



MEMORANDUM

TO : All Interested Parties

FROM : Vivian L. Day, C.B.O. *Vivian L. Day*
Director

DATE : February 10, 2009 (supersedes memo dated January 9, 2008)

SUBJECT : **San Francisco Solar Photovoltaic Permitting Procedures**

The following interim procedures apply to solar photovoltaic permitting and inspection activities in San Francisco until superseded:

1. **No Planning Department review is typically required; *except*,**
 - Where the installation of the solar photovoltaic systems creates or is part of a vertical or horizontal addition to a building, such as a new roof structure or carport extending beyond the surface on which the photovoltaic system could be directly mounted.
2. **Electrical permits only are required for photovoltaic systems, and no building permits, building permit fees, or building inspections are typically required; *except*,**
 - Building permits may be required for structural or electrical systems that, in the opinion of the Director of the Department of Building Inspection, require additional permit review and associated fees to assure the public health and safety.
3. **Electrical permits for photovoltaic systems shall be charged at the rates established in San Francisco Building Code.** At the date of this memorandum, the rates are:
 - Up to 10 kW \$170.00 per system
 - Each additional 10 kW \$100
 - Plan review, where required \$187 per hour
 - Re-inspections, where required \$170 per hour

Additional permit processing fees will be charged per SFBC Fee Tables.

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4. **No submittal information, such as diagrams, site plans or roof layouts, is typically required; *except*,**
 - For photovoltaic systems greater than 4 kW output, the following information must be presented for over-the-counter review by Electrical Inspection Division staff:
 - a. Roof layout showing location of all equipment and required Fire Department access (see Items 6 through 10 below).
 - b. Single-line schematic diagram noting:
 - i. System grounding
 - ii. Module ratings
 - iii. Wiring methods
 - iv. Conductor size and insulation types
 - v. Over current devices
 - vi. Disconnect means
 - vii. Inverter rating(s)
 - c. Structural system details for non-standard rack installations.
5. **On a flat roof (up to 3:12) with only one street frontage, a three foot clear walkway must be provided along the roof edge of the roof facing the street and a 3-foot clear walkway, provided at any location, must allow access to the rear of the building.** On a case-by-case basis, the Fire Department will consider alternatives or exceptions to these requirements.
6. **On a flat roof (up to 3:12) on a corner lot having two street frontages, a three foot clear area must be provided along the roof edges facing both streets. No other walkway is required.** On a case-by-case basis, the Fire Department will consider alternatives or exceptions to these requirements.
7. **On a pitched roof (over 3:12) a three foot clear walkway must be provided along the roof edge facing the street and a clear area measuring at least 18 inches, measured on the roof surface, must be provided from the ridge of the roof to the edge of the photovoltaic array.** On a case-by-case basis, the Fire Department will consider alternatives or exceptions to these requirements.
8. **Clear access to fire standpipes and other emergency equipment on roofs must be maintained.**
9. **If the roof area is greater than 5000 square feet and the photovoltaic system covers more than 80% of the roof area, the photovoltaic array layout must be reviewed by the Fire Department to assure sufficient emergency access.** The Fire Department will accomplish this review over-the-counter at no fee.
10. **Solar photovoltaic panels must be supported on the roof or surface of the building that they serve.**

11. **Solar photovoltaic panels may be installed over only one roof covering of a flat/built up roof or over two roof coverings of a shingled roof unless otherwise approved by the Department of Building Inspection.** The Department of Building Inspection will review such requests over-the-counter at no fee. Requests should be accompanied by details of current roof assemblies and approximate weights per square foot of roofing material.
12. **Storage batteries may not be connected to the solar photovoltaic system unless a separate electrical permit is procured based on detailed plans for the system installation.** A building permit is required if such batteries contain more than 50 gallons of battery acid or are installed on a rack over five feet, nine inches high.
13. **Structural safety for photovoltaic system installations may be assured in any one of the following four ways:**
- I. Install a structural mounting system that is pre-approved by the Department of Building Inspection. Contractors must have pre-approved structural documents available on the site at the time of Electrical inspection, or
 - II. Meet the following minimum standards for fasteners of rack systems to roof:
 - a. Table of fasteners -

<u># modules (max size 4'x6')</u>	<u>minimum # of mounting points</u>
1	4
2	4
3	6
4	8
5	10
6	12
7	14

 - o Double number of modules for mounting points
 - o Assume two bolts per mounting point.
 - b. Lag bots to be 1/4" if 4" embedment into wood joist material, 5/16" if 3" embedment
 - c. Use appropriate fasteners if rack supports are supported by materials other than wood joists
 - d. Maximum panel load is to be no greater than 8 pounds per square foot.
 - III. Install a standard manufactured rack and panel mounting system in accordance with manufacturer's installation instructions; or
 - IV. Have the structural mounting system approved by a Department of Building Inspection engineer on a case-by-case basis as an over-the-counter, no-fee review. Provide rack installation design drawings and related materials for review.

Since little technical review is required prior to permit issuance, permit holders must be prepared to show conformance with all technical requirements in the field at the time of inspection.

At this time, please use the form for *Electrical Permit Application for Roof-Mounted Solar Photovoltaic Systems*. This form is available on-line at the Department of Building Inspection website at www.sfgov.org/site/dbi_page.asp?id=18633 or at the Department of Building Inspection offices. For technical information regarding electrical permits and installations, please contact the Electrical Inspection Division at 415-558-6654.

Please note that these procedures are still under active review. Comments or questions regarding Solar PV permitting policies are appreciated; please contact Laurence Kornfield, Chief Building Inspector, at 415-558-6244 or at Laurence.Kornfield@SFGov.org.

Thank you.

VLD/LK/ce