DUBLIN
CALIFORNIA

Community Development Department
Building & Safety Division
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Streamlined Permitting Process

Plan Submittal & Inspection Checklist: Small Residential Solar Systems

Purpose

This handout summarizes the permit process and fees for the installation and inspection of Small Residential Solar Photovoltaic (PV) Systems. It also provides information about submittal requirements, plan review options, structural requirements, fire classification, and the inspection process. The following guideline shall be reviewed before commencing any work.

Additional Agency Approvals

If installing a ground- mounted PV system please contact the **Planning Division** at **(925) 833-6610** to ensure zoning regulations are met.

Contact **PG&E's** Solar Customer Service line at **(877) 743-4112** to verify the agency's requirements.

Review Process

To obtain a rooftop solar PV system permit, applicants can choose between the following three options:

Option 1: Over-the-Counter Review Process

Follow our current process by reviewing this checklist (policy as recommended by the ICC Tri-Chapter Uniform Code Committee). Provided that all the code regulations and plan criteria are met, the review and permit may be issued over-the-counter.

Option 2: One-to-Three Day Review Process

Follow the state's recommendations for permitting small PV systems as published by the California Solar Permitting Guidebook. The guidebook will inform applicants on which standardized form/template to use. The review may take one-to-three days depending on the completeness of the submittal.

Option 3: Standard Plan Review Process

If neither Option 1 nor 2 is chosen, the review will follow the standard review process of minimum ten business days.

Note: Ground- Mounted PV Systems will require a normal plan review submittal.

Plan Submittal for Construction

The following plans and documents shall be provided along with the appropriate fees.

A. Permit Application

A fully completed and signed Permit Application Worksheet.

B. Plans and Documents

- ❑ Three (3) complete sets of plans. At least two sets must be signed by designer or stamped and signed by licensed professional (if applicable).
- ❑ Two (2) sets of structural calculations prepared, stamped and signed by a California design professional (if applicable).
- ❑ Two (2) copies of manufacturer's specifications for the proposed PV panels with all electrical information.
- ❑ Two (2) copies of manufacturer's specifications for the proposed PV inverter(s) showing all electrical information.
- ❑ Permit fee payment.

C. Plan Size

Plans must be drawn to scale, fully dimensioned and legible on minimum 11 x 17 inch paper (e.g., site plan: 1/8-in = 1-ft) in a concise, detailed and professional manner.

Note: When using Option 2 follow the plan submittal instructions and template utilized in the California Solar Permitting Guidebook.

1. **Cover Sheet / Site Plan.** Identify job address; name and address of owner, contractor and contact person; address, phone number, title and registration of designer or design professional; clear description of work; applicable codes; sheet index. Show lot and major components on the property and lot lines.
2. **Roof Plan.** Provide a roof plan showing the slope of the roof and location of the proposed PV panels; minimum access pathways at all PV locations and roof access points in relation to any ridge, hip or valley.

Identify type and number of roof coverings and subsequent weatherproofing of the roof. Show all existing plumbing and mechanical vents.

3. **Framing Plan.** Roof- mounted solar projects shall include a roof framing and support structure plan; specify spacing and size (trusses or rafters) of framing members; maximum weight of individual PV panels; attachment details of panels to roof structure; size and weight of ballasts; access, pathways and spacing requirements per CRC R331.4.

   Where alterations are required to existing structures, structural plans shall be provided that are sufficient in detail and scope to demonstrate the required load path to the ground. This method is not eligible for over-the-counter review.

   Note: Structural calculations shall be required if the total weight of the photovoltaic system is over five pounds per square foot.

   Ground- mounted solar PV systems shall include a framing plan showing the supporting structure and the attachment of the panels to the structure. Include details that are sufficient in detail and scope to show the load path to the ground.

4. **Manufacturer's Electrical Data Sheets.** Electrical single-line diagram identifying all devices installed in the PV system and total kVA rating of system; point of interconnection with the utility supplied wiring system; details of main breaker; PV breaker and rating of bussing; type and size of all conduit and conductors throughout the PV system; overcurrent protection; inverter; disconnects; signage; AC connection to building; grounding and bonding of rails and modules.

   Manufacturer's specifications and installation instructions for all manufactured components: PV modules, inverter(s), combiner box (if used), disconnects, mounting system with base and rail attachment and connections.

5. **Design Professional Stamp and Signature on Plans.** All plans shall be stamped and signed in accordance with the California Business and Professions Code by the registered design professional. A California registered architect, civil engineer or structural engineer shall stamp and sign structural plans and calculations. PV plans may be stamped and signed by a California registered electrical engineer or a licensed electrical contractor (C-10 License) or a licensed solar contractor (C-46 License) who is responsible for the installation of the system.

6. **Contractor's License Classification.** Only contractors holding "A" General Engineering, "B" General Building, or C-46 Solar licenses can perform solar construction and installation. Contractors with a C-4 Boiler, Hot-Water Heating and Steam Fitting; C-10 Electrical; C-36 Plumbing; or C-53 Swimming Pool license can only do solar work within their classification as defined by CSLB regulations. Visit the **Contractors State License Board's website** CSLB or contact them at **(800) 321-2752** for questions about solar work permissible under their classification.

Fees

Residential rooftop PV Solar installation permits are based on a fixed fee of $250.00. Additional miscellaneous state fees will also be applied.

Permit Issuance

Provided all the information is complete and does not exceed three projects, roof-mounted solar permit applications are typically reviewed the same day and may be issued over-the-counter. One set of approved plans will be returned to the applicant to be maintained at the job site until the final inspection has been made. The Building & Safety Division will keep a set on file until 90 days after construction has been completed. The third set will be forwarded to the County Assessor's Office.

Inspection Guidelines

General

- ✓ Customer / installer shall provide approved plans on site for inspector.
- ✓ Photovoltaic module number and location of installation must match approved site plan.

  Note: *Revisions to the PV panel layout shall be submitted to the Building & Safety counter for review prior to final inspection. Additional fees may be charged.*
- ✓ Customer / installer shall provide access to all areas needed for inspection.
- ✓ Roof mounted panels: Installer shall provide a proper and secured ladder(s) to access all areas.
- ✓ In house: If wiring in attic and/or garage area, the customer/installer shall ensure access to attic and/or or garage.

Roof Access and Pathways

- ✓ Verify minimum 3-ft clearance from arrays to ridge and edge of roof. (CRC R331.4)
- ✓ Verify all structural supports are properly installed and sealed per listing.
- ✓ Verify all metallic raceways, J-boxes, supports and modules are properly labeled and grounded in accordance with product listings. (CEC Art 690.43)
- ✓ Verify all exposed wiring is listed Sunlight Resistant. (CEC Art 690.31)
- ✓ Verify all module interconnection connectors require a tool for opening. (CEC Art 690.33)

DC Disconnect

- ✓ Verify proper location of DC disconnect and that it shall be readily accessible - within sight of inverter - and properly listed for 600 volt DC power. (CEC Art 690.14
- ✓ If DC wiring is run through the building, a DC disconnect shall be installed prior to the conductors entering the building or the conductors shall be installed in metallic raceways or metallic enclosures from the point of entrance to the DC disconnect. All J-boxes shall be labeled. (CEC Arts 690.31 (E), 690.14 (C)(1))
- ✓ Verify proper and permanent labeling with the following information (CEC Art 690.17):

PHOTOVOLTAIC DC DISCONNECT

and

WARNING
ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS
TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

- ✓ The DC disconnect shall also be properly and permanently labeled with the following Installed System Information: (2013 CEC Art 690.53)
  (1) Rated maximum power-point current
  (2) Rated maximum power-point voltage
  (3) Maximum system voltage
  (4) Short-circuit current
- ✓ Verify labeling of wiring. (CEC Art 690.4)
- ✓ All conduits shall be run as close as possible to the ridges, hips, valleys or outside walls. (CRC 331.3)
- ✓ Verify if DC circuits are more than 80 volts. Arc-fault protection shall be required. (CEC Art 690.11)

AC Point of Connection

- ✓ The breaker must be secured in place and not be equipped with line/load connection. (CEC Art 690.10 (E))

Note: Roof-top micro-inverter systems have no DC disconnect switches. AC disconnect shall be installed on the roof or at the utility panel and be capable of being locked OFF. Installed system information shall be installed on Utility Service Panel.

Questions

Contact the **Building & Safety Division** at **(925) 833-6620** for fee or submittal inquiries.