

City of Woodland



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**BUILDING DIVISION**

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## Conditions-Of-Approval for Expedited Permit-Issue of Small SFD PV-Solar Systems

In order to provide an **Expedited Permit Issue** for small single-family-dwelling PV-Solar systems, **the plans are NOT reviewed in detail**. Therefore, the installing contractor shall comply with all *2013 California Electrical & Building Code* requirements which shall be **verified in the field** by the City of Woodland building inspector **regardless** of what might otherwise be shown or specified on the "approved" plans for this project.

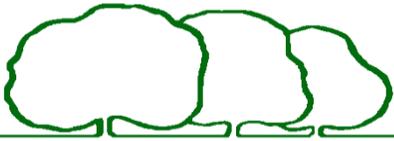
**Some of the specific California Electrical Code and Plumbing Code issues and requirements are noted below for general information:**

1. In **Center-Fed** Electrical Panels the **sum** of the **Main-OCPD + PV-OCPD amp ratings** shall **NOT exceed 100% of the busbar amp-rating** because the main supply/feed is NOT at the end of the busbar (creating a potential busbar-overload condition) in conformance with *CEC 705.12(D)(7)*.
2. **Unless** the **backfed PV-OCPD** is installed at the **opposite end** of the busbar from the Main-OCPD per *CEC 705.12(D)(7)*, the sum of the Main-OCPD + PV-OCPD amp ratings shall NOT exceed 100% of the busbar amp-rating instead of 120% of the busbar amp-rating permitted when the PV-OCPD and the Main-OCPD are located at opposite ends of the busbar per *CEC 705.12(D)(1)*.
3. If it is proposed to replace the existing Main-OCPD with a one with a lower amp trip-rating, then a **Residential Service Load Calculation Worksheet** must be completed and submitted that shows compliance with *CEC 220*. A copy of the electrical panel load calculation worksheet has been attached for your information and use if and where necessary.
4. **Grounding Electrode Conductor (GEC)** shall be un-spliced or irreversibly spliced to the existing GEC or bonded directly to the existing Grounding Electrode per *CEC 690.47*
5. **Plumbing vents** shall extend above and **shall NOT be covered by solar panels** per *CPC 906.1*

**NOTE:** The inspector will check existing panel for hot spots or unsafe conditions. If the existing panel is found to be unsafe, a licensed electrician will need to make repairs or replace equipment prior to PV hookup. Be aware that there is a *Consumer Safety Alert* issued on all Zinsco Panels (also manufactured with Sylvania & GTE labels)—these panels are so flawed that they do not comply with the applicable CEC and their listings, and are therefore no longer considered safe even to inspect, therefore, Zinsco panels must be replaced whenever a project will require the panel to be inspected by a City of Woodland inspector.

**Remember:** the contractor is required to set up a ladder secured to structure, remove all covers at the service panel, at disconnect(s) and the inverter prior to inspection.

The above information is only a guide and is not a complete list of the design requirements for Photovoltaic Solar Systems. Refer to *2013 CEC, CBC, CPC & CMC* for complete and more detailed design requirements for Photovoltaic-Solar Systems.



## Residential Service Load Calculation Worksheet\*

Address: \_\_\_\_\_ Permit #: \_\_\_\_\_ Date: \_\_\_\_\_

	Building sq. ft.:		Gas Furnace? Y		N
<b>Rating of:</b>	<b>NPR (Name plate Rating)</b>	<b>Watts (= volts x amps)</b>	<b>X % =</b>		<b>Total(a)</b>
Air Conditioning*	NPR	_____	X 1.00 =		_____
Heat Pump	NPR	_____	X 1.00 =		_____
Electric Central Heating System	NPR	_____	X.65 =		_____
Electric Space Heaters Less than 4 separately controlled units	NPR	_____	X .65 =		_____
Electric Space Heaters 4 or more separately controlled units	NPR	_____	X .40 =		_____

**Transfer the largest value (watts) from the above 5 lines to the space below titled "from above" \*\***

\* Air Conditioning Example: Compressor = 16.0 amps  
 Air handler = 2.0 amps  
 25% of the largest motor = 4.0 amps  
 Total = 22.0 amps X 240 volts = 5,280 Watts

Quantity	Item		Watts (= volts x amps)
_____	Sq. Ft. X 3 watts per sq. ft.	=	_____
_____	(2) 20 Amp appliance circuits @1500 watts each (kitchen)	=	_____
_____	Range/Cooktop/Ovens	NPR =	_____
_____	Microwave (separate)	NPR =	_____
_____	Water Heater (if electric)	NPR =	_____
_____	Dishwasher/Garbage Disposal	NPR =	_____
_____	Washer	(1) 20 Amp @1500 watts =	_____
_____	Electric Dryer	greater of 5000 or NPR =	_____
_____	Motor loads	NPR =	_____
_____	Pool and/or Spa	NPR =	_____
_____	Other loads	=	_____
	Subtotal	=	_____
	Less		-10,000
	Total = _____ X .40	=	_____
	** from above	+	_____
		+	10,000
	Grand Total (watts)	=	_____

Grand Total (watts) \_\_\_\_\_ ÷ 240 Volts = \_\_\_\_\_ Service Load (amps)

Main-OC PD Trip-Rating \_\_\_\_\_ amps \_\_\_\_\_

Signature of Contractor \_\_\_\_\_

**\*Note: Required to be submitted if the Main-OC PD is proposed to be down-rated incidental to a PV-Solar installation.**