

Certified Program:



Training managed by:



HERS Solar Photovoltaic (PV)

Class Code: 160303PN

Location: Southern CA Edison Energy Education Center
6090 North Irwindale Avenue
Irwindale, CA, 91702

Date/Times: Thursday, March 3rd, 2016 (*lunch not provided*)
7:30 am-4:30 pm

Cost: \$325 per person*

You can sign up for the class on-line and pay via credit card at:

www.calcerts.com or call 916.985.3400 x 2013

***Prices subject to change without notice**

The California Energy Commission's **New Solar Homes Partnership** (NSHP) is part of the comprehensive statewide solar program, known as the California Solar Initiative. The NSHP provides financial incentives and other support to home builders, encouraging the construction of new, energy efficient solar homes that save homeowners money on their electric bills and protect the environment.

Target Market for this Course:

HERS Residential Solar Photovoltaic (PV) is a course that will teach Field Verification and Diagnostic Testing HERS Raters how to perform field verification and diagnostic testing of Solar (PV) systems specifically for the New Solar Homes Partnership (NSHP) program. This course will explain the installation specifications that must be verified by the HERS Rater and describes the equipment that will be used for the solar verification. Students will be taught how to verify the installation and performance specifications of Solar systems. Finally, students will be taught which Title 24 Compliance form to fill out in the CalCERTS' registry

Incoming Skills Necessary:

To better prepare candidates for work in the HERS industry as a solar system verifier we strongly suggest that they possess some knowledge, skills, and abilities in the California HERS Program (HERS Basics), the construction industry, and some basic solar system knowledge. An understanding of the FV/DT skills as a HERS Compliance Rater is also expected.

Additionally, in the course of your rater work you may also be required to have the following knowledge, skills, and abilities required which are not taught in any CalCERTS trainings:

- High School diploma or GED
- 10th Grade English & Math minimal (especially fractions, percentages, geometry)
- Computer literacy

- Firm grasp of the English language (most codes and regulations are only in English)
- Ability to lift heavy objects (50 lbs. or more)
- Ability to inspect dark, tight, spaces
- Ability to read and understand levels and angle finders
- Ability to comprehend and understand compass readings, both true and magnetic

Prerequisites: You must be a Certified HERS Residential Alterations Rater (Complete and Pass HERS Basics, HERS Hands-On-Lab, HERS Residential Alterations, and HERS Residential Alterations Field House Exam) and hold a HERS Residential New Construction Certification.

Course Duration: 8 clock hours

Learning Objectives:

- Identify the field verification and diagnostic testing requirements of Solar Photovoltaic (PV) systems specifically for the New Solar Homes Partnership (NSHP) program.
- Demonstrate how to identify the HERS tests to perform a HERS verification of a solar installation.
- Explain the special tests and inspections for solar systems.
- Complete the Title 24 Compliance Forms for solar inspections.

Learning Outcomes:

At the end of this course, students will be able to:

- Identify the HERS compliance forms that are used for the collection of HERS testing data for the New Solar Homes Partnership Program.
- Identify the equipment required to perform a HERS verification for solar installations.
- Explain the installation and performance specifications for a solar installation.
- Complete the Title 24 Compliance Forms for solar inspections.

Topics Covered in This Class:

- The New Solar Homes Partnership Program
- The People Involved in the Process and Their Responsibilities
- Equipment Verification
- Verify Installation Specifications
- Verify Performance Specifications using a pyronometer and other equipment.
- Verifying the tilt and azimuth of solar arrays.
- Perform Shading Analysis
- Reading and verifying kW output on different PV inverters
- Title 24 Compliance Forms for Solar installations
- California Flexible Install

Note: HERS Solar Photovoltaic (PV) is included in the Whole-House Home Energy Rater training course. This class satisfies the requirements for raters who took the previous version of Whole-House Home Energy Rater training course that did not include solar photovoltaic.

How skills are measured: Standardized exam at the conclusion of the course and during the Whole-House Home Energy Field House Exam.

Some of the state mandated HERS tests/inspections are not covered in this class if they are specific to a certain credential (e.g., the identification of ice storage air conditioners is only required for Newly Constructed Buildings inspections). These topics are covered in the appropriate class.

Standards of Candidate Evaluation (for individual certificate issuance):

At the end of Class VI: Photovoltaic/Solar training day, all participants will take an open-book, multiple-choice written exam based upon; all the written materials provided to the Candidate, the presentations in class, and the verbal education by the Trainer(s) within the classroom and the lab (if applicable).

CalCERTS HERS Rater Written Exam Policies

These rules are intended to ensure fairness, accuracy, consistency and validity of exam results. Failure to abide by these rules could result in ejection, or other disciplinary action.

1. At the beginning of each exam, the proctor will announce the time allowed for the exam. The time allowed is based on the number of questions on the exam.
2. The written exam must be taken on the day of instruction (or on the last day of a multiple day delivery), no exceptions.
3. A Scantron form, exam packet and #2 pencil will be provided to the candidate.
4. Fill in (shade) your answers firmly and neatly on the Scantron form. Completely erase any changed answers with a soft eraser. Do NOT staple, fold, tear or crumple the form. Do NOT draw or write on the bar code black lines on the left hand side of the exam. Do NOT write on or in the exam packet.
5. Print your first and last name where indicated on the Scantron form.
6. Print exam version (located on front page of exam packet) in the area above your name.
7. Print the name of the class (i.e. Class I, Class II, etc.) on the "subject" line of Scantron form.
8. Print the date you are taking the exam where indicated on the Scantron form.
9. A score of 80% is required to pass the CalCERTS written exam. Candidates will not be informed which questions they have missed. They will only be informed of their score and whether they passed or failed.
10. Candidates must be prepared to show a valid Photo ID.
11. No cell phones may be used during the exam. Calculators will be provided.
12. No laptop computers may be used during the written exam.
13. The CalCERTS training manuals are the only written materials that may be referenced during the written exam. No other books or notes may be used. The answer to every question may be found or deduced from information in the training manuals. No other materials are needed to pass the exam.
14. Candidates may leave the room during the exam, but must hand over exam packet to Proctor until their return. No time will be added to time allotment for exiting exam.
15. Candidates may NOT write in training manual or exam booklet during exam. Scratch paper will be provided.
16. This is a professional level exam. **THERE IS NO TALKING OR COMMUNICATING ALLOWED DURING THE EXAM.** You must demonstrate your knowledge of the subject matter without assistance. You may NOT assist others during the exam.
17. There are multiple versions of each exam. They are similar to each other in terms of the topics covered and types of questions. Candidates will take a different version than those sitting to either side of them.
18. ALL exam packets must be turned in to the Proctor at the end of the exam.

Written Exam Re-test Policies

1. Candidates will be given three opportunities to pass each written exam (the initial attempt plus two re-test attempts).
2. Candidates must wait at least 48 hours to re-take any exam.
3. There will be an additional \$75.00 charge for a re-test attempt.
4. All of the above exam policies apply to a re-test as well (except item #2 above)
5. Candidates who do not pass an exam on their third attempt must retake the entire class, at full retail price, and pass the written exam if they wish to continue their pursuit of certification.

6. If a candidate does not pass the written exam after retaking the course, they will be excluded from becoming a CalCERTS HERS Rater for that classification indefinitely (i.e. New Construction Rater).

Students Right to Cancel or Withdraw:

Students have the right to cancel or withdraw and obtain a refund of charges paid through attendance at the first class session, or the seventh day after enrollment, whichever is later. Cancellation or Withdrawal notices must be submitted in writing by email to the Training Manager at training@calcerts.com. For more information, contact the Training Manager at (916) 985-3400 x2015.

The institution shall refund 100 % of the amount paid, less a non-refundable registration fee, if notice of cancellation is made through attendance at the first class session or by the seventh day after the enrollment, whichever is later. The refund policy for students who have completed less than 60 % of the course of instruction shall be due a pro rata refund. In this example below, the student has paid for the entire Instruction. The student attends 8 hours of 16 hours instruction and decides to withdraw.

We reserve the right to cancel classes for any reason. Every effort will be made to notify you of a cancelled class well in advance. If we cancel a class you will receive a full refund of the class fee, but we are not responsible for other costs (travel, hotel deposit, etc.).

Materials utilized in this Course:

Each participant will be given a training manual with all the applicable written course materials as described in the Course Outline above.

Any required diagnostic testing equipment and associated sundries will be provided by CalCERTS, Inc. Candidates are welcome to bring their own equipment if they'd like (may not be appropriate for all classes).

Candidates shall bring to class a pencil or pen, a calculator, and notepad.

For questions about any of our trainings call 916-985-3400 or e-mail training@calcerts.com. *If you require any special assistance or accommodation during training or testing, please contact 916-985-3400x2013 or email training@calcerts.com.*

***Please Note:**

*There is an annual \$120.00 subscription fee due if you choose to become a CalCERTS California HERS Field Verification & Diagnostic Testing Rater. This fee covers your CalCERTS HERS membership and the administrative duties on our part to maintain your records.

*Project uploads for compliance verifications, whole-house ratings, and/or Energy Star certifications are also subject to additional fees.

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Irwindale Eateries

(Within a 5 mile radius of 6090 North Irwindale-Irwindale)

<u>Mexican Cuisine:</u>	<u>Sandwich Spot:</u>	<u>Pizza-Other:</u>	<u>Fast Food:</u>
<p>El Matador 2 5312 Irwindale Ave Baldwin Park, CA 91706 (626) 338-2080</p>	<p>Picasso's Café 6070 N Irwindale Ave Irwindale, CA 91702 (626) 969-6100 picassoscafe.com *Vegetarian options</p>	<p>Duarte Pizza 2229 Huntington Dr Duarte, CA 91010 (626) 303-1676 *Vegetarian options</p>	<p>McDonald's 6650 Irwindale Ave Irwindale, CA 91702 (626) 815-8979</p>
<p>Chica's Place 251 S Irwindale Ave Azusa, CA 91702 (626) 334-1341</p>	<p>Subway 16012 E Arrow Hwy Irwindale, CA 91706 (626) 960-0058 *Vegetarian options</p>	<p>Farmer Boys 6600 Irwindale Ave Irwindale, CA 91706 (626) 815-8899</p>	<p>Taco Bell 1150 W Foothill Azusa, CA 91702 (626) 334-0889</p>
<p>Carls Jr/Green Burrito 1190 W Foothill Blvd Azusa, CA 91702 (626) 334-5340</p>	<p>Sante Fe Importers 5240 Irwindale Ave, Baldwin Park, CA 91706 (626) 337-8577 *Vegetarian options</p>		