

DOCKETED

Docket Number:	22-BSTD-03
Project Title:	2022 Field Verification and Diagnostic Testing OIR Proceeding
TN #:	251535
Document Title:	CalCERTS Comments on Revised Draft Staff Report - Proposed Regulations - Part 4
Description:	N/A
Filer:	Jennifer Brazell
Organization:	CalCERTS, Inc.
Submitter Role:	Public
Submission Date:	8/8/2023 3:49:20 PM
Docketed Date:	8/8/2023



August 8, 2023

Via CEC Docket 22-BSTD-03

Mr. Drew Bohan
Executive Director
California Energy Commission
1516 Ninth Street, MS-39
Sacramento, CA 95814
Drew.bohan@energy.ca.gov

CalCERTS Comments on Revised Draft Staff Report - Proposed Regulations: Part Four

On July 12, 2023, CalCERTS, Inc. (CalCERTS) was able to meet with California Energy Commission Staff and other approved HERS Providers to discuss the Revised Draft Staff Report (TN#250298). In response to that meeting CalCERTS has been working to provide specific feedback to Commission Staff in response to direct questions. Part One of CalCERTS response was focused on questions related to Conflicts of Interest and the proposed regulations and “removal” of conflicted data. [TN # 251156] Part Two was focused on Quality Assurance (QA). [TN #251387] Part Three, is focused on the Data Collection and Reporting Sections. [TN # 251530] This section, Part Four, is focused on Training sections of the proposed regulations.

Sincerely,

The CalCERTS Operations Team

Enclosure

 (916) 985-3400  www.calcerts.com
 support@calcerts.com  31 Natoma, Suite 120
Folsom, CA 95630

Attachment 1

CalCERTS Comments on Revised Draft Staff Report - Proposed Regulations: Part Four

APPENDIX B:

Proposed Regulations

The following redlines of the proposed training regulations should be reviewed in conjunction with all other comments and submissions docketed by CalCERTS on this subject.

CalCERTS supports the Commission's efforts to improve the requisite training needed to become a HERS Rater.

CalCERTS' training is more detailed and extensive than other HERS Trainings on the market. It includes a hands-on component with access to equipment and experienced instructors.

CalCERTS offers a Challenge Exam for existing Raters to become CalCERTS certified Raters. The *failure rate* of CHEERS Raters taking the CalCERTS Challenge Exam is documented below. This is first-attempt at the Challenge Exam failure rate. The failure rate is much higher for New Construction and Non-Residential Exams, classes that CalCERTS teaches specifically for those specialty areas.

2019 Res Alt Challenge Exam = 17% Fail Rate based on 63 Raters.

2019 NC Challenge Exam = 56% Fail Rate based on 48 Raters.

2019 Non-Residential Exam = 55% Fail Rate based on 11 Raters.

2022 Res Alt Challenge Exam = 8% Fail Rate based on 16 Raters.

2022 NC Challenge Exam = 100% Fail Rate based on 12 Raters.

With proper mentoring and support Raters have a far higher pass rate on their second attempt at the Challenge Exam after meeting with the CalCERTS Support and Training team.

(d) ECC-Provider Responsibilities

1. **ECC-Rater Training.** For each Triennial Code Cycle, ECC-Providers shall provide training to existing ECC-Raters and new ECC-Rater applicants. The ECC-Provider may also provide this training for prior Triennial Code Cycles. To fulfill the training requirements (Section 10-103.3(d)), an ECC-Provider shall confirm that an ECC-Rater applicant has completed a training curriculum that covers all information necessary to perform all FV&DTs in accordance with the applicable Building Energy Efficiency Standards and passed all associated tests. Alternatively, if offered by the ECC-Provider, an existing ECC-Rater may apply for approval without completing an ECC-Provider's training curriculum by passing a challenge test, which is a comprehensive test of advanced FV&DT technical knowledge that verifies the ECC-Rater applicant has sufficient knowledge necessary to perform FV&DT in accordance with the applicable Building Energy

Efficiency Standards. All training materials under the full training curriculum and challenge test shall be approved by the Commission as part of the ECC-Provider's application (Section 10-103.3(b)).

A. **Training and testing curriculum.** An ECC-Provider's training curriculum for ECC-Rater applicants must include the following:

- i. **Building Energy Efficiency Standards mandatory subject areas.** The training curriculum shall instruct ECC-Raters how to perform FV&DT as set forth in the following Building Energy Efficiency Standards, Reference Appendices:
 - a. RA1: Alternative Residential HERS Field Verification and Diagnostic Test Protocols
 - b. RA2: Residential HERS Verification, Testing, and Documentation Procedures
 - c. RA3: Residential HERS Field Verification and Diagnostic Test Protocols
 - d. RA4: Eligibility Criteria for Energy Efficiency Measures
 - e. NA1: Nonresidential HERS Verification, Testing, and Documentation Procedures
 - f. NA2: Nonresidential HERS Field Verification and Diagnostic Test Procedures
- ii. **Other mandatory subject areas.** The training curriculum shall inform ECC-Rater applicants about:
 - a. The roles and responsibilities of all entities regulated by Section 10-103.3 and in the Building Energy Efficiency Standards, Reference Appendices RA1, RA2, RA3, RA4, NA1, NA2, and JA7.
 - b. Energy Code nomenclature that designates building types, dwelling units, systems, and compliance methods.
 - c. Basic building science concepts, including:
 - (i) Principles of heat transfer.
 - (ii) Energy conservation features. **[Vague and broad topic, please provide specifics applicable to HERS verifications.]**
 - (iii) Framing, fenestration, insulation, and other built or installed features. **[Framing alone, advanced framing techniques and fenestration are not HERS verified measures, why train on this? "Other built or installed features" is vague and should be clarified]**
 - (iv) Energy consuming appliances. **[Appliances imply dishwashers, refrigerators, etc. which are not HERS verified, why train on this?]**

- (v) Types of space conditioning and ventilating systems.
 - (vi) Types of water heating systems.
 - (vii) Categories of lighting systems and lighting controls.
[This is not a HERS Measure. Why would we train on this?]
 - (viii) Energy generating and storage systems. **[This is not a HERS Measure.]**
 - (ix) Energy efficiency effects of building characteristics.
- d. Worksite safety.
- (i) Personal protective equipment and appropriate dress.
 - (ii) Communication with site management personnel.
 - (iii) Awareness of site hazards (including asbestos, fall risks, lifted loads, confined spaces, vehicles, powered equipment and tools, pressurized vessels and pipes, electrical terminals and fixtures, etc.), occupants in the dwelling unit, and escape routes. **[This list is broad and should focus on most important to health and safety.]**
 - (iv) Site security.
 - (v) Other practices, not limited to those relevant to home energy testing and verification procedures and equipment. **[What other practices?]**
- e. Instrumentation.
- (i) Diagnostic devices used in the measurement of, but not limited to duct leakage testing, dwelling unit leakage (blower doors), system air flow and pressure, and refrigerant pressure and temperature.
 - (ii) Accuracy and tolerance.
 - (iii) Calibration requirements.
- f. Equipment certification.
- (i) Overview of manufacturer- certified equipment ratings.
 - (ii) When and why certification applies for verification.
 - (iii) Where to find specified certifications and ratings.
- g. Compliance forms and registration.
- (i) Building Energy Efficiency Standards regulations and associated testing protocols, and the corresponding forms for data entry.
 - (ii) Documentation workflow and data input.
 - (iii) Form logic and validation.

- (iv) Group sampling.
 - h. Professionalism and conduct when working with various trades, owners, and other site personnel.
 - i. Resources available on the Commission website related to the Building Energy Efficiency Standards.
 - j. Progressive discipline of ECC-Raters (Section 10-103.3(d)7) and the appeal process (Section 10-103.3(h)).
 - k. Quality assurance process (Section 10-103.3(d)5).
 - l. Conflict of interest requirements (Section 10-103.3(b)1).
 - m. Prohibition on False, Inaccurate, or Incomplete Information (Section 10-103.3(b)2)
- iii. **Classroom Training.** Classroom training shall include an electronic or hardcopy manual for each student and may include the following features:
 - a. Classroom training may be provided online or in person and may be taught by an instructor or **proctoring learning management** software.
 - b. When administered online, the modules must be naturally paced recorded, and played back not faster than 100 percent speed. Modules must require occasional student intervention not limited to brief quizzes to progress through topics and encourage engagement with the platform.
[What does student intervention mean? Examples of LMS features that are acceptable are needed. Interactive quizzes are often used in ALP.]
 - c. Classroom training may include pre-recorded video instructions but must not solely rely on pre-recorded videos.
[This is confusing to provide restrictions just for classrooms training. Does that mean both classroom and online training?]
 - d. ~~Classroom~~ Training may use mock tests or exams, but mock tests or exams may not be used to comply with the Tests and Exams requirements in Section 10-103.3(d)1Avi.
- iv. **Instructional Materials.**
 - a. The materials shall address all topics listed in Section 10-103.3(d)1Ai and Section 10-103.3(d)1Aii.
 - b. Materials that are presented in a slideshow format must be accompanied by a script or detailed outline that explains the narrative and the purpose of each visual.
 - c. Slide text and graphics must be legible.
 - d. Governmental logos must not appear on class materials (including course descriptions, web pages, slides, videos,

handouts, and manuals) unless the department, office, or agency has given permission to do so, and then only if usage adheres to respective guidelines. The logo may appear without express permission on official publications whether distributed in whole or in part.

- v. **Laboratory Training.** Laboratory training shall cover all FV&DT procedures listed in Building Energy Efficiency Standards Reference Appendices RA1, RA2, RA3, RA4, NA1, and NA2 and comply with the following requirements:
 - a. All laboratory training facilities shall be designed to provide consistent and repeatable practical training exercises and be approved in advance by the Commission.
 - b. Laboratory training shall be conducted in a controlled space with appropriate safety measures such as proper ventilation, safe egress, appropriate lighting, and fire response systems. Laboratory training must not be conducted in an occupied residence.
 - c. All laboratory training shall be in person and be supervised by an instructor with no more than ten students to one instructor. Laboratory instruction shall include an electronic or hardcopy manual for each student.
 - d. Any equipment necessary to complete the laboratory training shall be available to students at a ratio of no greater than one test equipment per five students. Each student shall perform the laboratory training independently with full access to the necessary equipment. **[This is fantastic addition to the rules. The students must do the verifications not simply watch demonstrations.]**
- vi. **Written test.** An ECC-Rater applicant shall take a written test, offered by an ECC-Provider, to confirm the applicant's understanding of all mandatory training information specified in Section 10-103.3(d)1Ai and Section 10-103.3(d)1Aii. Tests shall only be used to verify the knowledge of ECC-Rater applicants and may not be used for training purposes. ECC-Providers shall retain all results for five years from the date of the test. The written test shall comply to all of the following:
 - a. Be online using online proctoring or **LMS software** (Section 10- 103.3(d)1Avii) or in person using a live proctor. **[Proctoring using an LMS can still involve a live person proctoring and should be encouraged. It is adopted by most academic institutions. Providers should make clear the methodology of proctoring and use of an**

LMS. Specific restrictions or limitations on software should not be adopted into regulations.]

- b. Consist of between 10 and 100 questions per subject area specified in Sections 10-103.3(d)1Ai and 10-103.3(d)1Aii. **[This is confusing and needs to be better clarified. Adult learning principles should be applied. – Exams with thousands of questions are not feasible. What is meant by subject area specifically?]**
 - c. Require a passing score of no less than 70 percent.
 - d. Be approved by the Commission at the time of ECC-Provider application (Section 10-103.3(c)1).
- vii. **Practical test.** ECC-Rater applicants shall take a practical test, offered by an ECC-Provider, to demonstrate competence in all subjects specified in Section 10-103.3(d)1Ai and Section 10-103.3(d)1Aii as they apply to the performance of FV&DT procedures. The ECC-Provider shall retain all results for five years from the date of the test. The practical test shall comply with the following:
- a. All practical tests shall be performed in the **same lab** facilities as required by the Laboratory Training Requirements in Section 10-103.3(d)1Aiv. **[You could take training at one facility and test at a second lab facility depending on location, time and retests. It should not have to be the same location as long as that location is approved.]**
 - b. All practical tests shall be in-person only using a live proctor with no more than five test takers to one proctor. **[CalCERTS has a one-to-one ratio for Field Exams. It would be very difficult to conduct a practical test of verifications in a group setting. Group setting may be more conducive to continuing education or lab audits. Please expand or clarify. For initial certification of a new Rater, the Field House Exam is essential to confirm understanding and proficiency of all verifications and should not be done at the same time.]**
 - c. Any equipment required to complete the practical test shall be made available to each test taker. Test takers shall not work in teams to complete any portion of the practical test.
 - d. All practical tests shall be approved by the Commission by demonstration during the application process (Section 10-103.3(c)1).

viii. **Proctoring Software.** Any proctoring software used for training and exams shall be approved in advance by the Commission and comply with the following:

- a. Proctoring software for training or exams must be time limited.
- b. Proctoring software shall monitor the computer desktop, webcam video, and audio of the individual completing the training or exam. The proctoring software, including any interactions with a proctoring service, shall take reasonable steps to detect the use of prohibited outside resources on the exam, and return a failing grade if the use of prohibited outside resources are in fact detected. **[In person live proctoring using LMS software but not proctoring software need to be considered. As written this may be too restrictive. Learning Management Systems (LMS) and proctoring software are different. Either or both should be disclosed to the Commission at time of approval.]**

B. **Challenge Test.** An ECC-Provider may also offer challenge testing that evaluates competence in all subjects specified in Section 10-103.3(d)1Ai and Section 10-103.3(d)1Aii. If a challenge test is used it must comply with the following requirements:

- i. The challenge test shall include ~~both~~ a written ~~and practical~~ test and ~~both~~ must be taken in person using a live proctor. **[Adding a practical test component adds costs to the program that cannot be justified. Raters already certified should not be hampered in use of a different Registry for their clients by having to retake an expensive and time-consuming practical exam for work they are already certified to conduct. A proctored written exam is sufficient and aligns with the costs already associated with the HERS Program. As stated in a separate comment docketed earlier - A practical "hands-on" test in addition to a written exam will be costly to the Rater or firm looking to do business in another Provider's Registry. If the Provider's meet the training requirement, why do they need to demonstrate the use of the equipment again? This will add significant travel expense and time away from work for companies or individuals simply seeking to enter results into another database.]**
- ii. The written portion of the challenge test shall include no less than 100 ~~and no more than 1,000~~ questions prepared by the ECC-Provider.

iii. The written portion of the challenge test shall comply with all requirements in Section 10-103.3(d)1Avi.

~~iv. The practical portion of the challenge test shall comply with all requirements in Section 10-103.3(d)1Avii.~~

C. Training and Testing for Subsequent Triennial Code Cycle

Updates. An ECC-Provider shall provide training to previously certified ECC-Raters on changes made during any Triennial Code Cycle update. The Triennial Code Cycle Update training and testing shall comply with all requirements in Section 10-103.3(d)1A. ECC-Providers may offer a challenge test in compliance with Section 10-103.3(d)1B. **[This should be reconsidered.]**

Practical exams as part of Triennial Recertification need a cost assessment.

It would be better to require as an In-Lab audit once per code cycle rather than a practical exam in conjunction with the code cycle roll out given how little time and space there is between adoption of the Code, approval for Providers, and execution of the code. We cannot process/recertify Raters that quickly if they need hands on assessments.

For the 2022 code it would have been less than a month to train all Raters. In-Lab Audits for all Raters within each Code Cycle is far more feasible. This is a good place to insert the in-lab audit from the QA proposals as part of training, but only once per code cycle as to not incur excessive costs.]

2. ECC-Rater Certification.

- A. **Certification Requirements.** Certification as an ECC-Rater is limited to a single Triennial Code Cycle. The ECC-Provider shall record each Triennial Code Cycle for which an individual ECC-Rater has been certified to provide field verification and diagnostic test services. For each Triennial Code Cycle, an ECC-Provider shall certify an eligible ECC-Rater applicant who meets the minimum requirements for an ECC-Rater, as verified by the ECC-Provider, and completes and passes all training requirements. Prior to certification, an ECC-Provider shall advise the ECC-Rater applicant on the required conduct for ECC-Raters in Section 10-103.3(e), the progressive discipline requirements Section 10-103.3(d)7, and the appeal process in Section 10-103.3(h).
- B. **Certification Agreement.** Prior to certification, the ECC-Provider shall ensure that the applicant signs the ECC-Rater Agreement with the ECC-Provider, in which the ECC-Rater shall agree, at minimum, to comply with all applicable laws and regulations, including the requirements provided in Section 10-103.3, and shall maintain a copy of the signed agreement.
- C. **Eligibility.** An ECC-Rater is eligible if they have not been prohibited from

practicing by the Executive Director or Commission pursuant to Section 10-103.3(g)1.

3. **ECC-Rater Company Training.** For each Triennial Code Cycle, the ECC-Provider shall develop and maintain a course of training to summarize the responsibilities of the ECC-Rater Company in the performance of field verifications and diagnostic testing as prescribed in Section 10-103.3(d)3. The ECC-Rater Company training may not exceed eight (8) hours in duration. All training materials shall be approved by the Commission as part of the ECC-Provider's application (Section 10-103.3(c)1). An ECC-Provider's training curriculum for ECC-Rater Company applicants must, at minimum, include all of the following:
 - A. A summary of the Training curriculum for ECC-Rater applicants provided in Section 10-103.3(d)1.
 - B. Information regarding the following:
 - i. The roles and responsibilities of all entities regulated by Section 10-103.3 and in the Building Energy Efficiency Standards, Reference Appendices RA1, RA2, RA3, RA4, NA1, NA2, and JA7.
 - ii. Discipline procedure for ECC-Raters (Section 10-103.3(d)7) and ECC-Rater Companies (Section 10-103.3(d)8), and the appeal process (Section 10-103.3(h)).
 - iii. Quality assurance process (Section 10-103.3(d)5).
 - iv. Conflict of interest requirements (Section 10-103.3(b)1).
 - v. Prohibition on False, Inaccurate, or Incomplete Information (Section 10-103.3(b)2)
4. **ECC-Rater Company Certification**
 - A. **Certification Requirements.** An ECC-Provider shall certify an eligible ECC-Rater Company applicant that meets the minimum requirements for an ECC-Rater Company, as verified by the ECC-Provider, and completes and passes all training requirements. Prior to certification, an ECC-Provider shall advise the ECC-Rater Company applicant on the required conduct for ECC-Rater companies in Section 10-103.3(f)2, the discipline requirements Section 10-103.3(d)8 and the appeal process in Section 10-103.3(h).
 - B. **Certification Agreement.** The ECC-Rater Company applicant shall sign the ECC-Rater Company agreement with the ECC-Provider, in which the ECC-Rater Company shall agree, at minimum, to comply with all applicable laws and regulations, including the requirements provided in this Section 10-103.3.
 - C. **Public List.** ECC-Providers shall maintain a publicly available list of certified ECC-Rater Companies.
 - D. **Eligibility.** An ECC-Rater Company is eligible if it meets the minimum qualifications enumerated in Section 10-103.3(f)1B and has not been prohibited from practicing by the Executive Director or Commission

pursuant to Section 10-103.3(g)2.

- E. After its initial certification, an ECC-Rater Company does not need to complete the training curriculum again or be recertified for each Triennial Code Cycle, so long as it maintains its eligibility under Section 10-103.3(f)1B.