



Solar PV Inspections

Course Outline

Course Description: This **6-module course**, is based on the *2017 and 2020 National Electrical Code (NEC)*. It teaches the practical application of requirements specific to performing photovoltaic (PV) inspections. The course is also helpful for solar PV designers and installers to better understand the key requirements for residential solar PV systems. Each module consists of an integrated video presentation, including presentation slides, explanation, and examples. Modules are designed to be roughly 10-55 min. in length.

Course Objectives: Solar photovoltaic (PV) system installations continue to increase throughout the country. Thorough plan reviews and inspections are essential for their safe installation. This course will give many examples of different types of solar PV systems and will walk the students step by step through the inspection process for each one. Topics to be covered throughout the presentation include: solar modules (panels) located on the roof, roof access pathways, roof racking supports and flashing, ballasted racking systems, wire management at the array, grounding and bonding at the array, rapid shutdown of systems, disconnect locations, interconnection requirements, equipment/wiring installation, and signage. This course will be very beneficial inspectors but will also be helpful for solar contractors and designers to better understand what is expected during inspections.

Texts and Readings: The *2020 National Electrical Code* is the textbooks for this course. It is highly recommended that you purchase a paper-back copy of these codes, which are available online at www.iccsafe.org or NFPA.org.

Course Outline of Topics:

Module:	Topics:	Readings:	Quiz:	Duration:
1	Roof-Mounted PV Systems	2018 IRC Chapters 3, 9, & 31	N	32 min.
Part 1		2018 IFC Chapter 12		
1	Roof-Mounted PV Systems	2020 NEC 110, 300, & 690	N	55 min.
Part 2				
2	Ground-Mounted PV Systems	2020 NEC 110 & 690	N	16 min.
3	Point of Interconnection	2020 NEC 300 & 705	N	50 min.
4	General Equipment Requirements	2020 NEC 110, 240, & 690	N	8 min.
5	General Wiring Requirements	2020 NEC 110, 200, 250, 300, 310, & 690	N	13 min.
6	Signage Requirements	2020 NEC 110, 690, & 705	N	11 min.
	<i>29 Quiz Questions, 2 min. each</i>			<i>58 min.</i>
	Total Course Hours			4 hours

Quizzes: This course will be followed by an assessment quiz. A passing score of 75% is required in order to advance to receive a certificate of completion. Topics in the quizzes may or may not have been covered in the video modules. A thorough reading of the code may be necessary in order to progress through this course.



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Expectation of Participants: You can progress through this course at your own pace; however, you only have access for 365 days.

Continuing Education Credits: Completion of this course results in **.40 CEU's** being provided by ICC, as West Coast Code Consultants is a Preferred Provider.

Instructor:



Doug Smith, MCP, CBO currently serves as Energy Division Lead for West Coast Code Consultants (WC3) and has been an inspector/plan reviewer for over 15 years. He has obtained 19 ICC certifications, including Master Code Professional and Certified Building Official. Mr. Smith has performed well over 10,000 plan reviews for renewable energy projects, including solar PV and energy storage systems. Mr. Smith currently serves as a Standards Technical Panel (STP) Member for the following UL Standards: UL 9540 (Energy Storage Systems and Equip.), UL 9540A (Test Method for Evaluating Thermal Runaway...in Battery Energy Storage Systems), UL 1741 (Inverters, Converters, Controllers...), and UL 1703/61730 (PV Modules/Panels). Mr. Smith was also recently appointed by IAEE to be on Code Making Panel #10 for the National Electrical Code (NEC). He is considered an expert regarding energy storage and solar PV systems and has taught many courses on the subjects.