PHOTOVOLTAIC PERMIT
APPLICATION INFORMATION
(CUT SHEETS FOR ALL PRODUCTS TO BE PROVIDED ALSO)
Worksheet for PV System Plan Check

Supplied Diagrams

Is a basic site diagram supplied with the permit package?
Location of major equipment identified on plan.

Is a one-line diagram supplied with the permit package?

Array configuration shown
Array wiring identified
Combiner/junction box identified
Conduit from Array to PV Power Source Disconnect Identified
Equipment grounding specified
Disconnect specified
Conduit from disconnect to inverter identified
Inverter specified
Conduit from inverter to disconnect to panel identified
System grounding specified
Point of connection attachment method identified

Inverter Information

Are cut sheets provided for Inverter?

Inverter model number

Is inverter listed for utility interactivity (see CEC list of Eligible Inverters)

Maximum continuous output power at 40°C

Input voltage range of inverter

PV Module Information

Are cut sheets provided for PV modules?

Are the modules listed? (see CEC list of Eligible PV Modules)

Open-circuit voltage (Voc) from listing label

Maximum permissible system voltage from listing label

Short-circuit current (Isc) from listing label

Maximum series fuse rating from listing label
Maximum power at Standard Test Conditions (Pmax on Label)
Voltage at Pmax from listing label
Current at Pmax from listing label

Array Information

Number of modules in series
Number of parallel source circuits
Total number of modules

Operating voltage
(number of modules in series x module voltage at Pmax)
Operating current
(number of parallel source circuits x module current at Pmax)
Maximum system voltage (690.7)
*assuming minimum expected temperature of 15°F - 42.8V x 1.13 x 10 = 484 Volts
*Short-circuit current (690.8)
*4.7 Amps x 1.25 x 2 = 11.75 Amps

Wiring and Overcurrent Protection

Wire type is 90°C wet rated

Conductor ampacities are sufficient
Maximum PV source circuit current
Minimum PV source circuit ampacity
Minimum PV output circuit ampacity
Minimum inverter output circuit ampacity

Source Circuit overcurrent protection is sufficient
If inverter is not listed for no backfeed current, does each source circuit have overcurrent protection in compliance with the listed maximum series fuse?
If inverter is listed for no backfeed current, overcurrent protection is not necessary if only two parallel strings are connected to the inverter.
Overcurrent protection on Inverter Output Circuit is sufficient

Point of connection meets provisions of NEC 690.64.
Point of connection panel busbar rating

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Roof Information (for rooftop systems)

Are the conductors from the PV Array run through the house?
If yes, what method will be used to address the protection issues?

Weight of array for rooftop systems
(pounds per square foot—include mounting hardware)
*module is 2.67 lbs/sq. ft. and hardware is less than 0.3 lbs/sq. ft.

Age of building (roof structure)
(If building is under 30 years old and array weight is less than
6 lb/sq.ft., then engineering calcs unnecessary for roof loading)

If roof structure is over 30 years old, describe structural elements:
Rafters:
  Size of rafters (e.g. 2"x6")
  Span of rafters (e.g. 14")
  Spacing of rafters (e.g. 24")

Identify roofing type (e.g. comp shingle, masonry tile, shake, etc...)

Is the detail of PV panel mounting attachment to the roof-framing
members provided?

Identify method of sealing roof penetrations
(e.g. flashing, sealed with urethane caulk, etc...)

Ground Mounting Structure (for ground-mounted structures)

Weight of array
(pounds per square foot—include mounting hardware)

Are the details of the array supports, framing members,
and foundation posts and footings provided

Is the information on mounting structure(s) construction provided?
(If the mounting structure is unfamiliar to the local jurisdiction and
is more than six feet above grade, it may require engineering calculations.)

Is the detail on module attachment method to mounting structure
provided?
Worksheet for PV System Field Inspection

One-line diagram comparison

Is a one-line diagram available at the site?

PV module model number matches plans and cut sheets

PV modules are properly grounded with lugs on each module or equivalent grounding method

PV array wiring is consistent with plans (# of modules)

Check that cable and conduit is properly supported

*Contractor fixed three places with insufficient support

Where plug connectors are used for module wiring, inspect a sample to make sure that connectors are fully engaged

Inverter model number matches plans and cut sheets

Structural Attachment of Array

Confirm that footings and support structure match the supplied detail.

Confirm that module attachment matches the supplied detail.

PV System Signs

Do signs have sufficient durability to withstand the environment?

Sign identifying Photovoltaic Power Source (at DC disconnect)

Operating current (provided in initial plan review)

Operating voltage (provided in initial plan review)

Maximum system voltage (690.7)

Short-circuit current (690.8)

Sign identifying AC point of connection (690.54)

Maximum operating current (provided in initial plan review)

Operating AC voltage (provided in initial plan review)

Sign identifying switch for alternative power system

Sign at the main service disconnect (702.8) notifying the type and location of the optional standby system
3/4" EMT Conduit with two #10 AWG, THWN conductors and a #10 AWG, THWN equipment grounding conductor (for all conduit from rooftop combiner to PV Power Source Disconnect)

Approximate distance from rooftop box to switch is 75 feet

1/2" LFNC Conduit with two #10 AWG, THWN conductors and a #10 AWG, THWN equipment grounding conductor

PV Power Source Disconnect (note 4)

DC/AC Inverter (notes 5, 6, & 7)

PV Output Meter (note 8)

Inverter within 10 feet of Main Service Panel

PV Array (20, 140-Watt PV modules in two series strings of 10 modules—notes 1&2)

4"x8"x4" NEMA 4 Circuit Combiner/Junction Box (note 3)

1/2" LFNC Conduit with two #12 AWG, THWN conductors, a #12 AWG, THWN equipment grounding conductor and a #8 AWG, THWN DC circuit grounding conductor (for all conduit from Inverter to Main Service Panel)

Main Service Panel (note 11)

Utility

Notes:
1. PV Array contains two parallel strings of 10, 140-Watt Modules in series (20-modules)
2. PV Array wiring to combiner is #10 AWG USE-2 with factory-installed MC connectors to interface with modules.
3. PV Array Combiner/Junction box provides transition from array wiring to combiner wiring.
4. PV Power Source Disconnect (unfused) rated at 30-amps, 600-Vdc, Nema 3R Rainproof.
5. Ground-Fault Protection provided in DC/AC Inverter.
6. DC/AC Inverter is SB250UL model rated at 2.5 kW AC output and is rated to provide 10.4 amps at 240-Volts at 40°C.
7. Inverter is Listed to UL-1741 “Utility-Interactive”
8. PV Output Meter is Form 25 kWh meter with cyclograph register (easy-read).
9. Inverter Output Disconnect rated at 30-amps, 240-Vac, Nema 3R. (needed only if Utility Switch not within view of inverter)
10. Utility Switch is visible open, lockable In open position, 240-Vac, 30-amp switch.
11. 100-Amp Main Service Panel with 15-Amp Two-Pole Circuit Breaker for Interactive Point of Connection (up to 20-amp allowed for 100 amp busbar—NEC 690.64(B)(2) exception.
12. Equipment grounding conductors on AC- and DC-side sized according to NEC 250.122.
13. Negative pole of PV array referenced to ground at the Inverter.
14. All grounds connected to main service ground in Main Service Panel.