

## DOCKETED

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*Comment Received From: Thomas Enslow*

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**CA IBEW-NECA LMCC Comments on 2016 NonRes Compliance Manual**

*Additional submitted attachment is included below.*

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August 27, 2015

**VIA EMAIL ONLY**

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[Docket@energy.ca.gov](mailto:Docket@energy.ca.gov)

**Re: CA IBEW-NECA LMCC Comments on 2016 Nonresidential  
Compliance Manual, Chapter 13 Acceptance Test Technician  
Certification Provider Requirements**

Dear Docket Office:

These comments are submitted on behalf of the California State Labor Management Cooperation Committee for the International Brotherhood of Electrical Workers and the National Electrical Contractors Association ("LMCC") to comment on the proposed 2016 Nonresidential Compliance Manual provisions related to requirements for Acceptance Test Technician Certification Providers ("ATTCPs").

The LMCC has a strong interest in ensuring the success and effectiveness of the certification requirements for lighting control acceptance test technicians. The LMCC spent significant time and resources ensuring that a qualified workforce was in place to enable the success of the 2013 Energy Code's Lighting Control Acceptance Test Technician certification requirements. More than 500 NECA contractors and IBEW electricians are currently trained and certified as Lighting Control Acceptance Test Technicians.

Certification for Lighting Control Acceptance Test Technicians was enacted by the Commission in response to testimony that training, certification and quality control of acceptance test technicians were needed to make the Commission's acceptance test requirements meaningful, reliable and effective. Reliable and effective acceptance testing is an essential component to meeting California's energy efficiency goals. Properly installed and functioning advanced lighting controls are an essential component to meeting California's energy efficiency goals. Lighting accounts for almost 40% of a commercial building's electrical use. This is double the energy used for cooling. However, studies have shown that without proper functional testing and acceptance test documentation, most installations fail to perform as efficiently as required by code.<sup>1</sup> Effective acceptance testing, however, requires ensuring that the technicians performing the acceptance testing have sufficient training and oversight. The Commission has thus adopted regulations in Part 1 of Title 24 to ensure that ATTCPs have enacted sufficiently rigorous and reliable certification procedures and requirements and have demonstrated the capability to operate and oversee a reliable certification program.

The LMCC continues to believe that the underlying ATTCP regulations should be strengthened to better ensure reliable and effective certification programs. Nonetheless, the LMCC appreciates the efforts of staff to update the compliance manual in a way that provides improved guidance to ATTCPs and ATTCP applicants. In particular, we support the inclusion of examples of best practices for ensuring effective and reliable certification programs.

We have reviewed the proposed amendments and have provided the attached marked-up document with various suggested edits. For the most part the suggestions are merely editorial in order to improve clarity and consistency. In several places, however, we identify compliance manual language that is slightly inconsistent with the Title 24, Part 1 regulatory requirements, creating the potential for confusion.

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<sup>1</sup> See, e.g., California Public Utilities Commission, *Decision Providing Guidance on 2013-2014 Energy Efficiency Portfolios 2012 Marketing, Education, and Outreach* (D.12-05-015) (May 10, 2012) §13.2.2 at p. 279.

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In addition, the LMCC strongly objects to the inclusion of the bullet point on page 13-252 that states "Is the installation and repair of lighting fixtures relevant experience for lighting controls?" This statement is ambiguous and fails to provide guidance relevant to the regulatory prequalification requirement. The Title 24, Part 1 regulation requires three years of professional experience "in lighting controls and electrical systems." Lighting fixtures are not lighting controls; nor are they contained in the definition of lighting controls found in Title 24, Part 6, Section 100.1. Moreover, this sentence is inconsistent with licensing distinctions regarding lighting fixture work that may be performed by nonresidential lighting technicians and other electrical work that may only be performed by certified general electricians, such as the installation of advanced lighting controls. We assume the intent of this provision was not to weigh in on jurisdictional and licensing issues. We respectfully request that the compliance manual remain silent on this issue. This sentence should be struck and replaced with the language actually contained in the Title 24, Part 1 requirements.

We appreciate the opportunity to comment on the proposed 2016 Compliance Manual. Please let us know if you have any questions regarding comments contained in the attached document mark-up.

Sincerely,

A handwritten signature in blue ink that reads "Thomas A. Enslow". The signature is written in a cursive style with a long horizontal line extending to the right.

Thomas A. Enslow

TAE:lj1

Attachment: CA IBEW-NECA LMCC, Compliance Manual Ch. 13 ATTCP Markup

*Evaluation*

This section briefly describes the steps followed during the acceptance test. Enter either Pass or Fail in the boxes next to the steps. Any portion that fails should be explained in the given rows.

**13.4113.3613.41 Acceptance Test Technician Certification Provider (ATTCP)**

This section goes over the requirements for:

Industry certification thresholds before acceptance test technician and employer certification requirements go into effect;

Acceptance Test Technician Certification Provider (ATTCP) qualifications and approval;

Training and Certification procedures for Acceptance Test Technicians and Employers;

Provider Accountability; and

Interim Approval.

Nonresidential Lighting Controls Acceptance Test Training and Certification

**1. Industry Certification Thresholds**

Field Technicians can complete acceptance tests for lighting controls found in Section 130.4 of the Building Energy Efficiency Standards (Standards) without being a certified Lighting Controls Acceptance Test Technician until the following ATTCP requirements are met:

A minimum of 300 Lighting Controls Acceptance Test Technicians have been trained and certified to complete the acceptance tests of Section 130.4 by ATTCP(s) approved by the Energy Commission; and

ATTCP(s) provide reasonable access, determined by the Energy Commission, for the training and certification for the majority of professions qualified to complete the work of lighting control field technicians. These professions include: electrical contractors, certified general electricians, professional engineers, controls installation and start-up contractors and certified commissioning professionals who have verifiable training, experience and expertise in lighting controls and electrical systems. The Energy Commission will consider, in its determination of "reasonable access," factors such as certification costs commensurate with the complexity of the training being provided, prequalification criteria, curriculum and, class availability throughout the state.

After the above ATTCP requirements are met all Field Technicians must be a certified Lighting Controls Acceptance Test Technician employed by a certified Lighting Controls Acceptance Employer to be able to complete any of the acceptance tests of Section 130.4.

**A. Provider Qualifications**

The requirements to become either a Lighting Controls or Mechanical Nonresidential Acceptance Test Technician Certification Provider (ATTCP) are very similar. Therefore, in this section we will address both the Lighting Controls and Mechanical ATTCP application requirements together, calling out specific

## Summary of Comments on Pages 248 to 267 from 2016\_CHAPTER\_13\_-Compliance Manual DRAFT-Acceptance\_Requirements (LMCC Redline).pdf

This page contains no comments

~~ifferences when warranted. The perspective ATTCPs shall must submit a written application to the Energy Commission with a summary and the related background documents to explain how the following criteria and procedures have been met that contains the following three major elements:~~

### **1. Organizational Structure**

~~**Requirement:** ATTCPs shall provide written explanations of the organization type, by-laws, and ownership structure. ATTCPs shall explain in writing how their certification program meets the qualification requirements of §10-103.1(c) (or §10-103.2(c)). ATTCPs shall explain in their application to the Energy Commission their organizational structure and their procedures for independent oversight, quality assurance, supervision and support of the acceptance test training and certification processes (§10-103.1(c)(1) and §10-103.2(c)(1)). ATTCPs written explanations shall include information of the organization type, by-laws, and ownership structure, how their certification program meets the qualification requirements of Title 24, Part 1, Section 10-103-A(c), and how their organizational structure and procedures include independent oversight, quality assurance, supervision and support of the acceptance test training and certification processes.~~

~~**Intent:** These ~~These~~ requirements are ~~is~~ necessary to ensure, at a minimum, that the organizations providing certification services to the building industry have a business structure that ~~will effectively~~ is conducive to train, and certify and oversee Lighting Controls Acceptance Test Technicians (ATTs). ~~This will improve compliance with the Standards by providing certification services that will produce Lighting Controls Acceptance Test Technicians better qualified to perform the acceptance tests required in the Standards.~~~~

~~**Compliance:** The Energy Commission has approved several ATTCP applicants and all applications included Articles of Incorporation, Bylaws, Trust Agreements and in one case, the Section 501(c) status ~~(with the corresponding employer identification number) of the organization. A copy of the ethics policy for the ATTCP is also acceptable.~~ This section of the application should also include a description of how the organization is conducive to providing training, certification, oversight and support to the technicians that they will be certifying.~~

~~The ATTCP may also describe what qualifications and experience the ATTCP may have to operate and oversee an accreditation program.~~

### **2. Certification of Employers**

~~**Requirement:** The ATTCPs shall provide written explanations of their certification and oversight of Acceptance Test Employers (ATEs). This explanation shall document how the ATTCP ensures that the employers are providing quality control and appropriate supervision and support for their Acceptance Test Technicians (§ 10-103.1(c)(2) and § 10-103.2(c)(2)).~~

Author: TEnslow Subject: Cross-Out Date: 8/25/2015 4:52:19 PM

Recommend moving this to the quality assurance section. Current location appears to conflate organizational structure with having an ethics policy for employers and technicians. "also acceptable" is vague and suggests ethics policy could be provided in lieu of information about organizational structure. Recommend changing to "A copy of any relevant ethics policies should also be provided."

**Intent:** ATEs must have an understanding of what tasks the ATT is responsible to complete. Additionally, the ATE must manage and provide support to the ATT in performing their tasks. The ATTCP is required to describe the training and requirements that they will place on the ATE for these endeavors and issue certificates to qualified ATE applicants.

**Compliance:** The Energy Commission recognizes that there are many roads to compliance in regards to ATE training, certification and oversight. Technical training typically consists of 4 to 24 hours of instruction. Quality control, supervision and support requirements implemented by the ATTCP on the ATE can vary considerably. Some elements that the ATTCP might consider implementing, but that are not specifically required by the Energy Commission regulations include the following:

- **Union contracting requirements:** The ATTCP may be restricted to serving unionized technicians only and as a result the ATTCP may require that the ATE be a party in good standing with a union contract. This may entail several significant requirements for the ATE.
- **Third-party certificate holders:** The ATTCP may require that the ATE hold a valid certificate from a third party such as specific types of Testing and Air Balancing (TAB) training.
- **Multiple office management requirements:** The ATTCP may require that an ATE with multiple offices maintain middle or senior level management on site at each office with a valid ATE certificate issued by the same ATTCP.
- **Restrictive employment practices:** the ATTCP may restrict the ATE from employing an ATT that is certified by a different ATTCP. Additionally, the ATTCP may restrict the ATE from holding certificates from multiple ATTCPs.
- **Licensing, insurance and safe practices requirements:** The ATTCP may require the ATE to provide initial and ongoing proof of workers compensation and general liability insurance (typically a minimum dollar amount is specified), local business licenses, Injury and Illness Prevention Program and Code of Safe Practices (typically required to be consistent with the California Code of Regulations, Sections 1509 and 3203).
- **Equipment Policy:** The ATTCP may require the ATE to agree to requirements for ensuring that the ATE and ATT possess and properly maintain diagnostic equipment.

### 3. Certification of Technicians

**Requirement:** ATTCPs shall include with their application a complete copy of all training and testing procedures, manuals, handbooks and materials. ATTCPs shall explain in writing how their training and certification procedures include, but are not limited to, the following (§ 10-103.1(c)(3) et sec and § 10-103.2(c)(3) et sec):

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- Author: TEnslow Subject: Sticky Note Date: 8/25/2015 5:30:52 PM  
"The ATTCP should develop a policy to address where a change in employment results in no ATE manager or supervisor having completed the ATE training."
- Author: TEnslow Subject: Highlight Date: 8/25/2015 4:54:51 PM  
Move ethics policy section to here: "Ethics Policy: The ATTCP may adopt an ethics policy for ATEs"
- Author: TEnslow Subject: Sticky Note Date: 8/25/2015 5:06:25 PM  
Recommend change to recommend that ATTCPs consider how they will handle such a scenario: "The ATTCP should consider how they will implement ATE training and certification requirements where an ATE has multiple offices. The ATTCP may consider requiring that an ATE with multiple offices shall ensure a middle or senior management level employee at each office has completed the ATE certification training."



a. Training Scope. The scope of the training shall include both hands-on experience and theoretical training to certify competency in the technologies and skills necessary to perform the acceptance tests.

b. ATT Training.

(i) Curricula. ATTCP training curricula for ATTs shall include, but not be limited to, the analysis, theory, and practical application as required in regulation. The curricula requirements for the Lighting Controls and Mechanical ATT training are significantly different from each other and can be found in §10-103.1(c)(3)(B)(i) and §10-103.2(c)(3)(B)(i).

#### B. Training and Certification Procedures

ATTCPs are required to provide both hands-on experience and theoretical training such that Lighting Controls Acceptance Test Technicians demonstrate their ability to complete the acceptance tests of Section 130.4 of the Standards, as well as, all documentation requirements. ATTCPs are also required to provide training that covers the scope and process of the acceptance tests of Section 130.4 to Lighting Controls Acceptance Test Employers.

#### Lighting Controls Acceptance Test Technicians

ATTCPs training curricula for Lighting Control Acceptance Test Technicians shall include, but not be limited to, the analysis, theory, and practical application of the following:

- \_\_\_\_\_ a) Lamp and ballast systems;
- \_\_\_\_\_ b) Line voltage switching controls;
- \_\_\_\_\_ c) Low voltage switching controls;
- \_\_\_\_\_ d) Dimming controls;
- \_\_\_\_\_ e) Occupant sensors;
- \_\_\_\_\_ f) Photosensors;
- \_\_\_\_\_ g) Demand responsive signal inputs to lighting control systems;
- \_\_\_\_\_ h) Building Energy Efficiency Standards required lighting control systems;
- \_\_\_\_\_ i) Building Energy Efficiency Standards required lighting control system specific analytical/problem solving skills;
- \_\_\_\_\_ j) Integration of mechanical and electrical systems for Building Energy Efficiency Standards required lighting control installation and commissioning;
- \_\_\_\_\_ k) Safety procedures for low voltage retrofits (<50 volts) to control line voltage systems (120 to 480 volts);
- \_\_\_\_\_ l) Accurate and effective tuning, calibration, and programming of Building Energy Efficiency Standards required lighting control systems;

This page contains no comments

m) ~~Measurement of illuminance according to the Illuminating Engineering Society's measurement procedures as provided in the IESNA Lighting Handbook, 10th Edition, 2011, which are incorporated by reference;~~

n) ~~Building Energy Efficiency Standards lighting controls acceptance testing procedures; and~~

o) ~~Building Energy Efficiency Standards acceptance testing compliance documentation for lighting controls.~~

(ii) **Hands-on training.** The ATTCP shall describe in their application the design and technical specifications of the laboratory boards, equipment and other elements that will be used to meet the hands-on requirements of the training and certification.

(iii) **Prequalification.** Participation in the technician certification program shall be limited to persons who have at least three years of professional experience and expertise as determined by the ATTCP.

(iv) **Instructor to Trainee Ratio.** The ATTCP shall document in its application to the Energy Commission why its instructor to trainee ratio is sufficient to ensure the integrity and efficacy of the curriculum and program based on industry standards and other relevant information.

(v) **Tests.** The ATTCP shall describe the written and practical tests used to demonstrate each certification applicant's competence in all specified subjects. The ATTCPs shall retain all results of these tests for five years from the date of the test.

(vi) **Recertification.** The ATTCP shall recertify all ATTs and ATEs prior to the implementation of each adopted update to the Building Energy Efficiency Standards as these updates affect the acceptance test requirements.

c. ATE Training. Training for ATEs shall consist of at least a single class or webinar consisting of at least four hours of instruction that covers the scope and process of the acceptance tests in Building Energy Efficiency Standards.

d. Complaint Procedures. The ATTCPs shall describe in their applications to the Energy Commission procedures for accepting and addressing complaints regarding the performance of any ATT or ATE certified by the ATTCP, and explain how building departments and the public will be notified of these proceedings.

e. Certification Revocation Procedures. The ATTCPs shall describe in their applications to the Energy Commission procedures for revoking their certification of ATTs and ATEs based upon poor quality or ineffective work, failure to perform acceptance tests, falsification of documents, failure to comply with the documentation requirements of these regulations or other specified actions that justify decertification.

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Author: TEnslo

Subject: Highlight

Date: 8/25/2015 5:36:52 PM

This is inconsistent with statutory requirement. Should state: "...professional experience and expertise in lighting controls and electrical systems as determined by..."

f. Quality Assurance and Accountability. The ATTCP shall describe in their application to the Energy Commission how their certification business practices include quality assurance and accountability measures, including but not limited to independent oversight of the certification processes and procedures, visits to building sites where certified technicians are completing acceptance tests, certification process evaluations, building department surveys to determine acceptance testing effectiveness, and expert review of the training curricula developed for Building Energy Efficiency Standards, Section 130.4. The ATTCP shall review a random sample of no less than 1 percent of each ATT's completed compliance documents, and shall perform randomly selected on-site audits of no less than 1 percent of each ATT's completed acceptance tests. Independent oversight may be demonstrated by accreditation under the ISO/IEC 17024 standard.

g. Certification Identification Number and Verification of ATT Certification Status. Upon certification of an ATT, the ATTCP shall issue a unique certification identification number to the ATT. The ATTCP shall maintain an accurate record of the certification status for all ATTs that the ATTCP has certified. The ATTCP shall provide verification of current ATT certification status upon request to authorized document Registration Provider personnel or enforcement agency personnel to determine the ATT's eligibility to sign Certificate of Acceptance documentation.

Intent: These requirements are the most significant of the ATTCP regulations. They encapsulate all the required training, testing, certification and oversight for the ATTs that the ATTCP must provide. These requirements describe the level of experience, education, professionalism and accountability of the ATT that the Energy Commission is seeking and that the ATTCP must enforce.

**Compliance:**

- The training must include both classroom and laboratory training. In essence, the technician must be instructed on all acceptance tests and then practice those instructions in a laboratory setting. Furthermore, the ATT must be educated on the general science regarding acceptance testing, as well as the procedure to complete and submit the correct acceptance test documents.
- The classroom training must include all of the curricula listed in the regulation, in addition to training on the acceptance tests themselves. Several ATTCPs require extensive classroom training to accomplish this educational requirement. However, one ATTCP requires that each applicant hold a third party certificate of training that the Energy Commission found to be equivalent to the curricula required.
- Each ATT applicant must be prequalified with three years of professional experience. The ATTCP must clarify the process that they will used to determine what experience is considered professional and relevant to either lighting controls or mechanical acceptance testing as well as to what extent the ATTCP will verify

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Author: TEnslow Subject: Highlight Date: 8/25/2015 5:54:33 PM  
For consistency with regulation, should say "three years of professional experience in lighting controls and electrical systems."

Author: TEnslow Subject: Highlight Date: 8/25/2015 5:57:28 PM  
Add clarifying sentence: "Professional experience means experience in a professional occupation that provides training and work experience related to the systems subject to lighting control or mechanical acceptance testing."

that experience. The following are some relevant questions that the ATTCP ~~might~~ consider when establishing an ATT applicant's prequalified experience:

- ~~Is the experience documented and does it exclusively include designing, installing or commissioning activities?~~
- ~~Is the installation and repair of lighting fixtures relevant experience for lighting controls?~~
- ~~Are letters from employers or other written evidence of relevant experience available?~~
- ~~Should professional experience be restricted to applicants that are one of the following ~~selected~~ professionals:~~
  - ~~California licensed electrical contractors~~
  - ~~California licensed mechanical or HVAC contractors~~
  - ~~California certified general electricians~~
  - ~~California licensed air conditioning repair contractors~~
  - ~~California licensed professional engineers~~
  - ~~Lighting control manufacturer representative~~
  - ~~Certified commissioning professionals~~
  - ~~Other professional occupations that are demonstrated to provide relevant industry accepted training and work experience.~~

- To be able to participate in the technician certification program Field Technicians must have at least three years of verifiable professional experience and expertise in lighting controls and electrical systems as determined by the Lighting Controls ATTCPs, to demonstrate their ability to understand and apply the Lighting Controls Acceptance Test Technician certification training. ATTCPs shall clarify in writing the process that will be used to make their determination of qualified professional experience to the Energy Commission.

- ATTCPs must have a sufficient number of instructors to effectively train the amount of participants in both classroom and laboratory work. ATTCPs ~~shall clarify in writing in their application to the Energy Commission how they will have a sufficient number of instructors to meet the demand of potential Field Technicians. Typically, the instructor to student ratio for classroom training is much higher than for laboratory training. In the applications that the Energy Commission has approved, classroom instructor to student ratios were between 1:25 and 1:35; for laboratory training, the ratios were between 1:6 and 1:12. Most importantly, each ATTCP application included a discussion of the basis for each ratio.~~


- All ATT applicants ~~participants~~ will have to take both a written and practical test to


- Author: TEnslow Subject: Highlight Date: 8/25/2015 5:59:05 PM  
Recommend changing "might consider" to "should consider" (change wouldn't make mandatory, but would ensure ATTCPs at least consider these issues when developing their policies).
- Author: TEnslow Subject: Highlight Date: 8/25/2015 5:57:39 PM
- Author: TEnslow Subject: Highlight Date: 8/25/2015 6:09:36 PM  
Recommend changing to more relevant question: "and how is it related to the systems subject to lighting or mechanical acceptance testing requirements"
- Author: TEnslow Subject: Highlight Date: 8/25/2015 6:07:07 PM  
Change to "How is the experience documents (for example letters from employers or other written evidence)"
- Author: TEnslow Subject: Cross-Out Date: 8/26/2015 11:24:36 PM  
Inconsistent with regulation. Regulation requires experience "in lighting controls and electrical systems."
- Author: TEnslow Subject: Cross-Out Date: 8/25/2015 6:15:04 PM
- Author: TEnslow Subject: Sticky Note Date: 8/25/2015 6:16:24 PM  
See proposed edit to first bullet point. Separate bullet point not necessary with that edit.
- Author: TEnslow Subject: Cross-Out Date: 8/25/2015 6:16:58 PM
- Author: TEnslow Subject: Sticky Note Date: 8/27/2015 10:20:08 AM  
Term "restricted" fails to convey that intent of this suggestion is to provide a way to ensure applicants meet professional experience requirements. Recommend replacing with: "Should professional experience be demonstrated by requiring applicants to be certified in specifically identified professions, such as:..."
- Author: TEnslow Subject: Cross-Out Date: 8/25/2015 6:26:09 PM
- Author: TEnslow Subject: Highlight Date: 8/25/2015 6:28:03 PM  
As written, term relevant is ambiguous. Recommend revising to "...work experience relevant to the systems subject to lighting control or mechanical acceptance testing."

demonstrate the ~~participant's~~ applicant's competence in all specified subjects to become a certified ~~Lighting Controls Acceptance Test Technician~~ ATT. The ATTCPs are required to retain all results of these tests for five years from the date the test was taken. When developing and implementing both written and practical tests, the ATTCP should consider the following issues:

- Consider validating exams by subject matter experts for content.
- Pilot testing and statistical analysis by qualified psychometricians can identify poor quality questions and bias as well as validating a passing score.
- Checking exam question response option frequency and other measurements of consistency may help validate the exam rigor and justify passing scores and performance standards.
- Annually evaluate exam questions to confirm reliability, rigor and lack of bias.
- Validation for lack of bias consistent with the Uniform Guidelines on Employee Selection Procedures (1978) Federal Register, 43(166), 38290-38315.
- Using three or more different version of exams with random question generation will aid in exam rigor.
- ATTCPs are required to recertify. Recertification will be required of all Lighting Controls Acceptance Test Technicians ~~ATTs~~ each time the Standards are updated with substantially new and/or modified acceptance test requirements. Recertification is required for all ATTs following an update to the Title 24, Part 6 Building Energy Efficiency Standards and the Energy Commission approval of the ATTCP training and testing materials. The ATTCP will submit their training and testing materials and recertification process to the Energy Commission for approval. Once approved, the ATTCP will implement the recertification process.
- ATTCPs are required to have procedures for accepting and addressing complaints regarding the performance of any certified ATT or ATE and must have a clear explanation on how building departments and the public can complete these procedures.
- ATTCPs have the authority to decertify ATTs and ATEs based upon poor quality or ineffective work, failure to perform acceptance tests, falsification of documents, failure to comply with the documentation requirements of these regulations or other specified actions that justify decertification.
- ATTCPs must include quality assurance, independent oversight and accountability measures, such as, independent oversight of the certification processes and procedures, visits to building sites where certified ATTs are completing acceptance tests, certification process evaluations, enforcement agency surveys to determine acceptance testing effectiveness, and expert review of the training curricula developed for the Standards. Independent oversight may be demonstrated by

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 Author: TEnslow Subject: Highlight Date: 8/25/2015 6:48:46 PM  
Importance of random questions and multiple versions of exams is exam security, not rigor. Change to "Adopt measures to ensure exam security such as, for example, having multiple versions of exams with random question generation and at least twice the number of questions in a validated question bank than are scored on any given test."

 Author: TEnslow Subject: Cross-Out Date: 8/25/2015 6:41:12 PM

accreditation under the ISO/IEC 17024 standard. The regulations require that the ATTCP review a random sample of no less than 1 percent of each Technician's completed compliance documents, and perform randomly selected on-site audits of no less than 1 percent of each ATT's completed acceptance tests. Further recommendations for the ATTCP to consider when developing a quality assurance program include the following:

- For the first three years of operation, review a random sample of 6 percent of each technician's completed documents and perform on-site audits of 6 percent of acceptance tests.
- For years 4 and 5 of the ATTCP operation, review a random sample of 4 percent of each technician's completed documents and perform on-site audits of 4 percent of acceptance tests.
- After 5 years of operation, reduce a random sample of 2 percent of each ATT's completed compliance documents and perform on-site audits of 2 percent of acceptance tests.
- The consequences of failed audits should be fully described by the ATTCP.

Each Provider may establish an Energy Commission-approved challenge test that evaluates competence in each area addressed by the Provider's training program. If a Field Technician applicant successfully passes this challenge test, the Provider may waive the classroom training requirement and the written and practical test requirements for that applicant. An applicant who passes this challenge test shall also successfully meet the requirements specified in Title 24, Part 4, Section 10-103-A(e).

ii. Lighting Controls Acceptance Test Employers

ATTCPs must provide certification and oversight of Lighting Controls Acceptance Test Employers to ensure quality control and appropriate supervision and support for Lighting Controls Acceptance Test Technicians.

Lighting Controls Acceptance Test Employers need to participate in a single class or webinar for a minimum of at least four hours of instruction that covers the scope and process of the acceptance tests in Section 130.4 of the Standards.

a. Provider Accountability

- ATTCPs are required to have procedures for accepting and addressing complaints regarding the performance of any certified Lighting Controls Acceptance Test Technician and/or Employer, and must have a clear explanation on how building departments and the public can complete these procedures.
- ATTCPs have the authority to decertify Lighting Controls Acceptance Test Technicians and Employers based upon poor quality or

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Author: TEnslow Subject: Cross-Out Date: 8/27/2015 10:17:13 AM

In order to give more meaningful context to the language below, change to: "ATTCPs might consider whether to require a higher percentage of document and on-site audits the first few years of operation in order to ensure that any initial issues with training or compliance are identified and addressed. For example, one ATTCP proposed the following: ..."

Author: TEnslow Subject: Highlight Date: 8/25/2015 6:51:23 PM

Insert "The Consequences of failed audits should be fully described by the ATTCP."

Author: TEnslow Subject: Cross-Out Date: 8/25/2015 7:00:04 PM

Move to above. This should be a requirement, not a consideration; and is not relevant to the other bullet points.

- (vi) NA7.5.7, NA7.5.9 Hydronic System Variable Flow Controls
- (vii) NA7.5.10 Automatic Demand Shed Controls

- b. ATTCPs provide reasonable access, determined by the Energy Commission, for the training and certification for the majority of professions qualified to complete the work of mechanical field technicians. These professions include: Professional engineers, HVAC installers, mechanical contractors, TABB certified technicians, controls installation and startup contractors and certified commissioning professionals who have verifiable training, experience and expertise in HVAC systems. The Energy Commission will consider, in its determination of "reasonable access," factors such as certification costs commensurate with the complexity of the training being provided, prequalification criteria, curriculum and, class availability throughout the state.

~~After the above ATTCP requirements are met all Field Technicians must be a certified Mechanical Acceptance Test Technician employed by a certified Mechanical Acceptance Employer to be able to complete any of the acceptance tests of Section 120.5.~~

#### Intent

~~The Threshold requirements have several goals. First, to make sure that there are enough certified technicians to cover the entire acceptance testing workload that exists in all counties of California. Second, to make sure that any qualified person has access to become certified if they so choose. Third, to ensure that the market is not impacted significantly by a scarcity of certified ATTs.~~

#### Compliance

~~As the ATTCP program exists now, there is a division between unionized and non-unionized technicians. Therefore, in order to satisfy the Threshold requirements it is necessary for there to be a Nonresidential Mechanical ATTCP that will accept non-union applicants.~~

## 2. Provider Qualifications

ATTCPs shall submit a written application to the Energy Commission with a summary and the necessary background documents to explain how the following criteria and procedures have been met:

### A. Organizational Structure

ATTCPs written explanations shall include information of the organization type, by-laws, and ownership structure, how their certification program meets the qualification requirements of Title 24, Part 1, Section 10-103-B(c), and how their organizational structure and procedures include independent oversight, quality assurance, supervision and support of the acceptance test training and certification processes. These requirements are necessary to ensure, at a minimum, that the organizations providing certification services to the building industry have a business structure that will effectively train and certify Mechanical Acceptance Test Technicians. This will improve compliance with the Standards by providing certification

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Author: TEEnslow Subject: Sticky Note Date: 8/27/2015 10:16:45 AM

While not relevant to Lighting Control ATTCPs (CALCTP trains and certifies both unionized and non-unionized employers and technicians), this provision adds requirements that are not in the adopted regulations and presupposes the Commissioners determination of reasonable access; accordingly, setting forth this additional requirement in the compliance manual constitutes an underground regulation.