

<b>DOCKETED</b>	
<b>Docket Number:</b>	24-BSTD-01
<b>Project Title:</b>	2025 Energy Code Rulemaking
<b>TN #:</b>	258652
<b>Document Title:</b>	Excerpt of Revised Staff Draft – Title 24 FV&DT Regulations Showing Revisions – Appendix B
<b>Description:</b>	Staff is docketing two documents containing relevant portions of (1) Revised Draft Staff Report - 2025 Update of the Field Verification and Diagnostic Testing Requirements dated May 24, 2023, note that draft regulations are located in Appendix B, (Docket 22-BSTD-03 TN #: 250297), and (2) Draft 2025 Energy Code Express Terms dated November 3, 2023 (Docket 22-BSTD-01 TN#: 252915). Both documents were evaluated during pre-rulemaking activities and demonstrate that staff intended to remove procedures regarding Non-QII Shadow Audits (but leaving QII audits) in Section 10-103.3(d)5Cii and to remove In-lab Audit procedures in Section 10-103.3(d)5Ciii. The references to these removed procedures in Section 10-103.3(d)5B were inadvertently left in the 45-Day Express Terms.
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- 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 ~~FV&DT Technician~~ECC-Raters (Section 10-103.3(d)7) and ~~FV&DT Technician~~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. ~~**FV&DT Technician Company**~~**ECC-Rater Company Certification**

- A. **Certification Requirements.** An ~~FV&DT Administrator~~ECC-Provider shall certify an eligible ~~FV&DT Technician Company~~ECC-Rater Company applicant that meets the minimum requirements for an ~~FV&DT Technician Company~~ECC-Rater Company, as verified by the ~~FV&DT Administrator~~ECC-Provider, and completes and passes all training requirements. Prior to certification, an ~~FV&DT Administrator~~ECC-Provider shall advise the ~~FV&DT Technician Company~~ECC-Rater Company applicant on the required conduct for ~~FV&DT Technician~~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 ~~FV&DT Technician Company~~ECC-Rater Company applicant shall sign the ~~FV&DT Technician Company~~ECC-Rater Company agreement with the ~~FV&DT Administrator~~ECC-Provider, in which the ~~FV&DT Technician Company~~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.** ~~FV&DT Administrator~~ECC-Providers shall maintain a publicly available list of certified ~~FV&DT Technician~~ECC-Rater Companies.
- D. **Eligibility.** A ~~FV&DT Technician Company~~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 ~~FV&DT Technician Company~~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(d)4~~10-103.3(f)1B.

- 5. **Quality Assurance.** An ~~FV&DT Administrator~~ECC-Provider shall maintain a quality assurance program to ensure appropriate oversight of the ~~FV&DT Technician~~ECC-Raters it certifies. This program shall, at a minimum, include the following:

- A. **Quality Assurance Staff.** ~~FV&DT Administrator~~ECC-Providers shall maintain the necessary qualified staff to ensure a functioning quality assurance program that includes, at a minimum, performing the types of quality assurance reviews listed in Section 10-103.3(d)5 on ~~FV&DT Technician~~ECC-Raters. Any form of audit is subject to the same standards of required conduct as any other field verifications and diagnostic tests and is also subject to Quality Assurance review. Quality Assurance staff may not include active ~~FV&DT Technician~~ECC-Raters.
- B. **Verified ECC-Rater.** An ECC-Rater is designated as a "Verified ECC-Rater" once the ECC-Rater has been (1) continuously certified as an ECC-Rater for a minimum of five years and (2) confirmed for designation by the applicable ECC-Provider after passing all required quality assurance audits within a 12-month period, including at least one annual quality insulation installation (QII) shadow audit, one non-QII shadow audit, one in-lab audit, and one desk audit.
- i. This designation shall be immediately revoked by the ECC-Provider for any audit failure or the failure to be recertified as an ECC-Rater in any subsequent Triennial Code Cycle.
  - ii. This designation, once obtained, may be included in marketing materials. If this designation is revoked, it shall be removed from marketing materials within 10 business days.
- C. **Types of Quality Assurance Review.** Quality Assurance Review shall take the form of onsite audits, shadow audits, laboratory audits, and desk audits.
- i. **Onsite Audits.** An onsite audit is performed by the ~~FV&DT Administrator~~ECC-Provider following field verification and diagnostic testing by an ~~FV&DT Technician~~ECC-Rater it certified. Onsite audits are performed at the invitation of the homeowner, through the complaint or other processes. For an onsite audit the ~~FV&DT Administrator~~ECC-Provider shall independently repeat the field verification and diagnostic test to determine if it was accurately performed and whether all data was accurately collected and reported by the ~~FV&DT Technician~~ECC-Rater. This information shall be included in the annual reporting to the Commission (Section 10-103.3(d)11E) or provided in response to a request by the Commission. Onsite audits shall comply with the following:
    - a. Onsite audits must not be performed in the presence of the ~~FV&DT Technician~~ECC-Rater and can be performed any time after the ~~FV&DT Technician~~ECC-Rater has left the project site.
    - b. ~~FV&DT Technician~~ECC-Raters must not be informed that their field verification and diagnostic test is receiving an onsite audit until the onsite audit is complete and the results are documented.

- c. Onsite audits shall follow the audit requirements in the Building Energy Efficiency Standards Reference Appendices RA1, RA2, RA3, RA4, NA1, and NA2.
- d. The ~~FV&DT Administrator~~ECC-Provider shall issue a pass to the ~~FV&DT Technician~~ECC-Rater and ~~FV&DT Technician Company~~ECC-Rater Company if the onsite audit results show compliance with the passing requirements for onsite audits as indicated in the Building Energy Efficiency Standards Reference Appendices RA1, RA2, RA3, RA4, NA1, and NA2.
- e. Onsite audits shall be performed when an ~~FV&DT Administrator~~ECC-Provider is investigating a complaint from a homeowner about a field verification and diagnostic test.
- f. Onsite audits shall be performed for every seventh sample-group used in a single residential development.
  - (i) The ~~FV&DT Administrator~~ECC-Provider shall perform the onsite audit at an untested home in the same sample-group being tested.
  - (ii) If the ~~FV&DT Administrator~~ECC-Provider is refused access to the development, all sample-groups for the development will be considered conflicted data (Section 10-103.3(b)1B).
  - (iii) If the ~~FV&DT Administrator~~ECC-Provider is refused access to the development, the ~~FV&DT Technician~~ECC-Rater may be subject to investigation and disciplinary action.
- g. Onsite audit results shall be documented by the ~~FV&DT Administrator~~ECC-Provider, provided to the ~~FV&DT Technician~~ECC-Rater and ~~FV&DT Technician Company~~ECC-Rater Company, provided to the homeowner, and recorded in the ~~FV&DT Administrator~~ECC-Provider's quality assurance database (Section 10-103.3(d)9B).
- h. If the onsite audit reveals the ~~FV&DT Technician~~ECC-Rater did not accurately perform the field verification and diagnostic test or accurately collect or report data, the ~~FV&DT Administrator~~ECC-Provider shall initiate disciplinary action (Section 10-103.3(d)7).
- i. Onsite audits shall include the use of photograph evidence to be recorded in the ECC-Provider data registry as provided in Building Energy Efficiency Standards Reference Appendix JA7.5.6.1.
- ii. **Shadow Audits.** A shadow audit requires the ~~FV&DT Administrator~~ECC-Provider to audit the ~~FV&DT Technician~~ECC-Rater as they perform a field verification and diagnostic test and collect

and report the data. The ~~FV&DT Administrator~~ECC-Provider's auditor shall observe and may not aid the ~~FV&DT Technician~~ECC-Rater during the shadow audit. Every year, at least one shadow audit shall be performed at random by the ~~FV&DT Administrator~~ECC-Provider for each ~~FV&DT Technician~~ECC-Rater it has certified. In addition, all ~~FV&DT Technician~~ECC-Raters shall receive a shadow audit for Quality Insulation Installation field verification (Building Energy Efficiency Standards Reference Appendix RA3.5) once per year. For Verified ECC-Raters the shadow audit and QII audit frequency shall be reduced from once per year to once per Triennial Code Cycle. A shadow audit shall also be performed if requested by the Commission. Shadow audits shall comply with the following:

- a. The ~~FV&DT Technician~~ECC-Rater shall be informed of the shadow audit on the day of the audit and the ~~FV&DT Administrator~~ECC-Provider's auditor will explain their presence to the homeowner. The homeowner shall grant entry to the auditor. If entry is refused, the ~~FV&DT Administrator~~ECC-Provider shall reschedule the shadow audit.
- b. For newly constructed buildings, the developer or contractor shall not refuse a shadow auditor if sampling is being used on the development. If the auditor is refused entry, the data registry will not accept sample-based compliance documents from the developer, contractor, or ~~FV&DT Technician~~ECC-Rater in regard to the project.
- c. Shadow audits are limited to one field verification or diagnostic test where the ~~FV&DT Technician~~ECC-Rater shall setup measurement equipment, take measurements, and record results.
- d. The ~~FV&DT Administrator~~ECC-Provider's auditor shall use the shadow audit check list provided in the Building Energy Efficiency Standards Reference Appendix RA1, RA2, RA3, RA4, NA1, and NA2.
- e. The shadow audit results shall be documented by the ~~FV&DT Administrator~~ECC-Provider, provided to the ~~FV&DT Technician~~ECC-Rater and ~~FV&DT Technician Company~~ECC-Rater Company, and recorded in the ~~FV&DT Administrator~~ECC-Provider's quality assurance database (Section 10-103.3(d)9B).
- f. If the shadow audit reveals the ~~FV&DT Technician~~ECC-Rater did not accurately perform the field verification and diagnostic test or accurately collect or report data, the

~~FV&DT Administrator~~ECC-Provider shall initiate disciplinary action (Section 10-103.3(d)7).

iii. **In-Lab Audits.** An in-lab audit requires an ~~FV&DT Technician~~ECC-Rater perform mock field verification and diagnostic testing in a laboratory setting. The ~~FV&DT Administrator~~ECC-Provider shall develop in-lab audits to demonstrate the ~~FV&DT Technician~~ECC-Rater's performance competence in subjects specified in Section 10-103.3(d)1 the ~~FV&DT Technician~~ECC-Rater is certified to perform. All ~~FV&DT Technician~~ECC-Raters shall perform an in-lab audit at least once per year and as directed by the Commission. For Verified ECC-Raters the in-Lab audit frequency shall be reduced from once per year to once per Triennial Code Cycle. In-lab audits shall comply with the following:

- a. The ~~FV&DT Administrator~~ECC-Provider shall include failure conditions randomly in all in-lab audits that are consistent with failure conditions found in the field by onsite and shadow audits.
- b. The ~~FV&DT Administrator~~ECC-Provider shall make a mock data registry available to be used by the ~~FV&DT Technician~~ECC-Rater as part of the in-lab audits.
- c. All in-lab audits shall be approved by the Commission by demonstration during the application process (Section 10-103.3(c)1).
- d. All in-lab audits shall be performed in the same facilities as required by the Laboratory Training Requirements in Section 10-103.3(d)1Av.
- e. All in-lab audits shall be in-person using a live proctor with no more than ten test takers per proctor. ~~FV&DT Technician~~ECC-Raters shall not work in teams to complete any portion of any in-lab audit.
- f. The ~~FV&DT Administrator~~ECC-Provider shall not provide any equipment necessary to complete the in-lab audit.
- g. To receive a passing score, the ~~FV&DT Technician~~ECC-Rater shall determine the appropriate results for each in-lab audit including "failed" tests and demonstrate the proper reporting using a mock-interface for the data registry. The ~~FV&DT Technician~~ECC-Rater will be given two chances to pass each in-lab audit.
- h. The in-lab audit results shall be documented by the ~~FV&DT Administrator~~ECC-Provider, provided to the ~~FV&DT Technician~~ECC-Rater and ~~FV&DT Technician Company~~ECC-Rater Company, and recorded in the ~~FV&DT~~

~~Administrator~~ECC-Provider's quality assurance database (Section 10-103.3(d)9B).

- i. If the in-lab audit reveals the ~~FV&DT Technician~~ECC-Rater did not accurately perform the field verification and diagnostic test or accurately collect or report data, the ~~FV&DT Administrator~~ECC-Provider shall initiate disciplinary action (Section 10-103.3(d)7).
- iv. **Desk Audits.** Desk audits consist of an ~~FV&DT Administrator~~ECC-Provider using registered compliance documents within an ~~FV&DT Administrator~~ECC-Provider data registry to evaluate an ~~FV&DT Technician~~ECC-Rater's Certificates of Compliance (Section 10-103(a)), Certificates of Installation (Section 10-103(b), and Certificates of Verification (Section 10-103(d)) for consistency and accuracy. ~~FV&DT Administrator~~ECC-Providers shall perform desk audits of all certified ~~FV&DT Technician~~ECC-Raters at least once per year and as directed by the Commission. For Verified ECC-Raters the Desk audit frequency shall be reduced from once per year to once per Triennial Code Cycle. Desk audits shall comply with the following:
  - a. ~~FV&DT Administrator~~ECC-Providers shall develop and document a maximum variance for each data entry point for each field verifications and diagnostic test.
  - b. ~~FV&DT Administrator~~ECC-Providers shall identify a project to audit where the ~~FV&DT Technician~~ECC-Rater provided field verification and diagnostic test services. The ~~FV&DT Administrator~~ECC-Provider shall collect all compliance documents associated with the project as necessary to audit the field verifications and diagnostic tests performed by the ~~FV&DT Technician~~ECC-Rater at the project site and may contact outside authorities, such as the local building authority with jurisdiction over the project.
  - c. The ~~FV&DT Administrator~~ECC-Provider shall confirm the measurements, calculations, and other information obtained during field verifications and diagnostic tests at the project are within expected tolerances.
  - d. The ~~FV&DT Administrator~~ECC-Provider shall compare the field verification and diagnostic test results from the project site to no less than twenty other field verification and diagnostic test results performed by the same ~~FV&DT Technician~~ECC-Rater on other project sites prior to the audited project. If the comparison suggests the subject project results could have been copied from prior project sites, the ~~FV&DT Administrator~~ECC-Provider shall perform a