

STATE OF CALIFORNIA

Energy Resources Conservation  
And Development Commission

In the matter of, )  
)  
Energy Commission Decision on the ) EXECUTIVE DIRECTOR  
Application of the National Lighting Contractors ) RECOMMENDATION TO  
Association of America (NLCAA) to Train and ) APPROVE NATIONAL  
Certify Lighting Controls Acceptance Test ) LIGHTING CONTRACTORS  
Technicians and Lighting Controls Acceptance ) ASSOCIATION OF AMERICA  
Test Employers Pursuant to Section ) AS A LIGHTING CONTROLS  
10-103-A of the 2013 Building Energy Efficiency ) ACCEPTANCE TEST  
Standards ) TECHNICIAN CERTIFICATION  
) PROVIDER  
)  
\_\_\_\_\_) September 26, 2014

**I. Executive Summary**

Section 10-103-A of the 2013 Building Energy Efficiency Standards (Standards)<sup>1</sup> implements new requirements for Nonresidential Lighting Controls Acceptance Test Training and Certification as of July 1, 2014. The requirements apply to nonresidential Lighting Control Acceptance Test Technicians and Employers, and the Certification Providers that certify them.

An Acceptance Test is a set of functional tests that ensure that Nonresidential Lighting Controls are working as designed after they are installed. Since 2005, commercial lighting installers have been required to perform an Acceptance Test on newly installed systems.

To ensure that Acceptance Test Technicians receive proper training and correctly perform Acceptance Tests, the 2013 Building Energy Efficiency Standards require organizations interested in becoming Acceptance Test Technician Certification Providers (ATTCPs) to apply to the Energy Commission for approval.

On January 16, 2014, the National Lighting Contractors Association of America (NLCAA) submitted an application to demonstrate it meets the requirements of section 10-103-A(c) to become a Lighting Controls ATTCP to certify and provide oversight functions to lighting controls technicians and lighting controls employers.

Energy Commission staff has reviewed and validated the information received in NLCAA's Lighting Controls ATTCP application and deemed NLCAA's application complete on July 2, 2014. Pursuant to section 10-103-A(f) of the 2013 Standards, Energy Commission staff explained these findings in the Staff Evaluation Report. A notice of availability informing interested parties that the Staff Evaluation Report along with NLCAA's application was available on the Commission's website was transmitted on July 18, 2014, over the Energy Commission's Listserv.

<sup>1</sup> Cal. Code Regs., tit. 24, pt. 6, and associated administrative regulations in pt. 1, ch. 10.

All interested persons have had a reasonable time since July 18, 2014, to review the posted information. Comments on the Staff Evaluation Report and NLCAA's application were received and reviewed by staff. Energy Commission staff has responded to the written comments and the responses are available in the backup materials.

Upon consideration of the application and comments received, I find that NLCAA's application to be a Lighting Controls ATTCP meets the criteria and procedures required by the 2013 Standards and recommend that the Energy Commission confirm these findings and approve NLCAA as an authorized Lighting Controls ATTCP. This approval would designate and authorize NLCAA to certify Technicians and Employers to perform the Nonresidential Lighting Controls Acceptance Tests under the 2013 Standards.

## **II. Background**

NLCAA applied on January 16, 2014 to the Energy Commission to be approved as a Lighting Controls ATTCP, to certify technicians and employers to perform the Nonresidential Lighting Controls Acceptance Tests under the 2013 Standards.

NLCAA was not listed in section 10-103-A(e) as eligible for interim approval. The Energy Commission may only consider those organizations listed in the 2013 Standards in section 10-103-A(e) for interim approval. On June 18, 2014, the Energy Commission determined that the Industry Certification Threshold conditions in Section 10-103-A(b)1 and Section 10-103-A(b)2 of the 2013 Standards have been met. Effective July 1, 2014, only technicians who have been certified by an interim-approved provider are allowed to conduct the Lighting Controls Acceptance Tests. NLCAA is not allowed to certify Technicians and Employers until its application is approved at a business meeting.

## **III. NLCAA Meets the Requirements for Providers Under Sections 10-103-A(c)**

Section 10-103-A(f) of the 2013 Standards authorizes the Energy Commission to review Lighting Controls ATTCP applications according to the criteria and procedures in section 10-103-A(c) of the 2013 Standards to determine if the applicant may be approved to provide Acceptance Testing certification services. Section 10-103-A(f) of the 2013 Standards requires Energy Commission staff to review and validate all information received in the Lighting Controls ATTCP application and determine if the application is complete and contains sufficient information to be approved.

1. Section 10-103-A (c)1: Requirements for Applicant ATTCP to Document Organizational Structure

NLCAA's application fulfills this requirement by providing information regarding its organizational structure including its status as a nonprofit organization governed by a Board of Directors, by-laws, a listing of the current Board of Directors and its responsibilities, and the selection process for the Board of Directors.

## 2. Section 10-103-A (c)2: Requirements for Certification of Employers

NLCAA's application fulfills this requirement by providing a one day training program for employers. The training gives an overview of the Acceptance Test documents and how to ensure their technicians are filling them out properly. The training includes an overview of the employer audit process, which must be conducted on the technicians first job, any time a technician has more than ten jobs in thirty days, any time NLCAA finds inconsistencies, or if a complaint has been filed. The audit process requires the employer to fill out an Audit Form online, which is nine pages in length. The Audit Form asks question about the job including the types of controls in the building, the locations of these controls, and the light output and power draw in various areas. Answers from the Audit Form are then cross checked against the actual Acceptance Tests. Any inconsistencies will be flagged and the employer will be contacted. If the inconsistencies cannot be explained, NLCAA will conduct a field inspection to follow up and inspect the technicians' next job.

## 3. Section 10-103-A (c)3: Requirements for Applicant ATTCP's to Document Training and Certification Procedures.

NLCAA's application fulfills this requirement by providing a complete copy of all training and testing procedures, manuals, handbooks and materials for technicians and employers. Staff has reviewed all the training material and determined that it satisfied these requirements.

## 4. Section 10-103-A (c)3A: Training and Scope

NLCAA's application fulfills this requirement by providing hands-on and theoretical training for both technicians and employers. Staff has reviewed all the training material and curricula and has determined that it satisfied these requirements.

## 5. Section 10-103-A (c)3B: Lighting Controls Acceptance Test Technician Training

NLCAA's application fulfills this requirement by providing hands-on and theoretical training for technicians. Staff reviewed the curricula, and determined that it satisfied this requirement.

NLCAA's application fulfills the prequalification requirements by providing information demonstrating that the applicants have at least three years verifiable professional experience and expertise in lighting controls for occupancy sensors and photosensors, low-voltage and line-voltage dimming, demand-response systems, time-based scheduling systems, indoor lighting, and outdoor lighting.

NLCAA's application fulfills the Instructor to Trainee Ratio requirement by providing information to demonstrate the instructor to trainee ratio for technicians will be no more than 18 students per one instructor for lectures and no more than 9 students per instructor for labs. For employer training the instructor to trainee ratio is no more than 18 students per instructor for lectures.

NLCAA's application fulfills the Test requirement by providing information to demonstrate that each applicant is competent in all specified subjects. Testing procedures for technicians include:

- 1) Eight quizzes of approximately ten questions each (which are not graded and are for educational and reference purposes only)
- 2) A final exam of 50 questions requiring a minimum score of 70 percent.
- 3) Four labs, which technicians must fully complete to become certified

Testing procedures for employers is an exam of 27 questions, which requires a minimum score of 70 percent.

NLCAA's application fulfills the recertification requirement by providing the process technicians and employers must follow to become recertified. If there are only minor changes to the acceptance test requirements, technicians and employers shall participate in "Acceptance Code Update Training". For any major changes or new acceptance test requirements, technicians and employers will be required to attend "Recertification Training" and pass an exam to become recertified.

#### 6. Section 10-103-A (c)3C: Lighting Controls Acceptance Test Employer Training

NLCAA's application fulfills this requirement by providing an eight hour classroom training program for employers. The training gives an overview of the Acceptance Test documents and when Acceptance Tests are required. The training reviews all the different types of lighting controls and how these controls work.

#### 7. Section 10-103-A (c)3D: Complaint Procedures

NLCAA's application fulfills the Complaint Procedure requirement by providing details of its complaint process. The complaint procedure process starts with filing a formal complaint against Employers and/or Technicians by submitting a complaint form to NLCAA. There are timelines in place for NLCAA, technicians, and employers to respond and comply.

#### 8. Section 10-103-A (c)3E: Certification Revocation Procedures

NLCAA's application fulfills the Certification Revocation Procedures requirement by providing information on its revocation procedures. The revocation procedures start with the complaint process. Once the complaint process has been completed a determination will be made by a minimum of three NLCAA directors who will review the complaint and recommend the action to be taken. NLCAA lists 10 possible actions that can be taken by the NLCAA directors. There is a written appeals process to appeal NLCAA decisions regarding disciplinary actions against technicians and employers.

#### 9. Section 10-103-A (c)3F: Quality Assurance and Accountability

NLCAA's application fulfills the Quality Assurance and Accountability requirement by describing its procedures for conducting quality assurance, independent oversight, and accountability measures. The audit procedures process requires the employer and technician to fill out an Audit Form for completed jobs which must be conducted on the technicians first job, any time a technician has more than ten jobs in thirty days, any time NLCAA finds inconsistencies, or if a complaint has been filed. The Audit Form is used to evaluate irregularities or inconsistencies in the completed Acceptance testing forms. Any inconsistencies will be flagged and the employer will be contacted. If the inconsistencies cannot be explained, NLCAA will conduct a field inspection to

follow up and inspect the technicians' next job. Technicians will also be subject to scheduled and random form and field inspections conducted by NLCAA. Scheduled field inspections will occur after a technician has completed 11 acceptance test jobs. Upon the first satisfactory field inspection, scheduled field inspections will occur every 25 jobs, every 50 jobs and every 100 jobs. If the scheduled field inspection is unsatisfactory, a complaint will be generated by NLCAA and the rate of scheduled field audits will remain the same. Random audits consist of random form review and random field inspections. The rate of random form reviews is two percent. The rate of random field inspections is one percent. The NLCAA application includes a list of what triggers failures during these audits and the required disciplinary actions including and up to decertification.

NLCAA requires technicians to use NLCAA's proprietary Acceptance Test Software when performing an acceptance test. The NLCAA software is designed so that the acceptance test technician enters all required acceptance data directly into the application's database. The software will generate all acceptance test forms, perform the required calculations eliminating mathematical errors, and ensure entered values are within a range that is reasonable. Technicians will be required to take pictures throughout the testing process of all controls. These pictures will be GPS-enabled to verify when the test was conducted. Once the acceptance tests are completed and signed the technician will no longer be allowed to make changes or modifications to the completed forms.

#### 10. Section 10-103-A (c)3G: Identification Numbering and Verification of ATT Certification Status

NLCAA's application fulfills the Identification Numbering and Verification of ATT Certification Status requirement by providing details of its identification numbering system, which staff has reviewed and approved. NLCAA will also list all certified employers and technicians on its website for the public to view.

Energy Commission staff has reviewed and validated all information received on NLCAA's Lighting Controls ATTCP application. The Energy Commission Staff Evaluation Report for NLCAA's application ("Evaluation Report") is attached as "Exhibit A."

Pursuant to section 10-103-A(f)(2) of the 2013 Standards, Staff's Evaluation Report and NLCAA's non-confidential portions of the application were made available to interested parties on July 18, 2014, at: <http://www.energy.ca.gov/title24/attcp/>.

Energy Commission staff received public comments on NLCAA's application and these comments have been posted at: [http://www.energy.ca.gov/title24/attcp/documents/NLCAA\\_comments/](http://www.energy.ca.gov/title24/attcp/documents/NLCAA_comments/).

#### **IV. Conclusion**

Pursuant to section 10-103-A(f)(3) of the 2013 Standards, Energy Commission staff has completed a thorough review and validation of the information received in NLCAA's Lighting Controls ATTCP application. Energy Commission staff deemed NLCAA's application complete on July 2, 2014. Staff considered the comments received in response to the Notice of Availability for NLCAA's application and the Energy Commission Staff Evaluation Report, which was posted for public comment on July 18, 2014. The comments received did not change staff's conclusion on NLCAA's application.

Accordingly, I find that NLCAA's application to be a Lighting Controls ATTCP meets the criteria and procedures required by the 2013 Standards and recommend that the Energy Commission confirm these findings and approve NLCAA as an authorized Lighting Controls ATTCP. This approval would designate and authorize NLCAA to certify technicians and employers to perform the Nonresidential Lighting Controls Acceptance Tests under the 2013 Standards.

  
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ROBERT P. OGLESBY  
Executive Director  
California Energy Commission

10-1-14  
Date

**EXHIBIT A**

**NLCAA LIGHTING ATTCP APPLICATION §10-103-A**

**Evaluation Form**

Below is the form used by staff to review NLCAA's application to become a Lighting ATTCP. NLCAA's curriculum and testing material has been granted as confidential (Docket Number TN 72722) and therefore limited information is included on the form in these areas.

NLCAA application for full ATTCP providership submitted on 1/16/14.		YES	NO
<b>I. Document Organizational Structure ([§10-103-A(c)1]</b>			
By-laws (Laws that govern organization type)		X	
<b>pg 35 to 39</b> Section includes principal office, instructions for changing principal address location. Purpose of corporation, directors responsibilities, compensation, terms etc.			
<b>Comments:</b> Requested additional information on 2/4/14. Final approved information received 7/2/14			
Ownership Structure		X	
<b>pg 36 to 39.</b> Owned by directors who will hold office until the next annual meeting where they can be replaced by election of the board. <b>Comments :</b> Requested additional information on 2/4/14. Final approved information received 7/2/14			
<b>II. Certification of Employers (Contractors) [§10-103-A(c)2]</b>			
How the ATTCP ensures quality control and appropriate supervision of Acceptance Test Employers?		X	
<b>pg 8.</b> Employer's are required to attend one day of training that includes information on how they are to provide oversight and assistance to technicians. Employers are also required to fill out employer audit forms and upload to NLCAA's registry. These employer audit forms will be reviewed and compared to the technician's acceptance forms for consistency and completeness. At first these evaluations will be performed manually but eventually computers will be used. If there are inconsistencies the technician and employer well be contacted and additional action might be taken to revoke certification. <b>Comments:</b> Requested additional information on 2/4/14. Final approved information received 7/2/14			
How the employer provides supervision and support for Technicians?		X	
<b>pg 8</b> Training for employers includes their requirements for oversight including and a requirement that enough time be given to the technician to complete an acceptance test. <b>Comments :</b> Requested additional information on 2/4/14. Final approved information received 7/2/14			
<b>III. Training and Certification Procedures [§10-103-A(c)3]</b>			
Copies of training and testing procedures, manuals, handbooks & materials? [§10-103-A(c)3]		X	
The applicant provided a very thorough training and testing manual that is approximately 700 pages long for technicians and 400 pages for employers. <b>Comments :</b> Reviewed by Staff who requested additional information on 3/3/14. Final approved information received 5/2014			
<b>NLCAA OFFERING CHALLENGE TESTS?</b>			X
NLCAA's application does not include any provisions to allow Challenge Tests or Certificates by Examination (test-out options). Any changes to the training procedures provided herein would be subject to the requirements of section 10-103-A(f) of the 2013 Energy Standards.			
Theoretical (classroom) Training? [§10-103-A(c)3A]		X	
<b>Comments:</b> Classroom training is approximately 600 pages long for the technician. <b>Comments:</b> Reviewed by Simon Lee of the Standards Development office. SIO requested additional information on 3/3/14. Final approved information received 5/2014			
Hands-on (Labs) training? [§10-103-A(c)3A]		X	
Information contained in Technician Training Manual: There are 24 labs the technicians must complete using laboratory racks. The labs cover the use and training of power meters, how to use the DALI program, measuring currant draw, set up time control switches of various mfg, and closed loop continuous dimming to name a few. <b>Comments:</b> Reviewed by Staff who requested additional information on 3/3/14. Final approved information received 5/2014			
Acceptance Test Technician Training [§10-103-A(c)3,B,i]		X	
Listed in this section are many areas of which the training must cover.		X	
<b>Comments:</b> Reviewed by staff and requested additional information on 3/3/14. Final approved information received 5/2014			

**NLCAA LIGHTING ATTCP APPLICATION §10-103-A**

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	<b>YES</b>	<b>NO</b>
NLCAA application for full ATTCP providership submitted on 1/16/14.	X	
Hands On Training [§10-103-A(c)3,B,ii]	X	
Description of design and technical specifications of the laboratory boards, equipment and other elements? The application includes a description of the Laboratory Racks, their basic design and tests that can be conducted. <b>Comments:</b> Reviewed by Staff who requested additional information on 3/3/14. Final approved information received 5/2014.	X	
Prequalification [§10-103-A(c)3,B,iii]	X	
103-A(c)3,B,iii]	X	
<b>pg 12</b> All applicants must complete the online Lighting Controls Associate course and pass with a minimum score of 70%. Their application must include three years of verifiable profession experience and expertise in lighting controls and electrical systems. The applicants must provide the type of license they have received and include documentation. The applicant must supply information showing they have at least 3 years of experience. <b>Comments:</b> Requested additional information on 2/4/14. Final approved information received 7/2/14		
Instructor to Trainee Ratio? [§10-103-A(c)3,B,iv]	X	
<b>pg 14</b> Ratio of no more than 18 students per one instructor is to be allowed for lectures and examination procedures – this applies to both the Lighting Controls Acceptance Test Technician curriculum and the Lighting Controls Acceptance Test Employer curriculum. <b>Comments:</b> Requested additional information on 2/4/14. Final approved information received 7/2/14		
Tests submitted? [§10-103-A(c)3,B,v]	X	
There are 8 quizzes that must be taken and passed as part of the lecture. Quizzes include approximately 10 questions each. There is a final exam with 50 questions and a minimum score of 35 must be achieved in order to pass. <b>Comments:</b> Reviewed by staff who requested additional information on 3/3/14. Final approved information received 5/2014		
Recertification - [§10-103-A(c)3,B,vi] procedures for recertification when Standards are modified?	X	
<b>pg 15</b> If there are only minor changes to the acceptance tests then recertification shall consist of taking an exam. For any major changes or new acceptance tests, the technician and employer will be required to attend training and testing similar to original certification. <b>Comments:</b> Requested additional information on 2/4/14. Final approved information received 7/2/14		
Employer Training - [§10-103-A(c)3,C] Training cover scope & process of acceptance tests?	X	
NLCAA will require employers to attend a one day training class and understand the acceptance process, forms and their requirements as overseeing technicians. They must also pass a test. <b>Comments:</b> Reviewed by Simon Lee of the Standards Development office. SIO requested additional information on 3/3/14. Final approved information received 5/2014		
Complaint Procedures - [§10-103-A(c)3,D] Procedure for complaint processing?	X	
<b>pg 20</b> NLCAA has a process in place that includes complaint forms. There are timelines in place for NLCAA as well as technicians and employers to respond and comply. There is also a list of 10 different disciplinary actions that can be taken by NLCAA. <b>Comments:</b> Requested additional information on 2/4/14. Final approved information received 7/2/14		
Revocation Procedures - [§10-103-A(c)3,E] Procedures for revocation of certification for technicians and employers	X	
<b>pg 22</b> Revocation procedures are in place that includes time lines for NLCAA as well as technicians and employers to respond and comply. <b>Comments:</b> Requested additional information on 2/4/14. Final approved information received 7/2/14		

**NLCAA LIGHTING ATTCP APPLICATION §10-103-A**

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	<b>YES</b>	<b>NO</b>
NLCAA application for full ATTCP providership submitted on 1/16/14.	X	
Quality Assurance - [§10-103-A(c)3,F] Written plan for Quality Assurance, Independent Oversight, and Accountability?	X	
<b>pg 25 Quality Assurance procedures</b> - On a random basis forms will be reviewed at a 2% rate to ensure proper completion. Failures will require additional forms review and possible site visits. There are times where field inspections will occur when the technician is conducting testing. There will also be random field inspections where NLCAA will verify completed jobs at a 1% rate on a random basis and within 24 hours of the technician completing their job where feasible. <b>Independent Oversight</b> will be completed by individuals who are independent from NLCAA who will oversee the training material, labs, and tests. <b>Oversight and Accountability</b> NLCAA has included a building department survey as part of the building department log-on process. <b>Comments:</b> Requested additional information on 2/4/14. Final approved information received 7/2/14	X	
Certification Identification Number and Verification of ATT Status [§10-103-A(c)3,G]	X	
Assign number, according to "standardize" format agreed upon between CEC and providers.	X	
<b>pg 31</b> Technicians identification number was approved by staff. <b>Comments :</b> Requested additional information on 2/4/14. Final approved information received 7/2/14 NLCAA must make listing of certified technicians, their ATT number, and their certification status readily available to the public.	X	
<b>pg 31</b> This information will be on the providers website. <b>Comments:</b> Requested additional information on 2/4/14. Final approved information received 7/2/14		
Requirements for ATTCP Annual Reports [§10-103-A(d)]	X	
Provide annual report to the Energy Commission summarizing certification services provided.	X	
(a) During the reporting period to date.	X	
<b>pg 32</b> A list of 12 items will be provided to the Commission in NLCAA's annual report. <b>Comments:</b> Final approved information received 7/2/14		
(b) The ATTCP shall report to the Energy Commission what adjustments have been made to the training curriculum.	X	
<b>pg 32</b> All updates to the training will be delivered to the Commission. <b>Comments:</b> Final approved information received 7/2/14		

Reviewed by Tav Commins, Engineer, Standards Implementation Office

Reviewed by Simon Lee, Engineer, Building Standards Office

Application deemed complete 7/2/14.

Date: July 2, 2014