FIELD INSPECTION REFERENCE

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.

		Inspection Items
AC Combiner	Conductors	• Conductor insulation rated for application • EGC is properly identified • Grounded conductor properly identified • Single conductor(s) connected correctly to the terminal in accordance with its listing • The enclosure fittings supporting and protecting the conductors are present • Ungrounded conductor properly identified • Conductors have sufficient ampacity
	Conduit	• Conduit fittings properly used • Conduit not used as conductor support • Conduit properly supported • Expansion fittings present • Ferrous conduit/enclosures properly bonded to GEC • Frost sleeve provided • Indoor/outdoor conduit penetrations internally sealed
	Electrical	• Unused panel openings properly sealed • Galvanic metals are isolated
	Grounding	• Enclosure is grounded • GEC is continuous • GEC is sufficiently sized • Grounded conductors are isolated from enclosure • Grounding equipment is properly installed
	Labeling	• AC Combiner circuit directory is complete • Inverter output location label present • Multiple sources label is present • PV circuit breakers identified • Switch/breaker is labeled as a PV disconnect • AC characteristics label is present
	OCPD	• Backfeed breaker is rated at, or above, 125% of inverter output current • Backfeed breaker less than or equal to conductor ampacity • Main breaker fastened in place • The circuit breaker type is listed for use in this enclosure
	Structural	• Enclosure rated for environment • Proper clearances observed • Enclosure properly secured

		Inspection Items
AC Disconnect	Conductors	• Conductor insulation rated for application • Conductors have sufficient ampacity • Grounded conductor properly identified • Single conductor(s) connected correctly to the terminal in accordance with its listing. • The conductors of the same circuit are routed together • The enclosure fittings supporting and protecting the conductors are present • Ungrounded conductors properly identified
	Conduit	• Conduit not used as conductor support • Conduit properly supported • Ferrous conduit/enclosures properly bonded to GEC • Frost sleeve provided • Indoor/outdoor conduit penetrations internally sealed • Thermal expansion fittings present • Conduit fittings properly used
	Electrical	• Disconnect only breaks ungrounded conductors • Disconnect rated for correct voltage/current • Disconnect readily accessible • Galvanic metals are isolated • Grounded conductor remains continuous • Sufficient disconnects to isolate equipment • Terminals are properly wired
	Grounding	• EGC is properly identified • EGC properly sized • EGC protected • GEC continuous • GEC sufficiently sized • Listed grounding means used • Neutral and ground isolated • AC disconnect is grounded
	Labeling	• AC Disconnect circuit directory is complete • AC output info label present/correct • Labeled as a PV system disconnect • The manufacturer's labels are not obscured.
	OCPD	• The OCPD is adequately sized for the expected output current of the PV System • Fused AC Disconnect is properly installed,Fuses are present
	Structural	• Clearances maintained • Enclosure moisture accumlation prevention method employed. (Weep Hole) • Suitable for location installed

		Inspection Items
Array - Ground Mounted	Conductors	• Conductors exceed minimum bending radius • All array conductors are properly connected • Conductors are protected from physical damage • Conductors properly supported • DC conductors rated for environment • Grounded conductor color codes followed • Sufficient ampacity in PVSC • Ungrounded conductor color codes followed • Wire ties rated for outdoor use/UV exposure
	Conduit	• Conduit properly supported • Conduit/connectors properly installed • Expansion fittings present • Frost sleeve provided • Indoor/outdoor conduit penetrations internally sealed • PVSC conductors not readily accessible • PVSC indoors in metal conduit • The conduit is grounded • Conduit not used as conductor support
	Electrical	• Components listed for voltage • Galvanic metals isolated • Outdoor components used
	Grounding	• EGC protected from damage • Grounding hardware properly installed • Module frames grounded • Module grounding hardware must be listed for the purpose • Racking is grounded • Racking/support properly bonded • Single conductor terminated at the Ground lug(s) in accordance with its listing • Sufficient WEEB quantity used • EGC color code followed
	OCPD Program	• String fuses/OCPD present • Modules are in good working condition
		• Array Azimuth (degree) • Array Module Model Number • Array Module Quantity • Array Tilt (degree) • Accessible DC disconnect present • Modules new and undamaged • PV modules are UL certified per NY Sun program requirements • Array Module Manufacturer
	Structural	• Module secured to racking • Support/racking suitable

		Inspection Items
Array - Roof Mounted	Conductors	• Conductors are protected from physical damage • All array conductors are properly connected • Conductors exceed minimum bending radius • Conductors properly supported • DC conductors rated for environment • Grounded conductor color codes followed • Sufficient ampacity in PVSC • Ungrounded conductor color codes followed • Wire ties rated for outdoor use/UV exposure
	Conduit	• Conduit properly supported • Conduit/connectors properly installed • Expansion fittings present • Frost sleeve provided • Indoor/outdoor conduit penetrations internally sealed • PVSC indoors in metal conduit • The conduit is grounded • Conduit not used as conductor support
	Electrical	• Components listed for voltage • Galvanic metals isolated • Outdoor components used
	Grounding	• EGC protected from damage • Grounding hardware properly installed • Metal roof is grounded • Module frames grounded • Module grounding hardware must be listed for the purpose • Racking is grounded • Racking/support properly bonded • Single conductor terminated at the Ground lug(s) in accordance with its listing • Sufficient WEEB quantity used • EGC color code followed
	OCPD	• String fuses/OCPD present
	Program	• Modules new and undamaged • Modules are in good working condition • PV modules are UL certified per NY Sun program requirements • Array Module Manufacturer • Array Azimuth (degree) • Array Module Model Number • Array Module Quantity • Array Tilt (degree)
	Structural	• Roof under array is in good condition • Flashing present/properly installed [NYSBC 1503, NYSRC M2301.2.7, and NEC 110.3(B)] • Module secured to racking • Support/racking suitable • Vent pipes not covered [NYSPC 904.1]

		Inspection Items
Array - Battery Backup	Conductors	• Conductors properly sized • Conductors protected from accidental contact • Correct terminals used • Conductors properly identified • Correct cable type used
	Conduit	• Conduit fittings properly used • Conduit not used as conductor support • Conduit properly supported
	Electrical	• Charge controller properly configured • Disconnect present • Galvanic metals are isolated • Voltage <= 50Vdc • Batteries ventilated • Clearances maintained • Proper racking material/type used
	Grounding	• EGC properly identified • Grounded conductor properly identified
	Labeling	• Battery bank labeled with voltage/current/polarity
	OCPD	• Adjacent circuits protected from overcurrent
	Program	• Battery Model • Battery Quantity • Battery Manufacturer
	Structural	• Batteries mounted properly • Equipment mounted properly

		Inspection Items
Array - DC Combiner	Conductors	• Grounded conductor properly identified • Output conductors have sufficient ampacity • String conductors have sufficient ampacity • Ungrounded conductor not properly marked • Conductors spliced securely • Conductor insulation properly rated • Splices suitable for environment
	Conduit	• Conduit fittings properly used • Conduit not used as conductor support • Frost sleeve provided • Indoor/outdoor conduit penetrations internally sealed • Output circuits in metal if run indoors • Thermal expansion fittings present
	Electrical	• Listed for current present • Galvanic metals are isolated • Listed for voltage present (600V/1000V) • Combiner is NRTL listed
	Grounding	• Combiner box is grounded • EGC properly identified • EGC protected • Single conductor(s) connected correctly to the ground lug/ground terminal position in accordance with its listing
	Labeling	• DC characteristics label present • Energized DC ungrounded conductor warning label present • Combiner disconnect is labeled
	OCPD	• Fuse holder is DC rated • Fuse is DC rated • Fuse rating > 1.56 x Isc • Grounded conductors unfused • Ungrounded conductors are protected by an OCPD. • Ungrounded conductors fused
	Structural	• Clearances maintained • Properly secured/mounted • The DC OCPD is not oversized for the expected circuit current • Approved Enclosure moisture accumlation prevention method employed. (Weep Hole) • Suitable for location installed

		Inspection Items
Array - DC Disconnect	Conductors	• Conductor insulation rated for application • Conductors have sufficient ampacity • Conduit fittings properly used • Grounded conductor properly identified • Ungrounded conductor properly identified
	Conduit	• Conduit properly supported • DC conductors in metal when indoors • Frost sleeve provided • Indoor/outdoor conduit penetrations internally sealed • Thermal expansion fittings present • Conduit not used as conductor support
	Electrical	• Breaks only ungrounded conductor • Disconnect breaks all ungrounded conductors • Disconnects sufficient to isolate all equipment • Galvanic metals are isolated • Listed for DC • Readily accessible
	Grounding	• EGC protected • Enclosure is grounded • Grounding equipment is properly installed • EGC properly identified • EGC properly sized
	Labeling	• Energized DC ungrounded conductor warning label present • Labeled as disconnect • Labeled with DC characteristics • Shock hazard warning label present
	OCPD	• Fuses rated for DC and correct voltage • Enclosure rated for voltage/current
	Structural	• Clearances maintained • Suitable for location installed • Disconnect properly secured

		Inspection Items
Array - Feeder Tap Connection	Conductors	• Grounded conductors properly identified • Splices properly made • Conductor insulation rated for application • Feeder conductors are properly sized and protected
	Conduit	• Conduit fittings properly used • Conduit not used as conductor support • Conduit properly supported • Frost sleeve provided • Indoor/outdoor conduit penetrations internally sealed • Thermal expansion fittings present
	Electrical	• Galvanic metals are isolated • Grounded conductor remains continuous • Terminals are properly wired • Disconnect rated for correct voltage/current • Disconnect readily accessible
	Grounding	• Grounding equipment is properly installed • EGC properly identified • EGC protected • Enclosure is grounded • Ferrous conduit/enclosures properly bonded to GEC • GEC bonded to existing ground system • GEC continuous • GEC present and sufficiently sized • Neutral and ground isolated • Water pipe electrode supplemented by other electrode
	Labeling	• Labeled as a PV system disconnect • AC output info label present/correct
	OCPD	• OCPD protects inverter output circuit • OCPD sized to prevent nuisance tripping
	Structural	• Properly secured/mounted • Suitable for location installed • Clearances maintained/live parts secured

		Inspection Items
Inverter - AC Module	Conductors	• Conductors have sufficient ampacity • Conductor insulation rated for application • Splices suitable for environment • Grounded conductor properly identified
	Conduit	• Conduit not used as conductor support • Conduit fittings properly used • Conduit properly supported
	Electrical	• Inverter not properly installed • Galvanic metals are isolated
	Grounding	• AC Module properly grounded • EGC properly identified • EGC protected • Grounding equipment is properly installed
Inverter - Microinverter	Conductors	• Power receptacle is GFCI-WR rated • Conductor insulation rated for application • Splices suitable for environment • Grounded conductor properly identified • Conductors have sufficient ampacity
	Conduit	• Conduit not used as conductor support • Conduit properly supported • Conduit fittings properly used
	Electrical	• Galvanic metals are isolated
	Grounding	• EGC properly identified • EGC protected • Ferrous conduit/enclosures properly bonded to GEC • GEC properly installed • GEC sufficiently sized • Grounding equipment is properly installed • Microinverter properly grounded
	Program	• Inverter Model Number • Inverter Quantity • Inverter Manufacturer
	Structural	• Properly secured/mounted

		Inspection Items
Inverter - String Inverter	Conductors	• DC conductor insulation rated for application • AC conductor insulation rated for application • DC conductors have sufficient ampacity • AC conductors have sufficient ampacity • DC conductors in metal when indoors • Grounded AC conductors properly identified • Grounded DC conductor properly identified
	Conduit	• Conduit fittings properly used • Conduit not used as conductor support • DC Conduit properly supported • Frost sleeve provided • Indoor/outdoor conduit penetrations internally sealed • Thermal expansion fittings present • AC Conduit properly supported
	Electrical	• Galvanic metals are isolated • Minimum string voltage sufficient to start inverter • Inverter AC Disconnect is present and grouped with the Inverter • Max string voltage below inverter max
	Grounding	• EGC properly identified • EGC protected • Ferrous conduit/enclosures properly bonded to GEC • GEC sufficiently sized • Grounding equipment is properly installed • Inverter properly grounded • Array EGC properly terminated
	Labeling	• DC characteristics label present • Disconnect labeled • GFDI warning label present
	OCPD	• String fuses sized for module ratings • Fuses properly rated
	Structural	• Clearances maintained • Inverter properly mounted/secured

		Inspection Items
Inverter - Xformerless Inverter	Conductors	• DC conductor insulation rated for application • AC conductor insulation rated for application • AC ungrounded conductors properly identified • AC conductors have sufficient ampacity • DC conductors have sufficient ampacity • DC ungrounded conductors properly identified • GFCI-WR rated receptacle is installed properly • The enclosure fittings supporting and protecting the conductors are present
	Conduit	• Conduit not used as conductor support • DC conductors in metal when indoors • DC conduit fittings used properly • DC Conduit properly supported • Frost sleeve provided • Indoor/outdoor conduit penetrations internally sealed • The conduit is grounded. • Thermal expansion fittings present • AC conduit fittings used properly
	Electrical	• Galvanic metals are isolated • Inverter AC Disconnect is present and grouped with the Inverter • Inverter not properly installed • Max string voltage below inverter max
	Grounding	• EGC properly identified • EGC properly sized • EGC protected • Enclosure is grounded • Ferrous conduit/enclosures properly bonded to GEC • Grounding equipment is properly installed • Array EGC properly terminated
	Labeling	• A normally grounded DC conductor warning label is applied to a grounded inverter • DC characteristics label present on disconnect • Labeled as a PV system disconnect • Ungrounded DC conductor warning label applied to an ungrounded Inverter
	OCPD	• Fuses properly rated • Fuses obey module string fuse rating
	Structural	• Inverter mounted/secured properly • A GFCI-WR rated receptacle is installed in a wet/damp location • Clearances maintained • The Inverter enclosure employs an approved moisture accumulation prevention method

		Inspection Items
Inverter - Xformerless Microinverter	Conductors	• Splices suitable for environment • Conductor insulation rated for application • Grounded conductor properly identified • Conductors have sufficient ampacity
	Conduit	• Conduit properly supported • Conduit not used as conductor support
	Electrical	• Galvanic metals are isolated • Inverter not properly installed
	Grounding	• EGC protected • Grounding equipment is properly installed • Xformerless Microinverter properly grounded • EGC properly identified
	Structural	• Properly secured/mounted

		Inspection Items
Junction Box	Conductors	• Conductors have sufficient ampacity • Power receptacle is GFCI-WR rated • Splices suitable for environment • Conductor insulation rated for application • Grounded conductor properly identified • Splices secure • The enclosure fittings supporting and protecting the conductors are present. • The length of the free conductors within the enclosure meet or exceed 6” requirement • Ungrounded conductor properly identified
	Conduit	• Conduit not used as conductor support • Conduit properly supported • DC conductors in metal when indoors • Frost sleeve provided • Indoor/outdoor conduit penetrations internally sealed • Thermal expansion fittings present • Conduit fittings properly used
	Electrical	• Galvanic metals are isolated • NRTL Listed
	Grounding	• Enclosure is grounded • Ferrous conduit/enclosures properly bonded to GEC • Grounded conductors isolated from enclosure • Grounding equipment is properly installed • EGC properly identified
	Labeling	• Energized DC ungrounded conductor warning label present
	OCPD	• The OCPD is properly sized for the rating of the receptacle
	Structural	• Clearances maintained • Suitable for location installed • Flashing present/properly installed [NYSBC 1503, NYSRC M2301.2.7, and NEC 110.3(B)] • Junction box is accessible • Properly secured/mounted

		Inspection Items
Load Side Connection	Conductors	• Conductors have sufficient ampacity • Grounded conductors properly identified • The neutral conductor is connected at its own dedicated terminal • Conductor insulation rated for application
	Conduit	• Conduit fittings properly used • Conduit not used as conductor support • Conduit properly supported • Frost sleeve provided • Indoor/outdoor conduit penetrations internally sealed • Thermal expansion fittings present
	Electrical	• Split bus panel not used • Galvanic metals are isolated
	Grounding	• EGC properly identified • EGC protected • Enclosure is grounded • Ferrous conduit/enclosures properly bonded to GEC • GEC bonded to existing ground system • GEC continuous • GEC present and sufficiently sized • Grounding equipment is properly installed • Water pipe electrode supplemented by other electrode
	Labeling	• Multiple sources label is present • Power source directory present (NEC 705.10) • PV breakers properly identified • BFB labeled with AC characteristics
	OCPD	• BFB properly located in panel • The PV breaker is listed for use in the enclosure. • OCPD exceedes the 120% rule • BFB sized to prevent nuisance tripping • BFB sized to protect circuits • OCPD protects circuits
	Structural	• Properly secured/mounted • Suitable for location installed • Clearances maintained/live parts secured

		Inspection Items
Optimizer	Conductors	• Conductors have sufficient ampacity • Conductor insulation rated for application • Splices rated for environment • Grounded conductor properly identified
	Conduit	• Conduit properly supported • Conduit fittings properly used
	Electrical	• Galvanic metals are isolated
	Grounding	• EGC properly identified • Optimizer grounded • Optimizer is properly grounded
	Structural	• Optimizer mounted/secured properly

		Inspection Items
Overall Observations	Program	• System Capacity (kWdc) < Program Records (affects incentive) • System Capacity (kWdc) >= Program Records • TSRF <80% and affects incentive • TSRF >80% and agrees with installer estimate (no incentive impact) • Program compliant means is present for customer to verify system electricity generation • Existing Panelboard does not meet Program Compliance

		Inspection Items
Production Meter	Conductors	• Conductor insulation rated for application • Conductors have sufficient ampacity • Conductors properly sized • Grounded conductor properly identified • The enclosure fittings supporting and protecting the conductors are present
	Conduit	• Conduit not used as conductor support • Conduit properly supported • Frost sleeve provided • Indoor/outdoor conduit penetrations internally sealed • Thermal expansion fittings present • Conduit fittings properly used
	Electrical	• Galvanic metals are isolated • Meter not wired backwards • Meter rated for correct voltage • Meter rated for current load • Neutral and ground isolated
	Grounding	• EGC properly sized • EGC protected • Enclosure is grounded • Ferrous conduit/enclosures properly bonded to GEC • GEC continuous • GEC sufficiently sized • Grounding equipment is properly installed • EGC properly identified
	Structural	• Clearances maintained • Enclosure properly secured/mounted • Enclosure suitable for environment

		Inspection Items
Rapid Shutdown Device	Conductors	• Conductors have sufficient ampacity • Conduit fittings properly used • Grounded conductor properly identified • Splices secure • Splices suitable for environment • Ungrounded conductor properly identified • Conductor insulation rated for application
	Conduit	• Conduit not used as conductor support • Conduit properly supported • DC conductors in metal when indoors • DC conduit properly labeled • Indoor/outdoor conduit penetrations internally sealed • Thermal expansion fittings present
	Electrical	• Galvanic metals are isolated • Rapid shutdown device controls conductors of more than 5 feet inside a building and more than 10 feet outside a building • Rapid shutdown device decreases PV output conductors to less than 30 volts within 10 seconds of initiation • Enclosure or device rated for voltage/current
	Grounding	• EGC properly identified • EGC properly sized • Enclosure is grounded
	Labeling	• Rapid shutdown label present
	Structural	• Clearances maintained • Enclosure properly secured • Suitable for location installed

		Inspection Items
Subpanel	Conductors	• Conductors have sufficient ampacity • Grounded conductor properly identified • Conductor insulation rated for application
	Conduit	• Conduit fittings properly used • Conduit not used as conductor support • Conduit properly supported • Frost sleeve provided • Indoor/outdoor conduit penetrations internally sealed • Thermal expansion fittings present
	Electrical	• Galvanic metals are isolated
	Grounding	• EGC properly identified • Enclosure is grounded • Ferrous conduit/enclosures properly bonded to GEC • GEC bonded to existing ground system • GEC continuous • GEC sufficiently sized • Grounding equipment is properly installed • Neutral and ground isolated
	Labeling	• BFB labeled as a disconnect • Circuit breaker directory is complete • Inverter output location label present • Multiple sources label is present • PV appears on breaker directory • AC characteristics label is present
	OCPD	• BFB rating <= circuit ampacity • BFB rating >= 1.25 x inverter output current • Main breaker not secured • OCPD rating <= circuit ampacity
	Structural	• Enclosure mounted/secured properly • Enclosure suitable for environment • Clearances maintained

		Inspection Items
Supply Side Connection	Conductors	• Conductor insulation rated for application • Conductors have sufficient ampacity • EGC properly identified • Splices properly made • The enclosure fittings supporting and protecting the conductors are present • The neutral conductor is connected at its own dedicated terminal • The PV splice connector(s) conductor(s) are properly installed and not exposed in accordance with the connector(s) listing
	Conduit	• Conduit not used as conductor support • Conduit properly supported • Ferrous conduit/enclosures properly bonded to GEC • Frost sleeve provided • Indoor/outdoor conduit penetrations internally sealed • The service entrance FMC conduit does not exceed 6 feet • Conduit fittings properly used
	Electrical	• Disconnect not rated for use • Disconnect not wired backwards • Galvanic metals are isolated • Grounded conductor is unfused • Means to disconnect a power source from all sources are grouped and identified (NEC 690.15) • Readily accessible • Split bus panel not used
	Grounding	• EGC properly sized • EGC protected • GEC bonded to existing ground system • GEC sufficiently sized • Grounding equipment is properly installed • Neutral bonded to enclosure • The enclosure is grounded (NEC 690.43) • The ground rod is protected from physical damage or is below/flush with the ground • The required supplemental grounding electrode is present • A water meter/filter ground bonding jumper is present
	Labeling	• AC characteristics label is present • Labeled as a PV system disconnect • Power source directory present • The manufacturer's labels are not obscured
	OCPD	• OCPD missing • The backfed PV breaker main OCPD is secured to the busbar by a secondary method • The OCPD is adequately sized for the expected output current of the PV System • The PV Disconnect fuses are installed properly • AIC rating matches main breaker
	Structural	• Clearances maintained