

Acceptance Testing Protocols Under the 2013 Energy Standards

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Overview

- The concept of “Acceptance Testing”
- What is “ATTCP”
- Who are the “Providers”
- Who are the “Technician”
- Why “Train and Certify”
- What is “NRCA”
- Enforcement Agency Review
- Resources
- Conclusion



Concept of “Acceptance Testing”

- Acceptance Testing required in previous Standards
 - Since 2005
 - Nonresidential Acceptance test (no State certification was required)
 - Lighting and Mechanical controls
- New for the 2013 Energy Standards
 - For lighting controls and mechanical systems
 - Acceptance Test Technician Certification Program (ATTCP)
 - Technician Employers must be certified and Technicians must be certified



Concept of “Acceptance Testing”

Criteria for Passing the Test

- Must pass all performance tests of lighting controls
- Controls are required to be certified by the Energy Commission
- Acceptance results are submitted to the enforcement jurisdiction and a copy to building owner
- The Residential Rater crosses over to Nonresidential

Acceptance Testing

- Home Energy Rating System - HERS (residential)
- HERS Rater involvement; Section 141.0(b)2Dii
 - Mechanical Systems only



Concept of “Acceptance Testing”

Acceptance serves to determine whether specific building Guidance meets the:

- Standards,
 - Reference Nonresidential Appendix NA7, and
 - Nonresidential Compliance Manual Chapter 13
- Acceptance requirements ensure code
- Compliance and promote optimization of system efficiency and performance.



What is a Provider ?

- CALCTP - California Advanced Lighting Controls Training Program is currently a interim provider
- Industry Certification Threshold of 300 must be met
- Commission Interim Approval (CALCTP) already trained over 630 technicians



Who are the Providers?

- CALCTP – California Advanced Lighting Controls Training Program (Interim Approved Provider)
- NLCAA - National Lighting Contractors Association of America
- On August 27th (Business Meeting) possible Full Approval for CALCTP and NLCAA
- Acceptance Testing required to be done by a Certified Technician for
 - Lighting Controls
 - Mechanical Controls (At this time - No technicians are certified as of yet)



What the Providers do

- They train, certify, & monitor Acceptance Test Technicians
 - Classes and hands-on training
- Certification Providers must be approved by the Energy Commission
- Train, certify, & monitor Employers too



Who are the Lighting Technicians?

■ Lighting Industry groups suitable for certification (with 3 years of experience):

- Electrical Contractors
- Certified General Electricians
- BS degree in Engineering
- Controls Installers
- Commissioning Professionals



Who are the Mechanical Technicians?

■ Mechanical Industry groups suitable for certification (with 3 years of experience + AABC, NEBB or TABB certificates):

- Mechanical Contractors
- HVAC equipment installers
- BS degree in Engineering
- Controls Installers / startup contractors
- Commissioning Professionals



Technician Requirements

- Three requirements of the Technician:
 - Visual inspection of equipment and installation
 - Review of certification requirements
 - Functional tests of systems and controls



Why Train & Certify?

- Certification promotes consistency within the industries
- Testing by Certified Technicians maximizes operating benefits for building owners
- Saves energy and resources
- Owner benefits



What is NRCA ?

■ NRCA – Nonresidential Certification of Acceptance Compliance Form

STATE OF CALIFORNIA

LIGHTING CONTROL ACCEPTANCE DOCUMENT

CEC-NRCA-LTI-02-A (Revised 06/14)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF ACCEPTANCE		NRCA-LTI-02-A
Lighting Control Acceptance Document		(Page 1 of 5)
Project Name:	Enforcement Agency:	Permit Number:
Project Address:	City:	Zip Code:



Acceptance Testing protocols

STATE OF CALIFORNIA LIGHTING CONTROL ACCEPTANCE DOCUMENT CEC-NRCA-LTI-02-A (Revised 05/14)		CALIFORNIA ENERGY COMMISSION NRCA-LTI-02-A (Page 1 of 5)
Project Name:	Enforcement Agency:	Permit Number:
Project Address:	City:	Zip Code:

Note: For more than 3 spaces attach additional sets of pages 2 through 5, as required.

Enforcement Agency Use: Checked by/Date

Automatic Shut-off Controls: Automatic Time Switch Control and Occupant Sensor

Intent: Lights are turned off or set to a lower level when not needed per Section 110.9(a) & 130.1(c).

Guidance

This acceptance test form must be filled out for all newly-installed lighting control systems of the following types:

- I. Automatic Time Switch Controls
- II. Occupancy Sensors
- III. Partial-OFF occupancy sensors
- IV. Partial-ON occupancy sensors (only if used to claim a Power Adjustment Factor)
- V. Occupancy Sensors serving small zones in large open plan offices (only if used to claim a Power Adjustment Factor)

For automatic daylighting controls use acceptance test form NRCA-LTI-03-A; for demand responsive lighting controls, use acceptance test form NRCA-LTI-04-A.

The tests on this certificate are required by Section 140.6(a)2 and 130.4(a) of the Building Energy Efficiency Standards 2013. The tests themselves are described in Sections 140.6(a)2 and in Reference Appendix NA7.6.

A. Construction Inspection

Fill out Section A to cover spaces 1 through 3 that are functionally tested under Section B. Make as many copies of pages 2-5 as are required to test all spaces in the building, and attach to page 1.

Instruments needed to perform tests include, but are not limited to: hand-held amperage meter, power meter, or light meter

1	Automatic Time Switch Controls Construction Inspection—confirm for all listed in Section B
a.	All automatic time switch controls are programmed for (check all):
	<input type="checkbox"/> Weekdays
	<input type="checkbox"/> Weekend
	<input type="checkbox"/> Holidays
b.	Document for the owner automatic time switch programming (check all):
	<input type="checkbox"/> Weekdays settings
	<input type="checkbox"/> Weekend settings
	<input type="checkbox"/> Holidays settings
	<input type="checkbox"/> Set-up settings
	<input type="checkbox"/> Preference program setting
	<input type="checkbox"/> Verify the correct time and date is properly set in the time switch
	<input type="checkbox"/> Verify the battery is installed and energized
	<input type="checkbox"/> Override time limit is no more than 2 hours
	<input type="checkbox"/> Occupant Sensors and Automatic Time Switch Controls have been certified to the Energy Commission in accordance with the applicable provision in Section 110.9 of the Standards, and model numbers for all such controls are listed on the Commission database as Certified Appliance and Control Devices
2	Occupancy Sensor Construction Inspection—confirm for all listed in Section B
	<input type="checkbox"/> Occupancy sensors are not located within four feet of any HVAC diffuser
	<input type="checkbox"/> Ultrasonic occupancy sensors do not emit audible sound 5 feet from source



What is NRCA

Acceptance Testing

- Acceptance is not commissioning or test and balance procedures
- Multiple Field Technicians under a licensed contractor or the “Responsible Person”
- Responsible person reviews and signs the form to certify compliance with the acceptance requirements.



Roles and Responsibilities Declaration Statement

Documentation Authors signs; it could be either be a CEA/HERS/ AAT Acceptance Field Technician or the responsible Acceptance Test Technician documenting the results.

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Acceptance documentation is accurate and complete.

Documentation Author Name:

Documentation Author Signature:

Documentation Author Company Name:

Date Signed:

Address:

CEA/HERS/ATT Certification Identification (If applicable):

City/State/Zip:

Phone:



Roles and Responsibilities Declaration Statement

- Acceptance Test/Field Technician is responsible for performing and documenting the results

FIELD TECHNICIAN'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Acceptance is true and correct.
2. I am the person who performed the acceptance verification reported on this Certificate of Acceptance (Field Technician).
3. The construction or installation identified on this Certificate of Acceptance complies with the applicable acceptance requirements indicated in the plans and specifications approved by the enforcement agency, and conforms to the applicable acceptance requirements and procedures specified in Reference Nonresidential Appendix NA7.
4. I have confirmed that the Certificate(s) of Installation for the construction or installation identified on this Certificate of Acceptance has been completed and signed by the responsible builder/installer and has been posted or made available with the building permit(s) issued for the building.

Field Technician Name:	Field Technician Signature:	
Field Technician Company Name:	Position with Company (Title):	
Address:	ATT Certification Identification (if applicable):	
City/State/Zip:	Phone:	Date Signed:



Roles and Responsibilities Declaration Statement

Responsible person signs document taking responsibility of the test results

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. I am the Field Technician, or the Field Technician is acting on my behalf as my employee or my agent and I have reviewed the information provided on this Certificate of Acceptance.
2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Acceptance and attest to the declarations in this statement (responsible acceptance person).
3. The information provided on this Certificate of Acceptance substantiates that the construction or installation identified on this Certificate of Acceptance complies with the acceptance requirements indicated in the plans and specifications approved by the enforcement agency, and conforms to the applicable acceptance requirements and procedures specified in Reference Nonresidential Appendix NA7.
4. I have confirmed that the Certificate(s) of Installation for the construction or installation identified on this Certificate of Acceptance has been completed and is posted or made available with the building permit(s) issued for the building.
5. I will ensure that a completed, signed copy of this Certificate of Acceptance shall be posted, or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a signed copy of this Certificate of Acceptance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Acceptance Person Name:

Responsible Acceptance Person Signature:

Responsible Acceptance Person Company Name:

Position with Company (Title):

Address:

CSLB License:

City/State/Zip:

Phone:

Date Signed:



Enforcement Agency Review

Certificate of Acceptance Form Must be:

- Verified, Properly filled and signed
- submitted for final Certificate of Occupancy
- Agency shall not release a final Certificate of Occupancy unless the certificate demonstrates
- Acceptance results are filed with enforcement jurisdiction and copy to building owner by the technician
- Does not relieve Enforcement Jurisdiction of current field inspection duties



Additional Resources

- Energy Commission Hotline
 - 1-800-772-3300
 - 916-654-4217 (outside California)
 - Title24@energy.ca.gov (questions)
- Webpage
 - <http://www.energy.ca.gov/efficiency/>
- Standards
 - Applicable Section 10-103
- Nonresidential Compliance Manual
 - Chapter 13



Conclusion

- The effect of acceptance testing by certified technicians will:
 - Reduce Energy Demand during Peak Hours
 - Provide full intended functionality of lighting systems and mechanical systems
 - Improve indoor lighting and mechanical performance

