

Report Confirming Industry Certification
Thresholds Have Been Met for Lighting
Control Acceptance Test Technician
Certification Requirements

Prepared By

The California Advanced Lighting Controls Training Program
(CALCTP)



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I. INTRODUCTION

The 2013 California Building Energy Efficiency Standards (“2013 Code”) requires lighting control acceptance tests to be performed by trained and certified Lighting Control Acceptance Test Technicians.¹ In adopting these regulations, the Energy Commission indicated a preference to require certification of lighting control acceptance test technicians as quickly as feasible. In order to expedite this requirement, the Energy Commission pre-approved the California Advanced Lighting Controls Training Program (“CALCTP”) as an interim Lighting Control Certification Provider.

The Commission, however, also enacted an “Industry Certification Threshold” to ensure there was sufficient availability of certified Lighting Control Acceptance Test Technicians prior to making the use of certified Technicians mandatory. The Industry Certification Threshold provides that the requirement to use certified Lighting Control Acceptance Test Technicians does not become effective until the Commission determines that at least 300 technicians are certified and a reasonable path for certification is available for the majority of certain specified industry professionals.²

As demonstrated by this report, both of these conditions have not only been met, they have been substantially exceeded. CALCTP has certified more than double the required number of Lighting Controls Acceptance Test Technicians and has both certified and provided reasonable access to certification to electrical contractors, certified general electricians, professional engineers, and certified commissioning professionals. Accordingly, CALCTP respectfully requests that the Commission issue its determination that the Industry Certification Threshold has been met for certified Lighting Control Acceptance Test Technicians. With such a finding, the Commission will meet its goal of making the use of certified Lighting Control Acceptance Test Technicians mandatory as of the July 1, 2014 effective date of the 2013 Code.

II. BACKGROUND

A. Purpose of Lighting Control Acceptance Test Technician Certification Requirement

Interior and exterior lighting accounts for 35-40% of commercial building electrical load, more than twice the energy used for cooling. Given the large share of California energy usage devoted to commercial lighting, the implementation of advanced lighting controls provides one

¹ Cal. Code Regs., tit. 24, Part 6, § 130.4, subd. (c). The 2013 Code also requires HVAC acceptance tests to be performed by trained and certified Mechanical Acceptance Test Technicians. Cal. Code Regs., tit. 24, Part 6, § 120.5, subd. (b). The Industry Certification Thresholds have not yet been met for Mechanical Acceptance Test Technicians. Accordingly, the Commission is only being asked, at this time, to make a finding regarding the Industry Certification Thresholds for Lighting Control Acceptance Test Technicians.

² Cal. Code Regs., tit. 24, Part 1, § 10-103-A, subd. (b).

of the biggest opportunities to reduce electricity use and limit production of greenhouse gases related to global climate change. However, these reductions are only possible if advanced lighting controls are installed correctly so they can achieve their specified optimum energy saving potential.

The 2010 Code requires acceptance testing of advanced lighting controls systems in order to ensure that these systems have been installed correctly and perform efficiently. The 2010 Code, however, does not require technicians to have any qualifications, expertise or demonstrated competence in performing these tests and verifying that the systems have been installed and perform as designed.

At a February 27, 2012 CEC workshop on the certification proposal, numerous stakeholders testified that there was no quality control over acceptance tests and that the vast majority of acceptance testing are being performed by persons without sufficient experience, knowledge, training or competence to correctly perform these tests. Furthermore, California Commissioning Collaborative research on acceptance testing enforcement and effectiveness found that code officials, contractors and engineers were not clear on the acceptance testing procedures and form documentation. As a result, incomplete or incorrectly executed acceptance tests and forms are currently the norm rather than the exception. Testimony was provided that training and certification of acceptance test technicians were needed to make the acceptance test requirements meaningful, reliable and cost-effective.

The Commission addressed this issue by including Acceptance Test Technician Certification requirements in the 2013 Code. Using Acceptance Test Technicians that have met specific experience, training and certification requirements to perform acceptance testing will significantly reduce the incidence of advanced lighting control products being poorly installed and operating below their specified efficiency. Advanced lighting systems are complex systems that require a unique mix of experience, training and competence to ensure proper performance. Improper installation and inadequate acceptance testing results in sub-standard performance, a high rate of call-backs, and the disabling or removal of advanced lighting control systems by frustrated consumers. Requiring the use of trained and certified Acceptance Test Technicians is consistent with the Commission's goal to achieve maximum energy efficiency and will ensure that actual energy savings and performance are consistent with design and specification standards.

B. General Background of CALCTP Program

CALCTP was established in 2008 in order to increase the number of California state-certified general electricians with the knowledge, skills and abilities necessary to install, program, test, commission and maintain advanced lighting control systems in commercial facilities. CALCTP was developed in cooperation with the California Energy Commission, the California Lighting Technology Center at U.C. Davis, the California Community College Chancellor's Office—Advanced Transportation Technology Energy Campuses, Southern California Edison, Pacific Gas & Electric, San Diego Gas & Electric, the Sacramento Municipal Utility District, the National Lighting Manufacturers Association, manufacturers and both union and non-union contractors. CALCTP has certified over 4,000 advanced lighting control

installers in California. CALCTP's certification program for Lighting Control Acceptance Test Technicians builds on and incorporates the relevant portions of its certification program for installers. CALCTP certification for both installers (CALCTP-I) and acceptance test technicians (CALCTP-AT) are open shop – meaning that certification is provided to both union and non-union workers.

C. Interim Approval of CALCTP as an Authorized Lighting Control Acceptance Test Technician Provider

In adopting the certification requirements, the Commission pre-approved CALCTP as an interim Lighting Control Acceptance Test Technician Provider authorized to certify Lighting Control Acceptance Test Technicians, subject to CALCTP's submittal of an application for full approval.³ The intent of interim approval was to ensure that the certification requirement would take effect as soon as possible, without having to wait for the Commission to first finish reviewing and approving a formal application. Under the regulations, the Commission and CALCTP have six months after the effective date of the 2013 Code to work out any substantive concerns with the certification program described in the application. If these concerns are not worked out and the application is not approved within six months, then CALCTP would lose its status as an approved Provider. Other entities may also apply to become an authorized Provider. At the time the 2013 Code was adopted, however, no other entities were identified that were deemed qualified to be pre-approved as an interim Lighting Control Acceptance Test Technician Provider.⁴

CALCTP has submitted a complete application and has been designated as an authorized interim Lighting Control Acceptance Test Technician Provider by the Executive Director, consistent with the regulations adopted by the Commission. Pursuant to this authorization, CALCTP has now trained and certified over 600 Acceptance Test Technicians.

III. INDUSTRY CERTIFICATION THRESHOLD

Title 24, Part 1, § 10-103-A, subsection (b) states that 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) No less than 300 Lighting Controls Acceptance Test Technicians have been certified to perform the acceptance tests in Building Energy Efficiency Standards, Section 130.4; and
- (2) The Certification Provider(s) approved by the Energy Commission, in their entirety, shall 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 startup contractors and certified

³ Cal. Code Regs., tit. 24, Part 1, § 10-103-A, subd. (e).

⁴ The Commission also identified three entities that it pre-approved as interim Mechanical Acceptance Test Technician Providers (subject to the submittal of full applications): TABB, NEBB and AABC. Cal. Code Regs., tit. 24, Part 1, § 10-103-B, subd. (e).

commissioning professionals who have verifiable training, experience and expertise in lighting controls and electrical systems.

Both of these conditions have not only been met CALCTP has certified 630 Lighting Controls Acceptance Test Technicians, over double the 300 technician threshold. CALCTP has also provided reasonable access to certification to electrical contractors, certified general electricians, professional engineers, and certified commissioning professionals.

IV. MORE THAN 600 LIGHTING CONTROLS ACCEPTANCE TEST TECHNICIANS HAVE BEEN CERTIFIED TO PERFORM THE ACCEPTANCE TESTS REQUIRED BY CALIFORNIA ENERGY CODE SECTION 130.4

As of May 15, 2014, CALCTP has certified 630 Lighting Controls Acceptance Test Technicians to perform the acceptance tests in Building Energy Efficiency Standards, Section 130.4. Each of these technicians has met the minimum pre-qualification requirements, completed the classroom and hands-on training requirements and passed the certification exam. These 562 certified technicians include electrical contractors, certified general electricians, professional engineers, certified commissioning professionals and lighting control manufacturer representatives.

Attached as Exhibit A is a list of the names and certification identification numbers for each of the CALCTP-AT certified Lighting Controls Acceptance Test Technicians. Exhibit A also provides information on when certified technicians were trained, what industry group they identified on their application and whether the technicians were previously certified as CALCTP-Installers. Exhibit B provides the location and dates of each training class, and how many were trained.

Each CALCTP-AT certified technician has met the minimum pre-qualification requirements, completed the classroom and hands-on training requirements and passed the certification exam as required by California Code of Regulations, title 24, Part 1, § 10-103-A and set forth in the CALCTP Application. These 630 certified technicians include electrical contractors, certified general electricians, professional engineers, certified commissioning professionals and lighting control manufacturer representatives. The criteria used to confirm eligibility and credentials was provided in the CALCTP-AT Lighting Control Acceptance Test Technician Certification Provider Application submitted to the CEC on February 28, 2014 and has been followed for each of these certified CALCTP-AT technicians.

Applicants who completed their training prior to the certification of CALCTP as an interim Lighting Controls Acceptance Test Technician Certification Provider were not certified until May 1, 2014. Per discussions with the Commission's Standards Implementation Office, CALCTP provided training certificate of completions to applicants who completed training and testing requirements prior to May 1, 2014. All applicants, whether trained prior to or after May 1, 2014, were trained to the curriculum and completed the lab modules and examinations set forth in the CALCTP Lighting Controls Acceptance Test Technician Provider Application previously submitted to the Commission. After May 1, 2014, each applicant who successfully

completed the training, laboratory and examination requirements received a certification card issued by CALCTP. (See Exhibit C for an example of the certification card.)

Attached as Exhibit D is a list of the names and certification identification numbers of each of the 57 businesses that are currently certified as Lighting Controls Acceptance Test Technician Employers.

Attached as Exhibit E is a map showing that the combined service area of the CALCTP-AT certified employers covers every single county in California. Attached as Exhibit F is a list of employers, their service areas and the number of CALCTP-AT certified technicians in their employ. While the Industry Certification Threshold regulations do not expressly require a showing that Certified Acceptance Test Technicians are available in every California county, CALCTP is pleased to confirm that such coverage currently exists.

Approximately 510 of the 630 certified technicians are also certified as CALCTP-Installers per the CALCTP installer training and certification program that the Commission helped to create in 2008. Because CALCTP-I Certified Installers have already received over 50 hours of intensive classroom and practical training in the entire range of advanced lighting control systems that are covered under the Title 24 Acceptance Test requirements, the CEC determined that CALCTP-I Certified Installers were eligible to become certified acceptance test technicians with only a supplemental course in Title 24 acceptance test procedures and documentation.

Accordingly, CALCTP Certified Installer applicant training consists solely of the 16 hour Acceptance Test Procedures and Documentation Unit described below. This unit addresses the acceptance test procedure and documentation curriculum components that were not already included in the CALCTP-I Installer Certification curriculum. However, this does not result in any less training than received by applicants who are not CALCTP Certified Installers. The additional training and curriculum required for those applicants has already been previously covered in the 50 hour CALCTP Certified Installer training course.

A. Training Received by Certified CALCTP AT Technicians Met Code Requirements

The 120 CALCTP certified Acceptance Test Technicians who had not previously been certified as CALCTP Lighting Control Installers have been trained in the analysis, theory and practical application of curricula topics listed in California Code of Regulations, title 24, Part 1, § 10-103-A(c)(3)(A) and (B), which includes the building energy efficiency standards acceptance test procedures and compliance documentation set forth in California Code of Regulations, title 24, Part 6, § 130.4. These applicants received approximately 30 hours of onsite classroom lectures, onsite lab introduction, onsite lab, Q &A, and examinations. In addition, these applicants are required to take a free prerequisite online course in basic lighting control terminology and concepts that is provided by the Lighting Controls Association. This course takes about 12 hours to complete.

The curriculum covered, training materials and laboratory boards utilized and the examination questions presented are provided in detail in the CALCTP Lighting Controls Acceptance Test Technician Provider Application previously submitted to the Commission. All training courses were developed by the California Lighting Technology Center at University of California, Davis after recommendations and a job task analysis were conducted by the CALCTP Curriculum Committee. The CALCTP-AT Curriculum includes a lighting control systems and programs unit, a lighting controls codes and standards unit and an acceptance test procedures and documentation unit. The CALCTP Board has determined that the systems and programs unit and the codes and standards unit are necessary to ensure that CALCTP- AT Technicians have the requisite background knowledge to be successful CALCTP-AT Technicians, even when encountering real-world systems or scenarios that might not have been expressly covered in a review of the basic acceptance test procedures and documentation alone.

In addition, these units are necessary to meet the training and scope requirements set forth by the Commission in California Code of Regulations, title 24, Part 1, § 10-103-A(c)(3)(A) and (B), which require:

Both hands-on experience and theoretical training such that Acceptance Test Technicians demonstrate their ability to apply the Building Energy Efficiency Standards 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.

(Cal. Code Regs., tit. 24, Part 1, § 10-103-A(c)(3)(A).)

and requires that:

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:

- a) Lamp and ballast systems;
- b) Line voltage switching controls;
- c) Low voltage switching controls;
- d) Dimming controls;
- e) Occupancy 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;
- 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.

The curriculum covered and the examination questions presented are provided in detail in the CALCTP Lighting Controls Acceptance Test Technician Provider Application previously submitted to the Commission, but are summarized as follows:

1. Lighting Controls Association Online Prerequisites

The prerequisite Lighting Controls Association online program is on the Lighting Controls Association Web site⁵ and consists of modules EE101, EE102, EE103, and EE201. These courses are estimated to take approximately 12 hours to complete and provide a foundation in lighting control terminology and concepts that are used throughout the CALCTP Program. Topics covered include: (1) Introduction to Lighting Controls; (2) Switching Controls; (3) Dimming Controls; and (4) Daylight Harvesting.

2. Lighting Control Systems Unit

This 10 hour Unit focuses on the functions and set up of lighting controls systems and programs and their interrelationship with the building environment. The Lighting Control Systems unit consists of lectures, lab activities and a written exam. The content of the unit is as follows:

Program Introduction

The program introduction describes CALCTP and the reasons behind its formation, relevance and need. Content includes a general introduction to the federal codes,

⁵ http://www.aboutlightingcontrols.org/Education_Express/accr_orgs.php.

standards, and design practices governing installation of lighting and lighting controls in the US.

Module 1: Lighting Systems Overview

Lighting Systems Overview provides a high-level introduction to the light sources, controls components and control strategies utilized in the commercial sector.

Module 2: Line Voltage Switching Controls

Module 2 is designed to teach class participants to correctly identify and select line voltage switching devices typically employed as part of a commercial lighting system including wallbox, cabinet and emergency switching devices.

Module 3: Low Voltage Switching Controls

Module 3 is designed to teach class participants to correctly identify and select low voltage switching controls typically employed as part of a commercial lighting system. Low voltage control devices and components include transformers, relays, relay panels, and switches.

Module 4: Dimming Controls

Module 4 is designed to teach class participants to correctly identify and select dimming control devices typically employed as part of a commercial lighting system.

Module 5: Occupancy Controls

Module 5 is designed to teach class participants to correctly identify and select occupancy control devices typically employed as part of a commercial lighting system.

Module 6: Photosensors

Module 6 is designed to teach class participants to correctly identify and select photosensors to control electric lighting systems, as part of a daylighting design strategy for commercial buildings.

Module 7: Emerging and Alternative Lighting Control Concepts

This module is designed to incorporate emerging and alternative trends in commercial lighting controls.

3. Codes and Standards Unit

This 4-hour unit covers the purposes of California energy codes, review of California legislation affecting the lighting industry, as well as an overview of California's indoor and outdoor lighting requirements. The course also covers regulations on what types of testing need additional training for acceptance test technicians.

4. Acceptance Test Procedures and Documentation Unit

This Unit consists of approximately 16 hours of onsite classroom lectures, onsite lab introduction, onsite lab, Q &A, examination, and evaluation on the building energy efficiency standards acceptance test procedures and compliance documentation set forth in California Code of Regulations, title 24, Part 6, § 130.4. It covers seven fundamental questions about lighting

control acceptance tests: (1) What is in the energy code?; (2) What are the test technician responsibilities?; (3) What are the employer's responsibilities?; (4) What are acceptance test processes?; (5) What are acceptance test procedures for indoor lighting?; (6) What are acceptance testing procedures for outdoor lighting?; and (7) What is needed for compliance documentation?

Students are required to complete each laboratory module with 100% (Pass/Fail) competency in lab exercises to move to the next laboratory module. Lab activities are conducted on specially designed CALCTP lab trainers made up of components from 14 different manufacturers to ensure that CALCTP-AT Technicians have the competency to work in any environment. The average cost of a lab board (pictured below) is \$20,000.



The final examination consists of 60 equally weighted multiple-choice questions, with four choices per question; 50 of the questions are scored and 10 are unscored pilot questions. The pilot questions are randomly distributed throughout the examination and are not identified. All questions will be extensively reviewed prior to use and will receive additional regular evaluation for unforeseen bias during the course of their use in the exam. The time limit for the examination is 2 hours. The final exam requires a 75% pass rate.

Final exam questions relate to a job task analysis created by experts and cover the following topics:

1. Lamp and ballast systems
2. Line voltage switching controls
3. Low voltage switching controls

4. Dimming controls
5. Occupancy sensors
6. Photosensors
7. Demand responsive signal inputs to lighting control systems
8. Building Energy Efficiency Standards required lighting control systems
9. Building Energy Efficiency Standards required lighting control system-specific analytical/problem solving skills
10. Integration of mechanical and electrical systems for Building Energy Efficiency Standards required lighting control installation and commissioning
11. Safety procedures for low-voltage retrofits (<50 volts) to control line voltage systems (120 to 480 volts)
12. Accurate and effective tuning, calibration, and programming of Building Energy Efficiency Standards required lighting control system
13. 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
14. Building Energy Efficiency Standards lighting controls acceptance testing procedures

B. CALCTP-I Certified Installer Training

California Code of Regulations, title 24, Part 1, § 10-103-A(e) only requires CALCTP Certified Installers to take a four hour class or webinar on the building energy efficiency standards acceptance test procedures and compliance documentation. The training and testing provided to CALCTP Certified Installers as a prerequisite to their CALCTP-AT certification meets and exceeds this requirement.

The certified CALCTP AT Technicians who were already certified as CALCTP-Installers have completed the Acceptance Test Procedures and Documentation Unit described above. Accordingly, they have each received approximately 16 hours of onsite classroom lectures, onsite lab introduction, onsite lab, Q &A, examination, and evaluation on the building energy efficiency standards acceptance test procedures and compliance documentation set forth in California Code of Regulations, title 24, Part 6, § 130.4. The curriculum covered and the examination questions presented are provided in detail in the CALCTP Lighting Controls Acceptance Test Technician Provider Application previously submitted to the Commission and summarized above.

In addition, CALCTP Certified Installers have completed the 12 hours of Lighting Control Association online modules, the CALCTP Codes and Standards Unit, and the material covered in the CALCTP Lighting Controls Systems and Programs Unit as part of their Installer certification training. With their CALCTP-Installer training, CALCTP-Installers certified as CALCTP-AT Technicians have been trained in the analysis, theory and practical application of curricula topics listed in California Code of Regulations, title 24, Part 1, § 10-103-A(c)(3)(A) and (B).

C. Industry Groups that CALCTP-AT Certified Technicians and Employers Represent

Exhibit A provides industry group identification for each of the certified Lighting Controls Acceptance Test Technicians. In addition, Table 1 below summarizes the professional background of the Certified CALCTP-AT Technicians. Industry group information is based on that provided on the applicant’s application. Note that several of the applicants identified themselves as representing more than one of industry group. It is likely that others also met more than one industry group, but only selected one of the categories in their application. As discussed, CALCTP is working with Lighting Control Manufacturers to identify objective standards and a consensus definition for the “controls installation and startup contractors.” But until such time as objective standards are identified, CALCTP has worked with manufacturers to certify their representatives under one of the other listed professional categories. Accordingly, the 30 lighting control manufacturers identified below were each also eligible under another of the industry categories.

Table 1 - Certified CALCTP-AT Technicians

Industry	Numbers
Electrical Contractors	69
State Certified General Electricians	549
Professional Engineers	7
Certified Commissioning Agents	4
Lighting Controls Manufacturers	30

Attached as Exhibit D is a list of each of the CALCTP-Certified Employers, including their certification numbers and type of corporation. The information is summarized in Table 2.

Table 2- Certified CALCTP-AT Employers

Industry	Numbers
Electrical Contractors	55
State Certified General Electricians	N/A
Professional Engineers	3
Certified Commissioning Agents	0
Lighting Controls Manufacturers	7

D. Business Locations, Number of Certified CALCTP-AT Technicians on Staff, and Service Area Coverage for Each Employer

Attached as Exhibit D is a list of each of CALCTP-Certified Employers, including their certification numbers. Attached as Exhibit F is a list of the names, office locations, number of certified CALCTP –AT technicians on staff, and service area coverage. Exhibit E provides a map that demonstrates that the combined service areas of the CALCTP-certified Lighting Controls Acceptance Test Technician Employers covers every single county in California. Not all

CALCTP-certified Lighting Controls Acceptance Test Technician Employers have responded to requests for this information, so the actual number of available employers per county will be higher than indicated. The Industry Certification Threshold regulations do not require a showing that Certified Acceptance Test Technicians are physically located in every California county. Certified Acceptance Test Technicians, however, are available in every county.

As shown by Exhibit E, every county has at least 8 certified employers who have indicated that the county is within their service area and at least 59 certified CALCTP AT technicians within the employ of these employers. Every county has at least 27 CALCTP-certified Lighting Controls Acceptance Test Technicians that work for an employer or employers that exclusively serve the region of California that the county is in. In addition, over 32 CALCTP-certified Lighting Controls Acceptance Test Technicians are available for acceptance test work in all California counties (based upon CALCTP employers who have indicated that they will serve all counties in California). This is consistent with current industry practices. For example, many certified CALCTP-I advanced lighting control installers travel throughout all of California to meet industry's lighting control installation needs.

In addition, a number of CALCTP-AT certified technicians are not affiliated with any specific employer and are on call to a certified employer in case needed to meet unexpected demand. This will allow employers with a limited number of full-time technician employees to meet an excess demand for services. This same strategy has proven successful with CALCTP-I advanced lighting control installers, where many underemployed and unemployed CALCTP-I advanced lighting control installers receive temporary work from CALCTP-I employers to meet spikes in demand.

Finally, the counties with relatively smaller number of available employers or technicians are counties that are less inhabited and developed and thus will have substantially less demand for Lighting Controls Acceptance Test Technicians.

Nonetheless, the CALCTP team has been aggressively marketing the acceptance testing technician training to the counties that don't have as many certified technicians. The CALCTP administration team made over 55 cold calls based on yellow pages of electrical contractors in Alpine, Del Norte, Fresno, Humboldt, Inyo, Lassen, Modoc, Mono, Shasta, Siskiyou, and Tulare counties to make sure they are aware of the acceptance testing requirements and have invited them to participate in CALCTP-AT trainings. So far the response rate has been low, but CALCTP expects that these cold calls will result in more applicants from these counties once the certification requirement becomes effective.

CALCTP also notes that the number of lighting control acceptance tests subject to the 2013 California Energy Code certification requirements in these outlying counties are expected to be minimal during the first six months that the Code is in effect. The 2013 California Energy Code will apply to projects that submit building permit applications after the July 1, 2014 effective date of the Code. Since acceptance tests occur at the very end of project construction, most projects that submit building permit applications in July or August won't be ready for acceptance tests until December or January. Accordingly, contractors in these outlying areas who

have not been willing to be early adopters will still have time to become certified after the certification requirement becomes mandatory, but before demand picks up.

CALCTP is in the process of putting up a page on its website where available certified CALCTP-AT employers may be looked up by county. This will be running prior to July 1, 2014.

V. REASONABLE ACCESS TO CERTIFICATION IS AVAILABLE TO A MAJORITY OF THE LISTED INDUSTRY GROUPS

Section 10-103-A, subdivision (b)(2) requires a finding that reasonable access to certification is available to the majority (i.e., at least three) of the following five professional industry groups who have verifiable training, experience and expertise in lighting controls and electrical systems: (1) electrical contractors, (2) certified general electricians, (3) professional engineers, (4) controls installation and startup contractors and (5) certified commissioning professionals. Section 10-103-A, subdivision (b)(2) does not require that each of the industry groups have been provided reasonable access prior to the determination, only that reasonable access is now available to a majority of these industry groups at the time of the determination.

CALCTP, however, currently has certified and continues to provide access to certification to four of the five listed professional industry groups and thus provides reasonable access to certification to the majority of these groups.

The only professional category that is not currently provided certification by CALCTP is “controls installation and startup contractors.” CALCTP has determined that there is no state contractor license for “controls installation and startup contractors” and there are no certifications, licenses, degrees or standard industry definitions for “controls installation and startup contractors.” CALCTP has surveyed National Electrical Manufacturers Association members for a possible standard definition of this group, but has been unable to establish a consensus definition. Accordingly, approval under this category lacks objective standards and would be arbitrary.

CALCTP has been able to work with lighting control manufacturers to certify their employees under one of the other four professional industry categories. At this date, CALCTP is not aware of any lighting control manufacturer applicants who have not been able to qualify a representative under one of the other four professional industry categories.

In addition, CALCTP will continue to work with the lighting control industry to determine if any meaningful certifications, licenses, degrees or training programs exist that can be uniformly applied to address installation and startup technicians. If industry consensus can be reached, CALCTP will work with industry to propose an amendment to Section 10-103-A, subdivision (b)(2) to replace the term “controls installation and startup contractors” with a more specific and meaningful description.

Evidence that reasonable access is provided to each of the other four professions is demonstrated by the fact that CALCTP has certified technicians representing each of these

groups and that each of these groups have the same prerequisite requirements, have the same training and testing requirements, are trained in the same classes and are charged the same fees. In addition, Title 24, Part 1, § 10-103-A, subsection (b)(2) states that the Energy Commission will determine whether reasonable access to certification is provided by considering factors such as: (A) class availability; (B) certification marketing materials; (C) certification costs commensurate with the complexity of the training being provided; (D) prequalification criteria; and (E) curriculum. Those factors are discussed below.

A. Class Availability

CALCTP has certified 63 instructors to conduct classroom and hands on training of CALCTP Acceptance Test Technician Certification applicants. These include instructors at community colleges, joint management/labor training centers, investor owned utility energy centers, and independent training centers.

61 classes for CALCTP Acceptance Test Technician Certification have been conducted by May 15, 2014. An additional 4 classes are scheduled to be completed by July 30, 2014. 35 classes have been offered in Northern California and 26 classes in Southern California. The upcoming four classes are split evenly between Northern and Southern California. Exhibit B lists the location of each of the classes, when they were completed, how many students attended and the industry groups represented.

43 of the classes were offered at JATCs (resulting in certification of 383 CALCTP-AT technicians) and 22 of the classes were, or are, offered at Investor Owned Utility Training Centers, community colleges or independent training centers (resulting in certification of 247 CALCTP-AT technicians). All JATC's that offered classes signed an agreement with CALCTP to let any student attend a class, even if they were not union members. The JATC's charged non-union members training fees ranging between \$500 and \$1000 since their training was not paid for out of Union dues.

As would be expected, the highest demand for classes have come from CALCTP-I certified advanced lighting control installer applicants. Due to applicant demand, 43 of the classes have been the 16 hours classes for CALCTP-I certified lighting control installers and 18 of the classes have been the 30 hour classes for all applicants.⁶ The four classes scheduled in June and July are open to all industry groups and the vast majority of future classes will continue to be open to all industry groups.

CALCTP and its training partners will continue to schedule additional classes as necessary to meet demand. At a minimum, CALCTP will schedule four more additional, all-industry classes (two in Northern California and two in Southern California) during the first year that the 2013 Energy Code is in effect. However, CALCTP expects there will be sufficient

⁶ In addition, the expedited trainings for CALCTP-I certified lighting control installers allowed under Section 10-103-A, subd. (e)(2) allowed those classes to begin sooner. As a result, the majority of the classes offered during 2013 were the expedited trainings for CALCTP-I certified installers allowed under Section 10-103-A, subd. (e)(2). From December of 2013 through the present, classes have been focused on the 30 hour training for non-CALCTP-I installers.

demand to allow for a substantially greater number of classes. With 63 trained instructors in locations throughout the state, CALCTP does not foresee any difficulties in providing sufficient classes to continue to meet industry demand for all qualified industry groups.

Thereafter, CALCTP anticipates that all-industry classes will be offered semiannually at a minimum, with more classes provided as demand requires. CALCTP will accept applications for certification year round.

B. Certification Marketing Materials

In marketing the availability of CALCTP certification, CALCTP made a concerted effort to publicize the program to union and non-union electrical contractors, certified commissioning professionals and professional engineers. In addition, CALCTP has made a concerted marketing effort to ensure a sufficient geographic spread of Certified Lighting Controls Acceptance Test Technicians to ensure coverage in all 58 counties in California.

CALCTP and its board members and partners have been aggressively advertising the CALCTP program to all interested individuals as well as to eligible industry groups.

1. General Marketing – To All Industry Groups

CALCTP prominently marketed the availability of classes to all industry groups on its website. CALCTP also worked with the California Lighting Technology Center at U.C. Davis to market the availability of classes on its website and in its newsletters. In addition, because Title 24, Part 1, Section 10-103-A, subsection (e) gives notice that CALCTP has been designated as an authorized lighting controls acceptance test technician provider, the code itself lets interested parties know that they can contact CALCTP for class information.

From November of 2103 to April of 2014, CALCTP also engaged an outreach coordinator, Christopher Smith, to identify and directly contact companies, organizations and firms that would likely be interested in certification classes. The contacts were identified based on size, operating market, reputation, years in the industry, growth potential, connection with title 24 lighting control standards, and ability to assist in spreading word of class availability. Over this six month period, Mr. Smith made approximately 1000 phone calls and sent approximately 450 emails and 100 faxes (including follow up calls and updates). In addition Mr. Smith has approximately 10 face to face meetings with groups.

Mr. Smith reported that, through these efforts he successfully contacted and provided follow up information to:

- 25 Lighting Control Manufacturers
- 15 Lighting Representatives
- 4 Lighting Designers
- 19 Engineering Firms
- 13 NEMA / Mechanical Contractors
- 12 Commissioning Agents

- 6 Lighting Technology Developers
- 10 Architectural Firms
- 10 Engineering / Mechanical / Architectural / COG Organizations

Marketing also included announcements sent through the Investor Owned Utilities' utility center announcement list, which goes out to over 10,000 interested parties(including parties representing all of the qualified industry groups) and announcements on the Investor Owned Utilities' websites.

CALCTP (with the help of Leviton Manufacturing) also marketed the availability of training as part of its presentation of fourteen Title 24 Lighting Control requirement workshops to over 631 building officials, plan check staff and building inspectors representing over 225 jurisdictions throughout California. These presentations provided building officials the information they needed to direct interested applicants to CALCTP's website.

CALCTP has held also promoted the availability of lighting control acceptance test technician training at information booths at numerous events throughout the state, including the SDG&E Energy Showcase and Southern California-Edison Customer's Authorized Agents (SCE-CAA) events.

CALCTP's partner training centers also marketed their training through their own websites and mailing lists, including announcements to community colleges and Advanced Transportation & Energy programs. In addition, Ecology Action, which runs the low-income programs for PG&E and other utilities, marketed the training to their network.

Finally, CALCTP has established a toll-free phone number for the CALCTP-AT program that fields between 15-25 calls a day from individuals interested in becoming an acceptance test technician.

2. Additional Industry Specific Marketing

Electrical Contractors & Certified Electricians

In addition to the above marketing, CALCTP has reached out directly through emails and phone calls to union contractors and their certified electrician employees through the California National Electrical Contractors Association (NECA) chapters and the IBEW/NECA Labor Management Cooperation Committee and to non union contractors and their certified electrician employees through the Western Electrical Contractors Association, Inc. (WECA).

In the more remote areas of the state, CALCTP contacted over 55 contractors directly through phone calls or emails to encourage their staff to participate in training. These contractors were identified through yellow page listings for electrical contractors in Alpine, Del Norte, Fresno, Humboldt, Inyo, Lassen, Modoc, Mono, Shasta, Siskiyou, and Tulare counties.

CALCTP also marketed to certified electricians by contacting both union and non-union training centers and asking them to inform their members. California Electrical Training

Institute, a non-union training center, sent out an email announcement to its 9,000 members. IBEW Joint Apprenticeship Training Centers also sent announcements to their members throughout the state.

The availability of certification classes was also marketed to CALCTP-certified installers – who include both union and non-union electricians.

Professional Engineers

In addition to the above marketing and direct calls to engineering firms and organizations, potentially interested professional engineers were also targeted through the help of the California Lighting Technology Center at Davis, which contacted engineers that it thought might be interested and sent out an email announcement of training to the over 2,305 recipients of its newsletter.

Certified Commissioning Professionals

In addition to the above marketing, CALCTP also reached out to certified commissioning professionals directly through the the California Commissioning Collaborative (CCCx). CALCTP promoted the availability of training classes at CCCx meetings and attended several CCCx events to educate attendees on the training. CCCx emailed announcements of CALCTP certification training to over 3,000 California commissioning professionals and included an announcement on its website.

Lighting Manufacturers

In addition to the above marketing, CALCTP reached out to lighting manufacturers through the National Electrical Manufacturers Association (NEMA). As a result, Ron Runckles, the NEMA Lighting Industry Director, sent out an email to NEMA lighting control section members regarding the training, which resulted in the certification of 30 representatives of lighting control manufacturers.

3. Sample Marketing Materials

A representative sample of marketing materials is provided in Exhibit G:

Tab 1 - Marketing materials from the California Lighting Technology Center at U.C. Davis

Tab 2 - List of building department jurisdictions that attended presentations made by CALCTP

Tab 3 – CALCTP marketing materials for CALCTP-AT certification

Tab 4 – California Commissioning Collaborative marketing materials for CALCTP-AT certification

Tab 5 – IBEW marketing materials for CALCTP-AT certification

Tab 6 – JATC marketing materials for CALCTP-AT certification

Tab 7 – California Electrical Training marketing materials for CALCTP-AT certification

Tab 8 – NECA marketing materials for CALCTP-AT certification

Tab 9 – Lighting Control Association marketing materials for CALCTP-AT certification

Tab 10 – Advanced Transportation Technology & Energy Center marketing materials for CALCTP-AT certification

Tab 11 – IOU marketing materials for CALCTP-AT certification

Tab 12 – Energy Education Center marketing materials for CALCTP-AT Employer certification

Tab 13 - Sacramento Valley Chapter of the International Association of Electrical Inspectors marketing materials for CALCTP-AT certification

Tab 14 – San Francisco Electrical Contractors Association marketing materials for marketing materials for CALCTP-AT certification

Tab 15 - Energy Design Resources marketing materials for CALCTP-AT certification

C. Certification Costs Commensurate with the Complexity of the Training Provided

Title 24, Part 1, § 10-103-A, subsection (b)(2) states that the finding that reasonable access has been provided to certification for technicians representing the majority of listed industry groups shall be based, among other factors, on whether certification costs for each of these groups is commensurate with the complexity of the training being provided. In other words, the Commission wishes to ensure that none of the listed industry groups are effectively discouraged from certification due to being charged higher costs that are not commensurate with the complexity of the training provided.

CALCTP certification costs are the same regardless of industry group.⁷ Accordingly, there are no unreasonable barriers erected for an industry group due to cost. In addition, the reasonableness of the certification cost is demonstrated by the fact that over 600 technicians have

⁷ The only exception to this is the certification cost for CALCTP-I Installer applicants. Certification costs for CALCTP-I Installer applicants are actually higher than for other applicants because they first have to be certified through the 50 hour installer class and then take an additional 16 hour class to become CALCTP-AT Technician. All other applicants only have to take the 30 hour CALCTP-AT class for non-CALCTP-I applicants. However, no industry group is required to become a CALCTP-I installer. Certified electricians, contractors, engineers and commissioning agents are all eligible to take the 30 hour CALCTP-AT class for non-CALCTP-I applicants.

already become certified through CALCTP, more than double the required 300 technicians. As a result, the market has already confirmed that these costs are reasonable.

1. Summary of Certification Costs

Certified CALCTP Lighting Controls Acceptance Test Technicians are subject to four separate fees: (1) Initial Application and Records Maintenance Fee; (2) training fee; (3) quality assurance fee; and (4) Annual Maintenance Fee.

Initial Application and Records Maintenance Fee: \$225

This fee covers review and verification of application materials, program administration, records maintenance, and the ongoing development of training and testing to reflect updates to the California Energy Code lighting control acceptance test requirements.

Annual Maintenance Fee: \$125

Certification is required to be renewed annually. This fee covers program administration, records maintenance, and the ongoing development of training and testing to reflect updates to the California Energy Code lighting control acceptance test requirements.

Training Fee: Varies by Training Center (\$0 to \$1,500.)

The CALCTP-AT Course is offered by independent training centers that may charge a training fee in addition to the application and records maintenance fee that is paid to CALCTP. In order to ensure sufficient competition to keep training costs to the minimum, CALCTP has certified 63 instructors to conduct classroom and hands on training of CALCTP Acceptance Test Technician Certification applicants. These include instructors at community colleges, joint management/labor training centers, and investor owned utility energy centers.

Training centers vary from joint labor/management training centers to community college centers to Investor Owned Utility training centers. Classes at joint labor/management training centers are generally paid for out of member dues, and thus do not charge any fees to member applicants in addition to their dues. Many of the classes at community colleges are offered at or below cost due to grants or subsidies. Classes at investor owned utility energy centers are also generally subsidized and offered for free or below cost. Even without subsidies, the cost of CALCTP certification is very modest. At community colleges, it is the cost of class time at community college tuition rates. For those that attend JATC classes as non-members and community colleges the average cost is \$500. CALCTP did have an independent training site offer the course at a cost of \$2500 but that entity was decertified by the Board in April 2014.

Quality Assurance Fee: \$200 per Document Review; \$ 400 per Acceptance Test Result Verification

This fee covers the random acceptance test documentation verification and on-site acceptance test verification that is required by the Commission regulations. It is set at the minimum level estimated necessary to make the quality assurance program mandated by the Commission self-funded. Based on the program parameters, a percentage of projects, chosen

randomly, will receive either a paperwork “desk” review or an onsite, in-person, quality-assurance review. Each review will be based upon the following fee structure.

**State of California Building Code
Title 24 Lighting Controls Quality Assurance Reviews**

Type of Review/Audit	Fee Paid to ICF
For Each Quality Assurance Desk Review	\$200 per Audit
Per On-Site, In Person Quality Assurance Visit	\$400 per Audit

2. Development of Costs

CALCTP is a non-profit mutual benefit corporation and thus has set CALCTP-AT certification costs at the lowest level possible to cover the costs of developing and running the program. The costs covers the costs for development of the curriculum—over a year in development, development of the laboratory testing boards, review of the tests for fidelity and compliance with best practices, administration, and pilot testing, and the updating of the curriculum as necessary to comply with updates of the California Energy Code lighting control acceptance test requirements. In addition, program and training costs needed to cover the cost of developing the laboratory board required under Section 10-103-A, subdivision (c)(3)(A) and (B)(ii). The laboratory boards are made up with lighting control components from 14 different manufacturers and the average cost of a lab board is: \$20,000.

CALCTP administration consulted the CALCTP Board in developing the fees. The CALCTP Board is comprised of representatives of utilities, contractors, electricians, manufacturers and the California Lighting Technology Center at the University of California, Davis.

CALCTP Board of Directors:

- *Bernie Kotlier, Co-Chair, IBEW/NECA LMCC*
- *Doug Avery, Co-Chair, Avery Energy Consulting*
- *David Rivers, Southern California Edison*
- *Robert Marcial, Pacific Gas & Electric*
- *Yvonne “Bonnie” Moreno, San Diego Gas & Electric*
- *Peter Davis, California Chancellor’s Office of the Community College System*
- *Michael Siminovitch, California Lighting Technology Center-UC Davis*
- *Ron Runkles, National Electrical Manufacturer’s Association*
- *Kostantinos Papamichael, California Lighting Technology Center-UC Davis*
- *Connie Samla, Sacramento Municipal Utilities District*

Any effort to raise the costs will have to be approved by the board. The board is aware of the not-for-profit nature and looks at the overall cost of the industry and cost to maintain operations of the non-profit that runs the program.

In addition, once certification costs were set, they were compared with other certification and training programs to ensure that they were within industry expectations. CALCTP did a comparison of certification costs in other programs in designing the certification fee structure which is included in Exhibit H and determined that CALCTP's certification costs were not out of line with these other programs. None of these programs were subject to the quality assurance audits required by Commission regulations and thus they do not reflect those costs.

CALCTP also compared the training costs to other similar training programs. For example, Associated Building and Contractors offers 2 day forklift training certificate (\$1000 for non-members and 985 for members).⁸ Western Electrical Contractors (San Diego Branch) offers a 4 hour ground and bonding class (\$295 non-member; \$250 member) – equivalent to a 16 hour class for \$1200 or a 30 hour class for \$2,200.⁹ Western Electrical Contractors Association (Northern Branch) provides an online 42 hour advanced electrical class for \$389, which doesn't include an hands on or live person instruction or use of laboratory boards.¹⁰

CALCTP training costs ultimately will be kept down by competition and the wide variety of training centers. In particular, training at community colleges is the cost of class time at community college tuition rates - rates that are generally well-below actual cost. In addition, classes at investor owned utility energy centers are also generally subsidized and offered for free or below cost. Other training centers will have to compete with these prices.

CALCTP also notes that training classes offered to union members at joint management/labor training centers are not free of charge. They are paid in full through members' dues. Accordingly, members of joint management/labor training centers are not advantaged by lower training costs – they simply pay for these costs in a different manner than other applicants. In contrast, most of the applicants who have trained through community colleges or investor owned utility energy centers have been charged some sort of subsidized rate, including many classes that were offered for free under grants. Because these non-union applicants do not reimburse these subsidies through payment of regular dues, any ratepayer or taxpayer subsidies for their classes provide a cost-advantage that the Union members do not receive.

D. Prequalification Criteria

California Energy Commission regulations require certified-technician applicants to “have at least three years of verifiable professional experience and expertise in lighting controls and electrical systems sufficient to demonstrate an ability to understand and apply the lighting

⁸ <http://www.abcnorcal.org/educationtraining/continuingeducation/tabid/626/ctl/viewdetail/mid/1775/itemid/1440/d/20140609/language/en-us/2-Day-Express-Counterbalanced-Forklift-Trainer-Certification-.aspx>

⁹ http://ps.businesssocialinc.com/media/uploads/ps_1400537636_grounding-and-bonding-6-30-14.pdf

¹⁰ <http://www.goweca.com/Journeymen/JourneymanCourseCatalogs/CourseCatalog.aspx?Program=GW-ADV&catalogType=J>.

control acceptance test technician certification requirements.”¹¹ In addition, the California Energy Commission requires certification to be open to the majority of the following industry groups: “electrical contractors, certified general electricians, professional engineers, controls installation and startup contractors and certified commissioning professionals who have verifiable training, experience and expertise in lighting controls and electrical systems.”¹²

1. Prequalification Requirements

Consistent with the above regulatory requirements, eligibility is limited to persons who have at least 3 years of verifiable experience in lighting controls and building systems in the following professions:

- Certified General Electricians (without CALCTP Installer certification) – must have a current, valid State Certification Number for general electricians that starts with E and ends with G: E + 6-digits + G.
- Electrical Contractors – as defined by individual Candidates who have a valid C-10 electrical contractor license in their name.
- Professional Engineers – as defined by Candidates who have received a bachelor’s degree in engineering from an accredited college or university.
- Certified Commissioning Professionals – As defined by Candidates who have received the following certifications:¹³
 - Certified Commissioning Professional offered by the Building Commissioning Association
 - Certified Building Commissioning Professional offered by the Association of Energy Engineers
 - Commissioning Process Management Professional offered by American Society of Heating Air Conditioning Engineers

The CALCTP Board has defined lighting controls experience to include:

- occupancy and photosensors for both indoor and outdoor applications;
- low and line voltage dimming systems;
- demand response control systems, including Energy Management Control System with Demand Response functionality/modules;
- track lighting systems, including current limiting devices; and

¹¹ Cal. Code Regs., tit. 24, Part 1, § 10-103-A, subd. (c)(3)(B)(iii).

¹² Cal. Code Regs., tit. 24, Part 1, § 10-103-A, subd. (b)(2).

¹³ To identify these certifications, CALCTP surveyed commissioning professionals in California. These three certifications were identified as the most common and most credible within the industry. The International Accreditation Service (“IAS”) just recently published AC 476, a national standard for accrediting building commissioning certification providers. Once this standard is implemented by the commissioning industry, CALCTP expects to amend this definition to include commissioning professionals who have been certified by AC 476-accredited certification organizations.

- time-based scheduling systems including automatic time switches, programmable lighting control panels, and part-night lighting control devices.

An applicant must submit documentation that he or she has experience in a majority of the above identified areas.

In addition, an applicant has to complete 12 hours of required Lighting Control Association online modules as a pre-requisite to being allowed to take the CALCTP Systems Course and CALCTP Codes and Standards Course. The prerequisite Lighting Controls Association online program is *free of charge* and consists of modules EE101, EE102, EE103, and EE201.¹⁴ Completion of the modules ensures that all candidates have a basic knowledge of the terms and controls that will be used in class. Candidates will not be enrolled into the CALCTP-AT certification course until completion of the online LCA courses.

These prequalification criteria are consistent with the Energy Commission regulations and do not create any arbitrary or overly burdensome prequalification requirements for any particular industry group. Each industry group is subject to the same prequalification requirements.

2. Application Review

CALCTP staff, under the supervision and direction of the CALCTP Board, review every application to verify that compliance with minimum eligibility requirements has been met by the applicant and is properly documented. An Application Review Committee reviews any application for which CALCTP administration is unable to determine if the applicant does or does not meet the eligibility requirements. This Committee is made up of three CALCTP-selected subject matter experts who have an understanding of the different types of situations and constraints encountered by practitioners in the field. Reviewers will be noncompetitive industry peers with no financial or other affiliation with applicants. Reviewers are charged to act in a manner that is fair, consistent, objective and justifiable.

If an applicant is deemed ineligible, he or she will be notified and informed of the reason(s) for this finding. If an applicant chooses to appeal the finding of ineligibility, he or she may do so in writing to CALCTP within 30 days of the receipt of notification of ineligibility.

The application review and appeal process further ensure reasonable access is provided to each of the industry groups.

E. Curriculum

The CALCTP Acceptance Test Technician course is divided into three units: (1) Lighting Control Systems and Programs; (2) Lighting Controls Codes and Standards; and (3) Acceptance Test Procedures and Documentation. This course is designed to meet Commission regulatory requirements and to ensure CALCTP Acceptance Test Technicians have the competency to

¹⁴ These courses can be found at: http://www.aboutlightingcontrols.org/Education_Express/accr_orgs.php.

accurately validate that lighting control installations will meet the State's energy efficiency targets.¹⁵ The curriculum is described in detail, *supra*, in section III.A of this report.

The curriculum is consistent with the Energy Commission regulations and does not create any arbitrary or overly burdensome training requirements for any particular industry group. Consistent with the regulations, the curriculum provides acceptance test technicians with both theoretical classroom training and hands-on practical training in order to ensure they are able to apply 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.¹⁶ The curriculum also meets the requirement that it provide certified acceptance test technicians with training in the "analysis, theory and practical application" of the identified lighting control topics.¹⁷ Furthermore, each industry group is trained to the exact same curriculum and thus is provided reasonable access to certification.

VI. CONCLUSION

In order to ensure that Title 24 requirements for reducing the energy demand of commercial lighting systems will result in actual real world energy savings, it is critical that acceptance testing and documentation of advanced lighting systems be performed accurately and completely. Without certification of acceptance test technicians, there is no assurance that the cost of complying with Title 24 energy saving requirements will actually result in expected energy savings.

CALCTP, California electrical contractors and the lighting control industry have invested substantial money, time and resources to ensure these Industry Certification Threshold requirements have been met in time to coincide with the implementation date for the 2013 Energy Code. Their return on this investment has already been delayed due to the six month delay in the 2013 implementation date, so it is crucial to these stakeholders that the Lighting Control Acceptance Test Technician certification requirement becomes mandatory on July 1, 2014 at the same time as the rest of the 2013 Energy Code.

As this report documents, the Section 10-103-A, subsection (b) industry certification threshold requirements have not only been met, but have been greatly exceeded. Not only is reasonable access to certification available to a majority of the listed industry groups, CALCTP has, in fact, actually certified representative from all of the listed industry groups. Certification requirements and costs are the same, regardless of industry group. In addition, certification is completely open shop. Certification is open to, and has been provided to, both union and non-union applicants. Certification costs are below industry averages and have been set in consultation with industry stakeholders.

Furthermore, more than double the number of technicians required to trigger the mandatory use of certified lighting control technicians have been certified. The certification of over 600 technicians, in itself, demonstrates that reasonable access to certification exists. This

¹⁵ See Cal. Code Regs., tit. 24, Part 1, § 10-103-A, subd. (c)(3)(B) (setting forth curriculum requirements).

¹⁶ Cal. Code Regs., tit. 24, Part 1, § 10-103-A, subd. (c)(3)(A).

¹⁷ Cal. Code Regs., tit. 24, Part 1, § 10-103-A, subd. (c)(3)(B).

greatly exceeds the number estimated necessary to fulfill the expected demand for certified lighting control acceptance test technicians.

CALCTP respectfully requests that the Energy Commission issue a finding that the Industry Certification Thresholds set forth in Section 10-103-A, subsection (b), have been fulfilled.

CERTIFICATION

I certify under penalty of perjury that the information contained in this *Report Confirming Industry Certification Thresholds Have Been Met for Lighting Control Acceptance Test Technician Certification Requirements* is true, correct, and complete to the best of my knowledge and that I am authorized to make this Report on behalf of CALCTP.

Dated: June 6, 2014

Signed: 

Name (print or type): Mark V. Ouellette

Title: (print or type) Senior Program Manager, ICF International

Representing: California Advanced Lighting Controls Training Program (CALCTP)

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Kathleen Barber	TC-A813001	Electrician	Yes	10/4/2013
Paul Bussell	TC-A813002	Electrician and Electrical Contractor	Yes	9/17/2013
Temistocles Caal	TC-A813003	Electrician and Electrical Contractor	Yes	9/17/2013
Geoffrey Gatt	TC-A813004	Electrician	Yes	9/17/2013
Michael Scalzo	TC-A813005	Electrician and Electrical Contractor	Yes	9/17/2013
Stephen Slovacek	TC-A813006	Electrician	Yes	9/17/2013
Jason McCord	TC-A813007	Electrician	Yes	9/17/2013
James Stark	TC-A813008	Electrician	Yes	9/17/2013
Rubio Rubio	TC-A813009	Electrician and Electrical Contractor	Yes	9/17/2013
Alberto DeSanto	TC-A813010	Electrician	Yes	9/17/2013
Lloyd Diehl	TC-A813011	Electrician and Electrical Contractor	Yes	10/4/2013
Michael Smith	TC-A813012	Electrician	Yes	9/17/2013
Ed Stark	TC-A813013	Electrician	Yes	9/17/2013
Michael Goodwin	TC-A813014	Electrician	Yes	9/17/2013
Jeff Gatlin	TC-A813015	Electrician	Yes	9/17/2013
Garrett Rowe	TC-A813016	Electrician	Yes	9/17/2013
Patrick Gorham	TC-A813017	Electrician	Yes	9/17/2013
Douglas Woodruff	TC-A813018	Electrical Contractor	No	10/7/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Brendan Cokeley	TC-A813019	Electrician	Yes	10/4/2013
Gary Pintor	TC-A813020	Electrician	Yes	10/7/2013
Barry White	TC-A813021	Electrician	Yes	10/17/2013
Donald Hay	TC-A813022	Electrician	Yes	10/13/2013
Daniel Forren	TC-A813023	Electrician	Yes	10/13/2013
Mike Nolan	TC-A813024	Electrician	Yes	10/4/2013
David Hoover	TC-A813025	Electrician and Electrical Contractor	No	10/7/2013
Richard DesLauriers	TC-A813026	Electrical Contractor	No	10/7/2013
Bruce Gourley	TC-A813027	Electrician	Yes	10/4/2013
Basil Goodrich	TC-A813028	Lighting Controls Manufacturer and Electrical Contractor	No	10/7/2013
Dwayne Holder	TC-A813029	Electrician	Yes	10/7/2013
Enrique Lorenzo	TC-A813030	Electrician	Yes	10/7/2013
Gregg Naveja	TC-A813031	Electrical Contractor	No	10/7/2013
Ossiel Sandoval	TC-A813032	Electrician	Yes	10/7/2013
Harry Stallmach	TC-A813033	Lighting Controls Manufacturer and Electrical Contractor	No	10/7/2013
Bernardo Torres	TC-A813034	Electrician and Electrical Contractor	No	10/7/2013
Steven Yamasaki	TC-A813035	Electrician	Yes	10/7/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Mladen Zagar	TC-A813036	Certified Commissioning Agent	No	10/7/2013
Anthony Ferguson	TC-A813037	Electrician	Yes	10/4/2013
Scot Hemingway	TC-A813038	Electrician	Yes	9/17/2013
Tom Forbes	TC-A813039	Electrician	Yes	9/17/2013
Mike Starr	TC-A813040	Electrician	Yes	9/17/2013
Francisco Deleon	TC-A813041	Electrician	Yes	10/7/2013
James Murphy	TC-A813042	Electrician	Yes	10/4/2013
Gregory Zickovich	TC-A813043	Electrician	Yes	10/4/2013
John Valverde	TC-A813044	Electrician	Yes	10/4/2013
Patrick Swain	TC-A813045	Electrician	Yes	10/4/2013
John Schmidt	TC-A813046	Electrician	Yes	10/4/2013
Ricardo Martinez	TC-A813047	Electrician	Yes	10/4/2013
Gary Leder	TC-A813048	Electrician and Electrical Contractor	Yes	10/24/2013
Wilfred Hernandez	TC-A813049	Professional Engineer	No	10/7/2013
John Ferraro	TC-A813050	Electrician	Yes	10/17/2013
Robert Walls	TC-A813051	Electrician	Yes	10/17/2013
Richard Whaley	TC-A813052	Electrician	Yes	10/17/2013
James Rosales	TC-A813053	Electrician	Yes	10/17/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
David Clark	TC-A813054	Electrician	Yes	10/4/2013
Stephen Sweazy	TC-A813055	Electrician	Yes	10/17/2013
Brian McKay	TC-A813056	Electrician	Yes	10/17/2013
Wayne Frank	TC-A813057	Electrician	Yes	10/4/2013
Jeffrey Dohan	TC-A813058	Electrician	Yes	10/24/2013
Davud Hickok	TC-A813059	Electrician	Yes	10/24/2013
Daniel Holt	TC-A813060	Electrician	Yes	10/24/2013
Alan Homutoff	TC-A813061	Electrician	Yes	10/24/2013
Vu Huynh	TC-A813062	Electrician	Yes	10/24/2013
Barry Nerhus	TC-A813063	Electrician	Yes	10/24/2013
John Nonenmacher	TC-A813064	Electrician	Yes	10/24/2013
Richard Sanderson	TC-A813065	Electrician	Yes	10/24/2013
Jason Slinger	TC-A813066	Electrician	Yes	10/24/2013
David Stotler	TC-A813067	Electrician	Yes	10/24/2013
Dean Taylor	TC-A813068	Electrician	Yes	10/24/2013
Erik Terrebone	TC-A813069	Electrician	Yes	10/24/2013
Cody Trusdall	TC-A813070	Electrician	Yes	10/24/2013
Charles Viviani	TC-A813071	Electrician	Yes	10/24/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Steven Brown	TC-A813072	Electrician	Yes	10/19/2013
James Callahan	TC-A813073	Electrician	Yes	10/19/2013
Ruben Gomes	TC-A813074	Electrician	Yes	10/19/2013
Annette Mennel	TC-A813075	Electrician	Yes	10/19/2013
Nathan Parker	TC-A813076	Electrician	Yes	10/19/2013
James Philbrook	TC-A813077	Electrician	Yes	10/19/2013
Richard Rounseville	TC-A813078	Electrician	Yes	10/19/2013
Crisosten (sam) Sandoval	TC-A813079	Electrician	Yes	10/19/2013
Brian Scanlon	TC-A813080	Electrician	Yes	10/19/2013
Christine Sigel	TC-A813081	Electrician	Yes	10/19/2013
James Smith	TC-A813082	Electrician	Yes	10/19/2013
Kenneth Jadeson	TC-A813083	Electrician	Yes	10/19/2013
Nicholas McDaid	TC-A813084	Electrician	Yes	10/19/2013
Mark Tabbert	TC-A813085	Electrician	Yes	10/4/2013
Dale Chryst	TC-A813086	Electrician	Yes	10/4/2013
Joseph Buhowsky	TC-A813087	Electrician	Yes	9/17/2013
Don K Dixon Sr.	TC-A813088	Electrician	Yes	9/17/2013
Francisco Garcia	TC-A813089	Electrician	Yes	9/17/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Chris Doyle	TC-A813090	Electrician	Yes	9/17/2013
Brandon M Osby	TC-A813091	Electrician	Yes	9/17/2013
Kenneth J Irwin	TC-A813092	Electrician	Yes	9/17/2013
Robertson G Ray	TC-A813093	Electrician	Yes	9/17/2013
Thai Q Huynh	TC-A813094	Electrician	Yes	9/17/2013
Carol Larson	TC-A813095	Electrician	Yes	9/17/2013
Jeremiah Nieman	TC-A813096	Electrician	Yes	9/17/2013
Jimmy P Borreani	TC-A813097	Electrician	Yes	11/6/2013
Joshua T Kaneko	TC-A813098	Electrician	Yes	11/6/2013
Marguerite Lethridge	TC-A813099	Electrician	Yes	11/6/2013
Greg C Neidiger	TC-A813100	Electrician	Yes	11/6/2013
Terry Padilla	TC-A813101	Electrician	Yes	11/6/2013
Patrick D Quinn	TC-A813102	Electrician	Yes	11/6/2013
Alan K Self	TC-A813103	Electrician	Yes	11/6/2013
Darin C Self	TC-A813104	Electrician	Yes	11/6/2013
Mario Oropeza	TC-A813105	Electrician	Yes	10/26/2013
Richard Reilly	TC-A813106	Electrician	Yes	10/26/2013
Andrew Wong	TC-A813107	Electrician	Yes	10/26/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Nathan Lotspeich	TC-A813108	Electrician	Yes	10/26/2013
Randy Williamson	TC-A813109	Electrician	Yes	9/17/2013
Eric Benson	TC-A813110	Electrician	Yes	9/17/2013
Jorge Perez	TC-A813111	Electrician	Yes	11/3/2013
Scott Cline	TC-A813112	Electrical Contractor	No	11/3/2013
Christopher Lussier	TC-A813113	Electrician	Yes	11/3/2013
Edgar Alcantara	TC-A813114	Electrician	Yes	11/6/2013
Rene Amable-olague	TC-A813115	Electrician	Yes	11/6/2013
George Ford	TC-A813116	Electrician	Yes	11/6/2013
Dean Oliver	TC-A813117	Electrician	Yes	11/6/2013
Tim Saunders	TC-A813118	Electrician	Yes	11/6/2013
Merrit Mann	TC-A813119	Electrician	Yes	9/17/2013
Joseph Savino	TC-A813120	Electrician	Yes	11/6/2013
John McDonagh	TC-A813121	Electrician	Yes	11/6/2013
Rory McCarthy	TC-A813122	Electrician	Yes	9/17/2013
Dave Thoni	TC-A813123	Electrician	Yes	10/4/2013
Tyler Lazarian	TC-A813124	Electrician	Yes	11/3/2013
Michael Colvin	TC-A813125	Electrician	Yes	11/3/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Daren Giles	TC-A813126	Electrician	Yes	11/3/2013
Eric Maglasang	TC-A813127	Electrician	Yes	11/3/2013
Jeffrey Mosher	TC-A813128	Electrician	Yes	9/17/2013
Paul Lord	TC-A813129	Electrician	Yes	9/17/2013
Chuck Andermann	TC-A813130	Electrician	Yes	10/4/2013
Bruce Bailey	TC-A813131	Electrician	Yes	10/4/2013
David Bryan	TC-A813132	Electrician	Yes	10/4/2013
Nick Gutierrez	TC-A813133	Electrician	Yes	10/4/2013
Paul Houseworth	TC-A813134	Electrician	Yes	10/4/2013
Joseph McVey	TC-A813135	Electrician	Yes	10/4/2013
Alexander Stewart	TC-A813136	Electrician	Yes	10/4/2013
Matthew Vereschagin	TC-A813137	Electrician	Yes	10/4/2013
Gregory Perez	TC-A813138	Electrician	Yes	10/4/2013
Bryan Wilfong	TC-A813139	Electrician	Yes	10/4/2013
Trevor Bissonnette	TC-A813140	Electrician	Yes	11/2/2013
John Lupton II	TC-A813141	Electrician	Yes	11/2/2013
Daniel Palen	TC-A813142	Electrician	Yes	11/2/2013
Christopher Bowden	TC-A813143	Electrician	Yes	11/21/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Mark Bowden	TC-A813144	Electrician	Yes	11/21/2013
Jeffrey Dunn	TC-A813145	Electrician	Yes	11/21/2013
Joshua House	TC-A813146	Electrician	Yes	11/21/2013
Brian McLain	TC-A813147	Electrician	Yes	11/21/2013
Billy Powell	TC-A813148	Electrician	Yes	11/21/2013
Allen Avalso	TC-A813149	Electrician	Yes	11/21/2013
Brian Dow	TC-A813150	Electrician	Yes	11/21/2013
Joel Gruenhagen	TC-A813151	Electrician	Yes	11/21/2013
Antonio Maldonado	TC-A813152	Electrician	Yes	11/21/2013
Matthew Paine	TC-A813153	Electrician	Yes	11/21/2013
Tony Rios	TC-A813154	Electrician	Yes	11/21/2013
William Rodabaugh	TC-A813155	Electrician	Yes	11/21/2013
Antonio Samaniego	TC-A813156	Electrician	Yes	11/21/2013
Harbhajan Singh	TC-A813157	Electrician	Yes	11/21/2013
Joseph Hutchinson	TC-A813158	Electrician	Yes	11/21/2013
Toby Mitchell	TC-A813159	Electrician	Yes	9/17/2013
Brad Shetley	TC-A813160	Electrical Contractor and Electrician	Yes	11/16/2013
Thomas Drexhage	TC-A813161	Lighting Controls Manufacturer and Electrical Contractor	No	11/16/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Timothy Friend	TC-A813162	Electrician	Yes	11/16/2013
Jack Haley	TC-A813163	Electrician	Yes	11/16/2013
Steven Hart	TC-A813164	Electrical Contractor	No	11/16/2013
Brandon Kolaczyk	TC-A813165	Electrician	Yes	11/16/2013
Daniel Miller	TC-A813166	Electrician	Yes	11/16/2013
Kevin Ornelas	TC-A813167	Electrician	Yes	11/16/2013
Rory Reynolds	TC-A813168	Electrician	Yes	11/16/2013
Evan Woeste	TC-A813169	Electrician	Yes	11/16/2013
Alonso Sabas	TC-A813170	Electrician	Yes	11/3/2013
Lisa Barber	TC-A813171	Electrician	Yes	11/3/2013
Michael Benson	TC-A813172	Electrician	Yes	11/3/2013
Thomas Brawley	TC-A813173	Electrician	Yes	11/3/2013
Juan Dena	TC-A813174	Electrician	Yes	11/3/2013
Alan Hauser	TC-A813175	Electrician	Yes	11/3/2013
Mark Hawkins	TC-A813176	Electrician	Yes	11/3/2013
Angel Morales	TC-A813177	Electrician	Yes	11/3/2013
Joseph Paul	TC-A813178	Electrician	Yes	11/3/2013
Ali Sadeghi	TC-A813179	Electrician	No	11/3/2013

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Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Joseph Enriquez	TC-A813180	Electrician	Yes	11/3/2013
Eduardo Sencion	TC-A813181	Electrician	Yes	11/3/2013
Christophe Thelia	TC-A813182	Electrician	Yes	11/3/2013
Christian Tomren	TC-A813183	Electrician	Yes	11/3/2013
James Wilson	TC-A813184	Electrician	Yes	11/3/2013
Kristofer Youngstrom	TC-A813185	Electrician	Yes	11/3/2013
Allen Randall	TC-A813186	Electrician	Yes	11/21/2013
Timothy Baird	TC-A813187	Electrician	Yes	11/21/2013
William Barton, Jr.	TC-A813188	Electrician	Yes	11/21/2013
Vincent Blaschak	TC-A813189	Electrician	Yes	11/21/2013
Joe Castaneda	TC-A813190	Electrician	Yes	11/21/2013
Shane Clark	TC-A813191	Electrician	Yes	11/21/2013
Christopher Eastman	TC-A813192	Electrician	Yes	11/21/2013
Nelson Fonte	TC-A813193	Electrician	Yes	11/21/2013
Anthony Knutson	TC-A813194	Electrician	Yes	11/21/2013
Ryan Kristensen	TC-A813195	Electrician	Yes	11/21/2013
John O'Neill	TC-A813196	Electrician	Yes	11/21/2013
Patrick Runion	TC-A813197	Electrician	Yes	11/21/2013

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Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Christopher Salorio	TC-A813198	Electrician	Yes	11/21/2013
Graham Trimper	TC-A813199	Electrician	Yes	11/21/2013
Matthew Vining	TC-A813200	Electrician	Yes	11/21/2013
Frederick Young	TC-A813201	Electrician	No	11/10/2013
Chris Rafferty	TC-A813202	Electrician	No	11/10/2013
Michael Desrosiers	TC-A813203	Electrical Contractor	No	11/10/2013
Khanh Pham	TC-A813204	Certified Commissioning Agent	No	11/10/2013
Merle Chick	TC-A813205	Professional Engineer	No	11/10/2013
Gary Rathbun	TC-A813206	Electrical Contractor	No	11/10/2013
Chris Appelt	TC-A813207	Electrical Contractor	No	11/10/2013
Todd LaRue	TC-A813208	Lighting Controls Manufacturer and Electrical Contractor	No	11/17/2013
Scott Stoner	TC-A813209	Electrical Contractor	No	11/17/2013
Zinovy Gutman	TC-A813210	Electrical Contractor	No	11/17/2013
Francisco Vega	TC-A813211	Electrical Contractor	No	11/17/2013
Michael Baxter	TC-A813212	Electrical Contractor	No	11/17/2013
Philip Hall	TC-A813213	Certified Commissioning Agent	No	11/17/2013
Vincent Calabrese	TC-A813214	Electrician	Yes	11/25/2013
Ralph Diaz	TC-A813215	Electrician	Yes	11/25/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Eric Elkins	TC-A813216	Electrician	Yes	11/25/2013
Charles Freeman	TC-A813217	Electrician	Yes	11/25/2013
Kevin Miller	TC-A813218	Electrician	Yes	11/25/2013
Jesse Moore	TC-A813219	Electrician	Yes	11/25/2013
Ryan Muzinich	TC-A813220	Electrician	Yes	11/25/2013
Michael Parmenter	TC-A813221	Electrician	Yes	11/25/2013
David Piercy	TC-A813222	Electrician	Yes	11/25/2013
Carlos Samaniego	TC-A813223	Electrician	Yes	11/25/2013
Ryan Serene	TC-A813224	Electrician	Yes	11/25/2013
Jon-Paul Wolfe	TC-A813225	Electrician	Yes	11/2/2013
Jonathan Barretta	TC-A813226	Electrician	Yes	12/2/2013
Scotty Allen	TC-A813227	Electrician	Yes	12/2/2013
Armando Arellano	TC-A813228	Electrician	Yes	12/2/2013
Mike Dolan	TC-A813229	Electrician	Yes	12/2/2013
Daniel Eakin	TC-A813230	Electrician	Yes	12/2/2013
Jonathen Gonzalez	TC-A813231	Electrician	Yes	12/2/2013
Timothy Lynch	TC-A813232	Electrician	Yes	12/2/2013
Burleigh Maples	TC-A813233	Electrician	Yes	12/2/2013

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Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Michael Perez	TC-A813234	Electrician	Yes	12/2/2013
Ramon Regoso	TC-A813235	Electrician	Yes	12/2/2013
Heather Rohn	TC-A813236	Electrician	Yes	12/2/2013
Tom Stephenson	TC-A813237	Electrician	Yes	12/2/2013
Glenn Wallis	TC-A813238	Electrician	Yes	9/17/2013
Brian Adams	TC-A813239	Electrician	Yes	12/5/2013
Robert Ackerman	TC-A813240	Electrician	Yes	12/5/2013
John Colfer	TC-A813241	Electrician	Yes	12/5/2013
Kenneth Comer	TC-A813242	Electrician	Yes	12/5/2013
Jeffrey Hall	TC-A813243	Electrician	Yes	12/5/2013
Thomas Heisdorf	TC-A813244	Electrician	Yes	12/5/2013
Nathan Hickinbotham	TC-A813245	Electrician	Yes	12/5/2013
Connie Johnson	TC-A813246	Electrician	Yes	12/5/2013
John Mulligan	TC-A813247	Electrician	Yes	12/5/2013
Jason Appleton	TC-A813248	Electrician	Yes	10/30/2013
Eduard Chiara	TC-A813249	Electrician	Yes	10/30/2013
Joseph Gillard	TC-A813250	Electrician	Yes	10/30/2013
Benjamin Gonzalez	TC-A813251	Electrician	Yes	10/30/2013

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Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Matthew Hlatky	TC-A813252	Electrician	Yes	10/30/2013
Hung Lam	TC-A813253	Electrician	Yes	10/30/2013
Matt Tampas	TC-A813254	Electrician	Yes	10/30/2013
Patrick Carroll	TC-A813255	Electrician	Yes	12/7/2013
David Christensen	TC-A813256	Electrician	Yes	12/7/2013
Barbara Dees	TC-A813257	Electrician	Yes	12/7/2013
Johah Gabriel	TC-A813258	Electrician	Yes	12/7/2013
James Peterson	TC-A813259	Electrician	Yes	12/7/2013
Douglas Phillips	TC-A813260	Electrician	Yes	12/7/2013
Leland Rogers	TC-A813261	Electrician	Yes	12/7/2013
Collin Weiner	TC-A813262	Electrician	Yes	12/7/2013
Mariano Yenke	TC-A813263	Electrician	Yes	12/7/2013
Richard Zemlok	TC-A813264	Electrician	Yes	12/7/2013
James Gotelli	TC-A813265	Electrician	Yes	12/2/2013
Ceferino Alvarez	TC-A813266	Electrician	Yes	11/25/2013
Gaetano D'Amato	TC-A813267	Electrician	Yes	11/25/2013
Brendan Greene	TC-A813268	Electrician	Yes	11/25/2013
Paul Krivda	TC-A813269	Electrician	Yes	11/25/2013

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Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Stephen Murray	TC-A813270	Electrician	Yes	11/25/2013
Judith Ryan	TC-A813271	Electrician	Yes	11/25/2013
Robert Wedge	TC-A813272	Electrician	Yes	11/25/2013
Christopher Cicero	TC-A813273	Electrician	Yes	11/25/2013
Troy Dann	TC-A813274	Electrician	Yes	11/25/2013
Julio Ferraro	TC-A813275	Electrician	Yes	11/25/2013
Christopher Ravanal	TC-A813276	Electrician	Yes	11/25/2013
Jeremy Arnold	TC-A813277	Electrical Contractor	No	11/14/2013
Alfredo Calderon	TC-A813278	Electrical Contractor	No	11/14/2013
Andrew Carbone	TC-A813279	Electrician	Yes	11/20/2013
Kenneth Dewes	TC-A813280	Electrician	Yes	11/20/2013
Gene Diamond	TC-A813281	Electrician	Yes	11/20/2013
Marcus Dorsey	TC-A813282	Electrician	Yes	11/20/2013
Trevor Ferraz	TC-A813283	Electrician	Yes	11/20/2013
Timothy Jones	TC-A813284	Electrician	Yes	11/20/2013
Erik Lopez	TC-A813285	Electrician	Yes	11/20/2013
Seth Manter	TC-A813286	Electrician	Yes	11/20/2013
Michael Marindale	TC-A813287	Electrician	Yes	11/20/2013

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Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Michael Masters	TC-A813288	Electrician	Yes	11/20/2013
Michael Poort	TC-A813289	Electrician	Yes	11/20/2013
Dan Scranton	TC-A813290	Electrician	Yes	11/20/2013
Zachary Stagner	TC-A813291	Electrician	Yes	11/20/2013
Chirs Steurer	TC-A813292	Electrician	Yes	11/20/2013
John Williams	TC-A813293	Electrician	Yes	11/20/2013
Christopher Cavanaugh	TC-A813294	Electrical Contractor	No	11/23/2013
Hugo Jaquez	TC-A813295	Electrician	No	11/23/2013
Richard Lee Miller	TC-A813296	Electrician	No	11/23/2013
Sean Watson	TC-A813297	Lighting Controls Manufacturer and Electrical Contractor	No	11/23/2013
Mark Carr	TC-A813298	Electrician	Yes	11/14/2013
Samuel Fillmore	TC-A813299	Electrician	No	11/14/2013
Jon Hanvey	TC-A813300	Electrician	No	11/14/2013
Tom James	TC-A813301	Professional Engineer	No	11/14/2013
Wayne Klingenhofer	TC-A813302	Electrician	Yes	11/14/2013
Dane Lay	TC-A813303	Lighting Controls Manufacturer and Electrical Contractor	No	11/14/2013

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Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Toby Lee	TC-A813304	Electrical Contractor	No	11/14/2013
Jack McCoy	TC-A813305	Electrician	No	11/14/2013
Derek McGaughy	TC-A813306	Electrician	No	11/14/2013
Lee William Miller	TC-A813307	Electrician	No	11/14/2013
Edward Olmos	TC-A813308	Electrician	No	11/14/2013
Jesse Purczynski	TC-A813309	Electrical Contractor	No	11/14/2013
Diego Trejo	TC-A813310	Electrician	No	11/14/2013
Rick Batterton	TC-A813311	Electrician	Yes	11/21/2013
Clint Castle	TC-A813312	Electrician	Yes	11/21/2013
George Cuario	TC-A813313	Electrician	Yes	11/21/2013
Carl Jenks	TC-A813314	Electrician	Yes	11/21/2013
Bing Louie	TC-A813315	Electrician	Yes	11/21/2013
Den Prom	TC-A813316	Electrician	Yes	11/21/2013
Mark Stoakes	TC-A813317	Electrician	Yes	11/21/2013
Guy Lawson	TC-A813318	Electrician	Yes	11/21/2013
Larry Nelson	TC-A813319	Electrician	Yes	11/21/2013
Brian McDonald	TC-A813320	Electrician	Yes	11/21/2013
Derrick Scott	TC-A813321	Electrician	Yes	11/21/2013

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Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Kevin Crane	TC-A813322	Electrician	Yes	12/12/2013
Todd Ellis	TC-A813322	Electrician	Yes	12/12/2013
Kyle Ensminger	TC-A813324	Electrician	Yes	12/12/2013
Timothy Gallashaw	TC-A813325	Electrician	Yes	12/12/2013
Gregory Graham	TC-A813326	Electrician	Yes	12/12/2013
Rick Hamilton	TC-A813327	Electrician	Yes	12/12/2013
Marcus Lygerger	TC-A813328	Electrician	Yes	12/12/2013
Hilario Martinez	TC-A813329	Electrician	Yes	12/12/2013
Michael Perdue	TC-A813330	Electrician	Yes	12/12/2013
Jeff Tumbaga	TC-A813331	Electrician	Yes	12/12/2013
Eric Vroege	TC-A813332	Electrician	Yes	12/12/2013
Stephen Hernandez	TC-A813333	Electrician	No	12/2/2013
Sean Patt	TC-A813334	Electrician	Yes	11/20/2013
Trevor Smith	TC-A813335	Electrician	Yes	11/20/2013
Patrick Cottrell	TC-A813336	Electrician	Yes	11/25/2013
Ray Hoff	TC-A813338	Electrician	Yes	11/14/2013
Brandon Powell	TC-A813339	Electrician	Yes	11/14/2013
Ed Murphy	TC-A813340	Electrician	Yes	9/17/2013

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Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Alberto Salcido	TC-A813341	Electrician	Yes	9/17/2013
Spyros Papas	TC-A813342	Electrician	No	12/11/2013
Roger Cheatham	TC-A813343	Electrician	Yes	12/14/2013
Philip Gadon	TC-A813344	Electrician	No	12/15/2013
Rockie Ginter	TC-A813345	Electrician	No	12/15/2013
Theodore Hernandez	TC-A813346	Electrician	No	12/15/2013
William Lynch	TC-A813347	Electrician	No	12/15/2013
David Morearty	TC-A813348	Electrician	No	12/15/2013
Jason Simmons	TC-A813349	Electrician	No	12/15/2013
Metin Taner	TC-A813350	Electrician	No	12/15/2013
Gregory Veatch	TC-A813351	Electrician	No	12/15/2013
Leland Williams	TC-A813352	Electrician	No	12/15/2013
Brett Browne	TC-A813353	Electrician	No	12/15/2013
Justin Cortinas	TC-A813354	Electrical Contractor	No	12/15/2013
Gregg Lutack	TC-A813355	Electrician	No	12/15/2013
Jon McRae	TC-A813356	Electrician	No	12/15/2013
Lawrence Miller	TC-A813357	Electrician	No	12/15/2013
Brian Morales	TC-A813358	Electrician	No	12/14/2013

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Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Ali Asghar Rostami	TC-A813359	Electrician	No	12/14/2013
Chris Laird	TC-A813360	Professional Engineer	No	12/15/2013
David Lock	TC-A813361	Electrical Contractor	No	12/15/2013
Trent Stouvenel	TC-A813362	Electrician	No	12/15/2013
Michael Ball	TC-A813363	Electrician	Yes	12/17/2013
Joseph Cirigliano	TC-A813364	Electrician	Yes	12/17/2013
Michael Kaspar	TC-A813365	Electrician	Yes	12/17/2013
James Hoffman	TC-A813366	Electrician	Yes	12/17/2013
Michael Stiteler	TC-A813367	Electrician	Yes	12/17/2013
Daniel Grace	TC-A813368	Electrician	Yes	12/14/2013
Patrick Harder	TC-A813369	Electrician	Yes	12/14/2013
Forrest Jang	TC-A813370	Electrician	Yes	12/14/2013
Daniel Kirchner	TC-A813371	Electrician	Yes	12/14/2013
Reuben Pickering	TC-A813372	Electrician	Yes	12/14/2013
Steven Stobel	TC-A813373	Electrician	Yes	12/14/2013
Ronald Bennett	TC-A813374	Electrician	Yes	12/9/2013
Jerry Brooks	TC-A813375	Electrician	Yes	12/9/2013
Raymundo Camacho II	TC-A812376	Electrician	Yes	12/9/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Chris Cossey	TC-A813377	Electrician	Yes	12/9/2013
Randal Dale	TC-A813378	Electrician	Yes	12/9/2013
Marilyn Ferguson	TC-A813379	Electrician	Yes	12/9/2013
Jennifer Larson	TC-A813380	Electrician	Yes	12/9/2013
Kimberlee Larson	TC-A813381	Electrician	Yes	12/9/2013
Crystal Lavering	TC-A813382	Electrician	Yes	12/9/2013
Robert Lilley	TC-A813383	Electrician	Yes	12/9/2013
Robert Moynihan Jr.	TC-A813384	Electrician	Yes	12/9/2013
Matthew Ngim	TC-A813385	Electrician	Yes	12/9/2013
Robert Patterson	TC-A813386	Electrician	Yes	12/9/2013
Bryan Pridmore	TC-A813387	Electrician	Yes	12/9/2013
Mark Ramsey	TC-A813388	Electrician	Yes	12/9/2013
Roy Sanders	TC-A813389	Electrician	Yes	12/9/2013
Rachel Shoemake	TC-A813390	Electrician	Yes	12/9/2013
Carol Yee	TC-A813391	Electrician	Yes	12/9/2013
Michael Muscarella	TC-A813392	Electrician	Yes	12/9/2013
Michael Lewis	TC-A813393	Electrician	Yes	12/9/2013
Carey Hummel	TC-A813394	Electrician	Yes	12/9/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Norman McElhaney	TC-A813395	Electrician	Yes	9/17/2013
Mario Solis	TC-A813396	Lighting Controls Manufacturer and Electrical Contractor	No	12/12/2013
Kenneth Apple	TC-A813397	Electrician	Yes	12/21/2013
Paul Avery	TC-A813398	Electrician	Yes	12/21/2013
Tory Blair	TC-A813399	Electrician	Yes	12/21/2013
David Bryce	TC-A813400	Electrician	Yes	12/21/2013
Scott Carle	TC-A813401	Electrician	Yes	12/21/2013
Genaro Carpio	TC-A813402	Electrician	Yes	12/21/2013
Mark Cosentino	TC-A813403	Electrician	Yes	12/21/2013
Steven Cummings	TC-A813404	Electrician	Yes	12/21/2013
Keith Dougherty	TC-A813405	Electrician	Yes	12/21/2013
David Egli	TC-A813406	Electrician	Yes	12/21/2013
Roger Grabill	TC-A813407	Electrician	Yes	12/21/2013
Jay Groh	TC-A813408	Electrician	Yes	12/21/2013
Sabahudin Hodzic	TC-A813409	Electrician	Yes	12/21/2013
Ronald Howie	TC-A813410	Electrician	Yes	12/21/2013
Rhonda Hughes	TC-A813411	Electrician	Yes	12/21/2013
Peter Icaza	TC-A813412	Electrician	Yes	12/21/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
John Kauer	TC-A813413	Electrician	Yes	12/21/2013
Steve Kazezski	TC-A813414	Electrician	Yes	12/21/2013
Edward Keplinger	TC-A813415	Electrician	Yes	12/21/2013
Juan Moran	TC-A813416	Electrician	Yes	12/21/2013
Joshua Munoz	TC-A813417	Electrician	Yes	12/21/2013
Walter Peper	TC-A813418	Electrician	Yes	12/21/2013
Bolivar Pineda	TC-A813419	Electrician	Yes	12/21/2013
Gavin Powers	TC-A813420	Electrician	Yes	12/21/2013
John Shean	TC-A813421	Electrician	Yes	12/21/2013
Ricky Walker	TC-A813422	Electrician	Yes	12/21/2013
John Washington	TC-A813423	Electrician	Yes	12/21/2013
Paul Zele	TC-A813424	Electrician	Yes	12/21/2013
Phillip Sheckler	TC-A813425	Electrical Contractor	No	9/17/2013
Timothy Brindley	TC-A813426	Electrician	No	12/12/2013
Richard Lindeman	TC-A813427	Electrician	No	12/12/2013
John Lopez	TC-A813428	Electrician	No	12/12/2013
John Miller	TC-A813429	Electrical Contractor	No	12/12/2013
Eamonn O'Halloran	TC-A813430	Electrician	No	12/12/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Bradley Howard	TC-A813431	Certified Commissioning Agent	No	12/12/2013
Christopher Denisi	TC-A813432	Electrician	No	12/12/2013
Jeremy Roos	TC-A813433	Electrical Contractor	No	12/12/2013
Christopher Sweeney	TC-A813434	Electrician	No	12/12/2013
Bryan Upcraft	TC-A813435	Electrical Contractor	No	12/12/2013
Mike Zinniker	TC-A813436	Electrical Contractor	No	12/12/2013
William Finkel	TC-A813437	Electrician	Yes	11/7/2013
Ruben Ayala	TC-A813438	Electrician	Yes	11/7/2013
Chris Lane	TC-A813439	Electrical Contractor and Electrician	No	11/25/2013
Matt Oakes	TC-A813440	Electrician	No	11/25/2013
James Weigel	TC-A813441	Electrician	No	11/25/2013
Gregorio Barrientes	TC-A813442	Electrician	Yes	12/15/2013
Dennis Chacon	TC-A813443	Electrician	Yes	12/15/2013
Guillermo Corona III	TC-A813444	Electrician	Yes	12/15/2013
Alan Emerson	TC-A813445	Electrician	Yes	12/15/2013
Joseph Hopper	TC-A813446	Electrician	Yes	12/15/2013
Mark Klasa	TC-A813447	Electrician	Yes	12/15/2013
Daniel Luther	TC-A813448	Electrician	Yes	12/15/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Roy Madrid	TC-A813449	Electrician	Yes	12/15/2013
William Percy	TC-A813450	Electrician	Yes	12/15/2013
Peter Sterbenz	TC-A813451	Electrician	Yes	12/15/2013
Patrick Conaty	TC-A813452	Electrician	Yes	12/19/2013
Ryan Devine	TC-A813453	Electrician	Yes	12/19/2013
Andrew Paganini	TC-A813454	Electrician	Yes	12/19/2013
James O'Sullivan	TC-A813455	Electrician	Yes	12/19/2013
Stuart Stenros	TC-A813456	Electrician	Yes	12/19/2013
Paul Wong	TC-A813457	Electrician	Yes	12/19/2013
Francisco Romero	TC-A813458	Electrician	Yes	12/18/2013
Paul Menicucci	TC-A813459	Electrician	Yes	12/18/2013
Daniel Mueller	TC-A813460	Electrician	Yes	12/18/2013
Adam Cullers	TC-A813461	Electrician	Yes	12/18/2013
Anthony Davis	TC-A813462	Electrician	Yes	12/18/2013
David Martinez	TC-A813463	Electrician	Yes	12/18/2013
Jose Moncada	TC-A813464	Electrician	Yes	12/18/2013
Albert Randall	TC-A813465	Electrician	Yes	12/18/2013
Steven Trybom	TC-A813466	Electrician	Yes	12/18/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Carlos Vargas	TC-A813467	Electrician	Yes	12/18/2013
Daniel Walford	TC-A813468	Electrician	Yes	12/18/2013
Scott Benefield	TC-A813469	Electrician	Yes	12/15/2013
David Bartleson	TC-A813470	Electrician	Yes	12/15/2013
David DeKruyf	TC-A813471	Electrician	Yes	12/15/2013
Edwin Dubon	TC-A813472	Electrician	Yes	12/15/2013
James Francis	TC-A813473	Electrician	Yes	12/15/2013
Sheldon Hotarek	TC-A813474	Electrician	Yes	12/15/2013
Charles Kelly	TC-A813475	Electrician	Yes	12/15/2013
Jose Macias	TC-A813476	Electrician	Yes	12/15/2013
John Martin	TC-A813477	Electrician	Yes	12/15/2013
Marius Merean	TC-A813478	Electrician	Yes	12/15/2013
Richard Mojica	TC-A813479	Electrician	Yes	12/15/2013
Erik Moreno	TC-A813480	Electrician	Yes	12/15/2013
Robert Roll	TC-A813481	Electrician	Yes	12/15/2013
Mannygreg Turalva	TC-A813482	Electrician	Yes	12/15/2013
Danny Vega	TC-A813483	Electrician	Yes	12/15/2013
Bruno Araiza	TC-A813484	Electrician	Yes	12/15/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Norman Bacher	TC-A813485	Electrical Contractor	No	1/25/2014
Virginia Wilken	TC-A813486	Lighting Controls Manufacturer and Electrical Contractor	No	1/25/2014
Richard Myhre	TC-A813487	Electrician	Yes	10/30/2013
James Hansmeier	TC-A813488	Electrician	Yes	12/10/2013
Jonathan Paola	TC-A813489	Electrician	Yes	12/10/2013
Ivan Richey	TC-A813490	Electrician	Yes	12/10/2013
John Sveiven	TC-A813491	Electrician	Yes	12/10/2013
William Bowen	TC-A813492	Electrician	Yes	11/21/2013
Frank Chapman	TC-A813493	Electrician	Yes	11/21/2013
Liviu Moscu	TC-A813494	Electrician	Yes	12/18/2013
Ernesto Campiz	TC-A813495	Electrician	Yes	12/18/2013
Armando Chavez	TC-A813496	Electrician	Yes	12/18/2013
Herbert Cortez	TC-A813497	Electrician	Yes	12/18/2013
Bert Deaton	TC-A813498	Electrician	Yes	12/18/2013
Larry Ferris	TC-A813499	Electrician	Yes	12/18/2013
Louie Garcia	TC-A813500	Electrician	Yes	12/18/2013
Lance Green	TC-A813501	Electrician	Yes	12/18/2013
Timothy Harrington	TC-A813502	Electrician	Yes	12/18/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Duy Nguyen	TC-A813503	Electrician	Yes	12/18/2013
Dean Reid	TC-A813504	Electrician	Yes	12/18/2013
Robert Ruby	TC-A813505	Electrician	Yes	12/18/2013
Richard Sakaniwa	TC-A813506	Electrician	Yes	12/18/2013
Gregory Snyder	TC-A813507	Electrician	Yes	12/18/2013
Doug Tupper	TC-A813508	Electrician	Yes	12/18/2013
Brian Fletcher	TC-A813509	Electrician	Yes	12/18/2013
Stephen Honea	TC-A813510	Electrician	Yes	11/20/2013
Maurice Ernst	TC-A813511	Electrician	Yes	12/22/2013
Carlos Estrada	TC-A813512	Electrician	Yes	12/22/2013
Anthony Fajardo	TC-A813513	Electrician	Yes	12/22/2013
Mynor Fonseca	TC-A813514	Electrician	Yes	12/22/2013
Matthew Foster	TC-A813515	Electrician	Yes	12/22/2013
Rolando Fraga	TC-A813516	Electrician	Yes	12/22/2013
Carlos Garcia	TC-A813517	Electrician	Yes	12/22/2013
Glen Kerr	TC-A813518	Electrician	Yes	12/22/2013
Alfrin Leggins	TC-A813519	Electrician	Yes	12/22/2013
Steve Richardson	TC-A813520	Electrician	Yes	12/22/2013

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Niecho Solorzano	TC-A813521	Electrician	Yes	12/22/2013
James Vega	TC-A813522	Electrician	Yes	12/22/2013
Craig Wilkerson	TC-A813523	Electrician	Yes	12/22/2013
Maria Palacios	TC-A813524	Electrician	Yes	12/22/2013
Enrique Velazquez	TC-A813525	Electrician	Yes	12/22/2013
Juan Fang	TC-A813526	Electrician	Yes	12/22/2013
Narcis Flutur	TC-A813527	Electrician	Yes	12/22/2013
Jorge Lara	TC-A813528	Electrician	Yes	12/22/2013
Joseph Cochran	TC-A813529	Lighting Controls Manufacturer and Electrical Contractor	No	2/7/2014
Wenceslo Garro	TC-A813530	Lighting Controls Manufacturer and Electrical Contractor	No	2/7/2014
Lyn Gomes	TC-A813531	Professional Engineer	No	2/7/2014
John Dees	TC-A813532	Electrician	No	2/7/2014
Richard Haring	TC-A813533	Lighting Controls Manufacturer	No	2/7/2014
Iam Harrington	TC-A813534	Lighting Controls Manufacturer	No	2/7/2014
Kyle Jensen	TC-A813535	Lighting Controls Manufacturer and Professional Engineer	No	2/7/2014
Lawrence Lamontagne	TC-A813536	Lighting Controls Manufacturer and Professional Engineer	No	2/7/2014

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Albert McBride	TC-A813537	Lighting Controls Manufacturer	No	2/7/2014
Charles Perkins	TC-A813538	Lighting Controls Manufacturer and Electrical Contractor	No	2/7/2014
Roger Phillips	TC-A813539	Lighting Controls Manufacturer	No	2/7/2014
Mark Spahn	TC-A813540	Lighting Controls Manufacturer and Electrical Contractor	No	2/7/2014
Jack Waldvogel	TC-A813541	Lighting Controls Manufacturer	No	2/7/2014
Rick Weber	TC-A813542	Lighting Controls Manufacturer	No	2/7/2014
Derek West	TC-A813543	Lighting Controls Manufacturer and Professional Engineer	No	2/7/2014
William Stapelberg	TC-A813544	Electrician and Electrical Contractor	Yes	2/22/2014
Anthony Garcia	TC-A813545	Electrician	Yes	2/22/2014
Christopher Craig	TC-A813546	Electrician	Yes	2/22/2014
Ronald Heimbuecher	TC-A813547	Electrician	Yes	2/22/2014
Ronnie Lynds	TC-A813548	Electrician	Yes	2/22/2014
Kevin Eubanks	TC-A813549	Electrician	Yes	11/21/2013
Frank Almond	TC-A813550	Electrician	No	3/20/2014
Christopher Chapman	TC-A813551	Electrician	No	3/20/2014
Andrew Horrell	TC-A813552	Electrical Contractor	No	3/20/2014

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Casey Jones	TC-A813553	Lighting Controls Manufacturer and Electrical Contractor	No	3/20/2014
Kannon Kobleur	TC-A813554	Electrician	No	3/20/2014
Maxwell Lablaiks	TC-A813555	Electrician	No	3/20/2014
Aaron Massella	TC-A813556	Electrician	No	3/20/2014
Michael McCormick	TC-A813557	Electrician	No	3/20/2014
Jeremiah Montano	TC-A813558	Electrician	No	3/20/2014
Cliff Nathanson	TC-A813559	Lighting Controls Manufacturer and Electrical Contractor	No	3/20/2014
Daniel Richardson	TC-A813560	Electrician	No	3/20/2014
Diana Towne	TC-A813561	Electrician	No	3/20/2014
Jason Wise	TC-A813562	Lighting Controls Manufacturer and Electrical Contractor	No	3/20/2014
Elliott Jesse	TC-A813563	Lighting Controls Manufacturer and Electrical Contractor	No	3/20/2014
Ed Mask	TC-A813564	Electrician	No	2/10/2014
Stephen Smith	TC-A813565	Electrician	No	2/10/2014
Rashid Aman	TC-A813566	Electrician	Yes	3/17/2014
Daniel Bates	TC-A813567	Electrician	Yes	3/17/2014
Luis Blake	TC-A813568	Electrician	Yes	3/17/2014

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
James Cadaret	TC-A813569	Electrician and Electrical Contractor	No	3/17/2014
Richard Cordova	TC-A813570	Electrician	Yes	3/17/2014
Joel Cypert	TC-A813571	Electrician	Yes	3/17/2014
Daniel Gibson	TC-A813572	Electrician	Yes	3/17/2014
Jeremy Gonzalez	TC-A813573	Electrician	Yes	3/17/2014
John Kincade	TC-A813574	Electrician	Yes	3/17/2014
Philip Magana	TC-A813575	Electrician	Yes	3/17/2014
James Manning	TC-A813576	Electrician	Yes	3/17/2014
David Martinez	TC-A813577	Electrician	Yes	3/17/2014
Ioan Rahovan	TC-A813578	Electrician	Yes	3/17/2014
Deepish Ratanjee	TC-A813579	Electrician	Yes	3/17/2014
Randall Ristine	TC-A813580	Electrician	Yes	3/17/2014
Larry Sicat	TC-A813581	Electrician	Yes	3/17/2014
Roberto Sosa	TC-A813582	Electrician	Yes	3/17/2014
Truong Tran	TC-A813583	Electrician	Yes	3/17/2014
Shane Wade	TC-A813584	Electrician	Yes	3/17/2014
Anthony Jones	TC-A813585	Electrician	No	4/10/2014
Albert Landry	TC-A813586	Electrical Contractor	No	4/10/2014

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Timothy Regan	TC-A813587	Lighting Controls Manufacturer and Electrical Contractor	No	4/10/2014
Traian Dragomir	TC-A813588	Electrical Contractor	No	4/17/2014
Eugen Bala	TC-A813589	Electrical Contractor and Electrician	No	4/17/2014
Emanuel Ionescu	TC-A813590	Electrician	No	4/17/2014
Steve Perez	TC-A813591	Lighting Controls Manufacturer and Electrical Contractor	No	4/17/2014
Randy Hunsucker	TC-A813592	Electrician	Yes	12/22/2013
Paul Lopez	TC-A813593	Electrician	Yes	12/22/2013
Phil Stayrook	TC-A813594	Electrician	Yes	12/22/2013
Mark Sweeney	TC-A813595	Electrician	Yes	12/22/2013
Dominic Marquez	TC-A813596	Electrician	Yes	10/26/2013
Wayne Mugleston	TC-A813597	Electrical Contractor	No	4/19/2014
Tim McNulty	TC-A813598	Electrical Contractor	No	4/19/2014
Jose Anguiano	TC-A813599	Electrician	No	4/19/2014
Chris Avila	TC-A813600	Electrician	Yes	4/19/2014
Jeff Bernardino	TC-A813601	Electrical Contractor and Electrician	No	4/19/2014
Horacio Garcia	TC-A813602	Electrician	No	4/19/2014
Glen Larison	TC-A813603	Electrician	No	4/19/2014

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Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Rafael Nevarez	TC-A813604	Electrician	No	4/19/2014
Richard Romero	TC-A813605	Electrician	Yes	4/19/2014
John Springer	TC-A813606	Electrician	Yes	4/19/2014
Mike Scott	TC-A813607	Electrician	No	4/19/2014
Paul Sinclair	TC-A813608	Electrician	No	4/19/2014
Steven Greene	TC-A813609	Electrical Contractor	No	5/8/2014
Martin Kleinbard	TC-A813610	Electrical Contractor	No	5/8/2014
Joseph Lagor	TC-A813612	Lighting Controls Manufacturer and Electrical Contractor	No	5/8/2014
James Malet	TC-A813613	Electrical Contractor	No	5/8/2014
Colin Mason	TC-A813614	Lighting Controls Manufacturer and Electrical Contractor	No	5/8/2014
Marius Pintilie	TC-A813615	Electrician	Yes	5/8/2014
Robert Sarnelle	TC-A813616	Electrical Contractor	No	5/8/2014
Reed Stoneburner	TC-A813617	Professional Engineer	No	5/8/2014
Christopher Stout	TC-A813618	Lighting Controls Manufacturer and Electrical Contractor	Yes	5/8/2014
Hean Uy	TC-A813620	Electrician	Yes	5/8/2014
David Carel	TC-A813621	Electrician	Yes	2/12/2014

Exhibit A – CALCTP-AT Certified Lighting Controls Acceptance Test Technicians – Names, ID Numbers, Date Trained & Industry Group

Name	Cert Number	Industry Representing	CALCTP-I Certified	Date Completed Training
Thomas Cross	TC-A813622	Electrician	Yes	2/12/2014
Brian Haskell	TC-A813623	Electrician	Yes	2/12/2014
Gabriel Hernandez	TC-A813624	Electrician	Yes	2/12/2014
Kevin Johnson	TC-A813625	Electrician	Yes	2/12/2014
Joe Miramontes	TC-A813626	Electrician	Yes	2/12/2014
Rick Muro	TC-A813627	Electrician	Yes	2/12/2014
Timothy O'Brien	TC-A813628	Electrician	Yes	2/12/2014
Rory O'Laughlin	TC-A813629	Electrician	Yes	2/12/2014
Christopher Riemersma	TC-A813630	Electrician	Yes	2/12/2014

Exhibit B - CALCTP-AT Training Classes - Dates, Locations, and Number Trained

Location	Final	County	No. of Participants	Electrical Electrician	Electrical Contractor	Certified		
						Commissioning Agent	Lighting Control Manufacturer	Engineer
Cuyamaca College/SCE	9/17/2013	San Diego	36	36	5			
Sacramento City College (Train the Trainer)	9/29/2013	Sacramento	34	31	3			3
Sacramento JATC	10/4/2013	Sacramento	12	12				
CA Electrical Training	10/7/2013	Los Angeles	11	3	4	3	1	
Fresno JATC	10/17/2013	Fresno	8	8				
Alameda JATC	10/18/2013	Alameda	18	18				
Orange County JATC	10/24/2013	Orange County	14	14				
Sacramento JATC	10/30/2013	Sacramento	11	11				
San Diego Electrical JATC	11/2/2013	San Diego	3	3				
San Mateo JATC	11/6/2013	San Mateo	8	8				
Alameda JATC	11/6/2013	Alameda	13	13				
CA Electrical Training (San Diego)	11/10/2013	San Diego	6	2	4			
Cuyamaca College/SDG&E	11/14/2013	San Diego	19	12	3		4	
San Luis Obispo JATC	11/16/2013	San Luis Obispo	12	12				
CA Electrical Training (Pleasanton)	11/17/2013	Alameda	6	1	3		2	
Sacramento JATC	11/20/2013	Sacramento	8	8				
Orange County JATC	11/21/2013	Orange County	8	8				
Stockton/Calveras JATC	11/21/2013	San Joaquin	6	6				
Central Valley JATC	11/21/2013	Stanislaus	13	13				
Solano Napa JATC	11/21/2013	Napa	8	8				
Cuyamaca College/SDG&E	11/23/2013	San Diego	7	5	4		1	
Santa Clara Electrical JATC	11/25/2013	Santa Clara	12	12				
San Francisco JATC	11/25/2013	San Francisco	11	11				

Exhibit B - CALCTP-AT Training Classes - Dates, Locations, and Number Trained

San Mateo JATC	12/2/2013	San Mateo	10	10			
Santa Clara Electrical JATC	12/2/2013	Santa Clara	12	12			
San Mateo JATC	12/4/2013	San Mateo	19	19			
Santa Clara Electrical JATC	12/4/2013	Santa Clara	6	6			
Fresno JATC	12/5/2013	Fresno	10	10			
Alameda JATC	12/7/2013	Alameda	8	8			
Contra Costa JATC	12/9/2013	Contra Costa	13	13			
San Mateo JATC	12/11/2013	San Mateo	1	1			
Central Valley JATC	12/12/2013	Stanislaus	11	11			
Cuyamaca College/SDG&E	12/12/2013	San Diego	13	9	2		2
San Diego Electrical JATC	12/14/2013	San Diego	7	7			
Redwood JATC	12/14/2013	Sonoma	7	7			
Santa Barbara JATC	12/14/2013	Santa Barbara	8	8			
CA Electrical Training	12/15/2013	Los Angeles	3	3	4		1
San Bernardino JATC	12/15/2013	San Bernardino	4	4			
Orange County JATC	12/17/2013	Orange County	5	5			
Santa Barbara JATC	12/19/2013	Santa Barbara	7	7			
Tri-County JATC	2/19/2014	Monterey	6	6			
San Francisco JATC	2/12/2014	San Francisco	7	7			
Bakersfield JATC	1/10/2014	Kern	2	2			
Sacramento JATC	12/18/2013	Sacramento	6	6			
San Francisco JATC	1/20/2014	San Francisco	10	10			
Cuyamaca College/SDG&E	2/13/2014	San Diego	11	9	3		1
Santa Clara Electrical JATC	12/21/2013	Santa Clara	4	4			
Cuyamaca College/SDG&E	1/25/2014	San Diego	10	5	3		2
San Mateo JATC	2/10/2014	San Mateo	2	2			

Exhibit B - CALCTP-AT Training Classes - Dates, Locations, and Number Trained

Sacramento City College/CLTC	2/20/2014	Sacramento	12	10	3		2	4
Santa Clara Electrical JATC	2/22/2014	Santa Clara	8	8				
Orange County JATC	3/17/2014	Orange County	19	19				
Cuyamaca College/SDG&E	3/20/2014	San Diego	15	4	6		5	
Cuyamaca College/SDG&E	4/20/2014	San Diego	14	9	3		2	
CA Electrical Training (Pleasanton)	4/12/2014	Alameda	10	4	5		1	
CA Electrical Training	4/19/2014	Los Angeles	10	3	3		4	
ETI JATC	4/19/2014	Los Angeles	10	10				
Santa Clara Electrical JATC	5/3/2014	Santa Clara	8	8				
Southern California Edison	5/8/2014	Los Angeles	15	10	5		2	
Cuyamaca College/SDG&E	5/14/2014	San Diego	15	10	6			
Sacramento JATC	5/15/2014	Sacramento	8	8				

Upcoming Trainings	Date	County
San Leondro	6/11/2014	Alameda
PGE	7/10/2014	San Francisco
SCE	7/30/2014	Los Angeles
Cuyamaca College/SDG&E	6/25/2014	San Diego

CALCTP-AT Employer Training

Location	Final	County	No. of Participants	Electrigan	Electrical Contractor	Certified		
						Commissioning Agent	Lighting Control Manufacturer	Engineer
Nor Cal NECA/JATC	9/18/2013	Alameda	49		26			

Exhibit B - CALCTP-AT Training Classes - Dates, Locations, and Number Trained

ETI JATC	10/3/2013	Los Angeles	17		14		
CA Electrical Training	10/7/2013	Los Angeles	10		8		
Orange County JATC	10/18/2013	Orange County	26		16		
San Diego JATC	11/19/2013	San Diego	4		4		
San Diego JATC	12/5/2013	San Diego	4		4		
Sacramento JATC	10/30/2013	Sacramento	7		2		
San Diego JATC	11/11/2013	San Diego	6		6		
CA Electrical Training (Pleasa	11/18/2013	Alameda	3		3		
ETI JATC	11/19/2013	Los Angeles	19		8		
San Francisco JATC	11/22/2013	San Francisco	17		8		
San Mateo JATC	11/19/2013	San Mateo	4		1		
Sacramento JATC	11/25/2013	Sacramento	3		1		
CA Electrical Training	12/17/2013	Los Angeles	4		4		
Orange County JATC	1/16/2013	Orange County	10		2	1	
SDG&E	1/8/2013	San Diego	5		3		1
Orange County JATC	2/19/2014	Orange County	8		2		
SDG&E	4/9/2014	San Diego	10		4		
CA Electrical Training (Pleasa	4/11/2014	Alameda	4		4		1
CA Electrical Training	4/15/2014	Los Angeles	4		4		
SDG&E	4/28/2014	San Diego	10		5	3	
SDG&E	4/17/2014	San Diego	10		7		
SDG&E	5/6/2014	San Diego	20		10		
Sacramento JATC	5/30/2014	Sacramento	5		5		
Nor Cal NECA/JATC	5/15/2014	Alameda	8		3		
Nor Cal NECA/JATC	5/21/2014	Sonoma	8		3		
PG&E	5/9/2014	San Francisco	15		12	3	1

Exhibit C – CALCTP-AT Certification Card



The California Advanced Lighting Controls Training Program CALCTP

June 4, 2014

Name of AT Technician
Cert Number
Address
City, State Zip

Congratulations Name of Technician,

You are now a CALCTP-AT lighting controls acceptance test technician. Enclosed is a copy of your certification card which can be carried and documented that you are certified by an accredited lighting controls acceptance test provider.



Lighting Controls Acceptance Test Technician

www.calctp.org/acceptance-technicians



Lighting Controls Acceptance Test Technician

Valid: XX/XX/XXXX to XX/XX/XXXX

Name Placeholder

Certification Number: XXXXXXXXXXXX

California Lighting Controls
Acceptance Test Technician

Information should be verified on www.calctp.org/acceptance-technicians.

Exhibit D - CALCTP-AT Certified Lighting Controls Acceptance Test Employers - Names, ID Numbers Industry Groups

Company Name	Certification Number	Type
Pro-Automated, Inc	ATE-048	Electrical Contractor
17th Street ALD Management-American Lighting	ATE-001	Electrical Contractor
21st Century Electrics , Ladybug-Lectric	ATE-002	Electrical Contractor
AAA Electrical & Communications, Inc. dba AAA Property Services	ATE-003	Electrical Contractor
ADEC, Inc	ATE-004	Electrical Contractor
Advance Lighting and Electric	ATE-005	Electrical Contractor
Advanced Lighting and Electrical – APPELT	ATE-006	Electrical Contractor
AMS Electric	ATE-007	Electrical Contractor
Anderson and Howard Electric, Inc.	ATE-008	Electrical Contractor
Apollo Electric	ATE-009	Electrical Contractor
Briggs	ATE-012	Electrical Contractor
Caal Electrical Contractors, Inc.	ATE-014	Electrical Contractor
Cadaret Electric, Inc.	ATE-015	Electrical Contractor
Cartier Electrical Technologies, Inc	ATE-016	Electrical Contractor
Classic Electric/Consulting Corp	ATE-017	Electrical Contractor
Collins Electric	ATE-018	Electrical Contractor
Crest	ATE-019	Electrical Contractor
CRI	ATE-020	Electrical Contractor
Cupertino Electric, Inc	ATE-021	Electrical Contractor
Decker Electric	ATE-022	Electrical Contractor
Del Monte Electric, Inc.	ATE-023	Electrical Contractor
DRE Power and Cabling Contractors, Inc	ATE-024	Electrical Contractor
Elcor Electric	ATE-025	Electrical Contractor
Electramark, Inc.	ATE-026	Electrical Contractor
Faith Com, Inc dba FCI Management Consultants	ATE-028	Electrical Contractor
Gilbert and Stearns	ATE-029	Electrical Contractor
Hangtown Electric Inc	ATE-030	Electrical Contractor
Hollywood Electricians	ATE-031	Electrical Contractor
Intermountain Electric Company	ATE-032	Electrical Contractor
JENSCO, Inc dba J M Electric	ATE-033	Electrical Contractor
Jakez Electric	ATE-034	Electrical Contractor
Jamar Power System	ATE-035	Electrical Contractor
K.B. Electric	ATE-036	Electrical Contractor
K.F. Howell Electric	ATE-037	Electrical Contractor
M.B. Herzog Electric	ATE-039	Electrical Contractor
McClure Electric, Inc	ATE-040	Electrical Contractor
Millennium Electrical Systems, Inc	ATE-041	Electrical Contractor
N2 Electric	ATE-042	Electrical Contractor
O'Bryant Electric	ATE-043	Electrical Contractor
On-Target Electric, Inc.	ATE-044	Electrical Contractor
Paganini Electric Corporation	ATE-045	Electrical Contractor
Palmer Electric	ATE-046	Electrical Contractor
Pieroth Inc. - Positive Energy	ATE-047	Electrical Contractor
Quantum Electric	ATE-049	Electrical Contractor
RLI Electric	ATE-051	Electrical Contractor
Roos Industries Inc.	ATE-052	Electrical Contractor
Rowan Inc	ATE-053	Electrical Contractor
SASCO	ATE-054	Electrical Contractor
Silver Creek Electric	ATE-055	Electrical Contractor
Southern Contracting	ATE-057	Electrical Contractor

Exhibit D - CALCTP-AT Certified Lighting Controls Acceptance Test Employers - Names, ID Numbers Industry Groups

Sparky's Electrical	ATE-058	Electrical Contractor
Teletron Instruments	ATE-060	Electrical Contractor
T. Marshall Associates, Inc.	ATE-061	Electrical Contractor
Unison Electric	ATE-063	Electrical Contractor
WECO Electrical Engineering	ATE-064	Electrical Contractor
Westech Systems, Inc	ATE-065	Electrical Contractor
Brindley Corporation dba Brindley Electrical Services	ATE-013	Engineering Firm
Kilowatt Engineering, Inc.	ATE-038	Engineering Firm
The Engineering Enterprise (Shalley-Dibble, Inc)	ATE-062	Engineering Firm
BAS Installations, Inc.	ATE-011	Lighting Manufacturer
Atlas-Pellizzari Electric, Inc	ATE-010	Lighting Manufacturer
Executive Lighting - The Guerra Companies	ATE-027	Lighting Manufacturer
R & R Controls Inc.	ATE-050	Lighting Manufacturer
SMART Light Systems LLC	ATE-056	Lighting Manufacturer
Sylvania Lighting Services Corp.	ATE-059	Lighting Manufacturer

Exhibit F- CALCTP-AT Certified Lighting Controls Acceptance Test Employers-Service Area Coverage and Number of CALCTP-AT Employees

CALCTP-AT Employer	Offices	Technicians	Counties Served
17th Street ALD Management Corp - American Lighting	San Diego	1	
21st Century Electrics	Encinitas	1	Riverside, Orange, San Diego.
AAA Electrical & Communications, Inc.	Valencia	2	Fresno, Tulare, Kings, San Luis Obispo, Santa Barbara, Kern, Ventura, Los Angeles, San Bernardino, Orange, Riverside, San Diego.
ADEC, Inc.	Torrance	2	Los Angeles, Ventura, Orange, San Bernardino and Riverside Counties
Advance Lighting and Electric	Bell	1	Los Angeles, Ventura, Orange, Riverside, San Bernardino, and San Diego Counties
Advanced Lighting and Electrical, Inc.	Anaheim	2	Orange, San Diego, Riverside, San Bernadino, Los Angeles, Imperial, Ventura, Santa Barbara, and Kern, San Luis Obispo
AMS Electric	Dublin	2	
Anderson and Howard Electric, Inc	Irvine, El Cajon	7	
Apollo Electric	Brea	3	Los Angeles and Orange Counties. San Bernardino, Riverside, San Diego and Ventura.
Atlas Pellizzari Electric, Inc.	Redwood	1	San Mateo, Santa Clara and San Francisco Counties.
BAS Installations, Inc	Fair Oaks	1	
Briggs Electric, Inc.	Tustin	1	Orange and Los Angeles Counties. Riverside and San Diego Counties.
Brindley Electrical Services	La Mesa	2	San Diego County
C. H. Reynolds	San Jose	1	Santa Clara, San Mateo, Santa Cruz, Monterey, Contra Costa, Alameda, San Benito Counties.
C.R.I. Electric, Inc.	Anaheim	1	Orange, Los Angeles, Riverside and San Diego Counties
Caal Electrical Contractors, Inc.	San Pedro	1	
Cadaret Electric Inc.	Corona	1	Riverside, San Bernardino, San Diego, Imperial, Orange and Los Angeles
Carol Electric	Los Alamitos	3	
Cartier Electrical Technologies, Inc.	Simi Valley	1	
Classic Electric and Consulting Corp	Oceano	1	All California counties.
Collins Electrical Company Inc.	Modesto	27	Plumas, Butte, Glenn, Yuba, Nevada, Sierra, Colusa, Lake, Sonoma,
Contra Costa Electric	Martinez, Fresno, Bakersfield	5	Clara, Sacramento, San Joquin, Sonoma, Napa, Merced, San Beniot,

Exhibit F- CALCTP-AT Certified Lighting Controls Acceptance Test Employers-Service Area Coverage and Number of CALCTP-AT Employees

Crest Electric	Alpine	1	San Diego County
Cupertino Electric Inc.	San Jose, San Francisco, Santa Fe Springs	12	All counties.
Decker Electric Company, Inc.	San Francisco, south San Francisco	14	Alameda, Santa Clara, Marin, Sonoma, Contra Costa, Solano and Napa Counties, Los Angeles
Del Monte Electric	Dublin	1	Alameda, Contra Costa, Napa, San Joaquin, San Francisco, San Mateo, Santa Clara, Solano, Sonoma
Dimension Electric, Inc.	Muerrieta	2	San Diego, Riverside, Orange Counties.
DRE Power and Cabling Contractors, Inc.	Orange	1	All CA Counties
Elcor Electric	Santa Clara	1	Santa Clara, Alameda and San Mateo Counties
Electramark, Inc.	San Diego	1	
Energy ETC, Inc	Union City	1	San Francisco, Contra Costa, Alameda, San Mateo, Santa Clara, Santa Cruz, Marin, Napa, Solano, Sacramento and San Joaquin Counties.
Executive Lighting Services	Anaheim	4	Los Angeles, Orange, Riverside, San Bernardino, Ventura, San Luis Obispo, Santa Barbara, Kern, Imperial
FCI Management Consultants	Long Beach	1	Los Angeles, Orange, Ventura Counties
Gilbert and Stearns, Inc.	Santa Ana	6	Orange County, Los Angeles County.
Hangtown Electric, Inc.	Shingle Springs	1	Alpine, Butte, Calaveras, Colusa, El Dorado, Lake, Lassen, Madera, Marin, Mendocino, Merced, Mariposa, Mono, Nevada, Placer, Plumas, Sacramento, San Benito, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Sonoma, Sutter, Tehama, Trinity, and Yolo.
Hollywood Electricians	Los Angeles	1	Los Angeles, Orange and Ventura counties
Intermountain Electric Company	San Carlos	1	Napa, Solano, Contra Costa, Alameda, San Francisco, San Mateo, Marin
J M Electric	Salinas	3	Monterey, Santa Cruz, San Benito and Santa Clara, Kings, San Luis Obispo, Fresno, San Mateo, Alameda, Stanislaus, Merced
Jakez Electric	Chula Vista	2	
Jamar Power Systems	Santee	1	
JM Electric	Salinas	4	
J.E. Snyder Electric, Inc.	El Segundo	3	
K&B Electric Incorporated	Loomis	1	

Exhibit F- CALCTP-AT Certified Lighting Controls Acceptance Test Employers-Service Area Coverage and Number of CALCTP-AT Employees

K.F. Howell Electric, Inc.	Santa Clara	2	Santa Clara, Alameda, San Mateo Counties San Benito, San Francisco and Contra Costa Counties
Kilowatt Engineering, Inc.	Oakland, Long Beach	1	
Kristan Electric	San Jose	1	
M.B. Herzog Electric	Paramount	3	
McClure Electric, Inc.	San Francisco	1	
Millennium Electrical Systems	Anaheim	2	Orange and Los Angeles
N2 Electric, Inc.	Livermore	1	
O'Bryant Electric, Inc.	Chatsworth	11	Los Angeles County, Orange, Riverside, Ventura and San Bernardino Counties
On Target Electric Inc.	Irvine	4	All counties.
Paganini Electric Corporation	San Francisco	1	San Francisco, San Mateo, Marin, Contra Costa, Alameda, Santa Clara Counties
Palmer Electric, Inc.	San Carlos	2	San Mateo, Santa Clara, Alameda, Contra Costa, San Francisco, Santa Cruz
PEM Evans Inc.	Los Alamitos	1	
Positive Energy	Glendora	4	All counties.
ProAutomated Inc	San Francisco	2	
Quantum Electric	Turlock	1	Orange County
R & R Controls, Inc	San Diego	2	
RLI Electric	Lakeside	2	San Diego County
Roos Electric, Inc	Lakeside	1	San Diego and Imperial Counties
Rosendin Electric, Inc.	San Jose, San Francisco, La Palma	9	All counties.
Rowan Inc.	Carlsbad	3	Imperial, Riverside, Orange, San Bernardino, Los Angeles.
SASCO	Fullerton	22	Mendocino, Sonoma, San Francisco, Marin, Solano, Sacramento, Contra Costa, San Joaquin, San Mateo, Alameda, Stanislaus, Santa Cruz, Santa Clara, Merced, Monterrey, Fresno, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, San Bernardino, Orange, Riverside, San Diego, and Imperial Counties
Silver Creek Electric	Milpitas	1	Santa Clara, Alameda, San Mateo, Santa Cruz, & San Francisco
SMART Light Systems LLC	Grass Valley	2	
Southern Contracting	Escondido	4	

Exhibit F- CALCTP-AT Certified Lighting Controls Acceptance Test Employers-Service Area Coverage and Number of CALCTP-AT Employees

Sparky's Electrical Contracting	Laguna Hills	1	
Sylvania Lighting Services Corp	Rancho Cordova	6	All counties.
T. Marshall Associates, Inc.	Pleasanton	1	San Francisco, San Mateo, Santa Clara, Alameda, Contra Costa, Solano, Sacramento, San Joaquin, Sonoma.
Teletron Instruments	Victorville	1	San Bernardino County
The Engineering Enterprise	Auburn	2	
Unison Electric	Huntington Beach	3	Los Angeles and Orange Counties.
W & S Electric	El Cajon	4	
WECO Electrical Engineering	Clayton	1	Contra Costa
Westech Systems, Inc	Clovis	1	

Exhibit G

Representative Sample of CALCTP Marketing Materials

Exhibit G - Tab 1

**Marketing materials from the California Lighting Technology
Center at U.C. Davis**

From: California Lighting Technology Center <cltc@ucdavis.edu>
Sent: Wednesday, April 30, 2014 12:10 PM
To: Ouellette, Mark
Subject: THE LIGHTING LINK: Career openings at CLTC, new resources, upcoming events, and more!

If you're having trouble viewing this email, you may [see it online](#).

Share this:   

LIGHTING LINK

NEWS FROM CLTC AND ITS PARTNERS



CLTC Is Hiring!

Be part of our team. CLTC is currently hiring for the following positions:

Senior Development Engineer: Requisition # 03011998

Programmer V: Requisition # 03011987

Senior Technical Writer: Requisition # 03012054

Visit the [UC Davis Career Opportunities website](#) and use the job requisition numbers above to view details and apply. Applications must be submitted through the [UC Davis Career Opportunities website](#).

Konstantinos Papamichael Leads Talks on Adaptive Lighting Controls and the Internet of Things

On April 23, 2014, CLTC Co-director Konstantinos Papamichael presented at the first [MCA/Semico IMPACT event on Smart Lighting](#). He discussed lighting control strategies and emerging technologies that maximize the energy-efficiency and functionality of both electric lighting and daylighting systems. Dr. Papamichael also moderated a panel discussion on "Smart Lighting: The Gateway to IoT?" with manufacturers and designers.

[Dr. Papamichael's presentation slides](#) are now available through CLTC's website.



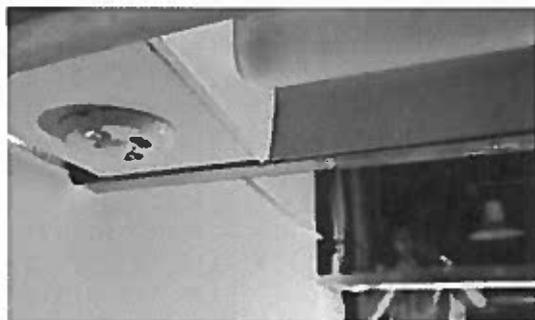
Michael Siminovitch Lectures on Circadian Lighting for Thai Audience

CLTC Director Michael Siminovitch will deliver a lecture on new lighting strategies and technologies, particularly LEDs, and their effects on human health and circadian function.

Friday, May 2
King Mongkut's University of Technology Thonburi
Bangkok, Thailand

Discussion will cover the sustainable, circadian-sensitive residential lighting of the [Honda Smart Home US](#).

[Learn more.](#)



CALCTP Acceptance Test Technician Training Course

The California Advanced Lighting Controls Training Program (CALCTP) holds its next AT Technician Training course next week:

Wednesday and Thursday, May 7–8
SCE Energy Education Center
Irwindale, CA

Those who successfully complete this course will be certified to conduct lighting controls acceptance tests required by 2013 Title 24, Part

6 standards that take effect July 1. [Visit the CALCTP website](#) or call 1-877-670-7910 for more information.

[Download the course flyer.](#)

To register, [e-mail CALCTP](#) for an application.



Residential Lighting: Title 24 and Technology Update

CLTC's Kelly Cunningham will lead this one-day course on the latest Title 24, Part 6 lighting requirements for residential spaces.

**8:30 a.m.–4:30 p.m.
Tuesday, May 6
Pacific Energy Center
San Francisco, CA**

The class is intended for professionals who design, specify, or inspect lighting installations in new and remodeled homes. Worth 5.5 AIA credits, the class is offered at no cost through Pacific Gas and Electric Company's Energy Education Classes.

[Register.](#)

Technology Forum: The Future of Lighting

CLTC Director Michael Siminovitch will present "Choosing the Right Light," a talk on selecting LED lighting for different applications. The forum will also feature a panel discussion on "Paths to Achieving Global Energy Savings with LEDs."

**5:30–9:30 p.m.
Thursday, May 29
Cooley LLP
Palo Alto, CA**

Light refreshments will be provided, as well as networking opportunities and demonstrations of LED lighting products. [Learn more.](#)



Connect with CLTC at Lightfair

CLTC will participate in this year's Lightfair Trade Show and Conference, where we will debut a new sensor technology for use in street lighting applications.

**June 3–5
Daylighting Pavilion, Booth 6316
Las Vegas Convention Center
Las Vegas, NV**

Stop by to learn more about our latest demonstrations of adaptive networked lighting control systems and more.

Exhibit G - Tab 2

**List of building department jurisdictions that attended
presentations made by CALCTP**



The California Advanced Lighting Controls Training Program CALCTP

Updated May 7, 2014

TITLE 24 LIGHTING OUTREACH WORKSHOPS

For: Building Department Officials, Plan check Staff, and Building Inspectors

Presentations:

- Overview of Title 24 Update by Bernie Kotlier, Co-chair, CALCTP
- Technical Review by:
 - Ronald France, Technical Representative, Leviton Manufacturing (Northern CA)
 - John Busch, Technical Representative, Leviton Manufacturing (Southern CA)

Content: Presentations are attached.

California Counties, Cities and Towns:

SANTA CLARA COUNTY, Workshop Date: 2/26/2014

Jurisdictions Served:

Santa Clara County
San Jose
Milpitas
Palo Alto
Santa Clara City
Sunnyvale
Cupertino
Los Gatos

Attendees: 53

SAN MATEO COUNTY, Workshop Date: 3/20/2014

Jurisdictions Served:

San Mateo County
San Francisco County
San Bruno
San Carlos
Redwood City
Foster City
San Francisco City
Daly City
East Palo Alto
Palo Alto
South San Francisco

Attendees: 24

RIVERSIDE AND SAN BERNARDINO COUNTIES, Workshop Date: 3/24/2014

Jurisdictions Served:

Riverside County
San Bernardino County
Rancho Cucamonga
Rialto
Victorville
Imperial City
Calexico City
Jurupa Valley
Temecula
Hemet

Attendees: 22

SACRAMENTO COUNTY, Workshop Date: 4/8/2014

Jurisdictions Served:

Sacramento County
Elk Grove
Fair Oaks
Sacramento City
Citrus Heights
Davis
Yuba City
Galt City
Roseville

Attendees: 20

ALAMEDA COUNTY, Date: 4/22/2014

Jurisdictions Served:

Alameda County
Contra Costa County
Lawrence Berkeley Lab
City of Richmond
City of El Cerrito
Oakland
UC Berkeley
Hayward
Livermore
Foster City

Attendees: 41

LOS ANGELES COUNTY, Date: 4/23/2014 (L.A. Event #1)

Series of two workshops to accommodate the 98 cities and towns in L.A. county
(Second workshop on May 13th, 2014)

Jurisdictions Served:

Los Angeles County (98 jurisdictions in L.A. County)

Attendees: 108

LOS ANGELES COUNTY, Date: 5/13/2014 (L.A. Event #2)

Jurisdictions Served:

Los Angeles County (98 jurisdictions in L.A. County)

Expected Attendees: 120

MARIN, SONOMA, NAPA AND SOLANO COUNTIES, Workshop Date: 5/8/2014

Jurisdictions Invited:

Marin County

Sonoma County

Napa County

Solano County

Windsor

San Rafael

Sebastopol

Novato

Benicia

Mill Valley

Fairfield

San Anselmo

Rio Vista

Larkspur

Vallejo

Corte Madera

Vacaville

Fairfax

Sonoma City

Sausalito

Santa Rosa

Petaluma

Rohnert Park

Expected Attendees: 30

FRESNO COUNTY, Date: 5/15/2014

Jurisdictions Invited:

Fresno County
Madera County
Tulare County
Kings County
Kerman
Fresno City
Kingsburg
Clovis
Mendota
Coalinga
Parlier
Reedley
Sanger
Chowchilla
Selma
Dinuba
Hanford
Lindsay
Lemoore
Visalia

Expected Attendees: 57

SAN LUIS OBISPO COUNTY, Workshop Date: 5/22/2014

Jurisdictions Invited:

San Luis Obispo County
Arroyo Grande
Atascadero
Grover Beach
Morro Bay
Paso Robles
Pismo Beach
San Luis Obispo City

Expected Attendees: 28

SANTA BARBARA COUNTY, Workshop Date: 5/29/2014

Jurisdictions Invited:

Santa Barbara County
Santa Barbara City
Surrounding Municipalities

Expected Attendees: 24

SANTA CRUZ, SAN BENITO, & MONTEREY COUNTIES, Workshop Date: 6/3/2014

Jurisdictions Invited:

Monterey, San Benito and Santa Cruz County
Municipalities in the three counties

Expected Attendees: 23

VENTURA COUNTY, Workshop Date: 6/12/2014

Jurisdictions Invited:

Ventura County and Local Municipalities

Expected Attendees: 26

SAN JOAQUIN COUNTY, Workshop Date: 6/17/2014

Jurisdictions Invited:

San Joaquin County
Stanislaus County
Calaveras County
Stockton
Tracy
Lodi
Manteca
Modesto
Ceres
Turlock

Expected Attendees: 19

CITY AND COUNTY OF SAN FRANCISCO, Workshop Date: 6/18/2014

Expected Attendees: 36

Total Attendees Attending and Expected: 631

Exhibit G - Tab 3

CALCTP marketing materials for CALCTP-AT certification

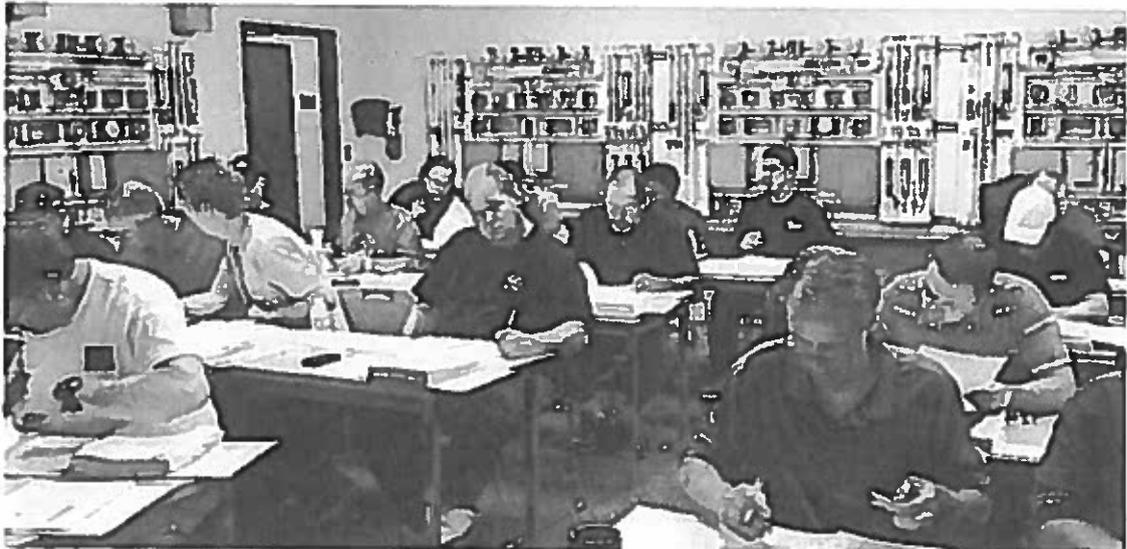
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CALCTP-AT Technician Training Course



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PROJECT REFERENCE

[Advanced Lighting Control Training Program \(CALCTP & HALCTP\)](#)

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[All High-Efficacy Lighting for Residential Applications](#)

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Published: Tue, 11/26/2013

The California Advanced Lighting Controls Training Program (CALCTP) is offering a course for lighting controls acceptance test technicians and technician employers on May 7-8 at the SCE Energy Education Center in Irwindale, CA. Those who successfully complete the course will be certified to conduct lighting controls acceptance tests as required by the new 2013 Building Energy Efficiency Standards (Title 24, Part 6) set to take effect July 1.

This course is particularly geared for electrical contractors, those from commissioning and engineering firms, and general electricians who are not certified CALCTP installers. For more details, download the course flyer, visit the CALCTP website or call 1-877-670-7910.

To register, e-mail CALCTP for an application

Tags

[Codes & Standards](#) [Compliance](#) [Lighting](#) [Lighting Controls](#)

[goog'le'us](#)

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Email or Phone

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California Lighting Technology Center

April 2 at 10:40am ·

Just a reminder....
(Please help spread the word.)



The Next CALCTP-AT Technician Training Course Is May 7-8 in Irwindale

The California Advanced Lighting Controls Training Program (CALCTP) is offering a course for lighting controls acceptance test technicians and technician employers on May 7-8 at the SCE Energy Education Center in Irwindale, CA. Get certified to conduct lighting controls acceptance tests required by ...

Like · Comment · Share



Mike Sagi Please post documents online for those who are remote.

April 2 at 5:07pm



GET CERTIFIED!

Training for Lighting Controls Acceptance Test Technicians

February 3–7, 2013 • Davis and Sacramento

WHO SHOULD REGISTER?

This course is designed for lighting professionals from commissioning and engineering firms, electrical contractors, and general electricians who are not certified CALCTP Installers.

HOW DO I APPLY?

Visit CALCTP.org to submit a CALCTP-AT Technician application, and submit payment online or by mail.

COST: \$500

The course fee includes materials, lab fees, and record keeping. Credit card payments may be submitted online. Checks are also accepted.

COURSE LOCATION:

California Lighting Technology Center (CLTC)
633 Pena Drive
Davis, CA 95618

RESCHEDULED—To better accommodate busy schedules during this time of year, the CALCTP-AT Technician Training course has been rescheduled. We will be taking this opportunity to include more resources into the curriculum for the February course.

California's new Title 24 standards will require that certain lighting control devices be certified as properly installed and operational before occupancy permits are issued. The new standards also require that this verification process be performed by a trained and certified lighting controls acceptance test technician.

The California Advanced Lighting Controls Training Program (CALCTP) certifies acceptance test technicians and technician employers. CALCTP has designed this intensive, interactive one-week course for applicants who are: professional engineers, certified commissioning professionals, licensed electrical contractors, or general electricians who are not certified CALCTP Installers

Participants will have the opportunity to share their recommendations and feedback, and they will come away with the training and tools they will need to successfully conduct and document acceptance tests required by the 2013 Title 24 standards

Mon, 2/03: CALCTP Systems Course, 8:30am–5pm at CLTC

Tue, 2/04: AT Part I, 8:30am–12:30pm at CLTC

Wed, 2/05: AT Part II, 8:30am–5pm at CLTC

Thu, 2/06: AT Lab (choose one of two sessions) at Sac JATC

Fri, 2/07: AT Certification Exam, 1:30pm–4:30pm at CLTC

Questions? Call 1-877-670-7910
www.calctp.org/acceptance-technicians



GET CERTIFIED!

Training for Lighting Controls Acceptance Test Technicians

June 11 – 12, 2014 • Zero Net Energy Center in San Leandro, CA

WHO SHOULD REGISTER?

This course is designed for lighting professionals from commissioning and engineering firms, electrical contractors, and general electricians who are not certified CALCTP Installers.

HOW DO I APPLY?

Visit **CALCTP.org** to submit a CALCTP-AT Technician application, and submit payment online or by mail.

COST: \$500

The course fee includes materials, lab fees, and record keeping. Credit card payments may be submitted online. Checks are also accepted.

COURSE LOCATION:

Alameda County Electrical JATC
Zero Net Energy Center
14600 Catalina Street
San Leandro, CA 94577

California's new Title 24 standards will require that certain lighting control devices be certified as properly installed and operational before occupancy permits are issued. The new standards also require that this verification process be performed by a trained and certified lighting controls acceptance test technician.

The California Advanced Lighting Controls Training Program (CALCTP) certifies acceptance test technicians and technician employers. CALCTP has designed this intensive, interactive one-week course for applicants who are: professional engineers, certified commissioning professionals, licensed electrical contractors, or general electricians who are not certified CALCTP Installers.

Participants will have the opportunity to share their recommendations and feedback, and they will come away with the training and tools they will need to successfully conduct and document acceptance tests required by the 2013 Title 24 standards.

Wed, 6/11: AT Part I and II, 8:30am – 5:30pm

Thu, 6/12: AT Lab, 8:30am – 12:30pm
AT Certification Exam, 2:00 – 4:30pm

Questions? Call 1-877-670-7910
www.calctp.org/acceptance-technicians



GET CERTIFIED!

Training for Lighting Controls Acceptance Test Technicians

May 7–8, 2014 • SCE Energy Education Center in Irwindale, CA

WHO SHOULD REGISTER?

This course is designed for lighting professionals from commissioning and engineering firms, electrical contractors, and general electricians who are not certified CALCTP Installers.

HOW DO I APPLY?

Visit CALCTP.org to submit a CALCTP-AT Technician application, and submit payment online or by mail.

COST: \$500

The course fee includes materials, lab fees, and record keeping. Credit card payments may be submitted online. Checks are also accepted.

COURSE LOCATION:

SCE Energy Education Center
6090 N. Irwindale Avenue
Irwindale, CA 91702

California's new Title 24 standards will require that certain lighting control devices be certified as properly installed and operational before occupancy permits are issued. The new standards also require that this verification process be performed by a trained and certified lighting controls acceptance test technician.

The California Advanced Lighting Controls Training Program (CALCTP) certifies acceptance test technicians and technician employers. CALCTP has designed this intensive, interactive one-week course for applicants who are: professional engineers, certified commissioning professionals, licensed electrical contractors, or general electricians who are not certified CALCTP Installers

Participants will have the opportunity to share their recommendations and feedback, and they will come away with the training and tools they will need to successfully conduct and document acceptance tests required by the 2013 Title 24 standards

Wed, 5/07: AT Part I and II, 8:30am–5:30pm

Thu, 5/08: AT Lab, 8:30am–12:30pm
AT Certification Exam, 2:00–4:30pm

Questions? Call 1-877-670-7910
www.calctp.org/acceptance-technicians

August 2013

CALCTP

Acceptance Technician



CALCTP

California Advanced Lighting
Controls Training Program



Topics of Discussion

- What is an Acceptance Technician Certificate?
- CALCTP-AT Levels
- Course Structure
- Eligibility
- Next Steps
- Questions

CALCTP

California Advanced Lighting
Controls Training Program

What is behind the new lighting controls and acceptance testing?

- AB32 signed by then Governor Schwarzenegger in 2006 set out an ambitious plan for California to reduce its carbon footprint by reducing greenhouse gas emissions by 30% by 2020.
- In response to AB32, the California Public Utilities Commission in 2008 published, and updated in 2011, the California Long-term Energy Efficiency Strategic Plan (Strategic Plan) which set bold market transformation energy efficiency goals for the state that has led to updates to the energy efficiency sections of the California state building code – Title 24.

Who is requiring acceptance testing?

- The California Energy Commission under Title 24 requires that comprehensive lighting controls be acceptance tested as a step in the certificate of occupancy process.
- The 2013 code greatly expands the lighting control requirements for commercial, non-residential buildings.

Why have an Acceptance Technician Certificate?

- Acceptance testing has been around since 2005. The Building Energy Efficiency Standards (California Code Regulations, Title 24, Part 6) required that specific equipment and controls installed in nonresidential buildings be tested according to Energy Commission adopted “acceptance testing” protocols to demonstrate their proper installation before the building may be approved for occupancy.
- Studies and stakeholder comments indicate that acceptance testing occurring in the field is currently inadequate.
- The CEC determined that because of inconsistent levels of training, Field Technicians as a whole are not ensuring that the installed systems are delivering the energy efficiencies and monetary savings expected by building owners.
- Thus, new regulation was developed and implemented starting in December 2012 create an lighting controls acceptance technician certificate.

Why is CALCTP Involved in Acceptance Testing?

- In the 2012 regulation, CALCTP was pre-approved as an Interim Acceptance Technician Certification Provider provided that CALCTP upon submittal of an application.
- The only one identified at the time by the state.
- Full status is dependent on training and certifying 300 participants
- Until full status is approved, anybody can self-certify or identify an acceptance technician.

Does Title 24 Have Any Requirements on Installation?

- No, at present there are no requirements around certification for installations or companies.
- There currently are no incentives by any of the Investor Owned Utilities to use CALCTP certified contractors or electricians.
- There is increased interest by the CPUC to have such incentives but none have been established to date.
- SMUD does have an incentive.

Two levels of CALCTP-AT Certification

- CALCTP-AT Certified Company
 - Have at least One Mid or Senior Manager per office complete the CALCTP-AT Contractor Course (4 hrs)
 - Does not have to be a CALCTP Installer Certified Company
 - Submit application and pay fees to CALCTP
 - Sign agreement with 3-party-ICF International-for quality assurance
- CALCTP-AT Certified Technician
 - Complete pre-requisites and submit application and fees
 - Pass 16 hour course

CALCTP-AT Technician Process

- Step 1
 - Complete and submit application to CALCTP
- Step 2
 - Receive admission slip to one of 32 independent training centers
- Step 3
 - Contact site regarding training dates/times and any applicable fees
- Step 4
 - Complete course, receive certificate and be listed on CALCTP website

How is the CALCTP-AT Technical Course Structured

- 16-hour course that includes:
 - Lighting controls acceptance testing – Introduction and Installation Requirements
 - Lighting controls acceptance testing – Acceptance test procedures
 - Exercises and Laboratory sessions
 - Review and exam
- Final Exam
 - 60 questions of which only 50 are graded.

Who is Eligible to Take the CALCTP-AT

- Per CEC, the following are eligible to become CALCTP-AT Technician Certified as long as they meet the providers requirements:
 - (1) electrical contractors,
 - (2) electricians,
 - (3) professional engineers,
 - (3) controls installation and start-up contractors and
 - (4) certified commissioning professionals.
- Current focus is on the 2,200 plus individuals that are currently CALCTP certified.
 - Need to train 300 to get full CALCTP-AT Provider Status
 - Reduction in application fee for those CALCTP certified
 - \$125 for initial year; \$225 for those not certified

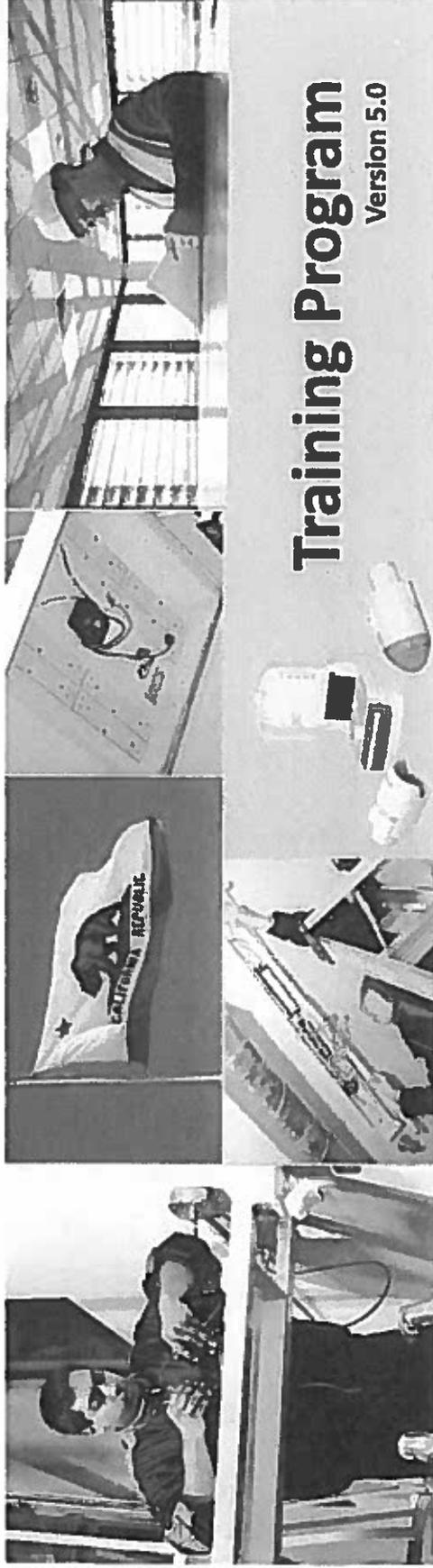
Contact Information

- CALCTP
 - Mark Ouellette
 - mark.ouellette@icfi.com or (213) 312-1794
 - Mobile: (909) 362-7098
 - 601 W. 5th Street, Suite 900
 - Los Angeles, CA 90071

STATE OF CALIFORNIA TITLE 24 LIGHTING CONTROLS ACCEPTANCE TESTING OVERVIEW

February, 2014

- Technician Skills & Responsibilities
- Compliance Documentation
- Installation Requirements
- Acceptance Test Procedures



Images Courtesy of IBEW/NECA, California Lighting Technology Center, UC Davis, WattStopper

CALCTP



CONTROLS

Certified Lighting Controls Acceptance Test Technician



- The California Energy Commission (CEC) / Title 24 requires Certification to conduct lighting controls acceptance testing in California
- The CEC also requires employers of acceptance testers to be certified
- **Contractors may self-certify if BOTH:**
 - **Employer is certified to perform AT, and**
 - **Field Test Technician is certified to perform AT**
 - Otherwise Contractors will need an outside acceptance tester to certify their lighting controls work



CONTROLS

Background On Lighting Controls Acceptance Test Training

- Must include both theoretical and hands-on training
- Limited to participants with at least 3 years of verifiable professional lighting controls experience
- Written and practical exams required for certification
- CALCTP is a state approved AT certification provider
- Curriculum developed by UC Davis California Lighting Technology Center (CLTC) under the supervision of the CA Energy Commission





CONTROLS

Lighting Controls Acceptance Test Training Classes & Certification

Two pathways for Acceptance Testing Certification:

- The Acceptance Testing Technical Training Class is 16 - 20 hours for those who have a CALCTP-I installer certificate. There is a pool of over 2,200 to draw from.
- UC Davis has developed a course for non-CALCTP-I electricians, engineers, commissioning agents, lighting designers, and lighting manufacturing representatives. That class is 32-36 hours.



CONTROLS

What Experience is Required to Become a Lighting Controls Acceptance Test Technician?

- Three Years of documented experience in lighting controls installation, engineering and/or commissioning.

For Contractors?

- A current California contractor's license
- The Contractor class is 6 hours.





CONTROLS

How To Authenticate AT Certification?

1. Go to www.CALCTP.org (No password needed)
2. Click on “Acceptance Technicians”

The screenshot shows the CALCTP website interface. At the top, there is a navigation menu with links: Home, Installer Contractor, Become Certified, Resources, What is CALCTP?, and Acceptance Technicians. A large white arrow points from the 'Acceptance Technicians' link to a login form. The login form has two fields: 'Username or e-mail *' and 'Password *'. Below the navigation menu, there is a section titled 'CALCTP EDUCATES CONSUMERS' with the following text: 'A broad partnership between utility companies, manufacturers, electricians, lighting designers and electrical contractors is leading to improvements in the design and installation of advanced lighting controls. Proper design and installation creates enormous costs savings which is increasing consumer demand.' To the right of this text is a photograph of three people in a meeting setting.



Username or e-mail

Password

CALCTP California Advanced Lighting Controls Training Program

Home Installer Contractor Become Certified Resources What is CALCTP? Acceptance Test

Acceptance Technicians

Effective January 1, 2014, the California Energy Commission adopted changes to the California building Efficiency Standards (Title 24, Parts 1 and 6) that require lighting controls and devices to be certified as properly installed and operational, prior to issuance of occupancy permits. The California Advanced Lighting Controls Training Program-Acceptance Technician (CALCTP-AT) certifies acceptance technician employers and technicians. All acceptance test technicians must be employed by an acceptance test employer that provides support as well as quality control.

Candidates interested in applying must submit a **CALCTP-AT Technician** or **CALCTP-AT Employer** application and pay the required fees outlined below.

CALCTP-AT Certified Employers

CALCTP-AT Employer ▲

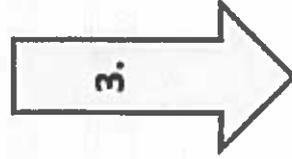
ADEC, Inc.

Advance Lighting and Electric

Advanced Lighting and Electrical, Inc.

Caral Electrical Contractors, Inc.

Collins Electrical Company, Inc.



[next >](#)

All lighting controls acceptance testing must be contracted with a CALCTP-AT Employer. If you need to see a detailed list of CALCTP-AT Employers and CALCTP-AT Technicians [Click Here](#).

CONTROLS



CONTROLS

4. Field Technician List

<u>Collins Electrical Company Inc.</u>	TC- A813056	Brian	McKay	Fresno	93705	(559) 454-8164
<u>DRE Power and Cabling Contractors, Inc.</u>	TC- A813025	David	Hoover	Orange	92867	(714) 279-9590
<u>Executive Lighting Services</u>				Ararheim	92806	(714) 632-5353
Independent	TC- A813001	Kathleen	Barber	San Carlos	94070	
Independent	TC- A813005	Michael	Scalzo	Santa Clarita	91390	
Independent	TC- A813006	Stephen	Slovacek	Arromas	95004	
Independent	TC- A813004	Geoffrey	Gatt	South San Francisco	94080	
Independent	TC- A813002	Paul	Bussell	Encinitas	92024	
Independent	TC- A813013	Edward	Stark	Oceanside	92054	
Independent	TC- A813012	Michael	Smith	Vacaville	95686	
Independent	TC- A813011	Lloyd	Diehl	Clayton	94517	

Exhibit G - Tab 4

**California Commissioning Collaborative marketing materials for
CALCTP-AT certification**

Ouellette, Mark

From: California Commissioning Collaborative <info@cacx.org>
Sent: Thursday, November 21, 2013 1:01 AM
To: Ouellette, Mark
Subject: Lighting controls training coming up in December

You're receiving this email because you have expressed an interest in California Commissioning Collaborative (CCC). Don't forget to add info@cacx.org to your address book so we'll be sure to land in your inbox!

You may [unsubscribe](#) if you no longer wish to receive our emails.



CALCTP Acceptance Testing Training

CALCTP-AT

The 2013 revision of California's Building Energy Efficiency Standards (Title 24, Part 6) expands requirements for lighting controls acceptance testing, and defines the required certifications for those performing acceptance tests. The 2013 codes go into effect on January 1, 2014.

The California Advanced Lighting Controls Training Program (CALCTP) is provisionally approved as a program that can certify individuals to perform acceptance testing for lighting controls (under the designation "CALCTP-AT"). On December 16, at the California Lighting Technology Center at UC Davis, CALCTP will be offering a 4-day training for individuals wanting to be certified as CALCTP-AT providers.

For more information on this upcoming training, check out the CALCTP website [here](#) or call the CALCTP-AT Helpdesk at (877) 670-7910.

Join our group on [LinkedIn](#). 

[Forward to a Friend](#)

Exhibit G - Tab 5

IBEW marketing materials for CALCTP-AT certification

Northern California IBEW, NECA and CALSEIA reached agreement to establish a solar installer job classification. Working together, IBEW, NECA, and CALSEIA developed an agreement establishing a new journeyman solar installer classification for commercial and residential projects with hourly wage rates based on geographic areas plus family health and dental plan benefits. Additionally, a new two-year apprenticeship program for solar is being filed with the State's Division of Apprenticeship Standards for state recognition.

Advanced Lighting Control

Commercial buildings can save up to 40% in energy savings by simply turning lights off in unoccupied offices, conference rooms, and restrooms during business hours.

California Advanced Lighting Controls Training Program (CALCTP) partner utilities, which encompass over 90% of the California market, will require CALCTP-certified contractors and CALCTP-certified general electricians for installation. Bruce Gourley and Mike Smith are certified instructors for the CALCTP. The JATC will soon be offering classes for members to become CALCTP-certified.

From <http://www.calctp.org/>

The California Advanced Lighting Controls Training Program (CALCTP) is a statewide initiative aimed at increasing the use of lighting controls in commercial buildings and industrial facilities.

Through proper installation, advanced lighting controls improve energy efficiency in commercial facilities and save significant dollars. CALCTP will educate, train and certify licensed electrical contractors, and state certified general electricians in the proper design, installation and commissioning of advanced lighting control systems.

What are the prerequisites? Because the lecture and lab work moves along at a challenging pace, all participants must be equally prepared prior to enrollment. The prerequisite studies are on the Lighting Controls Association website—modules EE101, EE102, EE103, and EE201 (Approximately 12 hours). These courses can be found at http://www.aboutlightingcontrols.org/Education_Express/accr_orgs.php. For enrollment in CALCTP, applicants must present a certificate of completion for online study to enroll in the CALCTP course.

What is covered in the course? This course is divided into seven modules consisting of both lecture and lab activities. The module content is organized to answer the following about lighting controls: what they are, what they do, where they are used, and how they are installed. Each "lecture" contains one or more interactive components, including group discussions, device demonstrations and/ or calculation exercises.

On-line Training

The Statewide JATC has partnered with 360Training.com to bring affordable online electrical continuing education courses to IBEW members. They are pleased to announce that the site is now ready to access. Earn CEUs for State certification and recertification. Over fifty courses are available on a wide range of topics, including OSHA 10 hour and 30 hour training. Easy on-line training you can use wherever and whenever you desire. Register for individual courses or purchase a package for added savings. A link to <http://ecertify.360training.com> has been added to ibewlu180.org under "links".

Business Agent

Yet another election is upon us. But this one may very well be the most important election in our history. Let me put some spin on the spin - how about boldly labeling this as possibly the **last** most important election in our history?

Discouraged about elections in general is a problem for the voter, and encouragement required for the unregistered and nonvoter is a disaster. While now is not the time to blow

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IBEW Local 302

Information on Classes Available

Training

Inside Wireman Journeyman

Upgrade Training

CCC JATC

The following Electrical Certification Renewal Classes can be used toward your required 32 hours of Continuing Education:

ELECTRICAL GROUNDING Starts Thursday, May 1, 2014, at 5:30pm, runs 4 weeks (16 hours)

MOTOR CONTROLS Starts Thursday, April 24, 2014, at 5:45 pm, runs 8 weeks (32 hours)

OSHA 30 Safety Class Starts Monday, April 21, 2014, at 5:30 pm, runs 8 weeks (32 hours)

FOREMAN CLASS Starts Tuesday, May 27, 2014, at 5:30pm, runs 4 weeks (16 hours)

CALL NOW TO MAKE YOUR RESERVATION!!!!

INSTRUMENTATION THEORY AND PRACTICE

This is a revised instrumentation class with significantly more dedicated hands on labs. The class will start on Thursday, January 9, 2014, at 5:30 pm. and will run for 24 weeks ending with the EPRI Part A written exam.

ADVANCED LIGHTING CONTROLS (CALCTP)

If you want to be put on the interest list for this class, call the Training Center for the prerequisite requirements which consist of a 15 hour online prep class prior to starting the hands on portion. The class is a 12 week commitment and will start when we have 8 people completing the prerequisites.

Call Greg @ the Training Center at 925/372-7083 to sign-up for any of these classes. Classes must have 15 student minimum to hold the class.

VDV Sound & Communication

Journeyman Upgrade Training

No. CA VDV JATC

911 Bern Ct. #100

San Jose, CA 95112

Exhibit G - Tab 6

JATC marketing materials for CALCTP-AT certification

REJATC

REDWOOD EMPIRE JOINT APPRENTICESHIP & TRAINING COMMITTEE

April 21, 2014

CALCTP-Advanced Lighting Control

Updated On: Dec 11, 2012

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CALCTP is a new program operated by representatives of the CA Lighting Technology Center, CA Energy Commission, CA Community College system, public utilities, electrical contractors, electrical workers, and manufacturers of advanced, high efficiency lighting and control systems.

CALCTP will educate, train, and certify electrical contractors and electricians in the best practices and most effective techniques to install, tune, commission, and maintain advanced lighting control systems.

In support of CALCTP, several LCA (Lighting Controls Association) Education Express online courses are now required as prerequisites before receiving live training by CALCTP. These include EE 101: Introduction to Lighting Control, EE 102: Switching Control, EE 103: Fluorescent Dimming and EE 201: Daylight Harvesting. Students may take these courses at any time, at their own pace, from anywhere, and for free; only a short registration is required.

www.aboutlightingcontrols.org

The live training is a 50 hour hands on lab/lecture being offered, here at the REJATC Training Center. If you are interested in getting certified in this special skill visit "Education Express" web site and sign up for the on line course(s). After completion of the prerequisites you decide to continue with the live training, contact Steve Stobel and he will help get you registered.

We have no classes scheduled. There will be \$100.00 (checks only) refundable deposit, returned after the completion of the 50 hours, and a \$35.00 (checks only) materials fee. The class will be available to the first members that have current General Electrician State Certification, complete the online courses, and bring their registration checks to the Training Center (class size is 4 members minimum/ 8 members maximum).

These hours count toward your State Continuing Education requirements.

IF YOU ARE INTERESTED IN ATTENDING THIS CLASS, CONTACT THE TRAINING CENTER - (707)523-3837 OR steves@newlocal551.org. YOU MUST BE REGISTERED AT LEAST TWO WEEKS PRIOR TO THE FIRST DAY OF CLASS. WE HAVE TO SUBMIT ROSTERS AND ORDER TESTS FROM THE COMPANY ADMINISTERING THE PROGRAM NO LATER THAN TWO WEEKS BEFORE THE CLASS STARTS. WE WILL CONFIRM THE CLASS SCHEDULE WHEN WE SUBMIT A REQUEST FOR THE TESTS.

Member Login

Username:

Password:

Login

Not registered yet? [Click Here to sign-up](#)

[Forgot Your Login?](#)

<<	April 2014							>>
S	M	T	W	T	F	S		
			1	2	3	4	5	
6	7	8	9	10	11	12		
13	14	15	16	17	18	19		
20	21	22	23	24	25	26		
27	28	29	30					

Action Center

[IBEW Local 551 Wage Schedule Effective June 1st, 2008](#)

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[Helmets to Hardhats](#)

[Santa Rosa Traffic/Weather Conditions](#)

[NECA](#)

[IBEW Local 551 - Health & Welfare & Pension Trust Funds](#)

[Academic & Professional International Evaluations, Inc.](#)

[NJATC](#)

[Ca Div of Appr. Standards - Certification Dept](#)



Santa Clara County Electrical JATC

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April 21, 2014

CALCTP / CALCTP-AT

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- Apprentice Headquarters
- Education and Training
- State Certification
- CALCTP/CALCTP-AT
- Coordinator Update
- Community Outreach
- A.S. Degree Information
- Officers & Staff
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- Downloads
- Links
- JATC Committee
- Login

Action Center



What is CALCTP/CALCTP-AT?

Dec 02, 2013

Why Advanced Lighting Controls?

The California Advanced Lighting Controls Training Program (CALCTP) is a statewide initiative aimed at increasing the use of lighting controls in commercial buildings. CALCTP will educate, train and certify licensed C-10 electrical contractors, state-certified general electricians in the proper design, installation and commissioning of advanced lighting control systems. Advanced lighting control systems typically include: dimmers, occupancy sensors, photo-sensors, relay modules, and communication-based control devices.

Through proper installation practices, advanced lighting controls have the potential to improve energy efficiency in commercial facilities across California and help achieve significant energy savings.

What is CALCTP Besides Electrician Training?

To ensure proper commissioning and design, the CALCTP partners have developed a business component on how to effectively price an installation. Additionally, CALCTP partners are developing a course for specifiers (Architects, Engineers, Lighting Designers) on advanced lighting controls design and specification.

Who is CALCTP?

The CALCTP is a collaboration of:

- California State Labor Management Cooperation Committee for the International Brotherhood of Electrical Workers and the National Electrical Contractors Association (LMCC/IBEW-NECA)
- California Community College System
- California Energy Commission
- University of California-Davis-California Lighting Technology Center
- Pacific Gas and Electric (PG&E)
- Southern California Edison (SCE)
- San Diego Gas and Electric (SDG&E)
- Sacramento Municipal Utility District (SMUD)
- National Electrical Manufacturers Association

CALCTP-AT

What is behind the new lighting controls and acceptance testing?

AB32 signed by then Governor Schwarzenegger in 2006 set out an ambitious plan for California to reduce its carbon footprint by reducing greenhouse gas emissions by 30% by 2020. In response to AB32, the California Public Utilities Commission in 2008 published, and updated in 2011, the California Long-term Energy Efficiency Strategic Plan (Strategic Plan) which set bold market transformation energy efficiency goals for the state that has led to updates to the energy efficiency sections of the California state building code - Title 24.

Who is requiring a compliance testing?

The California Energy Commission under Title 24 requires that comprehensive lighting controls be acceptance tested. The 2013 code greatly expands the lighting control requirements for commercial, non-residential buildings.

What is Acceptance Testing?

Acceptance testing is one part of a multi-stage compliance program that ensures newly constructed buildings and new construction in existing buildings conforms to energy efficiency standards contained in Title 24, Part 6 of the California Code of Regulations (CCR). Acceptance testing consists of a series of construction inspections and functional tests for different types of mechanical and electrical systems. These inspections and tests ensure that applicable systems are installed and operate correctly.

Why This Rule, and Why Now?

Acceptance testing has been around since 2005, but only for new buildings and retrofits impacting over 50% of the existing luminaires or ballasts. The 2013 Building Energy Efficiency Standards (California Code Regulations, Title 24, Part 6) require more acceptance testing and establish a criteria for what skills a state certified acceptance technician needs to have.

What spaces will be affected?

The 2013 Building Energy Efficiency Standards (California Code Regulations, Title 24, Part 6) states that the following commercial buildings will have to comply with new acceptance testing requirements:

- 1) All newly constructed commercial buildings (no previous occupancy)
- 2) Any addition
- 3) Any alteration that adds new equipment to an existing space (retrofit) that modifies more than 10% of the existing luminaires or ballasts, or any retrofit of < 40 ballasts or luminaires.

What has to be done for a space to be acceptance tested?

While the acceptance test process is a separate and independent process, Title 24 regulations now require that a Commissioning Report be completed and provided to the Building Owner before a building occupancy certificate can be provided. A lighting control "acceptance test" report is required as part of this larger commissioning report.

If I am an electrical contractor, can I also acceptance test my own work?

Yes, as long as you are a state certified acceptance testing contractor and the work is performed only by a state licensed acceptance technician. For CALCTP we are identifying these as CALCTP-AT or CALCTP acceptance testing contractors.

Do I have to be a CALCTP certified contractor to be a CALCTP-AT Contractor?

No, you do not have to be a CALCTP certified contractor for installers to be eligible to become a CALCTP-AT Contractor.

If I'm an electrical contractor and I don't have an acceptance technician on staff what do I do?

- 1) Before January 1st you can take the CALCTP-AT class and become a certified acceptance test contractor, and encourage current CALCTP

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<< April 2014 >>

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electricians to take the CALCTP-AT technician course.

- b. Per state law, after January 1, 2014 if the project impacts the spaces mentioned above, a building occupancy certificate will not be issued unless the control system(s) are acceptance tested. Thus, you would have to hire an outside acceptance technician to do this work.

Who can become an acceptance testing contractor?

Any state licensed C-10 contractor may become a CALCTP-AT contractor as long as they follow the requirements spelled out in the CALCTP-AT Handbook that will be available shortly on the www.calctp.org website.

How long is the CALCTP-AT Contractor Course?

The course is 4 hours.

Who can be an CALCTP Acceptance Test Technician?

Currently, we are focusing on the 2,000 Certified CALCTP electricians

How long is the CALCTP-AT Technical Course?

For those who hold a CALCTP Installer technical certification, the CALCTP-AT Technical course is 16 hours in length and is a mix of lecture, labs, and a final exam.

(The CALMCC has received a grant from the California State Employment Training Panel (ETP) to train electricians on advanced lighting controls. If your JATC is interested in receiving these funds for the Acceptance Testing training classes they must offer at least 34 hours of training. An optional 24 hour class is available to meet the reimbursement requirements.)

I was an acceptance technician before can I continue doing this work?

No, because of inconsistencies in the quality of acceptance testing, the 2013 Building Energy Efficiency Standards outlined new requirements for the skills and training that is needed to become an acceptance test technician or an acceptance test contractor. These State of California rules require that an individual must be licensed by a state certified acceptance technician provider. The rule-making did establish CALCTP as the first (and currently the only) pre-approved interim provider for lighting controls acceptance technicians.

Where do I go for more information?

You can receive more information on the CALCTP website at: www.calctp.org/acceptance-technicians or by emailing CALCTP at info@calctp.org

Download:  [CALCTP Flyer.pdf](#) ,  [CALCTP Contractor Brochure.pdf](#)

Become a CALCTP Certified Electrician

Jun 23, 2011

CALCTP trains licensed C-10 electrical contractors and state certified general electricians in effective techniques to install, tune, commission and maintain advanced lighting control systems. Funding for the CALCTP Technical Course is supported by grants from the U.S. Department of Labor and the California Employer Training Panel. CALCTP is an equal opportunity program and auxiliary aids and services are available upon request to individuals with disabilities.

Why get Certified?

CALCTP will dramatically increase the demand for lighting controls in commercial buildings. For a building to be eligible for incentives, CALCTP partner utilities, which encompass over 90% of the California market, will require CALCTP-certified contractors and general electricians on each project. If you want to be part of this growing work opportunity, you must be certified.

What is Covered in the Course?

This course is divided into seven modules consisting of both lecture and lab activities. The module content is organized to answer the following about lighting controls: what they are, what they do, where they are used, and how they are installed. Each "lecture" contains one or more interactive components, including group discussions, device demonstrations and/or calculation exercises.

The corresponding lab period, following the lecture, allows the attendee to directly apply what has been learned by installing the devices on electrical lab board, under the supervision of the CALCTP-certified instructor(s).

Become a CALCTP-AT Certified Technician

Dec 01, 2013

Password:

[Login](#) [Forgot Your Login?](#)

CALCTP California Advanced Lighting Controls Training Program

Acceptance Technicians

Effective January 1, 2014, the California Energy Commission adopted changes to the California Building Efficiency Standards (Title 24, Parts 1 and 6) that require lighting controls and devices to be certified as properly installed and operational prior to issuance of occupancy permits. The California Advanced Lighting Controls Training Program Acceptance Technician (CALCTP-AT) course is designed for licensed employees and technicians. All acceptance technician trainees must be employed by an acceptance facility member that has a valid contract with the CECA.



Become a CALCTP-AT Technician or CALCTP-AT Contractor by:

1. Meeting the required state and program requirements which can be found in the CALCTP-AT Handbook (Coming Soon)
2. Submitting completed application, supporting documents, and appropriate fees; and
3. Completed required CALCTP-AT Course.

<https://www.calcto.org/acceptance-technicians>

UPCOMING CLASSES

Mar 26, 2014

CALCTP-AT (Acceptance Technician)

April 19, 2014 – May 3, 2014

Saturdays from 8:00am to 4:30pm.

April 2014	S	M	T	W	T	F	S
Day Class 8:00am-4:30pm		1	2	3	4	5	6
	13	14	15	16	17	18	19
	20	21	22	23	24	25	
	27	28	29	30			

May 2014	S	M	T	W	T	F	S
Day Class 8:00am-4:30pm	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29	30	31

BEFORE YOU CAN REGISTER FOR THIS CLASS, YOU MUST COMPLETE THE APPLICATION FOR CALCTP-AT TECHNICIAN FORM.

This form is available at the JATC office or on the CALCTP website (<https://www.calcto.org/ecc/2014-acceptance-technicians/>).

Please submit the completed application form to Rachele Salazar at the JATC office.

If you are an BEW member, the \$225.00 class fee is waived.

Registration Requirements:

- ✓ Must be CALCTP Certified
- ✓ Current Dues Receipt
- ✓ Valid State Certification Card
- ✓ Class Admissions slip from CALCTP
- ✓ \$50.00 CASH or CHECK refundable deposit (**NO CREDIT/DEBIT CARDS**)

If you are interested in future classes, please click on the link below to complete the Class Interest form. Remember to select the CALCTP and/or CALCTP-AT class.

<https://docs.google.com/spreadsheet>



REJATC

REDWOOD EMPIRE JOINT APPRENTICESHIP & TRAINING COMMITTEE

May 01, 2014

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SCHOOL STARTS SEPTEMBER 16TH.....

Welcome to the Redwood Apprenticeship Training Center

Our training center (REJATC) offers one of the highest quality apprenticeships. As an Apprentice Electrician in IBEW Local 551, you receive post-secondary training and in-school learning. To find out more about our apprenticeship program under Man Menu.

What's New at THE TRAINING CENTER 551

NEW TRAINING CENTER UPDATE

The dream of owning our own Training Center has finally come true! We have a lot of equipment and supplies still in boxes, we will be starting to move them in soon.

We have an Open House/Industry Day planned! Tuesday May 13, 2014 the Training Center will be open for you come by and take your own to go.

JOURNEYMAN CLASS

LIGHTING CONTROL ACCEPTANCE TESTER

Prerequisite : must have taken, and passed, the 50 hour Advanced

New Title 24 regulations will take effect January 1, 2014. The new regulations involve more than 10% of the total square footage.

Certified Acceptance Testers will verify that equipment installation requirements are met.

The first scheduled class will be Saturday(s) December 7 and 14, 2013. Additional class(es) if we have enough interest.

The cost of the class is \$25.00 per student.

Minimum class size : 4, Maximum class size : 8

16 CEU's toward State Certification (32 CEU's are required to receive certification)

If interested in attending this class you will need to be signed up by December 1st.

Classes will be held here at the Training Center 1700 Corby Ave

CALCTP-Advanced Lighting Control

CALCTP is a new program operated by representatives of the CA Lighting Controls Association, electrical contractors, electrical workers, and manufacturers of advanced lighting control systems.

CALCTP will educate, train, and certify electrical contractors and electricians on advanced lighting control systems.

In support of CALCTP, several LCA (Lighting Controls Association) Educational Courses are available. These include EE 101: Introduction to Lighting Control, EE 102: Advanced Lighting Control, and EE 103: Lighting Control Systems. You can take these courses at any time, at their own pace, from anywhere, and

www.aboutlightingcontrols.org

The live training is a 50 hour hands on lab/lecture being offered, here at the Training Center. "Education Express" web site and sign up for the on line course(s). After registration, we will help get you registered.

We have no classes scheduled. There will be \$100.00 (checks only) registration and materials fee. The class will be available to the first members that register. Registration checks to the Training Center (class size is 4 members minimum).

These hours count toward your State Continuing Education requirements.

IF YOU ARE INTERESTED IN ATTENDING THIS CLASS, CONTACT THE TRAINING CENTER AT LEAST TWO WEEKS PRIOR TO THE FIRST DAY OF CLASS. WE HAVE TO REGISTER AT LEAST TWO WEEKS BEFORE THE CLASS STARTS. WE WILL CONFIRM YOUR REGISTRATION.

Looking for Electrician Instructors for Journeyman

Would you enjoy sharing your knowledge with Journeyman Wiremen? We are actively seeking qualified Electrician instructors in order to fulfill the requirements.

Exhibit G - Tab 7

**California Electrical Training marketing materials for CALCTP-
AT certification**



California Electrical Training

Preventing Electrical Safety Through Education



[Home](#) | [About](#) | [Electrical Training](#) | [32 Hour Education](#) | [Weekend Lab](#) | [Title 24 Energy Code](#) | [OSHA](#) | [State Exam Classes](#) | [Contact us](#) | [Spanish Class](#)

Lighting Controls Acceptance Test Technician Certification



Prior to attending our acceptance test technician course You must register with CALCTP-AT to get a admission slip.

If you don't present an admission slip from CALCTP-AT You will not receive your certificate.

Meeting the required state and program requirements which can be found in the CALCTP-AT Handbook

Submitting completed application, supporting documents, and appropriate fees;

- Completed required CALCTP-AT Course.

BEFORE ATTENDING THIS CLASS:

To qualify to attend our Lighting Control Acceptance Test Technician course:

1. Proof of three years experiences on lighting controls and electrical systems. Submitted to CALCTP-AT [Click here](#)
2. Complete Free 12 hour online Lighting Control Association courses EE-101, EE-102, EE-103, EE-201. Web location for free courses [Click here](#)
3. Pay CALCTP-AT registration fee for Acceptance Test Technician and or Contractor. See attached.
4. You must have an admission slip in order to attend our class. The fee for Acceptance Test Technician Course is \$1,500.00 and the fee for Acceptance Test Technician Contractor is \$500.00. Seating is limited to the first 15 that sign up. Final date if seats are available will be Dember 10, 2013 for the next class.

1500.00

Purchase

April 2014						
SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Upcoming classes:

[Electrical Testing Equipment](#)

[Electrical Testing Equipment](#)

[Spanish Class](#)

[Transformers](#)

State of California



Division of Labor
Standard Enforcement
School 4151

Department of
Industrial Relations

Exhibit G - Tab 8

NECA marketing materials for CALCTP-AT certification

TITLE 24 WORKSHOP: WHAT'S NEW IN THE 2013 ENERGY CODE?

CHANGES TO MANDATORY LIGHTING REQUIREMENTS

THURSDAY, MAY 15, 2014, 10:00 AM - 3:00 PM

10:00 AM - 12:00 - SPECIFICATION PRESENTATION (ARCHITECTS, EE'S, CONTRACTORS)

12:00 PM - 1:00 PM - LUNCH AND NETWORKING (BOTH GROUPS)

1:00 PM - 3:00 - CODE PRESENTATION (CODE INSPECTORS, BUILDING OFFICIALS, PERMIT)

The National Electrical Contractors Association (NECA) and the International Brotherhood of Electrical Workers (IBEW) and the Illuminating Engineering Society (IES) would like to invite building officials, code inspectors, plan checkers, EE's, architects and school district officials to a free lunch seminar that will provide an in-depth review of the Title 24 changes to mandatory lighting requirements in non-residential buildings. This seminar will address the major updates to lighting system specification as well as the lighting/electrical code and the role inspectors will play in effective state energy efficiency policy.

With California's new Building Energy Efficiency Standards going into effect in July, the mandatory requirements for lighting controls constitute one of the biggest changes to Title 24 standards. The latest version of the standards also include more stringent requirements for the testing and

Two presentations will be held: The impact Title 24 will have on design and specification, and a presentation on the updated lighting and electrical codes. Interested individuals may attend both presentations. Lunch will be served between presentations and tours of the electrical JATC will be offered.

PRESENTATIONS BY:

Bernie Kotlier, California NECA-IBEW LMCC, Executive Director, Sustainable Energy Solutions; Co-Chair of the California Advanced Lighting Controls Training Program (CALCTP)

Ronald France, LEVITON, Lighting and Energy Solutions

- Managers' Overview of New Lighting Control Requirement
- Technical Review of New Lighting Control Requirements
- Overview of New State Certification for Contractors and Technicians That Conduct Acceptance Testing
- Lighting Control Acceptance Testing Before "Certificate of Occupancy" Can Be Issued



FRESNO/YOSEMITE CHAPTER

Member of Engineering Society, 213 Woodward Avenue / Fresno, CA 93727

**IBEW LOCAL 100 &
East Central California
Chapter NECA, Fresno /
Yosemite Chapter IES**

WHERE

Fresno Electrical JATC
5420 E. Hedges Ave
Fresno, CA 93727

TARGET AUDIENCE

Building Officials, Code Inspectors, Plan Checkers, Electrical Engineers, Architects, Design-Build General Contractors and School District Project Managers & DSA IOR's

NO MEETING COST

City, County & Unified School District Officials are welcome to attend the event free of charge; lunch will be provided.

TO REGISTER

Contact: **Kathy Hawkins** at khawkins@fresnojatc.org or (559) 251-5174 and please provide the name of your organization with names of all participants, email addresses and which presentation (s) they will be attending.

FOR QUESTIONS

Email: csmith@calmcc.org

TITLE 24 WORKSHOPS THE NEW 2013 ENERGY CODE

Hosted by



NEW MANDATORY LIGHTING & HVAC REQUIREMENTS

The International Brotherhood of Electrical Workers (IBEW) and The National Electrical Contractors Association (NECA) invite building department managers, plan check staff, and inspectors to attend either one of two free comprehensive workshops for an in-depth review of the Title 24 changes to mandatory lighting, and mechanical system requirements in non-residential buildings. These seminars will address the major updates to the lighting and mechanical codes and the role building departments and inspectors play in effective state energy efficiency policy.

With California's new Building Energy Efficiency Standards going into effect July 1st, these new mandates constitute one of the biggest changes to Title 24 standards. The latest version of the code also requires acceptance testing – stringent requirements for testing and certification of lighting controls and HVAC systems.

- Hours: 7:30 AM - 4:00 PM, on either April 23rd, or May 13th
- Continental Breakfast and Lunch Provided by IBEW-NECA

PRESENTATIONS BY:

Bernie Kotlier, California NECA-IBEW LMCC, Executive Director, Sustainable Energy Solutions; Co-Chair of the California Advanced Lighting Controls Training Program (CALCTP)

John Busch, LEVITON, Lighting and Energy Solutions

James Page, National Energy Management Institute

- Technical Reviews of New Lighting & Mechanical Requirements
- Overview of New State Certification for Employers and Technicians Who Will Conduct Acceptance Testing
- Acceptance Testing to be Required Before "Certificate of Occupancy" Can Be Issued

**WEDNESDAY
APRIL 23RD**

OR

**TUESDAY
MAY 13TH**

7:30 AM TO 4 PM

**SAME PROGRAM
BOTH DAYS**

WHO SHOULD ATTEND

City, County & Town
Building Officials,
Plan Check Staff,
and Code Inspectors

WHERE

Electrical Training Institute
6023 South Garfield Ave.
Commerce, CA 90040

NO MEETING COST

City, County & Town officials
are welcome to attend free
of charge; breakfast and
lunch will be provided.

TO REGISTER, *or* FOR QUESTIONS

Contact: Adam Marcus
LA County Dept of Public Works
amarcus@dpw.lacounty.gov
(626) 458-6336. Please provide
the name of your city,
county, or town with the
names of attendees and
their email addresses, and
which date they will attend.

STATE OF CALIFORNIA BUILDING CODE ACCEPTANCE TESTING CONTRACTOR CERTIFICATION CLASS

**OCTOBER 9, 2013
8:30 AM – 12:30 PM**

Beginning January 1, 2014, the California Building Code Energy Efficiency section, Title 24, will require building owners to install comprehensive lighting controls on all new commercial construction, most retrofits and TI's. State regulations will also mandate that building owners have state certified testing of those lighting control systems - called Acceptance Testing.

NECA contractors who become certified lighting Acceptance Testing contractors will be able to self-perform acceptance tests on their own lighting controls jobs. Contractors who are certified will not have to hire outside acceptance testers.

To be best prepared to take advantage of the business opportunities presented by the newly updated Title 24, please join us for a four (4) hour contractor lighting controls Acceptance Testing training and certification class.

Please note the following:

- Class materials will be provided in PDF format via flash drive. **Each participant must bring a laptop computer with a USB port to class in order to view the material.** The class session will conclude with a certification exam.
- Contractors with multiple office locations will need at least one management person certified for each location that conducts testing.
- This class only covers the required management training component for certification. You will soon receive information regarding the required electrician training to be conducted by the ETI.

WHO MAY ATTEND

NECA contractors and/or their staff (from any NECA chapter) are eligible for certification

WHERE

Pasadena

CLASS FEE

\$45 per person

TO REGISTER

Contact Bart Dickson at bart@laneca.org. Please provide the name of your company and all participants.



STATE OF CALIFORNIA BUILDING CODE ACCEPTANCE TESTING CONTRACTOR CERTIFICATION CLASS

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8:30 AM – 12:30 PM**

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CLASS FEE

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TO REGISTER

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Come and succeed with us at OCJATC
We have a course for everyone....

Please print and complete the [registration form \(click to download\)](#) and bring it to the office with any necessary payment

Subject:

CALCTP Acceptance Testing

Instructor: Jeff Gallin

Goal:

Effective January 1, 2014, the California Energy Commission adopted changes to the California building Efficiency Standards (Title 24, Parts 1 and 6) that require lighting controls and devices to be certified as properly installed and operational, prior to issuance of occupancy permits. The California Advanced Lighting Controls Training Program-Acceptance Technician (CALCTP-AT) certifies acceptance technicians.

Candidates interested in applying as a CALCTP-AT Technician must submit an application which is available at www.calctp.org/acceptance-technicians and pay a \$125.00 application fee as required. Note: Local 441 members may qualify for a refund of the application fee upon successful completion of the course. Contact the Training Center for further information.

Hours: 4:00pm - 8:00pm

Length: 5 Night's

Schedule: Monday's and Thursday Night's

Textbook and Workbooks:

Pen and Notepad

Course Dates:

<u>Start</u>	<u>End</u>
Oct 10, 2013	Oct 24, 2013

Registration may be done in person or you can print a registration form which is available on our website at www.ocett.org on the Journeyman classes tab. All registrants must be members in good standing of IBEW Local 441 or Orange County Chapter of NECA.

Location:

Orange County Electrical JATC Training Center
717 S. Lyon St. Santa Ana, CA 92705

Exhibit G - Tab 9

**Lighting Control Association marketing materials for CALCTP-AT
certification**



Education Express & Accrediting Organizations

The Lighting Controls Association's Education Express learning modules are accredited/registered by these organizations:

National Council on Qualifications for the Lighting Professions (NCQLP). Education Express courses are registered with the NCQLP for its LC (Lighting Certified) Program, which involves self-reporting of Lighting Education Units (LEUs). For more information on the NCQLP and their certification program, please visit the [NCQLP website](#).

California Advanced Lighting Controls Training Program (CALCTP). CALCTP trains licensed C-10 electrical contractors and state certified general electricians in effective techniques to install, tune, commission and maintain advanced lighting control systems. For a building to be eligible for incentives, CALCTP partner utilities, which encompass over 90% of the California market, will require CALCTP-certified contractors and general electricians on each project.

Several Lighting Controls Association Education Express courses are required as prerequisites to receive CALCTP live training, including *EE101: Introduction to Lighting Control*, *EE102: Switching Control*, *EE103: Dimming Control*, and *EE201: Daylight Harvesting*. All certificates available for these courses, totaling 120 CALCTP points, must be collected and presented to CALCTP as proof of attendance.

Other. CEU certificates are provided for students for other purposes. Note that Education Express courses are not officially registered with state licensing boards.

[RETURN TO WELCOME PAGE](#)

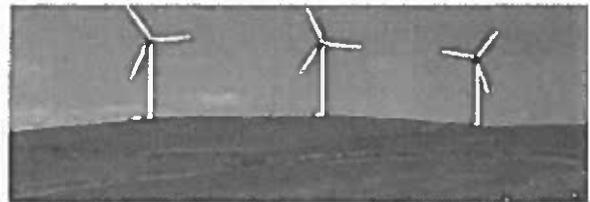
Exhibit G - Tab 10

Advanced Transportation Technology & Energy Center marketing materials for CALCTP-AT certification

Advanced Transportation Technology & Energy

Location:

Community Ed. Building
14000 Fruitvale Avenue
Saratoga, CA 95070
atte@westvalley.edu



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- Media Library
- Consulting Services
- K-12 Resources
- Partnerships
- Ecoprenuer
- En Español
- ATTE Blog

Staff

David Esmaili

What's New!



West Valley College Campus Center LEED Certification

Training Programs

Below are descriptions and available classes for ATTE sponsored programs. For detailed descriptions of the classes in Spanish please see our section in *En Español*.
[Click here for information on LEED GA Prep Lunch & Learn scheduled for 2/22/15](#)

K-12 Resources

Energy Management Program

Geospatial Technology/Geographic Information Systems (GIS)

Solar

Pavement Management

Energy Efficiency and LEED

Introduction to Renewable Energy

Alternative Fuel and Vehicle Technology

California Advanced Lighting Control Training Program (CALCTP)

CALCTP is a statewide initiative aimed at increasing the use of lighting controls in educate, train and certify state-certified general electricians in the proper design, advanced lighting control systems.

OSHA 10

Leadership in Energy & Environmental Design (LEED)

Green Information Technology (IT)

Google SketchUp for Solar Design & Sustainable Architecture

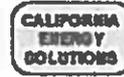


Exhibit G - Tab 11

IOU marketing materials for CALCTP-AT certification

Ouellette, Mark

From: San Diego Gas & Electric <webmaster@sdge.messages3.com>
Sent: Friday, April 18, 2014 8:01 AM
To: Ouellette, Mark
Subject: Become a certified CALCTP contractor

This message contains graphics. If you do not see the graphics, [click here to view](#).

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Title 24 Lighting Acceptance Test

4-Hour Certification Course

Become a certified CALCTP contractor

This 4-hour certification course is for electrical contractors and their employees. The course will review the amended Title 24 standards for non-residential acceptance testing, and will provide an overview of the requirements, training, and applications required under these new standards. You must have an approved application form obtained from the [CALCTP-AT](#) website to attend this seminar.

[Register Today »](#)

Course highlights

- Understand the purpose and scope of Title 24 installation and acceptance testing requirements
- Learn about the roles and responsibilities of acceptance test technicians and their employers
- Review the applicable codes and standards for commercial buildings
- Understand the certification and permitting process

- Examine the project type and lighting controls that are regulated
- Explore compliance documentation and forms

Please note that your completed exam is sent to CALCTP for scoring and results are not available at the Energy Innovation Center.

Speaker

Paul Bussell is a certified CALCTP Trainer, former lighting instructor at DISD and FIDM- Los Angeles, and presents seminars for Cuyumaca College Auxilliary, Mesa College, SDG&E, & the USGBC. Paul also develops on-line and site training offerings for the knowledge company LumenCulture.



Tuesday, May 6

(Seminar #8725)

Register

Time:

8 a.m. - 12 p.m.

(7:30 a.m. check-in and continental breakfast provided)

Location:

Energy Innovation Center

4760 Clairemont Mesa Blvd

San Diego, CA 92117

[View map](#)

It's easy to register:

Online: seminars.sdge.com

Email: seminars@sdge.com

Phone: 1-800-644-6133

Pre-registration is encouraged.

There is no fee to attend.



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CALENDAR OF EVENTS | ENERGY EDUCATION & TRAINING | REBATES & INCENTIVES

This email has been sent to mark.cuellette@icfi.com as a promotional communication. If you'd rather not receive emails like this, please [click here](#) or you can [manage your preferences](#)

Sender's business address is 101 Ash Street, San Diego, CA 92101.

SDG&E® values your privacy. [View our Privacy Policy](#) and

Ouellette, Mark

From: San Diego Gas & Electric <webmaster@sdge.messages3.com>
Sent: Friday, April 18, 2014 8:01 AM
To: Ouellette, Mark
Subject: Become a certified CALCTP contractor

This message contains graphics. If you do not see the graphics, [click here to view](#).

Web version | Update
preferences | Unsubscribe

Like Tweet Forward



Title 24 Lighting Acceptance Test

4-Hour Certification Course

Become a certified CALCTP contractor

This 4-hour certification course is for electrical contractors and their employees. The course will review the amended Title 24 standards for non-residential acceptance testing, and will provide an overview of the requirements, training, and applications required under these new standards. You must have an approved application form obtained from the [CALCTP-AT](#) website to attend this seminar.

Register Today »

Course highlights

- Understand the purpose and scope of Title 24 installation and acceptance testing requirements
- Learn about the roles and responsibilities of acceptance test technicians and their employers
- Review the applicable codes and standards for commercial buildings
- Understand the certification and permitting process

- Examine the project type and lighting controls that are regulated
- Explore compliance documentation and forms

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[View map](#)

It's easy to register:

Online: seminars.sdge.com

Email: seminars@sdge.com

Phone: 1-800-644-6133

Pre-registration is encouraged.

There is no fee to attend.



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PG&E Energy Efficiency Classes Class Details & Registration

Program Title	CALCTP AT Employer Lighting Acceptance Test Technician Employer Certification Course (Register)
Time, Location	May 16 (Friday, 11:00 am to 1:00 pm) San Francisco-PEC
Also Offered	N/A
Description	<p>This 6-hour class is for employers, such as C-to's, Architectural, and Engineering Firms, who have completed the CALCTP-AT employer application process at www.calctp.org. Content covers an overview of Title 24 Part 6.1.1) Lighting controls requiring testing and verification, 2) support, hiring, documentation, and auditing procedures of certified acceptance test technicians and permitted projects seeking occupancy, and 3) a 1-hour exam thereon. A copy of your paid employer application submission from CALCTP will be needed to enter the classroom. Note: Your completed 1-hour exam is sent to CALCTP for scoring. -- no results are available at the energy center.</p> <p>Pre-Requirement: see below Application requirement.</p> <p>Application: Participants must submit an application prior to the training and have a valid admissions slip from CALCTP to attend. The link is here: www.calctp.org/acceptance-technicians</p> <p>IMPORTANT NOTE: A copy of your paid employer application submission from CALCTP will be needed to enter the classroom.</p>
Audience Level	
Agenda	
Instructor(s)	<p>Barbara Cox Ms Cox has worked with a wide spectrum of industry stakeholders, policy advocates, state and federal agencies to develop and implement demand driven training programs, including the California Advanced Lighting Controls Training Program (CALCTP), to elevate technical competency standards within the electrical industry. She prepared and implemented workforce development programs with the US Department of Labor, US Department of Energy, the California Energy Commission, and the California Employment Development Department in her capacity as the Director of Sustainable Energy Grants for the California Labor Management Cooperation Committee.</p> <p>Ms Cox earned a Bachelorate degree in Behavioral Science from San Jose State University. She is a state certified General Electrician (commercial and industrial electrician) and nationally credentialled, apprenticeship-trained Journeyman Inside Wireman.</p>
Resources	N/A
Cost	No fee for this program for California businesses and residents
Credits	N/A

Registration Form

Bold Fields are Required

Please avoid registering multiple people under a single email address. Doing so may cause a failure to register.

Your Name: (First MI, Last)	<input type="text"/>
Your Job Title:	<input type="text"/>
Your Company Name:	<input type="text"/>
Your Address:	<input type="text"/>
Street Address 2:	<input type="text"/>

City: _____

State: **California**

Zip: _____

Phone: _____
(area code + number)

Cell Phone: _____
(area code + number)

Fax: _____
(area code + number)

E-mail address: _____

* AIA Member Number
(see below)

NOTE: If you have already submitted the information below in a previous form, we have your request and you do not need to check the boxes and radio buttons again. Simply skip the items below and click "Send Form".

- Please **DO NOT** send me e-mail messages about energy efficiency classes
- Please send me new e-mail e-mails about classes on the following checked topics
- | | |
|---|---|
| <input type="checkbox"/> Architecture | <input type="checkbox"/> Alternative Energy (solar, wind, etc.) |
| <input type="checkbox"/> HVAC | <input type="checkbox"/> Data Collection & Measurement |
| <input type="checkbox"/> Lighting | <input type="checkbox"/> Residential Energy Efficiency |
| <input type="checkbox"/> Commercial Refrigeration | |

Send Form

*If you are not a member of the AIA (American Institute of Architects), leave this field blank. If you are a member of the AIA and want us to report these continuing education credits, please include your AIA member number. After the class, we will report attendees' names and member numbers to the AIA.

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PG&E Energy Efficiency Classes Class Details & Registration

Program Title	CALCTP-AT Employer: Lighting Acceptance Test Technician Employer Certification Course [Register]
Time, Location	May 16 (Friday, 11:00 am to 6:00 pm) San Francisco--PEC
Also Offered	n/a
Description	<p>This 6-hour class is for employers, such as C-10's, Architectural, and Engineering Firms, who have completed the CALCTP-AT employer application process at www.calctp.org. Content covers an overview of Title 24 Part 6's: 1) lighting controls requiring testing and verification, 2) support, hiring, documentation, and auditing procedures of certified acceptance test technicians and permitted projects seeking occupancy, and, 3) a 1-hour exam thereon. A copy of your paid employer application submission from CALCTP will be needed to enter the classroom. Note: Your completed 1-hour exam is sent to CALCTP for scoring -- no results are available at the energy center.</p> <p>Pre-Requisite: see below Application requirement. Application: Participants must submit an application prior to the training and have a valid admissions slip from CALCTP to attend. The link is here: www.calctp.org/acceptance-technicians</p> <p>IMPORTANT NOTE: A copy of your paid employer application submission from CALCTP will be needed to enter the classroom.</p>
Audience Level	
Agenda	
Instructor(s)	<p>Barbara Cox Ms Cox has worked with a wide spectrum of industry stakeholders, policy advocates, state and federal agencies to develop and implement demand-driven training programs, including the California Advanced Lighting Controls Training Program (CALCTP), to elevate technical competency standards within the electrical industry. She prepared and implemented workforce development programs with the US Department of Labor, US Department of Energy, the California Energy Commission, and the California Employment Development Department in her capacity as the Director of Sustainable Energy Grants for the California Labor Management Cooperation Committee.</p> <p>Ms Cox earned a Baccalaureate degree in Behavioral Science from San Jose State University. She is a state certified General Electrician (commercial & industrial electrician) and nationally credentialed, apprenticeship-trained Journeyman Inside Wireman.</p>
Resources	N/A
Cost	No fee for this program for California businesses and residents.
Credits	N/A

Registration Form

Bold Fields are Required

Please avoid registering multiple people under a single email address. Doing so may cause a failure to register.

Your Name: (First, MI, Last)	<input type="text"/>
Your Job Title:	<input type="text"/>
Your Company Name:	<input type="text"/>
Street Address 1:	<input type="text"/>
Street Address 2:	<input type="text"/>

City:

State: **California**

Zip:

Phone:
(area code + number)

Cell Phone
(area code + number):

Fax:
(area code + number):

E-mail address:

* AIA Member Number
(see below):

NOTE: If you have already submitted the information below in a previous form, we have your request and you do not need to check the boxes and radio buttons again. Simply skip the items below and click "Send Form".

- Please **DO NOT** send me e-mail messages about energy efficiency classes.
- Please send me occasional e-mails about classes on the following checked topics.
 - Architecture
 - Alternative Energy (solar, wind, etc.)
 - HVAC
 - Data Collection & Measurement
 - Lighting
 - Residential Energy Efficiency
 - Commercial Refrigeration

Send Form

***If you are not a member of the AIA (American Institute of Architects), leave this field blank. If you are a member of the AIA and want us to report these continuing education credits, please include your AIA member number. After the class, we will report attendees' names and member numbers to the AIA.**

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Exhibit G - Tab 12

**Energy Education Center marketing materials for CALCTP-AT
Employer certification**

Ouellette, Mark

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

You are receiving this email, as you have expressed an interest in the California Advanced Lighting Controls Training Program (CALCTP).

Below is a list of 3 different CALCTP Courses that SCE's Energy Education Center in Irwindale (EEC-I) provide, along with the intended audience, prerequisite information, and instructions on how to register. If you have any questions, please feel free to call us at 626-812-7537.

1. 10 Hour CALCTP Systems Class * For C10 Contractors *****

Mid Management: CALCTP Systems Course Completion and Certification - Intended for contractor staff who do not hold a current state certification. Systems Course is needed for contractor certification. Prerequisite reading and a 10-hour on-line training course required.

Dates and Times: 4:00 pm - 9:00 pm

Tuesday, April 22, 2014
Thursday, April 24, 2014

Prerequisites

Before one can register, the following must be completed:

1. Send a copy of the company's C10 Contractor's license to Bonnie Madera via email @ EEC-iRegistration@sce.com or fax # 626-812-7513 "Attention Bonnie Madera".

2. Each person planning to register needs to go to http://www.aboutlightingcontrols.org/Education_Express/accr_orqs.php ... there are courses listed in paragraph 4 on that web page that must be completed prior to enrollment. **12 certificates of completion** must be emailed to EEC-iRegistration@sce.com or faxed to 626-812-7513, "Attention Bonnie Madera." *Please send all 12 certificates in one email.*

2. 50 Hour CALCTP General Electrician Workshop ***

For State of California Certified General Electricians Only, No Exceptions.

Dates and Times: 4:00 pm - 9:00 pm

Tuesday, March 4, 2014	Thursday, March 6, 2014
Tuesday, March 11, 2014	Thursday, March 13, 2014
Tuesday, March 18, 2014	Thursday, March 20, 2014
Tuesday, March 25, 2014	Thursday, March 27, 2014
Tuesday, April 1, 2014	Thursday, April 3, 2014

Prerequisites

Before one can register, the following must be completed:

1. Send a copy of the individual's State of California General Electrician Certification Card to Bonnie Madera via email @ EEC-iRegistration@sce.com or fax # 626-812-7513 "Attention Bonnie Madera".
2. Each person needs to go to http://www.aboutlightingcontrols.org/Education_Express/accr_orqs.php ... there are courses listed in paragraph 4 on that web page that must be completed prior to enrollment. From that page, click "Return to Welcome Page", create a user id and password, and register. **12 Certificates Of Completion** must be emailed to EEC-iRegistration@sce.com or faxed to 626-812-7513, "Attention Bonnie Madera." *Please send all 12 certificates in one email.*

3. CALCTP Business Development Class * (None are Currently Scheduled at this time)**

Top Management: CALCTP Business Development Seminar Completion - This 8-hour session is intended for owners and top-level executives, focusing on marketing, sales, finance, and creating an advanced lighting controls brand for your company. No prerequisite training required.

Please see attached documents for an overview of CALCTP, requirements for becoming a CALCTP certified contractor, and a flyer for the 50 Hour CALCTP General Electricians Workshop.

Best Regards,

Energy Education Center - Irwindale
Registration Desk
Tel (626) 812-7537
Fax (626) 812-7513
PAX 42537
EEC-iRegistration@sce.com
www.sce.com/energycenters
6090 N. Irwindale Ave
Irwindale, CA 91702
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Exhibit G - Tab 13

**Sacramento Valley Chapter of the International Association of
Electrical Inspectors marketing materials for CALCTP-AT
certification**



INTERNATIONAL ASSOCIATION OF ELECTRICAL INSPECTORS



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EVENTS

[Monthly Meeting](#)
Wed May 14 @ 05:00PM

MEMBERS

[Member Login](#)

Title 24 Workshop: What's New In the 2013 Energy Code?

Tuesday April 08 2014 12:00pm - 2:00pm

by admin

Hits: 64

Title 24 Workshop: What's New in the 2013 Energy Code?

Tuesday, April 8, 2014, 12:00 PM - 2:00 PM

The National Electrical Contractors Association (NECA) and the International Brotherhood of Electrical Workers (IBEW) would like to invite building officials and code inspectors to a free lunch seminar that will provide an in-depth review of the Title 24 changes to mandatory lighting requirements in non-residential buildings. This seminar will address the major updates to the lighting code and the role inspectors play in effective state energy efficiency policy.

With California's new Building Energy Efficiency Standards going into effect in July, the mandatory requirements for lighting controls constitute one of the biggest changes to Title 24 standards. The latest version of the standards also include more stringent requirements for the testing and certification of lighting controls in the form of acceptance testing.

- 12:00 PM—1:00 PM Lunch and Managers' Summary
- 1:00 PM—2:00 PM In-depth Technical Review Changes to Mandatory Lighting Requirements

Presentations by:

Christopher Smith & Bernie Kollier, California NECA-IBEW LMCC, Executive Director Sustainable Energy Solutions, Co-Chair of the California Advanced Lighting Controls Training Program (CALCTP)

Ronald France LEVITON, Lighting and Energy Solutions

- Managers' Overview of New Lighting Control Requirements
- Technical Review of New Lighting Control Requirements
- Overview of New State Certification for Contractors and Technicians That Conduct Acceptance Testing
- Expanded Lighting Control Acceptance Testing Before "Certificate of Occupancy" Can Be Issued

IBEW LOCAL 340 & NECA GREATER SACRAMENTO CHAPTER

TARGET AUDIENCE

City, County & Town Building Officials Plan Checkers and Inspectors

WHERE

Sacramento Electrical JATC
2836 Camino Road
Sacramento, CA 95833

NO MEETING COST

City, County & Town officials are welcome to attend free of charge. Lunch will be provided.

TO REGISTER

Contact: Grace Duncan at gduncan@340iaei.org or (916) 646-8688 and please provide the name of your city, county or town with names of the participants and their email addresses.

FOR QUESTIONS

Email csmith@calncc.org or Call (717) - 625 - 2425

NECA Sacramento • IBEW Local 340 • Sacramento, CA 95833

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Exhibit G - Tab 14

San Francisco Electrical Contractors Association marketing materials for marketing materials for CALCTP-AT certification

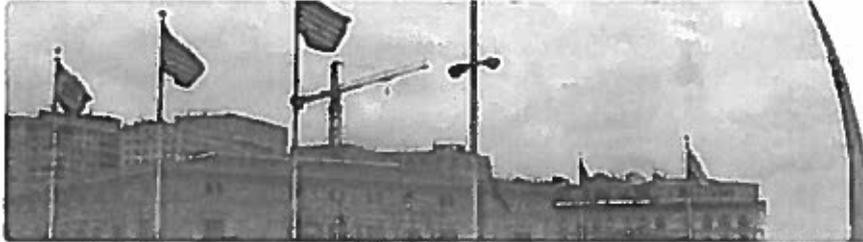


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EDUCATIONAL PROGRAM

Classes open for registration	Date	Status
CalCTP Special Membership Meeting at the SFJATC at 4056 Mission, SF	Wednesday, November 20th, 2013	Open now
CalCTP Lecture and Test for Company Acceptance Testing Certification at the SFJATC at 4056 Mission, SF	Friday, November 22nd, 2013	Open now
Affordable Care Act - Lunch and Learn	Wednesday, December 11th, 2013	Open
Basic Estimating by NECA presenter Bob Mooty at the SFJATC at 4056 Mission, SF	April 4th - 7th, 2014	Open

Completed Class	Status
Lien Law Changes by Dan McLennon at the Association Office	Completed
Title 24 Code Updates by Charles Knuffke at the SFJATC	Completed
Project Planning - A Checklist for Surviving the Dirty Dozen by NECA Presenter Dan Stuart at the Association Office	Completed
Affordable Care Act - How will it affect you? (First of two programs) by David Crutcher at the Association Office	Completed
Lean Construction in Electrical Contracting at the Association Office	Completed

CONTRACTORS



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Exhibit G - Tab 15

**Energy Design Resources marketing materials for
CALCTP-AT certification**



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CALCTP-AT Employer: Lighting Acceptance Test Technician Employer Certification Course

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Date: May 16, 2014

Time: 11:00 am - 6:00 pm

Location: San Francisco--PEC

Target Audience: Engineer - Electrical/Lighting Designer/Contractor - Electrical

Topic: Lighting; Controls

Utility Sponsor: PG&E

[Register now >](#)



Energy Design Resources is funded by California utility customers under the auspices of the California Public Utilities Commission.

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Exhibit H – Comparison of Certification Costs

CALCTP Proposed Licensing Fee (Paid by Individual)

Comparison with Fees for: (1) Building Performance Institute, Inc. (BPI) certification for residential energy auditing; (2) North American Board of Certified Energy Practitioners (NABCEP) certification for solar power and heating system installers.

Type	BPI Charges	NABCEP Charges	CALCTP Proposed
Application Fee Electronic/Paper	\$0	\$125/\$175	\$225
Examination Fee	\$250-\$300	\$300	N/A
Recertification Fee	\$300-\$550	\$300-\$350	\$125

CALCTP Quality Assurance Site Visits (Paid by Company)

Type	BPI Charges	NABCEP Charges	CALCTP Proposed
Initial Application (Accreditation Fee-Fee Covers 4 Hour Required Course)	\$500	\$500	\$500 for Single Office \$750 for Multi-Office
Initial Application (Quality Assurance Fee)	\$1,000	\$375 Per Audit (3 Audits will be Required for Initial Application or \$1,125)	\$200 for Paper Audits \$400 for On-Site Audits
Annual Fee after 1 st Year	\$1,000 to \$2,500 ⁴	\$500 - \$5,000 ⁵	N/A