



www.burnhamnationwide.com

SIMPLY GETTING IT DONE.

Photovoltaic Quality Assurance Inspection Report

General Information

Table with 4 columns and 6 rows containing general information such as Customer Name (Duran & Stickel Installation), Site Address (Sebastopol, CA), Contractor Name (Synergy Solar), and Inspection Photos Web Link.

Inspector Information

Table with 2 columns and 4 rows containing inspector information: Name (Erik Schadler), Signature (ES), Date of Inspection (1/31/2013), and Inspection Status (Complete).

Main Electrical Service Information

Table with 2 columns and 10 rows containing main electrical service information: Make & Model number of main service panel (Square D SC2040M200C 002), Primary service disconnect size (200 Amp), Buss bar rating of main service (200 Amp), Sub-panel model and buss rating (N/A), Sub-panel feeder breaker rating (N/A), Alternative method of interconnection (N/A), Other electrical sources (None at the time of inspection), Electrical concerns & Code Violations (None at the time of inspection), and Other Article 230 Considerations (None at the time of inspection).

Roof Information

Table with 2 columns and 8 rows containing roof information: Type of Roofing (Composite Asphalt Shingles), If tile roof, confirm location of standoffs (N/A), Method of Sealing Roof Penetrations (OATEY no caulk flashings tucked under the shingles), Do DC conductors from PV Array run through the house? (Conductors are run in 3/4" EMT through building), Roof Condition (The roof is in good conditions), Roof Damage (No damage to the roof at the time of inspection), Inspect roofing penetrations and stand-off installation (Roof penetrations are installed using approved methods), and Comments.



www.burnhamnationwide.com

SIMPLY GETTING IT DONE.

**Structural Attachment / Racking system**

Confirm footings and support structure are properly secured	<b>Array standoffs are securely mounted to roof structural support members.</b>
Visually inspect and use “pull test” where appropriate to confirm lag bolts are properly installed and attach to rafter	<b>“Pull Test” verified proper lag bolt installation.</b>
If pull test and rooftop visual inspection yields less than satisfactory results, proceed to attic for lag embedment inspection in rafters	<b>N/A</b>
Confirm module attachment is properly secured (Check to make sure all panels are attached properly to their mounting brackets and nothing catches the eye as being abnormal or misaligned.)	<b>Modules are securely mounted to the support rails with approved hardware.</b>
Check that non-current carrying metal parts grounded properly. (Array frames, racks, metal boxes, etc.)	<b>The support rails are bonded to EGC with bolted lugs.</b>
Type of lugs (with bare copper), or WEEBS	<b>Bolted lugs and bare copper conductors.</b>
Comments	

**Photovoltaic Module / Array Information**

Module Make & Model Number	<b>Sharp ND240QCJ</b>
Total Number of modules in Array	<b>Eighteen (18)</b>
Number of modules in series (verify if possible)	<b>Nine (9)</b>
Number of parallel source circuits (“strings”)	<b>Two (2)</b>
Confirm modules are properly grounded with lugs on each module or equivalent grounding method	<b>Modules are bonded to the support rails with WEEB clips.</b>
Plugs and connectors (Visually inspect and check plugs/connectors between modules to ensure they are fully engaged)	<b>All connectors are fully engaged.</b>
Wire Management (Check to see all wiring under array is neat and properly supported)	<b>Conductors are secured above the roof surface.</b>
Wire Clips/Zip Ties (black zip ties indicate UV resistance)	<b>Black UV resistant wire ties.</b>
Visually inspect array for cracked/Damaged modules	<b>No damage to the modules at the time of inspection.</b>
Stand-off height (0 to 3” avg, 3” to 6” avg, over 6” avg)	<b>Greater than 6” standoff height.</b>
Confirm strings properly configured (i.e. all modules on a string are facing the same pitch and azimuth, etc.)	<b>Pitch and azimuth are consistent for entire array.</b>
Comments	

**Inverter Information**

Number of inverters installed	<b>Eighteen (18)</b>
Inverter Make & Model Number	<b>Enphase M215-60-2LL-S22</b>
Inverter Installation (Confirm inverter is properly mounted)	<b>Inverters are properly mounted under the inverters.</b>
Verify ground installation to inverter (Grounded to existing UFER, ground rod, or GEC)	<b>Inverters are bonded to EGC with WEEB clips.</b>
Confirm Input String Voltage within Operating Voltage (Use table 690.7 correction factors)	<b>N/A</b>
Confirm NEC Compliant Disconnects (Physically-separable disconnect and wiring box from actual inverter unit)	<b>Disconnects are NEC compliant.</b>
Comments	



www.burnhamnationwide.com

SIMPLY GETTING IT DONE.

**Wiring and overcurrent protection**

Wire type is 90°C wet rated (USE-2; THWN-2; 90°C only)	<b>USE-2 conductors are used under the array transitioned to THWN-2 conductors in J box.</b>
Electrical boxes and conduit bodies on roof reasonably accessible?	<b>No, under the array cannot access.</b>
Electrical connections suitable for the environment?	<b>MC connectors are suitable for outdoor exposure.</b>
Confirm conductor ampacities are sufficient? (NEC correction factors, temperature and conduit fill derates, etc.)	<b>Conductors are properly sized through out system installation.</b>
Inspect combiner or junction boxes (Confirm if weep hole or other water drainage method)	<b>Sola-Deck is properly installed to roof surface.</b>
Verify source circuit overcurrent protection is sufficient	<b>Integrated fused protections on inverters are sufficient.</b>
Verify overcurrent protection on inverter output circuit is sufficient	<b>Two 20 Amp backfeed breakers at the main service panel are sufficient</b>
Verify point of connection meets provisions of NEC 690.64; 705.12 & Verify Article 230 has not been violated (6 handle rule or supply side tap)	<b>Point of connection is NEC compliant.</b>
Check that all cable and conduit is properly supported (conduit should not be directly on roof surface)	<b>All the conduits are properly supported.</b>
Check that DC & AC conduit is grounded with bushings (or equivalent acceptable method)	<b>Cannot verify conduit grounding.</b>
Verify complete system bonding to main UFER/Grounding Rod at location	<b>The system is bonded to the ground terminal and the ground rod at the main service panel.</b>
Comments	

**Photovoltaic system signs and labeling**

Do signs have sufficient durability to withstand the environment?	<b>Yes</b>
Sign identifying PV power source (At DC disconnect)	<b>N/A</b>
Sign Identifying AC point of connection	<b>Yes</b>
Sign at main electrical service disconnect	<b>Yes</b>

**Performance / Site evaluation**

Is the system in operation? (If no, turn system on and check for proper operation)	<b>Yes</b>
PV system metering device (Type, Installation, issues, etc)	<b>None installed at the time of inspection.</b>
Azimuth direction of array	<b>180°</b>
Tilt angle of array	<b>23°</b>
Watts output on inverter display (collect this measurement immediately after irradiance measurement)	<b>Estimated system output based on condition: 1472w Average Irradiance 7110 w/m<sup>2</sup> - Ambient temp: 71°</b>
Verify shading conditions (Use suneye to collect shading data)	<b>Site shade analysis was conducted with the Solmetric SunEye tool.</b>
Look for any environmental variables that may affect system performance (Dusty conditions, trees, animals, etc)	<b>No significant shade over the array.</b>
Comments	



[www.burnhamnationwide.com](http://www.burnhamnationwide.com)

SIMPLY GETTING IT DONE.

### ***Recommended Corrections***

- 1.) System is installed utilizing industry best practices standards. No recommendations at this time.**