FLORIDA SOLAR ENERGY CENTER

Creating Energy Independence

Expedited Permitting for PV Systems

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Solar ABCs Stakeholders Meeting
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A Research Institute of the University of Central Florida

Objectives

- Develop procedures and recommendations for timely and efficient permitting of PV systems by building inspectors and other jurisdiction officials.
- Minimize costs of permitting for PV systems.

Draft Report: Contents

- Introduction
- Currently Available Methods
- Recommended Approach
- Other Recommendations
- Summary
- Bibliography

Reference to IEEE PVSC Paper on Local Codes Issues

Currently Available Methods

- FSEC's *PV System Design Review and Approval* process.
- Brooks Engineering's *Inspector Guidelines for PV Systems.*
- Similarities and Differences in two methods.

FSEC PV System Approval Certificate

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PV System Approval Certificate

07 - AB - 1234 Z

Awarded to:

Solar Company
123 Main Street
Suite A
Orlando, Florida

Important: All items should be checked by the building code official

PV Modules and Array: System Certified for:

PV Module Manufacturer	Solar System Co.
PV Module Model Number	SSM-100B
FSEC Module Certification Number	07-FSEC-9999
Listing to UL1703 Verified	YES
Array Configuration	
Total Number of PV Modules	32
Number In Each Series String	16
Number of Series Strings	2

Power Conditioning Equipment (Inverter):

Inverter Manufacturer:	Inverter Co.		
Inverter Model Number	SI-3000		
Listing to UL1741 Verified:	YES		
Max. Allowable PV Array Power to Inverter:			
Inverter DC Voltage Window	Min: 200	Max:	450
AC Power Rating	3.0 kW		
AC Nominal Voltage Output	240 V		

Electrical Design

(Verify the following items for agreement between the installed components and the supplied electrical schematic)

Size, type, and location of all conductors in the PV system
Conduit, raceways, junction boxes, and combiner boxes
Size, current rating, voltage rating, and location of all overcurrent protection devices
Rating and location of all disconnects
Point of connection to the utility
PV module and equipment grounding system (including conductor size)
PV DC circuit and system grounding (including grounding electrode conductor size)
Ground Fault Detection & Interrupter (GFDI) rating and location
Battery wiring and cable sizes (if applicable)

An electrical schematic of the complete PV system consisting of a three-line diagram must be attached to this form.

Inspection

Inspector Name (printed) _____ Inspector Signature _____ Date _____

Installer Information and Certification

Company Name _____
Address _____
Address _____
City _____ State _____ Zip Code _____
Phone Number _____ Fax Number _____
Web Site
Florida Contractor License Number _____

Florida Contractor License Type __ Solar __ Electrical __ Other (specify) _____

I hereby certify that this PV system has been installed in full accordance with the National Electrical Code.

Installer Name (printed) _____ Installer Signature _____ Date _____

Simplified Design Checkout (Brooks Engineering)

Recommended Approach

Listed/Approved PV Systems

- Require only post-installation or field inspection checklist

Unlisted PV Systems

- Require pre-installation check/approval
  - PV system design review and approval by approved experts (FSEC, other agencies, PEs)
  - Simplified design tools and considerations
- Also require field inspection inspection checklist

Recommendations
Near Term (Current Year)

- Promote FSEC's *PV System Design Review and Approval* and Brooks Engg's *Inspector Guidelines for PV Systems* to State Energy Officials, Building Inspectors and Authority Having Jurisdiction (AHJ) officials.

Recommendations
Longer Term (One to Three Years)

- Implement PV System Design Approval by a national certification body such as NABCEP, PowerMark or SRCC.
- Expand PV System Design Review and Approval process to possibly include Brooks Engg., BEW Engg., SWTDI, Sandia, NREL and qualified PEs.

Stakeholders Involvement

- Review the draft report (to be completed in two weeks) and provide comments.
- Suggest the state and local agencies to work with for promotion and implementation of PV System Design Review and Simplified PV System Schematics approaches.
- Provide support and collaborate on outreach activities, including seminars, short courses, etc.

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