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August 1, 2014

VIA EMAIL

Tav Commins
Mechanical Engineer
California Energy Commission
1516 Ninth Street
Sacramento, California 95814
Tav.Commins@energy.ca.gov

Re: NLCAA Non-Residential Lighting Control Acceptance Test Technician Certification Provider Application

Dear Mr. Commins:

I am writing on behalf of the California Advanced Lighting Controls Training Program ("CALCTP") to provide the below comments on the Lighting Control Acceptance Test Technician Certification Provider ("ATTCP") application submitted by the National Lighting Contractors Association of America's ("NLCAA"). CALCTP has been interim-approved by the Commission as a Lighting Control ATTCP and is waiting for full approval by the Commission.

I. CALCTP'S APPLICATION SHOULD BE PROCESSED FIRST

While CALCTP is not opposed to expanding the field of approved Lighting Control ATTCPs, CALCTP respectfully requests that CALCTP's application be reviewed and approved first by the Commission. Not only was CALCTP the first entity to submit an application, it expended tremendous resources to meet the necessary industry certification threshold prerequisites for triggering mandatory use of the certified Lighting Control Acceptance Test Technicians.

Without CALCTP's efforts to ensure that trained Lighting Control Acceptance Test Technicians are available in all counties across the state, technicians with no training or demonstrated capability would still be allowed to perform lighting control acceptance tests. In order to recoup these costs, it is

important to the CALCTP board that CALCTP can market itself as the first fully approved Lighting Control ATTCP.

II. COMMISSION STAFF SHOULD BE DIRECTED TO SET THE MINIMUM REQUIRED NUMBER OF RANDOM QUALITY ASSURANCE AUDITS BEFORE PROVIDING FINAL APPROVALS TO ATTCP APPLICANTS

CALCTP is concerned that the Commission is proposing to approve an ATTCP with much lower quality assurance requirements than set forth in CALCTP's application. Quality assurance audits represent a significant expense to contractors. Accordingly, if one ATTCP offers a significantly weaker and cheaper quality assurance program, this will put the ATTCP with the stronger but more expensive program at a competitive disadvantage.

The Commission regulations don't definitively mandate random document audits and field re-inspections, but Commission staff made clear to CALCTP early in the program development process that it expected CALCTP to provide both random document audits and random field re-inspections. Commission staff wouldn't, however, set a minimum number of audits and inspections; rather they directed CALCTP to justify whatever percentage they came up with.

In response to this direction, CALCTP designed a quality assurance "audit" program utilizing best practices around a "quality assurance audit model." CALCTP followed the guidelines established by the American Institute of CPA's ("AICPA") in the "Audit Sampling Considerations of Circular A-133 Compliance Audits" to address sampling size in an audit environment.

A-133 audits are required by the federal government and provide a statistically reliable method of quality assurance. In the "Audit Sample"" chapter AICPA states that, "generally, samples for control tests are designed to achieve a 90 percent to 95 percent confidence level."

However, AICPA state that there are several inherent risk factors that could impact noncompliance, which included, specifically:

- New program with little history with compliance requirement.
- Complex processing or judgment.
- Significant deficiencies or material weaknesses observed in the past.

- Correspondence from program officials indicating potential problems.
- Lack of adherence to applicable laws and regulations in prior years.
- High auditee turnover in a particular area.
- Very high volume of activity.
- Substantial change in the policies, processes, or personnel associated with the compliance requirement.

For new programs, AICPA recommends the audit program require a 95 to 98 percent confidence level at first to ensure that any initial issues with noncompliance are identified and addressed.

Because the CALCTP-AT program is a new program that will initially consist entirely of newly certified lighting control test technicians, CALCTP set a goal of conducting enough quality assurance audits during the first three years of the program to have a 98% confidence level that all acceptance test assessments are done correctly. As the program becomes more established and the CALCTP certified acceptance test technician workforce becomes more experienced, these quality assurance visits will decrease and move to a 95% confidence level in years 3-5 and then a 90% confidence level when the program is established in year 5 and beyond. The confidence levels for the program can be described in the table below.

Time Period	Confidence Level
Years 1-3	98%
Years 4-5	95%
Year 5+	90%

As requested by the California Energy Commission staff, CALCTP's application proposes conducting two types of audits. A random paper quality assurance audit and a random on-site quality assurance audit, with goal being that 50% of the audits are paper audits and 50% are on-site audits.

Time Period	Confidence Level	Anticipated % of Projects Audited*	Paper Audits	On-Site Audits
Years 1-3	98%	12%	6%	6%
Years 4-5	95%	8%	4%	4%
Year 5+	90%	4%	2%	2%

While CALCTP's stakeholders expressed concerned over the cost of this level of audits, they agreed to this level based on the fact that it represented industry best practices.

As other ATTCP's began to develop their applications, it became clear that they were proposing much lower levels of random audits. For example, NLCAA requires (a) random field inspections on 1% of acceptance test jobs; (2) random document reviews on 2% of acceptance test jobs; and (3) preannounced field observation reviews on 1% of acceptance test jobs (plus two initial scheduled field observations reviews during a technician's first 75 tests). NLCAA thus provides total audits of 4% of the NLCAA tests, with just 1% of the audits consisting of random field inspections. In comparison, CALCTP audits 12% of all tests during the first few years of the program, with 6% of the audits consisting of random field inspections.

CALCTP recognizes that if quality assurance programs of competing ATTCP's require fewer audits, CALCTP will have to similarly reduce the amount of random audits that it requires in order to keep costs down for its contractors and remain competitive.

In order to avoid this "race to the bottom," CALCTP asked Commission staff on multiple occasions to hold an ATTCP stakeholder meeting to discuss the minimum level of quality assurance audits that will be required by the Commission. CALCTP is concerned that the Commission is now proposing to provide final approval to ATTCP applications with much cheaper and less reliable quality assurance programs without first having addressed this issue through all ATTCP-applicant stakeholder meetings. CALCTP respectfully suggests that this issue should be addressed first, before full approvals are provided.

III. NLCAA'S APPLICATION LACKS DETAIL ON WHAT CONSTITUTES A FAILED AUDIT AND HOW NLCAA WILL RESPOND

CALCTP notes that NLCAA's quality assurance program does not appear to set forth what constitutes a failed audit or what consequences a failed audit would elicit. An ATTCP's definition of a failed audit and response to a failed audit can also drive up contractor costs. Accordingly, it is important that Commission staff ensure that they do not approve ATTCP's with weak or sham quality assurance audits and responses.

In comparison, CALCTP's application sets forth in detail what constitutes a failed item or test when an audit is performed.

A "failed Item" constitutes a category of failure on the part of the lighting controls acceptance test technician such as: failure to ensure appropriate documentation is available and complete; failure to conduct automatic daylight controls tests, lighting shut-off control tests, outdoor lighting control tests or demand responsive control tests; failure to verify power adjustment factors are correct when claimed; or failure to confirm installed lighting controls are certified to the California Energy Commission.

A "failed test" occurs when at least one of the threshold specifications is not met during the testing and inspection process. "Threshold Specifications" is a set of specific pass/fail criteria for each lighting control device or system requiring acceptance testing. Threshold specifications are established for minimum performance levels necessary to pass acceptance tests as outlined in the California Advanced Lighting Controls Training Program—Acceptance Test Technician Course.

A failed test would include one or more of the following items:

- Occupant Sensors serving small zones in a large open office plan for Power Adjustment Factor (PAF)
    - Technician did not complete the automatic shutoff controls acceptance tests for occupancy sensors serving small zones in a large open office plan or properly document all results on the acceptance certification NRCA-LTI-02-A.
    - Incorrect power adjustment factor (PAF) is documented on Certificate of Acceptance NRCA-LTI-02-A (Part 5).
    - Zones, where a PAF is claimed, are not separately listed on Certificate of Acceptance NRCA-LTI-02-A (Part 5).
    - Occupant sensors are triggered by movement outside their assigned zone.
    - Occupant sensors are not listed in the CEC appliance database or approved for use by the CEC.

- Energy Management Control System (EMCS) functioning as an indoor lighting control that requires an acceptance test (per NRCI-LTI-02-E)
    - Technician did not complete the automatic shutoff controls acceptance tests for the type of control the EMCS is designed to replace or did not properly document all test results on the acceptance certificate NRCA-LTI-02-A.
    - EMCS was not tested once for each type of indoor lighting control it is designed to replace.
    - If the EMCS acts as an automatic time-switch control, a manual override (manual switch) is not installed in each indoor area served by the EMCS.
    - If the EMCS acts as part of an occupancy-based lighting control, the lighting system under its control turns OFF no later than 30 minutes after the space becomes vacant.

- Automatic Daylighting Controls
    - Technician did not complete the automatic daylighting controls acceptance tests or properly document all results on the acceptance certificate NRCA-LTI-03-A.
    - All required daylit zones are not shown on building plans.
    - Completed acceptance test document NRCA-LTI-03-A does not accurately account for all daylit control zones.
    - Luminaires outside the daylit zone are controlled by the same automatic daylighting control as luminaires inside the daylit zone.
    - Test results from the No Daylight Test, Full Daylight Test and Partial Daylight Test are not documented on acceptance test form NRCA-LTI-03-A.
    - Automatic daylighting control device is not listed in the CEC appliance database or approved for use by the CEC.

- Indoor Shut-off Controls – Automatic Time Switch Control
    - Technician did not complete the automatic time switch control acceptance tests and document the results on acceptance certificate NRCA-LTI-02-A.
    - Device is not programmed with a weekend schedule that matches the owner's operating plan or other programming guidelines provided to the technician for the space/building.
    - Device is not programmed with a holiday schedule that matches the owner's operating plan or other programming guidelines provided to the technician for the space/building.
    - Device override time limit is greater than 2 hours.
    - All individual control zones (or sampled zones when using a sampling method) are not documented on the acceptance certificate NRCA-LTI-02-A.

- Demand Response Controls
    - Technician did not complete the demand responsive lighting controls acceptance tests and document the results on the acceptance certificate NRCA-LTI-04-A.
    - Technician did not confirm the maximum DR reduction is less than 50% of full output.
    - DR controls are not capable of receiving a demand response signal from a utility or 3rd party aggregator.

- Outdoor Controls
    - Technician did not complete the outdoor lighting controls acceptance tests or document results on the acceptance certificate NRCA-LTO-02-A.
    - Technician did not verify that outdoor lighting was OFF during the day.
    - Outdoor lighting is not OFF during the day.
    - Technician did not test all outdoor motion sensors.

In addition, the CALCTP application sets forth the additional oversight or remedial action that is taken upon a failed item or test. If an acceptance test technician and/or an acceptance test technician employer has failed either a paper

quality assurance audit or an on-site-quality audit, both the technician and the employer will receive the following additional quality assurance oversight:

Result	% of Projects Audited	Action That Will Be Take
Failed Either a Paper or On-Site Quality Assurance Audit	50% of Future Projects Audited until they have passed 2 on-site audits	On-Site Quality Assurance Audit Only
Failed a Second Quality Assurance Audit, the Second is an On-Site Audit	100% of Future Projects Audited, until passed 4 on-site audits	On-Site Quality Assurance Audit Only
Failed a Third Quality Assurance Audit, while still in the failed pool.		Recommendation sent to CALCTP Board to Terminate from CALCTP-AT Program

The NLCAA application does not describe any responsive consequence for failed paper audits or scheduled field inspections. For a failed random field inspection, the application simply states that the consequence is to increase the percentage of random field inspections from 1% to 2% of the next 100 jobs, or 2 out of the next 100 jobs. In comparison, CALCTP requires random on-site audits of 1 out every 2 jobs (50%) until there have been 2 passed audits. A second failure triggers 100% audits of the next 4 jobs and a third failure while still in the failed pool triggers a recommendation to terminate.

In addition, CALCTP's actions apply both to individual technicians and their employers. It is not clear from NLCAA's application if there is any consequence to certified acceptance test technician employers if their employee fails an audit.

IV. APPLICATION UNILATERALLY EXPANDS THE LIST OF QUALIFIED PROFESSIONALS WHO ARE ELIGIBLE TO OBTAIN CERTIFICATION

Relying on the professions identified in Section 10-103-A, subdivision (b)(2) of Title 24, Part 1, CALCTP has required applicants to its certification program to have verifiable professional experience as (1) electrical contractors, (2) certified general electricians, (3) professional engineers, (4) controls installation and startup contractors, or (5) certified commissioning professionals.

NLCAA's application, however, expands the above list of qualified professionals to include: (1) military veterans with various ratings, including electronic systems, avionic systems, radio systems, communication systems, and radar systems; (2) persons with various B.S. or M.S. degrees, including chemistry, mathematics, physics, geology and philosophy; and (3) persons with various state certifications, including nonresidential lighting technicians.

NLCAA's application does not provide any justifications or evidence for expanding qualified applicants to include these categories. Furthermore, approval of this expansion without first informing other ATTCP applicants or holding any stakeholder meetings to discuss the qualifications of the proposed additional designations puts CALCTP at a competitive disadvantage for having stuck to the express language of the Commission certification regulations.

CALCTP also notes that the NLCAA application does not state how it will determine who is a qualified certified commissioning professional. CALCTP surveyed the commissioning industry to determine what commissioning certifications were most commonly accepted by stakeholders as legitimate and meaningful. Based on this survey, CALCTP identified the following certifications as providing evidence that an applicant was a qualified certified commissioning professional:

- 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

Finally, CALCTP notes that NLCAA does not set forth how it will define a controls installation and startup contractor category. In attempting to establish objective standards for who qualifies as a controls installation and startup contractor, CALCTP 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 surveyed National Electrical Manufacturers Association members for a possible standard definition of this group, but was unable to establish a consensus definition.

If NLCAA has established objective standards for approval under this category that have been accepted by Commission staff, CALCTP requests that these standards be shared with other ATTCP applicants. No standards are set forth in the application.

V. CONCLUSION

CALCTP appreciates the opportunity to provide comments on the NLCAA application. As discussed above, the NLCAA application includes items that have implications on CALCTP's certification program. CALCTP requests that these items be addressed before the NLCAA application is approved.

Sincerely,

Thomas A. Enslow

TAE:ljl

cc: Robert Oglesby, Executive Director