

## Energy - Docket Optical System

---

**From:** Loyer, Joe@Energy  
**Sent:** Tuesday, November 06, 2012 4:41 PM  
**To:** Loyer, Joe@Energy  
**Subject:** FW: Docket No. 12-BSTD-2 - comments on Acceptance Test Certification regulations  
**Attachments:** Lab Boards - Proposed revisions to CEC Acceptance Test Regulations.doc

**Follow Up Flag:** Flag for follow up  
**Flag Status:** Flagged

---

**From:** Thomas A. Enslow [<mailto:TEnslow@adamsbroadwell.com>]  
**Sent:** Tuesday, November 06, 2012 3:46 PM  
**To:** Brook, Martha@Energy  
**Cc:** Bernie Kotlier ([ibewnecagreen@gmail.com](mailto:ibewnecagreen@gmail.com)); Eddie Bernacchi; Eduardo Martinez; Scott Wetch  
**Subject:** Docket No. 12-BSTD-2 - comments on Acceptance Test Certification regulations

CALIFORNIA ENERGY COMMISSION  
Attention: Docket No. 12-BSTD-2  
Dockets Office  
1516 Ninth Street, MS-4  
Sacramento, CA 95814



The following comments are submitted on behalf of the California State Labor Management Cooperation Committee and Bernie Kotlier, co-chair of the California Advanced Lighting Controls Training Program ("CALCTP").

We have reviewed the proposed Nonresidential Acceptance Testing Certification regulations and strongly support their adoption, with a few minor changes.

Attached are suggested changes that clarify that an ATTCP application should include a description of the design and technical specifications of the lighting controls training laboratory boards and equipment that will be used to meet the hands-on requirements of the training and certification. In addition the application should document how training boards and equipment will be updated regularly to keep pace with developments in the marketplace.

Meaningful certification will be dependent on technicians receiving hands on training on a comprehensive representation of lighting control systems and devices. The only way to ensure this occurs is for the ATTCP application to include a description of the equipment that they will use to provide this training. While we assume that staff would require this information to be included as part of their review of any ATTCP application, it makes sense to expressly flag this requirement in the regulations so that ATTCP applicants are aware ahead of time that this information needs to be part of an application. The result should be smoother and faster reviews of any applications.

We have also proposed adding an amendment to section (c)3.a that clarifies what is meant by the term "hands-on" training. A public comment you received by Mr. Miller suggested that this term needed explanation.

Finally, we have proposed some additional language regarding the qualifications of lab instructors and the scope of lab requirements. These proposals are based on CALCTP's own experience regarding the amount of hands-on lab training needed to ensure competency in advanced lighting systems and regarding the ratio of instructors to trainees that is most effective in the hands-on lab setting. The proposed minimum 40 hour lab instruction is based upon training electricians who already have substantial apprenticeship training and real world experience with electrical systems.

Technicians who are not electricians would likely require additional hands-on lab training, depending on their experience and knowledge.

We appreciate your consideration of these minor amendments to the proposed regulations.

Regards,

Tom Enslow

*Thomas A. Enslow*  
*Adams Broadwell Joseph & Cardozo*  
*520 Capitol Mall, Suite 350*  
*Sacramento, CA 95814*  
*Tel: (916) 444-6201*  
*Fax: (916) 444-6209*  
[tenslow@adamsbroadwell.com](mailto:tenslow@adamsbroadwell.com)

---

This e-mail may contain material that is confidential, privileged and/or attorney work product for the sole use of the intended recipient. Any review, reliance or distribution by others or forwarding without express permission is strictly prohibited. If you are not the intended recipient, please contact the sender and delete all copies.

## **SECTION 10-103-A – NONRESIDENTIAL LIGHTING CONTROLS ACCEPTANCE TEST REQUIREMENTS**

(a) **Scope.** The requirements of this section apply to nonresidential lighting control Acceptance Test Technicians and Employer, and the Certification Providers that train and certify them.

(b) **Industry Certification Threshold.** Lighting Controls Acceptance Test Technician and Employer certification requirements shall take effect when the Energy Commission finds that each of the following conditions are met:

1. **Number of Certified Acceptance Test Technicians.** There shall be no less than 1,000 Lighting Controls Acceptance Test Technicians certified to perform the acceptance tests in Title 24, Part 6, Section 130.4. The number of certified Acceptance Test Technicians shall be demonstrated by Certification Provider-prepared reports submitted to the Energy Commission.

2. **Industry Coverage by Certification Provider(s).** The Certification Provider(s) approved by the Energy Commission, in their entirety, provide reasonable access to certification for technicians representing the majority of the following industry groups: 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 and electrical systems. The Energy Commission will determine reasonable access by considering factors such as certification costs commensurate with the complexity of the training being provided, certification marketing materials, prequalification criteria, class availability, and curriculum.

(c) **Qualifications and Approval of Certification Providers.** The Acceptance Test Technician Certification Providers (ATTCPs) shall 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:

1. **Requirements for Applicant ATTCPs to Document Organizational Structure.** 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 Title 24, Part 1, Section 10-103-A(c). ATTCPs shall explain in their application to the Energy Commission how their organizational structure and procedures include independent oversight, quality assurance, supervision and support of the acceptance test training and certification processes.

2. **Requirements for Certification of Employers.** The ATTCPs shall provide written explanations of how their program includes certification and oversight of Acceptance Test Employers to ensure quality control and appropriate supervision and support for Acceptance Test Technicians.

3. **Requirements for Applicant ATTCPs to Document Training and Certification Procedures.** ATTCPs shall provide 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:

A. **Training Scope.** Both hands-on experience and theoretical training such that Acceptance Test Technicians demonstrate their ability to apply the Title 24, Part 6 acceptance testing and documentation requirements to a comprehensive variety of

lighting control systems and networks that are reflective of the range of systems currently encountered in the field. The objective of the hands-on training is to practice and certify competency in the technologies and skills necessary to perform acceptance tests.

## **B. Lighting Controls Acceptance Test Technician Training.**

(i) **Curricula.** Acceptance Test Technician Certification Provider training curricula for Lighting Control Acceptance Test Technicians shall include, but not be limited to, the analysis, theory, and practical application of the following:

- Lamp and ballast systems;
- Line voltage switching controls;
- Low voltage switching controls;
- Dimming controls;
- Occupancy sensors;
- Photosensors;
- Demand responsive signal inputs to lighting control systems;
- Title-24 required lighting control systems;
- Title-24 required lighting control system-specific analytical/problem solving skills;
- Integration of mechanical and electrical systems for Title-24 required lighting control installation and commissioning;
- Safety procedures for low-voltage retrofits (>50 volts) to control medium voltage systems (120 to 480 volts);
- Accurate and effective tuning, calibration, and programming of Title-24 required lighting control systems;
- Measurement of illuminance on standard measurement grids;
- Title 24 lighting controls acceptance testing procedures; and
- Title 24 acceptance testing compliance documentation for lighting controls.

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

- The lighting controls training laboratory boards and equipment shall include, but not be limited to, a comprehensive current-market representation of the following system and equipment categories: (1) Lamp & Ballast Systems; (2) Line Voltage Switching Devices; (3) Low Voltage Switching Controls; (4) Dimming Controls; (5) Occupancy Sensors; (6) Photosensors; and (7) Wireless Lighting Control Systems.
- The application shall also describe procedures for updating the laboratory boards and equipment every 18 months to encompass changes and/or advances in lighting control systems available in the California market.
- Participants in the hands-on training must successfully demonstrate full competency in each equipment category before progressing to the next equipment category. Competency shall be defined as the comprehensive mastery of the applications, installation, accurate and effective tuning, calibration, programming, start-up, operation, and testing of each of the

advanced lighting controls systems and networks represented on the lighting controls training laboratory boards and equipment.

(iii) **Prequalification.** Participation in the technician certification program shall be limited to persons who have at least three years of verifiable professional experience and expertise in lighting 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. The criteria and review processes used by the ATTCP to determine the relevance of technician professional experience shall be described in the ATTCP application to the Energy Commission.

(iiiiv) A sufficient ratio of instructors to participants in classroom and laboratory work to ensure integrity and efficacy of the curriculum and program. Lab instructors must be certified as competent by the ATTCP and have a minimum of three (3) years of full time experience in teaching of electrical equipment labs. Total lab instruction shall consist of a minimum of 40 hours of hands-on training. The instructor ratio for the lab portion shall be 1 instructor to 5 participants.

(iv) A written and practical test that demonstrates 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) Requirements and Procedures for recertification of Acceptance Test Technicians each time Title-24, Part 6 is updated with new and/or modified acceptance test requirements.

**C. Lighting Controls Acceptance Test Employer Training.** Training for Lighting Controls Acceptance Test Employers shall consist of a minimum of a one day class that covers the scope and process of the acceptance tests in Title 24, Part 6, Section 130.4.

D. Procedures described in writing for notifying building departments and the public that the Acceptance Test Certification Provider will accept complaints regarding the performance of any certified acceptance test technician or employer, and procedures for how the Provider will address these complaints.

E. Procedures described in writing for revoking the certification of Acceptance Test Technicians and Employers based upon poor quality or ineffective work, failure to perform acceptance tests, falsification of documents, failure to comply with requirements for the issuance of building permits or other specified actions that justify decertification.

F. The ATTCP shall describe in their application to the Energy Commission how their certification business practices include quality assurance, independent oversight and accountability measures, such as, third party 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 Title 24, Part 6, Section 130.4 training curricula. Third party oversight may be demonstrated by accreditation under the ISO/IEC 17024 standard.

**(d) Requirements for ATTCPs to Provide Annual Reports.** The ATTCP shall provide an annual report to the Energy Commission summarizing the certification services provided over the reporting period, including the total number of Acceptance Test Technicians and Employers certified by the agency (a) during the reporting period and (b) to date, and a report as to what adjustments have been made to the training curricula, if any, to address changes to Title 24 Acceptance Testing requirements or to ensure training is reflective of the variety of lighting controls that are currently encountered in the field. The annual report shall also contain a signed certification that the ATTCP has met all requirements for this program.

**(e) Interim Approval of Lighting Controls Acceptance Test Technician Certification Provider.** The California Advanced Lighting Controls Training Program (CALCTP) shall be approved as authorized Lighting Controls Acceptance Test Technician Certification Provider subject to the below conditions:

1. Interim approval shall be conditioned upon submittal of an application that contains the information required by subdivision (c)(1)-(3), including documentation that demonstrates that certification includes training and testing on Title 24 lighting control acceptance testing procedures and Title 24 acceptance testing compliance documentation for lighting control systems.
2. Technicians who have been certified by CALCTP prior to the inclusion of training on Title 24 acceptance testing procedures and compliance documentation shall qualify as a Lighting Control Acceptance Test Technicians upon successful completion of a class or webinar on Title 24 acceptance testing procedures and compliance documentation.
3. Employers who have been certified by CALCTP prior to the inclusion of training on Title 24 acceptance testing procedures and compliance documentation shall qualify as a Lighting Control Acceptance Test Employer upon successful completion of a class or webinar on Title 24 acceptance testing procedures and compliance documentation.
4. Interim approval for all ATTCPs shall end on the later date of, July 1, 2014 or six months after the effective date of the 2013 California Building Energy Efficiency Standards. The Energy Commission may extend the interim approval period for up to six additional months total, if it determines the threshold requirements in Section 10-103-A(b) have not been met for the certification requirements to take effect. If the Energy Commission determines that an extension is necessary, its determination shall be approved at a publicly-noticed meeting.

**(f) Application Review and Determination.** The Energy Commission shall review Acceptance Test Technician Certification Provider applications according to the criteria and procedures in Section 10-103-A(c) to determine if such providers are approved to provide acceptance testing certification services.

1. Energy Commission staff will review and validate all information received on Acceptance Test Technician Certification Provider applications, and determine that the application is complete and contains sufficient information to be approved .
2. The Executive Director may require that the applicant provide additional information as required by staff to fully evaluate Provider applications. The Executive Director shall provide a copy of its evaluation to interested persons and provide an opportunity for public comment.

3. The Executive Director shall issue a written recommendation that the Energy Commission designate the applicant as an authorized Acceptance Test Technician Certification Provider or deny that Provider application.

4. The Energy Commission shall make a final decision on the application at a publically noticed hearing.

**(g) Review by the Energy Commission.**

If the Energy Commission determines there is a violation of these regulations or that an Acceptance Test Technician Certification Provider is no longer providing adequate certification services, the Energy Commission may revoke the authorization of the Acceptance Test Technician Certification Provider pursuant to Section 1230 et. seq. of Title 20 of the California Code of Regulations.