<table>
<thead>
<tr>
<th><strong>DOCKETED</strong></th>
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<tbody>
<tr>
<td><strong>Docket Number:</strong> 13-ATTCP-01</td>
</tr>
<tr>
<td><strong>Project Title:</strong> Acceptance and Training Certification</td>
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<tr>
<td><strong>TN #:</strong> 238148</td>
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<tr>
<td><strong>Document Title:</strong> ATTCP Quick Start Presentation</td>
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<tr>
<td><strong>Description:</strong> N/A</td>
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<tr>
<td><strong>Filer:</strong> Joe Loyer</td>
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<tr>
<td><strong>Organization:</strong> California Energy Commission</td>
</tr>
<tr>
<td><strong>Submitter Role:</strong> Commission Staff</td>
</tr>
<tr>
<td><strong>Submission Date:</strong> 6/8/2021 9:05:54 AM</td>
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<tr>
<td><strong>Docketed Date:</strong> 6/8/2021</td>
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Acceptance Testing Enforcement

Lighting Controls and Mechanical Systems in Nonresidential Buildings

Presenter: Joe Loyer, Senior Mechanical Engineer
Date: TBD
Agenda

- Introduction
- Acceptance Testing and the ATTCP
- Builders and Contractors
- Authorities Having Jurisdiction
- Questions and Answers
Acronyms Used

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>ATTCP</td>
<td>Acceptance Test Technician Certification Provider</td>
</tr>
<tr>
<td>ATT</td>
<td>Acceptance Test Technician</td>
</tr>
<tr>
<td>ATE</td>
<td>Acceptance Test Employer</td>
</tr>
<tr>
<td>AHJ</td>
<td>Authority Having Jurisdiction</td>
</tr>
<tr>
<td>CEC</td>
<td>California Energy Commission</td>
</tr>
<tr>
<td>NRCC</td>
<td>Nonresidential Certificate of Compliance</td>
</tr>
<tr>
<td>NRCI</td>
<td>Nonresidential Certificate of Installation</td>
</tr>
<tr>
<td>NRCA</td>
<td>Nonresidential Certificate of Acceptance</td>
</tr>
</tbody>
</table>
Introduction
Learning Goals

Understand the ATTCP Program

 Builders and contractors
  • ATTCP program to demonstrate code compliance
  • Secure an ATT certification
  • Engineer or architect can rely on program

 Authorities Having Jurisdiction
  • ATTCP program to enforce Energy Code
  • Inspectors can rely on efficacy of program
  • Other checks for inspectors to use
ATTCP Program

CEC approves ATTCPs to
• Train, certify, and oversee ATTs and ATEs

ATTs perform tests in nonresidential buildings for
• Lighting Controls
• Mechanical Systems
Construction Process Overview

1. Pre-Application
   - Permit Application (NRCC)
   - AHJ Permit Approval

2. Acceptance Testing (NRCA)
   - AHJ Inspections
   - Construction and Installation (NRCI)

3. AHJ Inspections
   - Final Inspections
   - AHJ Issued Certificate of Occupancy
Enforcing Acceptance Testing

ATT – Acceptance Test

ATTCP – Records Test with QA

ATTCP – Produces NRCA w/logo

ATT – Submits NRCA to AHJ
ATT Certification Enforcement Dates

• Lighting Control: July 2014

• Mechanical Systems: October 1, 2021
Acceptance Testing and the ATTCP
Acceptance Testing

- Final stage of equipment installation
- Construction inspection and functional testing
- Goal: design compliance, functional design, code compliance
- Performed and documented by installing technician
- Submitted to AHJ
ATTCP Program Background

- Established in the 2013 Energy Code
- Improve compliance for lighting controls and mechanical systems
- Private organizations approved by CEC
- Train, certify, provide oversight for ATTs / ATEs
- Tracking system for compliance forms
ATTCP Responsibilities

• Train and certify ATTs and ATEs
• Quality Assurance Program
• Complaints Process
• Generate NRCA Compliance Documents
Lighting Controls ATTCPs

Approved by CEC

- National Lighting Contractors Association of America (NLCAA)
- California Advanced Lighting Controls Training Program (CALCTP)
Mechanical Systems ATTCPs

Approved by CEC

- California State Pipe Trades Council (CSPTC)
- National Energy Management Institute Committee (NEMIC)
- National Environmental Balancing Bureau (NEBB)
- Refrigeration Service Engineers Society (RSES)
Builders and Contractors
Triggers for Acceptance Testing

New installation, addition, alteration

Newly constructed building or tenant improvement
General Acceptance Testing Triggers

• Newly installed lighting controls
  o Indoor
  o Outdoor

• Mechanical systems
  o Newly installed
  o Replacement
Alterations
Indoor Lighting Controls

Acceptance Testing Triggers
• Lighting system installed for first time
• 10% or more of luminaires are altered

Exceptions
• New controls are for 20 or fewer luminaires
• Adding lighting controls only
• Only replacing lamps, ballasts, drivers
• One-for-one luminaire alteration limit 50 per year
Alterations

Outdoor Lighting Controls

Acceptance Testing Triggers

• Systems listed in Table 140.7-A or 140.7-B.

Exception

• Controls for 20 or fewer luminaires

---

**TABLE 140.7-A GENERAL HARDSCAPE LIGHTING POWER ALLOWANCE**

<table>
<thead>
<tr>
<th>Type of Power Allowance</th>
<th>Lighting Zone 0</th>
<th>Lighting Zone 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Wattage Allowance (AWA)</td>
<td>0.01 W/ft²</td>
<td>0.02 W/ft²</td>
</tr>
<tr>
<td>Linear Wattage Allowance (LWA)</td>
<td>0.15 W/ft</td>
<td>0.30 W/ft</td>
</tr>
<tr>
<td>Initial Wattage Allowance (IWA)</td>
<td>180 W</td>
<td>180 W</td>
</tr>
</tbody>
</table>

---

**TABLE 140.7-B ADDITIONAL LIGHTING POWER ALLOWANCE FOR SPECIFIC APPLICATIONS**

All area and distance measurements in plan view unless otherwise noted.

<table>
<thead>
<tr>
<th>Lighting Application</th>
<th>Lighting Zone 0</th>
<th>Lighting Zone 1</th>
<th>Lighting Zone 2</th>
<th>Lighting Zone 3</th>
<th>Lighting Zone 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Entrances or Exits</td>
<td>Not applicable</td>
<td>9 watts</td>
<td>15 watts</td>
<td>19 watts</td>
<td>21 watts</td>
</tr>
<tr>
<td>Primary Entrances to Senior Care Facilities, Police Stations, Healthcare Facilities, Fire Stations, and Emergency Vehicle Facilities</td>
<td>Not applicable</td>
<td>20 watts</td>
<td>40 watts</td>
<td>57 watts</td>
<td>60 watts</td>
</tr>
<tr>
<td>Drive Up Windows</td>
<td>Not applicable</td>
<td>16 watts</td>
<td>30 watts</td>
<td>20 watts</td>
<td>75 watts</td>
</tr>
<tr>
<td>Vehicle Service Station Uncovered Fuel Dispenser</td>
<td>Not applicable</td>
<td>66 watts</td>
<td>72 watts</td>
<td>61 watts</td>
<td>73 watts</td>
</tr>
</tbody>
</table>

---

Continuous lighting is explicitly prohibited in Lighting Zone 0. A parking area, trail head, ferry/packet boat, boat house, or toilet facility. Luminaires installed shall meet the maximum zonal lumens limits.

Where greater than 50% of the paved surface of a parking lot is free of other General Hardscape areas:

Narrow band spectrum light sources with a dominant peak wavelength to minimize the impact on local, active professional astronomy or seacoast is preferred.
Acceptance Testing Triggers

- Any new or replacement systems or components

Exception

- Electric resistance space heaters for apartments
NRCCs for Lighting Controls and Mechanical Systems
### NRCC - Acceptance Tests Tables

#### Indoor Lighting - NRCC

**Acceptance Test Requirement Table**

<table>
<thead>
<tr>
<th>Item</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 1</td>
<td>Must be submitted for lighting control system, or for low energy Management Control System (NRCC) to be recognized for compliance.</td>
</tr>
<tr>
<td>Item 2</td>
<td>Must be submitted for two-interlock systems using an auditorium, a conference center, a conference room, a multipurpose room, or a theater to be recognized for compliance.</td>
</tr>
<tr>
<td>Item 3</td>
<td>Must be submitted for Power Adjustment Factor (PAF) to be recognized for compliance.</td>
</tr>
<tr>
<td>Item 4</td>
<td>Must be submitted for additional settings installed in a video conferencing suite to be recognized for compliance.</td>
</tr>
</tbody>
</table>

#### Mechanical - NRCC

**Acceptance Test Requirement Table**

<table>
<thead>
<tr>
<th>Item</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 1</td>
<td>Must be submitted for occupancy sensors and automatic time switch controls.</td>
</tr>
<tr>
<td>Item 2</td>
<td>Must be submitted for automatic daylight controls.</td>
</tr>
<tr>
<td>Item 3</td>
<td>Must be submitted for demand responsive lighting controls.</td>
</tr>
<tr>
<td>Item 4</td>
<td>Must be submitted for instantaneous lighting power adjustment factors (HPA).</td>
</tr>
<tr>
<td>Item 5</td>
<td>Must be submitted for daylighting design power adjustment factors (HPA).</td>
</tr>
</tbody>
</table>

### Declaration of Required Certificates of Acceptance

Table instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table 7. Additional Notes. These documents must be submitted to the building inspectors during construction or on site as required. If the form name must be completed through an acceptance test, the certificate is completed for the project. For more information visit: [NRCC Home Page](http://www.nrc.ca.gov/).
AHJ Permit Application Approval

- NRCCs submitted with plan in permit application
- AHJ approves permit application including NRCC

- Total of 10 NRCC forms
  - 2 for lighting controls
  - 1 for mechanical systems
Authorities Having Jurisdiction
AHJ Site Inspection

Enforcement can be simple!

Required

- Reference NRCC to verify required NRCAs
- Verify NRCA submitted has ATTCP logo

Recommended, if Necessary

- Question parts of or entire test
- Take ATTCP Inspector Training
- Ask questions, inspect tools, require demonstration
Lighting Controls ATTCP Logos

National Lighting Contractors Association of America

California Advanced Lighting Controls Training Program
Mechanical Systems ATTCP Logos

a. NEMIC Logo (Background Watermark on NEMIC Acceptance Forms)

The HVACR Training Authority

Title 24 Acceptance Test Technician Certification Provider (ATTCP) Program
Invalid NRCAs
Complaint Process

• Available for AHJs and all other parties
• ATTCP complaint processes are CEC-approved
• ATTCPs report complaints to CEC annually
• Complaints can be submitted to CEC directly
• CEC will investigate to achieve resolution
Resources

ATTCP Training:

- National Lighting Contractors Association of America (NLCAA)
- California Advanced Lighting Controls Training Program (CALCTP)
- California State Pipe Trades Council (CSPTC)
- National Energy Management Institute Committee (NEMIC)
- National Environmental Balancing Bureau (NEBB)
- Refrigeration Service Engineers Society (RSES)

California Energy Commission:

- Acceptance Test Technician Certification Provider Program
- Online Resources Center

Energy Code Ace: Web-Link

Staff Contact: Joe Loyer at Joe.Loyer@energy.ca.gov
Questions & Answers
Thank You!