

## DOCKETED

<b>Docket Number:</b>	13-ATTCP-01
<b>Project Title:</b>	Acceptance and Training Certification
<b>TN #:</b>	214517
<b>Document Title:</b>	Staff Report on the Lighting Controls ATTCP 2016 Updates Review for CALCTP
<b>Description:</b>	Staff report on the review and evaluation of the California Advanced Lighting Controls Training Program's 2016 lighting controls acceptance test technician certification provider updates for the 2016 Building Energy Efficiency Standards code cycle. Dated September 2016. Publication Number CEC-400-2016-019.
<b>Filer:</b>	Veronica Martinez
<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Commission Staff
<b>Submission Date:</b>	11/17/2016 10:44:56 AM
<b>Docketed Date:</b>	11/17/2016

California Energy Commission

## STAFF REPORT

# Lighting Controls Acceptance Test Technician Certification Provider 2016 Updates Review: California Advanced Lighting Controls Training Program

*Compliance Review to the 2016 California Building  
Energy Efficiency Standards*

California Energy Commission

Edmund G. Brown Jr., Governor



September 2016 | CEC-400-2016-019

# California Energy Commission

Veronica Martinez  
**Primary Author**

Joe Loyer  
**Project Manager**

William Dietrich  
**Manager**  
**EXISTING BUILDINGS AND COMPLIANCE OFFICE**

Dave Ashuckian, P.E.  
**Deputy Director**  
**EFFICIENCY DIVISION**

Robert P. Oglesby  
**Executive Director**

## **DISCLAIMER**

Staff members of the California Energy Commission prepared this report. As such, it does not necessarily represent the views of the Energy Commission, its employees, or the State of California. The Energy Commission, the State of California, its employees, contractors and subcontractors make no warrant, express or implied, and assume no legal liability for the information in this report; nor does any party represent that the uses of this information will not infringe upon privately owned rights. This report has not been approved or disapproved by the Energy Commission nor has the Commission passed upon the accuracy or adequacy of the information in this report.

## ABSTRACT

Per the requirements in Section 10-103-A(d) of the *2013 Building Energy Efficiency Standards* (codified in Title 24, Part 6, of the California Code of Regulations), acceptance test technician certification providers shall submit an update report to the California Energy Commission reporting what adjustments have been made to the training curricula, if any, to address adopted updates to the standards. The *2016 Building Energy Efficiency Standards* (codified in Title 24, Part 6, of the California Code of Regulations) were adopted by the Energy Commission on November 12, 2015, and all acceptance test technician certification providers were notified to begin development of their 2016 update reports.

Staff has evaluated the training curricula adjustments and other application amendments that the California Advanced Lighting Controls Training Program submitted in its 2016 update report, which staff received in its entirety on July 14, 2016. Staff has found that the proposed training curricula adjustments and other application amendments submitted satisfy the requirements for acceptance test technician certification providers in Section 10-103.1(c)3 of the 2016 Standards, which will go into effect January 1, 2017. Staff recommends approval of the California Advanced Lighting Controls Training Program's 2016 training curricula adjustments and other application amendments.

**Keywords:** Nonresidential Lighting Controls Acceptance Test Technician Certification Provider, California Advanced Lighting Controls Training Program, Lighting Controls, Acceptance Testing, Building Energy Efficiency Standards.

Please use the following citation for this report:

Martinez, Veronica. 2016. *Lighting Controls Acceptance Test Technician Certification Provider 2016 Updates Review: California Advanced Lighting Controls Training Program*. California Energy Commission. Publication Number: CEC-400-2016-019



# TABLE OF CONTENTS

	Page
<b>Abstract</b> .....	i
<b>Table of Contents</b> .....	iii
<b>List of Tables</b> .....	iv
<b>Executive Summary</b> .....	1
CHAPTER 1: Background.....	3
The Acceptance Test Technician Certification Provider Program.....	3
Requirements for the 2016 Update Report .....	3
Updates to the <i>Building Energy Efficiency Standards</i> for the 2016 Code Cycle .....	4
California Advanced Lighting Controls Training Program.....	4
CHAPTER 2: ATTCP 2016 Update Report Evaluation.....	5
Modified Requirements for Quality Assurance .....	5
Regulatory Changes .....	5
ATTCP Requirements.....	5
Summary of Compliance Method for ATTCP.....	5
Staff Assessment .....	6
Requirements for the New Acceptance Test .....	6
Regulatory Changes .....	6
ATTCP Requirements.....	6
Summary of Compliance Method for ATTCP.....	7
Staff Assessment .....	8
Minor Changes to the Lighting Controls and Acceptance Test Requirements .....	9
Regulatory Changes .....	9
ATTCP Requirements.....	10
Summary of Compliance Method for ATTCP.....	10
Staff Assessment .....	10
CHAPTER 3: Other ATTCP Application Amendments.....	12
Online 2016 ATT Recertification Training.....	12
Requirements .....	12
Proposed Application Amendment.....	13
Summary of Compliance Method for ATTCP.....	13
Staff Assessment .....	13
Online ATE Training .....	14
Requirements .....	14
Proposed Application Amendment.....	15

Summary of Compliance Method for ATTCP.....	15
Staff Assessment .....	15
Increased Cost of On-site Audits.....	15
Requirements .....	15
Proposed Application Amendment.....	15
Summary of Compliance Method for ATTCP.....	16
Staff Assessment .....	16
CHAPTER 4: Staff Recommendations .....	17
APPENDIX A: GLOSSARY.....	18

## LIST OF TABLES

	Page
Table 1: Summary of ATTCP Compliance With §10-103.1(c)3F.....	6
Table 2: Summary of ATTCP Compliance With §10-103.1(c)3A, §10-103.1(c)3B, and §10-103.1(c)3C.....	8
Table 3: Summary of Minor Lighting Controls and Acceptance Testing Updates to the <i>Building Energy Efficiency Standards</i> .....	9
Table 4: Summary of ATTCP Compliance With §10-103.1(c)3B(i), §10-103.1(c)3C, and §10-103-A(c)3B(vi).....	11
Table 5: Summary of ATTCP Compliance With §10-103.1(c)3 (Online Recertification Training).....	14

## EXECUTIVE SUMMARY

The Acceptance Test Technician Certification Provider Program provides training, certification, and oversight of acceptance test technicians who perform the acceptance tests required by California's *Building Energy Efficiency Standards*, as well as the acceptance test employers that employ technicians. Providers are professional organizations that are approved to provide training curricula for technicians and their employers, certification procedures, complaint resolution (including disciplinary procedures), quality assurance, and accountability measures. Acceptance testing ensures that installed equipment, controls, and systems in nonresidential buildings operate as required by the standards.

Per Section 10-103-A(d) of the *2013 Building Energy Efficiency Standards* (2013 Standards) (codified in Title 24, Part 6, of the California Code of Regulations), providers are required to report to the California Energy Commission what adjustments have been made to training curricula. Providers need to address changes to acceptance testing requirements or adopted updates to the standards no less than six months before the effective date of any newly adopted standards.

All reports shall contain a signed certification that all requirements have been met. Providers must also demonstrate to the Energy Commission that their acceptance testing certification services will comply with any applicable updates to the standards if their approved 2013 application does not comply with the 2016 requirements. The 2016 training curricula adjustments and any other 2016 application amendments shall be reviewed by the Energy Commission according to the criteria in Section 10-103.1(c)3 of the *2016 Building Energy Efficiency Standards* (2016 Standards) (codified in Title 24, Part 6, of the California Code of Regulations) to determine if the providers approved under the 2013 Standards satisfy requirements for providers in the 2016 Standards.

The California Advanced Lighting Controls Training Program was approved by the Energy Commission as a nonresidential lighting controls provider on November 17, 2014, and submitted a complete 2016 update report on July 14, 2016. Energy Commission staff reviewed the report and found it complies with the requirements of Section 10-103.1(c)3 of the 2016 Standards.



# CHAPTER 1: Background

---

## **The Acceptance Test Technician Certification Provider Program**

The Acceptance Test Technician Certification Provider (ATTCP) Program provides training, certification, and oversight of acceptance test technicians (ATTs) who perform the acceptance tests required by California's *Building Energy Efficiency Standards*, as well as the acceptance test employers (ATEs) that employ ATTs. ATTCPs are professional organizations that are approved by the California Energy Commission to provide training curricula for ATTs and ATEs, certification procedures, complaint resolution (including disciplinary procedures), quality assurance, and accountability measures.

Acceptance testing ensures that installed equipment, controls, and systems in nonresidential buildings operate as required by the standards. The ATTCP Program was developed to improve compliance with lighting controls and mechanical acceptance test requirements.

## **Requirements for the 2016 Update Report**

In accordance with Section 10-103-A(d) of the *2013 Building Energy Efficiency Standards* (2013 Standards) (codified in Title 24, Part 6, of the California Code of Regulations), lighting controls ATTCPs must report to the Energy Commission any adjustments made to the training curricula to address changes to lighting controls acceptance testing requirements or adopted updates to the standards. The reports must be submitted no less than six months prior to the effective date of any newly adopted standards and shall contain a signed certification that the ATTCP has met all requirements for this program. ATTCPs must also demonstrate to the Energy Commission that their acceptance testing certification services will comply with any applicable updates to the standards, if their approved 2013 application does not comply with the requirements for ATTCPs in the *2016 Building Energy Efficiency Standards* (2016 Standards) (codified in Title 24, Part 6, of the California Code of Regulations).

Update reports submitted by lighting controls ATTCPs shall be reviewed according to the review and determination process in Section 10-103-A(f)1 of the 2013 Standards. Although staff's overall review of the 2016 update reports will follow the procedures for the review of an ATTCP application under the 2013 Standards, the contents of each 2016 update report will be reviewed for compliance with the 2016 Standards. Staff will evaluate the training curricula adjustments and other application amendments contained within an ATTCP's 2016 update report to determine if the ATTCP's training

and certification services, including quality assurance measures, comply with the criteria and procedures in Section 10-103.1(c)3 of the 2016 Standards.

## **Updates to the *Building Energy Efficiency Standards* for the 2016 Code Cycle**

The 2016 Standards include various updates that affect the Lighting Controls ATTCP Program on different levels. Staff considers most of these updates to be minor, as these changes do not require the lighting controls ATTCPs to alter their approved applications substantively. However, there are updates to the standards that require a substantive alteration of the ATTCP application. These substantive and nonsubstantive updates to the standards will be discussed as part of the staff evaluation in Chapter 2 of this report.

## **California Advanced Lighting Controls Training Program**

The California Advanced Lighting Controls Training Program (CALCTP) was established in 2008 as a nonprofit industry-wide collaborative and reorganized as a California nonprofit mutual benefit corporation in 2013. CALCTP is one of two organizations that were approved by the Energy Commission as a nonresidential lighting controls ATTCP on November 17, 2014. CALCTP began submitting its 2016 update report for review beginning March 23, 2016, with the final component submitted on July 14, 2016, in response to feedback from Energy Commission staff.

CALCTP's 2016 update report was submitted under the 2013 Standards. The report was evaluated in accordance with the application review and determination requirements in Section 10-103-A(f)1 of the 2013 Standards. Staff has summarized the relevant sections from CALCTP's 2016 training curricula adjustments and other applications amendments as they pertain to the requirements in Section 10-103.1(c)3 of the 2016 Standards. Furthermore, staff has assessed whether CALCTP's training curricula adjustments and other application amendments satisfy the ATTCP requirements in Section 10-103.1(c)3 of the 2016 Standards.

# CHAPTER 2:

## ATTCP 2016 Update Report Evaluation

---

To ease the transition to the new code cycle, the most significant changes for lighting controls acceptance testing were identified by staff and communicated to the ATTCPs. The three sections that follow present these changes. The first two sections discuss the regulatory changes deemed to have the most effect on ATTCPs at the organizational level: modified quality assurance requirements in Section 10-103.1(c)3F and a new lighting controls acceptance test as required in Section 130.4(a)7. The third section discusses minor updates that ATTCPs should address in the training curricula when certifying and recertifying ATTs and ATEs.

While the only requirements directly applicable to lighting controls ATTCPs are in Section 10-103.1 of the 2016 Standards, the new lighting controls acceptance test requirement in Section 130.4(a)7 of the 2016 Standards and in the 2016 Reference Nonresidential Appendix NA7.7.6.2 affects the services that ATTCPs must provide. Training adjustments are necessary to address the new acceptance test and the minor updates to the standards.

### Modified Requirements for Quality Assurance

#### Regulatory Changes

According to Section 10-103.1(c)3F of the 2016 Standards, the ATTCP shall review a random sample of no less than 1 percent of each technician's completed compliance forms and shall perform randomly selected on-site audits of no less than 1 percent of each technician's completed acceptance tests.

#### ATTCP Requirements

This update to the standards adds a quality assurance requirement for ATTCPs that calls for ATTCPs to review a minimum sample size of completed acceptance forms and tests to ensure consistent compliance. Although a larger sample size and frequent auditing are encouraged, ATTCPs must submit a description of, and findings from, a quality assurance program implementing the minimum standard.

#### Summary of Compliance Method for ATTCP

According to CALCTP's approved application, approximately 12 percent<sup>1</sup> of its completed acceptance test projects are randomly audited for quality assurance under

---

<sup>1</sup> CALCTP's number of projects audited will depend on the total number of projects completed, and the approximate percentage of projects audited is calculated based on an anticipated minimum pool of 250 projects in the course of a year. If more projects are completed, then the percentage of projects audited decreases.

the 2013 Standards: 8 percent being paper audits and 4 percent being on-site audits. However, the percentage of on-site audits for the 2013 Standards was at the program level, as opposed to the technician level.

Under the 2016 Standards, CALCTP will reduce the anticipated percentage of projects audited to 6 percent: 5 percent being paper audits and 1 percent being on-site audits. CALCTP will also modify its quality assurance measures for the percentage of on-site audits to be at the technician level to satisfy the new requirement for random sampling of each technician’s completed acceptance tests.

**Staff Assessment**

CALCTP’s proposed quality assurance paper and on-site random audit rates for the 2016 code cycle have been reviewed, and staff has concluded that CALCTP satisfies the requirements in Section 103.1(c)3F of the 2016 Standards. A summary of CALCTP’s compliance is found in **Table 1**.

**Table 1: Summary of ATTCP Compliance With §10-103.1(c)3F**

REQUIREMENT	AMENDMENT LOCATION(S)	ADEQUATE
1% random sampling of each ATT’s completed compliance forms	CALCTP 2016 Update Report (Confidential)	<input checked="" type="checkbox"/>
1% randomly selected on-site audits of each ATT’s completed acceptance tests	CALCTP 2016 Update Report (Confidential)	<input checked="" type="checkbox"/>

Source: California Energy Commission

**Requirements for the New Acceptance Test**

**Regulatory Changes**

In accordance with Section 103.4(a)7 of the 2016 Standards, a certificate of acceptance shall be submitted to the enforcement agency under Section 10-103(a) of the 2016 Standards that certifies that lighting systems receiving the institutional tuning power adjustment factor (PAF) comply with Section 140.6(a)2J of the 2016 Standards and Reference Nonresidential Appendix NA7.7.6.2.

**ATTCP Requirements**

This update to the standards adds an acceptance test for a lighting system being used to claim the institutional tuning PAF and introduces the new acceptance form, NRCA-LTI-05-A. The ATTCP must demonstrate that its ATT and ATE trainings on the new institutional tuning PAF acceptance test satisfy the applicable requirements in Section 10-103.1(c)3 of the 2016 Standards.

The ATTCP must:

- Provide both hands-on experience and theoretical training for ATT applicants, such that they may demonstrate their abilities to apply the 2016 Standards acceptance testing and documentation requirements to lighting systems for which the institutional tuning PAF is being claimed to comply with Section 140.6(a)2J and Reference Nonresidential Appendix NA7.7.6.2.
- Issue a written and practical test to demonstrate each ATT applicant's competence in the institutional tuning PAF acceptance test.
- Demonstrate its 2016 recertification training on the institutional tuning PAF acceptance test is equivalent to the 2016 training new certification applicants will receive and satisfies training requirements in Section 10-103.1(c)3 of the 2016 Standards.
- Update its ATE training to cover the scope and process of the institutional tuning PAF acceptance test.

### **Summary of Compliance Method for ATTCP**

To satisfy the applicable requirements in Section 10-103.1(c)3 of the 2016 Standards for institutional tuning training, CALCTP has modified its certification training curricula and created 2016 recertification training curricula. All ATE training and 2016 ATT recertification training will be provided online.

For ATT certification, CALCTP has added an institutional tuning lecture section, laboratory component, and quiz, as well as institutional tuning questions on the final exam. The institutional tuning PAF acceptance test lecture and laboratory components of the ATT certification course include:

- Instruction on institutional tuning.
- Guidance on how institutional tuning may be accomplished to claim a PAF.
- Guidance on how to determine if the institutional tuning PAF acceptance test is required.
- Instruction and practice with performing the acceptance test and completing the NRCA-LTI-05-A documentation.

For ATT recertification, the portions of the training that cover the institutional tuning PAF acceptance test include:

- The same institutional tuning lecture section used in the ATT certification course.
- The same institutional tuning laboratory component and practical exam section used in the ATT certification course.
- The same institutional tuning quiz questions provided in the ATT certification course.

To satisfy ATE training requirements for the new acceptance test, CALCTP has added a lecture section to the ATE certification course that will provide instruction on the scope and process of the institutional tuning PAF acceptance test. The 2016 ATE recertification course will use the same institutional tuning PAF acceptance test lecture material as the 2016 ATE certification course.

## Staff Assessment

Staff has evaluated CALCTP’s institutional tuning PAF acceptance test training materials for the 2016 code cycle and has found that they satisfy the applicable requirements of Section 10-103.1(c)3. **Table 2** summarizes CALCTP’s compliance with the requirements in Sections 10-103.1(c)3A, 10-103.1(c)3B, and 10-103.1(c)3C of the 2016 Standards for training on the new institutional tuning PAF acceptance test.

**Table 2: Summary of ATTCP Compliance With §10-103.1(c)3A, §10-103.1(c)3B, and §10-103.1(c)3C**

REQUIREMENT	AMENDMENT LOCATION(S)	ADEQUATE
Training Scope	CALCTP – AT V2.0 Lesson Plan (Confidential) CALCTP – AT V2.0 Lecture – All (Confidential) CALCTP – AT V2.0 Laboratory Manual (Confidential)	☒
Curricula	CALCTP 2016 Update Report (Confidential) CALCTP – AT V2.0 Lecture Outline (Confidential) CALCTP – AT V2.0 Lecture – All (Confidential)	☒
Hands-on training	CALCTP – AT V2.0 Master Lab Introduction (Confidential) CALCTP – AT V2.0 Laboratory Manual (Confidential)	☒
Tests	CALCTP – AT V2.0 Quiz Exercise Questions and Answers (Confidential) CALCTP – AT V2.0 Technician Final Exam (Confidential)	☒
Recertification	CALCTP 2016 Update Report (Confidential) CALCTP – AT V2.0 Technician Recertification 2016 Standards (Confidential) CALCTP – AT V2.0 Online Exercises (Confidential) CALCTP – AT – 2016 Employer Recertification (Confidential)	☒
Employer Training	CALCTP 2016 Update Report (Confidential) CALCTP – AT V2.0 Technician Employer Curriculum Outline (Confidential) CALCTP – AT V2.0 Employer (Confidential)	☒

Source: California Energy Commission

# Minor Changes to the Lighting Controls and Acceptance Test Requirements

## Regulatory Changes

Minor updates were made to the lighting controls and acceptance testing requirements in the standards and reference appendices; these updates are summarized in **Table 3**.

**Table 3: Summary of Minor Lighting Controls and Acceptance Testing Updates to the *Building Energy Efficiency Standards***

Updated Regulation	Description of Change
§130.1(b)3	This update provides clarification that dimmable luminaires shall be controlled with a manual dimmer capable of ON and OFF functionality.
§130.1(c)1, Exception 3	This update increases allowable continuous lighting for emergency exits from 0.05 watts/ft <sup>2</sup> to 0.1 watts/ft <sup>2</sup> .
§130.1(c)1, Exception 5	This update adds a new exception to shut-off controls to allow illumination when provided by lighting equipment that is designated for emergency lighting, connected to an emergency power source or battery supply, and is intended to function in emergency mode only when normal power is absent.
§130.1(c)5	This update adds a requirement for specific areas to have vacancy/partial ON controls rather than normal occupancy sensors.
§130.1(e)	This update excludes areas with less than 0.5 watts/ft <sup>2</sup> from 10,000ft <sup>2</sup> threshold to reduce lighting power in response to a Demand Response Signal.
§130.2(c)3B	This update increases the maximum dimming permitted as part of an active motion controlled lighting system from 80% to 90%.
§130.2(c)4	This update removes outdoor sales lots and sales canopies from this section. These spaces must now comply with Section 130.2(c)3.
§140.6(a)2J	This update provides the requirements for a tuned lighting system to qualify for the institutional tuning PAF in Table 140.6-A.
§140.6(a)3C	This update provides clarification that lighting wattage used for make-up and hair lighting is excluded from the prescriptive calculations when controlled with a vacancy sensor.
Table 140.6-A (§140.6)	This update removes PAFs and adds a PAF for institutional tuning.
Tables 140.6-B, 140.6-C, 140.6-D, 140.6-E, 140.6-F, 140.6-G (§140.6)	These updates modify lighting power densities to reflect the industry shift to light-emitting diode (LED) lighting as the design baseline.
§140.7(a)6	This update removes ATMs from excluded wattages. Calculations now need to include ATM lighting for outdoor lighting power adjustments.
§141.0(b)2I	This update changes the requirement to allow scenarios where alterations to multi-level controls, if triggered, can be more cost-effective. If the lighting power is 85% or less of the allowance, then it is permissible to have one control step between 30-70%. If lighting power is greater than 85% of the allowance, then the requirement of 130.1(b) is applicable. There is an alternative option that allows the reduction of lighting power by 35-50% from existing, thereby allowing an exemption to the multilevel control requirement of 130.1(b).
§141.0(b)2J	This update provides relief to the trigger for acceptance testing of smaller projects if controls added were for 20 or fewer luminaires.
§141.0(b)2L	This update provides clarification for general requirements, adds specifics to certain areas, and provides relief to the trigger for acceptance testing for smaller projects if controls added were for 20 or fewer luminaires.
NA7.6.1.2, NA7.6.2.3,	These updates add descriptions for minimum sampling to test

Source: California Energy Commission

## ATTCP Requirements

The updates to the standards listed in **Table 3** are considered “minor” because they do not require an ATTCP’s application to be substantively altered. While any changes to the lighting controls acceptance testing requirements, substantive or not, will require an ATTCP to adjust its training curricula, the updates in **Table 3** do not require substantive training adjustments—such as entirely new laboratory components or lecture sections. Instead, the 2016 updates build upon the requirements of the 2013 Standards; therefore, the ATTCP must simply demonstrate that its training includes these updates to comply with the technician curricula requirements in Section 10-103.1(c)3B(i) and the employer training requirements in Section 10-103.1(c)3C.

Whereas the 2016 certification training must meet the requirements of the 2016 Standards, recertification for 2016 is intended to take place before the standards go into effect. As such, 2016 recertification training is subject to the requirements in Section 10-103-A(c)3B(vi) of the 2013 Standards, which require the ATTCP to recertify its existing ATTs on all new or modified lighting controls acceptance test requirements in the 2016 Standards. In preparation for the 2016 code cycle, the ATTCP must demonstrate that its recertification training includes the minor updates in **Table 3**. The requirements do not include tests or hands-on training; however, ATTCPs are encouraged to incorporate these elements.

## Summary of Compliance Method for ATTCP

As part of the 2016 update report, CALCTP has listed the changes to its 2016 ATT and ATE certification curricula that include the updates in **Table 3**. CALCTP has also submitted the presentation slides that will be used in the 2016 recertification training course and has indicated where the **Table 3** updates are addressed. These training materials are confidential; therefore, evaluation of compliance is available only in this public document.

## Staff Assessment

Staff evaluated CALCTP’s confidential certification and recertification materials for the 2016 code cycle, comparing the listed curricula adjustments to the minor updates in **Table 3**. Staff has found that CALCTP’s 2016 certification training satisfies the requirements in Section 10-103.1(c)3B(i) of the 2016 Standards for ATTs and in Section 10-103.1(c)3C of the 2016 Standards for ATEs. CALCTP’s 2016 recertification training also satisfies the recertification requirements in Section 10-103-A(c)3B(vi) of the 2013 Standards. A summary of CALCTP’s compliance is found in **Table 4**.

**Table 4: Summary of ATTCP Compliance With §10-103.1(c)3B(i),  
§10-103.1(c)3C, and §10-103-A(c)3B(vi)**

REQUIREMENT	AMENDMENT LOCATION(S)	ADEQUATE
(Lighting Controls ATT Training) Curricula	CALCTP 2016 Update Report (Confidential) CALCTP – AT V2.0 Lecture Outline (Confidential) CALCTP – AT V2.0 Lecture – All (Confidential)	☒
Lighting Controls ATE Training	CALCTP 2016 Update Report (Confidential) CALCTP – AT V2.0 Technician Employer Curriculum Outline (Confidential) CALCTP – AT V2.0 Employer (Confidential)	☒
(Lighting Controls ATT Training) Recertification	CALCTP 2016 Update Report (Confidential) CALCTP – AT V2.0 Technician Recertification 2016 Standards (Confidential) CALCTP – AT V2.0 Online Exercises (Confidential) CALCTP – AT – 2016 Employer Recertification (Confidential)	☒

Source: California Energy Commission

# **CHAPTER 3:**

## **Other ATTCP Application Amendments**

---

In addition to the application amendments necessary to demonstrate compliance with the 2016 Standards requirements for lighting controls ATTCPs, all ATTCPs had the option to propose additional application amendments for the 2016 code cycle in their update reports for approval with the 2016 training curricula.

### **Online 2016 ATT Recertification Training**

Chapter 2 of this report contains information on how CALCTP's 2016 ATT recertification training content satisfies the requirements in Section 10-103-A(c)3B(vi) of the 2013 Standards for ATT recertification training. This section specifically examines whether the recertification content can be implemented in an online format, per CALCTP's request. The intent of the standards, CALCTP's method to remain consistent with the intent of the standards, and staff's assessment of whether CALCTP satisfied the intent of the standards are discussed below.

#### **Requirements**

Recertification for the 2016 code cycle is intended to take place before the effective date of the 2016 Standards and is subject to the requirements as specified by the 2013 Standards. According to Section 10-103-A(c)3B(vi) of the 2013 Standards, lighting controls ATTCPs are required to recertify their ATTs each time the standards are updated with new or modified lighting controls acceptance test requirements.

The regulations do not specify what form the training should take, as long as the regulatory changes are communicated to the ATTs. While the possibility of online training is not excluded by the standards, staff has requested that ATTCPs limit online recertification training to nonsubstantive content to remain consistent with the intent of the standards. Staff reasons that the 2013 certification training combined with the 2016 recertification training that existing ATTs receive, should be equivalent to the 2016 certification training that new ATT applicants will receive.

In the case of the new institutional tuning PAF acceptance test, staff informed the ATTCPs that the 2016 recertification training should be held to the same standards as the 2016 certification training. The ATTs will need to be trained on the procedures and documentation for a new acceptance test that was not required under the 2013 Standards. While equivalency is also not explicitly required in the standards, all ATTCP recertification proposals will be reviewed by staff, and a recommendation will be made to the Energy Commission whether the training satisfies the regulatory requirements while remaining consistent with the intent of the regulations.

## **Proposed Application Amendment**

CALCTP has proposed to conduct 2016 recertification training for its existing ATTs online. This training will consist of various training modules and will include recorded lectures, video demonstrations, and interactive quizzes.

CALCTP contends that the training for institutional tuning builds upon CALCTP prerequisite offerings and thus the hands-on training portion of the 2016 recertification course is not entirely new material. Following this assumption and that all other updates that should be included in the 2016 recertification training are minor, CALCTP has asserted that it would be a hardship to all parties involved to require ATTs to attend 2016 recertification training in person.

## **Summary of Compliance Method for ATTCP**

CALCTP has submitted the lecture and laboratory activity slides that ATTs will view during the online recertification course for the 2016 Standards. To address concerns that the training existing ATTs receive for the institutional tuning PAF acceptance test as part of recertification be equivalent to the 2016 certification training new ATT applicants will receive, CALCTP's online recertification training will include:

- A narrated presentation of the same institutional tuning lecture from the ATT course to satisfy the requirement in Section 10-103.1(c)3B(i) of the 2016 Standards for ATT training curricula.
- An online activity in the form of a video demonstration from the ATT certification course to satisfy the requirement in Section 10-103.1(c)3B(ii) of the 2016 Standards for ATT hands-on training.
- A quiz section based on the lecture and video demonstration to satisfy the requirement in Section 10-103.1(c)3B(v) of the 2016 Standards for ATT training tests. If a question is answered incorrectly more than a certain number of times, the ATT will have to retake the module.

## **Staff Assessment**

Staff has reviewed CALCTP's proposal and online recertification training materials and has confirmed that the scope of the institutional tuning module includes theoretical and practical instruction. Staff has found that CALCTP's 2016 recertification training for ATTs certified under the 2013 Standards may be considered equivalent to the 2016 ATT certification training. Therefore, it is staff's view that the 2016 recertification training may be conducted online and still be consistent with the intent of the requirements in the 2016 Standards to include hands-on and theoretical training to certify ATT competency to perform the acceptance tests. **Table 5** summarizes CALCTP's compliance with the ATT training requirements in Section 10-103.1(c)3 of the 2016 Standards for its proposal to conduct recertification training online.

Staff's finding regarding online recertification training is specific to the 2016 code cycle, and does not extend to the consideration of future recertification. In the future when it

becomes necessary for ATTCPs to conduct recertification training, staff will work with ATTCPs to determine if an online format is appropriate in those particular cases.

**Table 5: Summary of ATTCP Compliance With §10-103.1(c)3  
(Online Recertification Training)**

REQUIREMENT	AMENDMENT LOCATION(S)	ADEQUATE
Training Scope	CALCTP 2016 Update Report CALCTP – AT V2.0 Technician Recertification 2016 Standards (Confidential) CALCTP – AT V2.0 Online Exercises (Confidential)	☒
Curricula	CALCTP – AT V2.0 Technician Recertification 2016 Standards (Confidential)	☒
Hands-on training	CALCTP – AT V2.0 Online Exercises (Confidential)	☒
Tests	CALCTP – AT V2.0 Quiz Exercise Questions and Answers (Confidential) CALCTP – AT V2.0 Technician Final Exam (Confidential)	☒

Source: California Energy Commission

## Online ATE Training

Chapter 2 of this report contains information on how CALCTP’s 2016 ATE certification training content satisfies the requirements in Section 10-103-A(c)3C of the 2016 Standards. This section specifically examines whether the training content can be implemented in an online format, per CALCTP’s request. This section also examines whether CALCTP’s proposed 2016 ATE recertification training is consistent with the intent of ATE training requirements under the 2013 Standards.

### Requirements

According to Section 10-103.1(c)3C of the 2016 Standards and Section 10-103-A(c)3C of the 2013 Standards, ATE training should be a single class or webinar consisting of at least four hours of instruction that covers the scope and process of the lighting controls acceptance tests required in Section 130.4 of the 2013 Standards and 2016 Standards, respectively.

As previously stated, recertification is subject to the requirements in Section 10-103-A(c)3B(vi) of the 2013 Standards, as it intended to take place before the 2016 Standards go into effect. ATE recertification is not required under the 2013 Standards, though it is strongly encouraged. Therefore, proposals for 2016 ATE recertification training will be reviewed for consistency with the intent of ATE training requirements under the 2013 Standards for new or modified lighting controls acceptance test requirements in the 2016 Standards.

## **Proposed Application Amendment**

CALCTP has requested to conduct its ATE certification and recertification courses online to address market needs and continue its efforts to provide reasonable access to certification services for all participants.

## **Summary of Compliance Method for ATTCP**

CALCTP has submitted the training materials for its 2016 ATE certification and recertification courses. CALCTP asserts that its proposal to provide ATE training online by webinar is consistent with the requirements of Section 10-103.1(c)3C, which expressly states that ATE training may consist of a single class or webinar.

## **Staff Assessment**

Staff has reviewed CALCTP's request to conduct ATE training online and the ATE training requirements in the 2013 and 2016 Standards. Staff has found that CALCTP's online 2016 ATE certification course satisfies the requirements in Section 10-103.1(c)3C of the 2016 Standards and its online 2016 ATE recertification course satisfies the requirements in Section 10-103-A(c)3C of the 2013 Standards.

Furthermore, staff recommends that CALCTP may conduct all future ATE training in a webinar format—provided the certification courses consist of at least four hours of instruction as specified in the standards, and that future adopted standards do not eliminate the allowance of online ATE training. Since recertification is intended to focus on the new or modified acceptance testing requirements and the specification for four hours of instruction is intended to ensure the ATE course covers the scope and process of all the required lighting controls acceptance tests, recertification courses do not need to be a specific length.

## **Increased Cost of On-site Audits**

### **Requirements**

Section 10-103.1(c)1 of the 2016 Standards requires an applicant ATTCP to explain in its application to the Energy Commission its organizational structure and its procedures for independent oversight, quality assurance, supervision and support of the acceptance test training and certification processes. The Standards do not dictate the financial practices that an ATTCP chooses to administer—such as application fees, training fees, and quality assurance fees. However, all changes to a submitted application are considered amendments and should be reported to the Energy Commission for review.

### **Proposed Application Amendment**

CALCTP has proposed to increase the cost of on-site audits in order to address the need for staff members to be relocated near projects in areas do not have staff readily available to conduct site visits.

## **Summary of Compliance Method for ATTCP**

CALCTP is increasing the cost associated with on-site, in-person quality assurance visits by \$100 per on-site audit for the 2016 code cycle. According to CALCTP's 2016 update report, this increased fee will serve to address the need for quality assurance administrators to have additional on-call staff available to conduct site visits in areas that do not have staff readily available. CALCTP has also provided the Energy Commission with a comparison of its on-site audit fees and those of two similar programs to illustrate that the increase is reasonable and overall still less than comparable programs.

## **Staff Assessment**

Staff has reviewed CALCTP's application amendment to increase on-site audit fees and found it is a nonsubstantive change to CALCTP's certification business practices that is consistent with Section 10-103.1 of the 2016 Standards. Therefore, staff recommends that the increased on-site audit fee amendment be incorporated into CALCTP's approved application for the 2016 code cycle, effective January 1, 2017.

# CHAPTER 4:

## Staff Recommendations

---

Under Section 10-103-A(f)1 of the 2013 Standards, staff has completed its evaluation of the application amendments submitted by CALCTP in its 2016 update report, which was received in its entirety on July 14, 2016. Staff has found that CALCTP's proposed 2016 training curricula adjustments and other application amendments comply with the requirements in Section 10-103.1(c)3 of the 2016 Standards. Staff recommends that the Energy Commission approve CALCTP's:

- Proposed 2016 ATT and ATE training curricula adjustments.
- Proposed 2016 ATT and ATE recertification training curricula.
- Request to conduct 2016 ATT recertification training online.
- Request to offer ATE training online.
- Proposed quality assurance program modifications.

Staff recommends that the training curricula adjustments and other training-related application amendments be approved for CALCTP to begin administration as soon as possible, and approval of CALCTP's quality assurance program modifications be effective January 1, 2017.

# APPENDIX A: GLOSSARY

ATTCP

Acceptance test technician certification provider

An agency, organization, or entity approved by the Energy Commission to train and certify acceptance test technicians and acceptance test employers.

ATT

Acceptance test technician

A field technician who is certified by an authorized acceptance test technician certification provider.

ATE

Acceptance test employer

A person or entity who employs an acceptance test technician and is certified by an authorized acceptance test technician certification provider.

CALCTP

California Advanced Lighting Controls Training Program

A California nonprofit mutual benefit corporation that educates, trains, and certifies licensed C-10 electrical contractors and state-certified general electricians in the proper programming, testing, installation, commissioning, and maintenance of advanced lighting control systems.

Institutional tuning

The process of adjusting the maximum light output of lighting systems to support visual needs or save energy. The control strategy is implemented at the institutional level and maximum light level adjustments are available only to authorized personnel.