properly connected.	Critical	NEC Articles 110.3(B) and 110.12
		Circuit conductors are properly supported and protected.	Minor	NEC Article 334.30
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Outdoor wire ties/clips are UV and outdoor rated.	Minor	NEC Article 110.3(B)
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
	Conduit	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)
		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 does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	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
		Optimizer grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Minor	NEC Article 110.3(B)
	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than #6 AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Optimizer is properly bonded to the EGC.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Listed means used to ground Optimizer chassis per manufacturer instructions.	Major	NEC Articles 110.3(B), 250.4 and 690.4
	Structural	Optimizer is mounted/installed in accordance with its listing and manufacturer instructions.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)

		Requirement	Defect Category	Code Reference
Production Meter	Conductors	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)
		PV system AC output conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(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
		Grounded conductor(s) are insulated from metal enclosure surface and ground terminal inside meter enclosure.	Minor	NEC Article 250.24(A)(5)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	Electrical	Meter enclosure is suitable for environment.	Major	NEC Articles 314.15 and 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
		Meter is installed in accordance with its listing and manufacturer instructions.	Minor	NEC Article 110.3(B)
		Meter is rated for expected current load.	Critical	NEC Article 110.3(B)

		Requirement	Defect Category	Code Reference
Production Meter (continued)	Grounding	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
		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, 250.122, 250.166 and 690.47
		Grounding means for enclosure installed.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	Structural	Meter Enclosure is properly suited for conditions and mounted to maintain listing.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)
		Meter is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirement	Defect Category	Code Reference
Rapid Shutdown Device	Conductors	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 appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		DC string conductors are sized properly.	Critical	NEC Articles 690.8 and/or 310.15
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 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)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		Controlled conductors located inside the boundary or not more than 1 m (3 ft) from the point of penetration of the surface of the building shall be limited to not more than 80 volts within 30 seconds of rapid shutdown initiation. Voltage shall be measured between any two conductors and between any conductor and ground.	Major	NEC Article 690.12(B)(2)(2)

		Requirement	Defect Category	Code Reference
Rapid Shutdown Device (continued)	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than 6AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Articles 250.122 and 690.45
	Labeling	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).	Incidental	NEC Articles 110.21(B) and 690.31(G)(3)(4)
		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
		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 690.56(C)(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 and 110.13(A)
		Rapid Shutdown is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirement	Defect Category	Code Reference
Roof Array	Conductors	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 appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		DC Combiner (aggregated) output circuit conductors are properly sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Splice components must be rated for the environment they are installed.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Splices and/ or connectors must be properly secured.	Major	NEC Article 110.14
		DC string conductors meet or exceed ampacity requirements.	Critical	NEC Articles 690.8 and/or 310.15
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		All array conductors are properly connected.	Critical	NEC Articles 110.3(B) and 110.12
		Circuit conductors are properly supported and protected.	Minor	NEC Article 334.30
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		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 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		As required, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
	Conduit	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)
		DC PV source 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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	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
		Equipment must be installed in accordance with its listing and manufacturer's instructions.	Minor	NEC Article 110.3(B)

		Requirement	Defect Category	Code Reference
Roof Array (continued)	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than #6 AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Grounding hardware is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Manufacturer instructions for grounding hardware quantity must be followed.	Minor	NEC Article 110.3(B)
		Racking system and support structure are properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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
	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(E)(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).	Incidental	NEC Articles 110.21(B) and 690.31(G)(3)(4)
		Where circuits are embedded in build up, laminate or membrane roofing materials not covered by PV modules and associated equipment, the location of the circuits shall be clearly marked.	Incidental	NEC Articles 110.21(B) and 690.31(G)(I)
		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	Module is properly secured to the racking system per manufacturer instructions.	Major	NEC Article 110.3(B)
		Racking system shall be installed and used in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Roof penetrations are properly sealed and flashed.	Major	IBC Section 1503.2, IPC 903, and NEC Article 110.3(B)
		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

		Requirement	Defect Category	Code Reference
String Inverter	Conductors	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 appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(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
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	Circuit 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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		Indoor DC source circuits are contained in metallic conduit or raceway	Major	NEC Article 690.31(G)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 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)
		PV array maximum DC string voltage complies with inverter maximum input voltage rating.	Critical	NEC Articles 110.3(B) and 690.7
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		Input string voltage is suitable for inverter rated minimum operating voltage.	Minor	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)

		Requirement	Defect Category	Code Reference
String Inverter (continued)	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than 6AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Array equipment grounding conductor is installed/ terminated in inverter according to manufacturer's instruction.	Major	NEC Article 110.3(B)
		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, 250.122, 250.166 and 690.47
		Inverter metal enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Articles 250.122 and 690.45
	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)
		A permanent label for the direct-current PV power source shall be provided by the installer at the PV disconnecting means.	Incidental	NEC Articles 110.21(B) and/or 690.53
		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
		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 690.56(C)(3)
		Solidly grounded bipolar PV systems shall be clearly marked with a permanent, legible warning notice indicating that the disconnection of the grounded conductor(s) may result in overvoltage on the equipment.	Incidental	NEC Articles 110.21(B) and 690.31(I)
	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 and 110.13(A)
		Equipment is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirement	Defect Category	Code Reference
Subpanel	Conductors	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)
		PV system AC conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(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
		Grounded conductor(s) are insulated from metal enclosure surface and ground terminal inside meter enclosure.	Minor	NEC Article 250.24(A)(5)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit Conduit fittings and connectors are designed and N 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)	
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 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 sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		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)

		Requirement	Defect Category	Code Reference
Subpanel (continued)	Grounding	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
		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 bonded to the main premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Subpanel is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	Labeling	All interactive system points of interconnection with other sources shall be marked at an accessible location at the disconnecting means as the power source and with the rated AC output current and the nominal operating AC voltage.	Incidental	NEC Articles 110.21(B) and/or 690.54
		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 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)(2)(3)(c)]
		Equipment containing overcurrent devices in circuits supplying power to a busbar or conductor supplied from multiple sources shall be marked to indicate the presence of all sources.	Incidental	NEC Articles 110.21(B), 690.59 and 705.12(B)(3-4)
		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

		Requirement	Defect Category	Code Reference
Subpanel (continued)	OCPD	Subpanel Overcurrent protection is sufficient.	Critical	NEC Article 240.4 and 690.9
		PV Backfed breaker is properly sized at, or above 125% of inverter output current.	Major	NEC Article 240.4 and 690.9
		PV Backfed breaker rating size is properly sized to protect circuit conductors.	Critical	NEC Articles 310.15 and/or 690.9(B)
		Back-fed plug in devices shall be secured in place by additional fastener.	Minor	NEC Article 408.36(D)
		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 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
	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 and 110.13(A)
		Subpanel is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirement	Defect Category	Code Reference
Supply Side Connection	Conductors	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)
		PV system AC conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Service entrance conductors are properly spliced.	Major	NEC Articles 110.3(B) and 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		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.	Major	NEC Article 250.24(C)
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
	Conduit	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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
		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)
	Electrical	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
		AC Disconnect is in a readily accessible location.	Minor	NEC Article 690.13(A)
		Service disconnect is properly rated for the application.	Major	NEC Article 230.79(D)
		The PV disconnect means shall disconnect all ungrounded conductors.	Major	NEC Article 690.13
		Service Disconnects are properly grouped.	Minor	NEC Article 230.72

		Requirement	Defect Category	Code Reference
Supply Side Connection (continued)	Grounding	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
		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, 250.122, 250.166 and 690.47
		Disconnect enclosure is properly grounded using a listed grounding method.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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(G)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)
	Labeling	All interactive system points of interconnection with other sources shall be marked at an accessible location at the disconnecting means as the power source and with the rated AC output current and the nominal operating AC voltage.	Incidental	NEC Articles 110.21(B) and/or 690.54
		A directory is required at each DC PV system disconnecting means, AC disconnecting means for mini- and micro-inverters, and service disconnecting means showing the location of all DC and AC PV system disconnecting means in the building/structure.	Incidental	NEC Article 110.21(B), 690.56(B) and 705.10
		The manufacturers name, trademark or other descriptive markings must be visible on all electrical equipment and, where required by thea 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

		Requirement	Defect Category	Code Reference
Supply Side Connection (continued)	OCPD	The AC OCPD is properly sized for the expected output current of the PV system.	Major	NEC Article 690.9
		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)
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Articles 240.22 and 690.13
		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
		Fuses are present and installed in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Equipment intended to interrupt current at fault levels shall have an interrupting rating sufficient for the current that is available at the line terminals of the equipment.	Major	NEC Articles 110.9, 110.10 and 230.82
		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)
	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 and 110.13(A)
		Equipment is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirement	Defect Category	Code Reference
Xformless Inverter	Conductors	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 appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Inverter DC ungrounded conductors are correctly identified.	Incidental	NEC Article 200.7
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Single conductor(s) connected correctly to the terminal or lug in accordance with its listing.	Minor	NEC Article 110.3(B) and 110.12
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		All conductors of the same circuit shall be contained within the same raceway.	Minor	NEC Article 300.3(B)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
		Conductors are properly sized for rated terminals.	Minor	NEC Article 110.3(B)
	Conduit	Circuit 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)
		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 penetrations internally sealed to prevent condensation between conditioned and unconditioned environment.	Incidental	NEC Article 300.7(A)
		Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		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 conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
		Conduit does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	Electrical	The Inverter enclosure employs an approved moisture accumulation prevention method.	Major	NEC Articles 314.15 and 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
		Inverter is installed properly according to the manufacturer installation instructions.	Minor	NEC Article 110.3(B)
		PV array maximum DC string voltage complies with inverter maximum input voltage rating.	Critical	NEC Articles 110.3(B) and 690.7
		Unused openings of electrical equipment shall be properly sealed.	Minor	NEC Articles 110.12(A) or 408.7
		Input string voltage is suitable for inverter rated minimum operating voltage.	Minor	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)
		Requirement	Defect Category	Code Reference
--------------------------------------	------------	--	--------------------	--
Xformless Inverter (continued)	Grounding	Where not routed with circuit conductors, equipment grounding conductors smaller than #6 AWG shall be protected from physical damage.	Minor	NEC Articles 690.46 and 250.120(C)
		Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Inverter array frame grounding conductor is installed in accordance with manufacturers instruction.	Major	NEC Article 110.3(B)
		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, 250.122, 250.166 and 690.47
		Inverter metal enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Articles 250.122 and 690.45
	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)
		A permanent label for the direct-current PV power source shall be provided by the installer at the PV disconnecting means.	Incidental	NEC Articles 110.21(B) and/or 690.53
		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
		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 690.56(C)(3)
		Solidly grounded bipolar PV systems shall be clearly marked with a permanent, legible warning notice indicating that the disconnection of the grounded conductor(s) may result in overvoltage on the equipment.	Incidental	NEC Articles 110.21(B) and 690.31(I)
	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 and 110.13(A)
		Equipment is installed with the appropriate clearances.	Minor	NEC Articles 110.26 and 110.27(A)

		Requirement	Defect Category	Code Reference
Xformless Microinverter	Conductors	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)
		Inverter PV system AC output conductors are appropriately sized for expected current load.	Critical	NEC Article 310.15 and/ or 690.8(B)
		Microinverter output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		All array conductors are properly connected.	Critical	NEC Articles 110.3(B) and 110.12
		Circuit conductors are properly supported and protected.	Minor	NEC Article 334.30
		Wire cannot be bent at a tighter radius than 5x the diameter of the conductor.	Minor	NEC Article 338.24
		Outdoor wire ties/clips are UV and outdoor rated.	Minor	NEC Article 110.3(B)
		Conductors entering boxes, conduit bodies, or fittings shall be protected from abrasion.	Minor	NEC Article 314.17
		In exposed work, conductors are protected from physical damage.	Major	NEC Article 334.15(B)
	Conduit	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)
		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 does not meet the conditions to be used as conductor support.	Incidental	NEC Article 300.11(C)
	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
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Minor	NEC Article 110.3(B)

		Requirement	Defect Category	Code Reference
Xformerless Microinverter (continued)	Grounding	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
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Major	NEC Articles 110.3(B) and 690.47
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Microinverter grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Listed means used to ground Microinverter chassis.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	Structural	Microinverter is mounted/installed in accordance with its listing and manufacturer instructions.	Major	NEC Articles 110.3(B), 110.12 and 110.13(A)



PHOTO INSPECTION REFERENCE – 2017 NEC NY-Sun



The photo inspection resource is used by NY-Sun's third-party QA Contractor to evaluate the quality of the solar electric installation. NY-Sun approved builders are encouraged to reference this resource throughout the installation process for each project to ensure compliance with the NY-Sun Program rules and requirements.

		Requirement	Defect Category	Code Reference
Overall Observation	Program	PV Modules are UL Listed per NY Sun program requirements.	Minor	NY-Sun Program
		Existing Service Panel is not a split bus (FPE Stab-Lok, Push-O-Matic etc.,).	Critical	NY-Sun Program
		Array Module Manufacturer must match application.	Incidental	NY-Sun Program
		Array Module Number matches application.	Incidental	NY-Sun Program
		Array Module Quantity matches application.	Incidental	NY-Sun Program
		Installed Battery manufacturer shall match Program records.	Incidental	NY-Sun Program
		Installed Battery model number shall match Program records.	Incidental	NY-Sun Program
		Installed Battery quantity shall match Program records.	Incidental	NY-Sun Program
		Installed Inverter manufacturer shall match Program records.	Incidental	NY-Sun Program
		Installed Inverter quantity shall match Program records.	Incidental	NY-Sun Program
		Installed Inverter model number shall match Program records.	Incidental	NY-Sun Program
		As per Program requirements, any roof damage must be repaired prior to installation.	Minor	NY-Sun Program
		Site address must match site address submitted.	Critical	NY-Sun Program
		Current Transformers are installed and meet Program requirements.	Major	NY-Sun Program

		Requirement	Defect Category	Code Reference
AC Combiner	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surfaces and the ground terminal inside combiner box.	Major	NEC Article 250.24(A)(5)
		The neutral conductor is connected at its own dedicated terminal isolated from metal enclosure.	Minor	NEC Article 408.41
	Electrical	AC Combiner is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
	Grounding	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
		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, 250.122, 250.166 and 690.47
		AC Combiner is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	OCPD	AC Combiner Overcurrent protection is sufficient.	Critical	NEC Article 240.4 and 690.9
		PV Backfed breaker is properly sized at, or above 125% of inverter output current	Major	NEC Article 240.4 and 690.9
		The AC OCPD is properly sized for the expected output current of the PV system.	Major	NEC Article 690.9
		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 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

		Requirement	Defect Category	Code Reference
AC Disconnect	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductors are isolated from enclosure and ground terminal.	Major	NEC Article 250.24(A)(5)
		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.	Major	NEC Article 250.24(C)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Conduit	The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	AC Disconnect enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		AC Disconnect is properly rated for expected current load.	Critical	NEC Articles 230.79, 690.13(E) and 110.3(B)
		Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
		AC Disconnect Switch must break the ungrounded conductor and keeps the grounded conductor properly grounded and unenergized.	Major	NEC Article 690.13
		Service disconnect is properly rated for the application.	Major	NEC Article 230.79(D)
	Grounding	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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Grounding electrode conductor must be continuous.	Major	NEC Articles 250.64(C) and 690.47
		Grounding electrode conductor is properly bonded to the main premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		AC Disconnect is grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Articles 250.122 and 690.45

		Requirement	Defect Category	Code Reference
AC Disconnect (continued)	OCPD	Conductors shall be protected against overcurrent in accordance with their ampacity.	Critical	NEC Article 240.4 and 690.9
		The AC OCPD is properly sized for the expected output current of the PV system.	Major	NEC Article 690.9
		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)
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Articles 240.22 and 690.13
		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
		The OCPD is properly sized for the rating of the equipment.	Major	NEC Article 240.3
		Fuses are present and installed in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Equipment intended to interrupt current at fault levels shall have an interrupting rating sufficient for the current that is available at the line terminals of the equipment.	Major	NEC Articles 110.9, 110.10 and 230.82
		The service overcurrent device shall be an integral part of the service disconnecting means or shall be located immediately adjacent.	Critical	NEC Articles 230.91 and/ or 110.3(B)
AC Module	Conductors	Microinverter output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
	Grounding	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
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Major	NEC Articles 110.3(B) and 690.47
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Microinverter grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Listed means used to ground Microinverter chassis.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43

		Requirement	Defect Category	Code Reference
DC Combiner	Conductors	DC Combiner splice components are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		DC Combiner splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Combiner box is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Enclosure rating is sufficient for expected current load in accordance with its listing.	Critical	NEC Article 110.3(B)
		DC Combiner is properly identified and listed.	Major	NEC Articles 110.3(B)
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		DC Combiner box is grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Articles 250.122 and 690.45
	OCPD	Combiner string fuse is properly sized.	Major	NEC Article 690.9
		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)
		Inverter string fuses are 600 or 1000 VDC rated as required.	Critical	NEC Articles 110.3(B) and 690.9(B)
		DC Combiner string fuse holder is DC rated.	Critical	NEC Article 110.3(B)
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Articles 240.22 and 690.13
		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

		Requirement	Defect Category	Code Reference
DC Disconnect	Conductors	Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	DC Disconnect enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
		Disconnect is listed for DC use.	Critical	NEC Article 110.3(B) and 690.15
		Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
		The PV disconnect means shall disconnect all ungrounded conductors.	Major	NEC Article 690.13
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		DC Disconnect is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Articles 250.122 and 690.45
	OCPD	Disconnect is rated for nominal voltage and current.	Critical	NEC Article 110.3(B) and 690.15
		Disconnect fuses are DC rated and properly sized for system voltage.	Critical	NEC Articles 110.3(B) and 690.9(B)

		Requirement	Defect Category	Code Reference
Energy Storage	Conductors	Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Battery DC conductors are protected from accidental contact.	Major	NEC Articles 110.27 and 706.10(B)
		Correct flexible cables are used for battery interconnections.	Major	NEC Article 706.32
		Battery DC conductors are properly sized for expected current load.	Major	NEC Article 706.32
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
		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)
		Charge Controller shall be compatible with the Energy Storage manufacturer's electrical ratings and charging specifications.	Major	NEC article 110.3(B) and IFC 2018, 1206.2.4
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Battery enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	OCPD	A listed, current-limiting, overcurrent device shall be installed in each circuit adjacent to the batteries where the available short circuit from a battery or battery bank exceeds the interrupting or withstand rating of other equipment in that circuit.	Major	NEC Article 690.15

		Requirement	Defect Category	Code Reference
Feeder Tap Connection	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Conductors are properly spliced.	Major	NEC Articles 110.3(B) and 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		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.	Major	NEC Article 250.24(C)
	Conduit	The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
	Grounding	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
		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 premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is present and sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)

		Requirement	Defect Category	Code Reference
Ground Mounted	Conductors	Splice components must be rated for the environment they are installed.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Splices and/ or connectors must be properly secured.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Means to disconnect equipment such as inverters, batteries and charge controllers from all ungrounded conductors of all sources is required.	Major	NEC Article 690.15
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Grounding hardware is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Racking system and support structure are properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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
		Equipment grounding conductor is properly sized.	Major	NEC Articles 250.122 and 690.45
		Module grounding hardware must be listed for the purpose.	Major	NEC Articles 110.3(B) and 690.43
	Structural	PV Module shall be installed and used in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Ground/pole mount support structure, anchor system, and or footings are installed and used according to manufacturer instructions.	Major	NEC Article 110.3(B)

		Requirement	Defect Category	Code Reference
Junction Box	Conductors	Junction Box splice components are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surfaces and the ground terminal inside Junction Box.	Minor	NEC Article 250.24(A)(5)
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Junction Box is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Junction Box is properly identified and listed.	Major	NEC Articles 110.3(B)
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		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, 250.122, 250.166 and 690.47
		Listed means used to ground enclosure.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Articles 250.122 and 690.45
	Structural	Roof penetrations are properly sealed and flashed.	Major	NYS Uniform Building Code and NEC Article 110.3(B)

		Requirement	Defect Category	Code Reference
Load Side	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
Connection		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		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.	Major	NEC Article 250.24(C)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Grounding	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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		GEC is continuous/irreversibly spliced.	Major	NEC Articles 250.64(C) and 690.47
		Grounding electrode conductor is properly bonded to the main premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Enclosure is properly grounded using a listed grounding method.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)
	OCPD	Main panel overcurrent protection is sufficient.	Critical	NEC Article 240.4 and 690.9
		PV Backfed breaker is properly sized at, or above 125% of inverter output current.	Major	NEC Article 240.4 and 690.9
		PV Backfed breaker rating size is properly sized to protect circuit conductors.	Critical	NEC Articles 310.15 and/or 690.9(B)
		Back-fed plug in devices shall be secured in place by additional fastener.	Minor	NEC Article 408.36(D)
		Load Side connection of a utility-interactive output circuit must be properly located at the point of connection.	Major	NEC Article 705.12(B)(2)(3)(b)
		Inverter-interactive output circuit load side connection overcurrent protective device must be properly sized.	Critical	NEC Article 705.12(B)(2)(3)(b)
		Fuses are present and installed in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)

		Requirement	Defect Category	Code Reference
Microinverter	Conductors	Microinverter output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
	Grounding	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
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Major	NEC Articles 110.3(B) and 690.47
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Microinverter grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Listed means used to ground Microinverter chassis.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
			1	
Optimizer	Conductors	Optimizer output conductor wire splice connectors are rated for environment.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Optimizer is properly bonded to the EGC.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Listed means used to ground Optimizer chassis per manufacturer instructions.	Major	NEC Articles 110.3(B), 250.4 and 690.4

		Requirement	Defect Category	Code Reference
Production	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
Meter		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		Grounded conductor(s) are insulated from metal enclosure surface and ground terminal inside meter enclosure.	Minor	NEC Article 250.24(A)(5)
	Conduit	The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Meter enclosure is suitable for environment.	Major	NEC Articles 314.15 and 110.3(B)
		Meter is rated for expected current load.	Critical	NEC Article 110.3(B)
	Grounding	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
		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, 250.122, 250.166 and 690.47
		Grounding means for enclosure installed.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
Danid	Conductors	Lingrounded conductor properly identified	Incidental	NEC Article 2007
Shutdown	Conduit	Indeer DC source circuite are contained in metallic	Major	NEC Article 200.7
Device	Conduit	conduit or raceway.	Major	NEC ALICIE 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Articles 250.122 and 690.45

		Requirement	Defect Category	Code Reference
Roof Array	Conductors	Splice components must be rated for the environment they are installed.	Major	NEC Articles 110.3(B), 110.11, and 110.14
		Splices and/ or connectors must be properly secured.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor properly identified.	Incidental	NEC Article 200.7
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		Grounding hardware is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Racking system and support structure are properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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
	Structural	Module is properly secured to the racking system per manufacturer instructions.	Major	NEC Article 110.3(B)
		Racking system shall be installed and used in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Roof penetrations are properly sealed and flashed.	Major	IBC Section 1503.2, IPC 903, and NEC Article 110.3(B)
		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
Xformerless	Conductors	Microinverter output conductor wire splice	Maior	NEC Articles 110 3/B) 11011 and
Microinverter		connectors are rated for environment.	iviajoi	110.14
		Junction Box splices and connections are secure and of high integrity.	Major	NEC Article 110.14
		Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
	Grounding	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
		Microinverter grounding electrode conductor (WEEB or Rack) is installed in accordance with manufacturers installation instructions.	Major	NEC Articles 110.3(B) and 690.47
		Grounded conductor(s) terminal lug is properly installed.	Major	NEC Articles 110.3(B) and 250.4
		Microinverter grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Listed means used to ground Microinverter chassis.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43

		Requirement	Defect Category	Code Reference
String Inverter	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
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 110.3(B)
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Array equipment grounding conductor is installed/ terminated in inverter according to manufacturer's instruction.	Major	NEC Article 110.3(B)
		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, 250.122, 250.166 and 690.47
		Inverter metal enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Articles 250.122 and 690.45
	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)

		Requirement	Defect Category	Code Reference
Subpanel	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
		Grounded conductor(s) are insulated from metal enclosure surface and ground terminal inside meter enclosure.	Minor	NEC Article 250.24(A)(5)
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Conduit	The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Boxes, conduit bodies and fittings installed in wet locations shall be listed for use in wet locations.	Major	NEC Articles 314.15 and 110.3(B)
		Equipment must be sufficiently rated for expected voltage and/or current.	Critical	NEC Article 110.3(B)
	Grounding	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
		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 bonded to the main premises grounding electrode system.	Major	NEC Articles 250.64 and 690.47
		Grounding electrode conductor is sufficiently sized.	Major	NEC Articles 250.66, 250.122, 250.166 and 690.47
		Subpanel is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
	OCPD	Subpanel Overcurrent protection is sufficient.	Critical	NEC Article 240.4 and 690.9
		PV Backfed breaker is properly sized at, or above 125% of inverter output current.	Major	NEC Article 240.4 and 690.9
		PV Backfed breaker rating size is properly sized to protect circuit conductors.	Critical	NEC Articles 310.15 and/or 690.9(B)
		Back-fed plug in devices shall be secured in place by additional fastener.	Minor	NEC Article 408.36(D)
		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

		Requirement	Defect Category	Code Reference
Supply Side	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
Connection		Service entrance conductors are properly spliced.	Major	NEC Articles 110.3(B) and 110.14
		Ungrounded conductor(s) are properly identified.	Incidental	NEC Article 200.7
		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.	Major	NEC Article 250.24(C)
	Conduit	The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	Service disconnect is properly rated for the application.	Major	NEC Article 230.79(D)
		The PV disconnect means shall disconnect all ungrounded conductors.	Major	NEC Article 690.13
	Grounding	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
		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, 250.122, 250.166 and 690.47
		Disconnect enclosure is properly grounded using a listed grounding method.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		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)
		A metal underground water pipe shall be supplemented by an additional electrode.	Major	NEC Article 250.53(D)(2)
		Water pipe electrode supplemented by other electrode.	Major	NEC Article 250.53(D)(2)
	OCPD	The AC OCPD is properly sized for the expected output current of the PV system.	Major	NEC Article 690.9
		No overcurrent device shall be connected in series with any conductor that is intentionally grounded.	Major	NEC Articles 240.22 and 690.13
		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
		Fuses are present and installed in accordance with any instruction included in the listing or labeling.	Major	NEC Article 110.3(B)
		Equipment intended to interrupt current at fault levels shall have an interrupting rating sufficient for the current that is available at the line terminals of the equipment.	Major	NEC Articles 110.9, 110.10 and 230.82
		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)

		Requirement	Defect Category	Code Reference
Xformerless	Conductors	Grounded (neutral) conductor is properly identified.	Incidental	NEC Article 200.6(A)&(B)
Inverter		Inverter DC ungrounded conductors are correctly identified.	Incidental	NEC Article 200.7
		The neutral conductor is connected at its own dedicated terminal insulated from metal enclosure.	Minor	NEC Article 408.41
	Conduit	Indoor DC source circuits are contained in metallic conduit or raceway.	Major	NEC Article 690.31(G)
		The conduit is grounded (when required).	Major	NEC Articles 250.4(A)(3) and 690.43
	Electrical	The Inverter enclosure employs an approved moisture accumulation prevention method.	Major	NEC Articles 314.15 and 110.3(B)
	Grounding	Equipment grounding conductor is identified as bare, green, or green with continuous yellow stripe(s).	Incidental	NEC Article 250.119
		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
		Inverter array frame grounding conductor is installed in accordance with manufacturers instruction.	Major	NEC Article 110.3(B)
		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, 250.122, 250.166 and 690.47
		Inverter metal enclosure is properly grounded.	Major	NEC Articles 250.4, 250.8, 250.12 and 690.43
		Equipment grounding conductor is properly sized.	Major	NEC Articles 250.122 and 690.45
	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)

