<table>
<thead>
<tr>
<th><strong>Docketed Date:</strong></th>
<th>6/9/2021</th>
</tr>
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<tbody>
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<td><strong>Submssion Date:</strong></td>
<td>6/9/2021 9:47:06 AM</td>
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<tr>
<td><strong>Submitter Role:</strong></td>
<td>Commission Staff</td>
</tr>
<tr>
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<td>California Energy Commission</td>
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<tr>
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<td>Joe Loyer</td>
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<td>ATTCP Quick Start Presentation ADA</td>
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<tr>
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<td>238161</td>
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<td>Acceptance and Training Certification</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>Description</th>
</tr>
</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
  - Indoor
  - Outdoor

- Mechanical systems
  - Newly installed
  - 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>
<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>No allowance¹</td>
<td>0.018 W/ft²</td>
</tr>
<tr>
<td>Linear Wattage Allowance (LWA)</td>
<td>0.15 W/ft²</td>
<td>0</td>
</tr>
<tr>
<td>Initial Wattage Allowance (IWA)</td>
<td>180 W</td>
<td></td>
</tr>
</tbody>
</table>

¹Continuous lighting is explicitly prohibited in Lighting Zone 0. A parking area, trail head, fee payment kiosk, outreach, or tenant facility lighting shall meet the maximum zonal luminance limits as specified in Table 140.7-B.
²When greater than 50% of the paved surface of a parking lot is free of any other General Hardscape areas.
³Narrow band spectrum light source with a dominant peak wavelength, to minimize the impact on local, active professional astronomy or a power allowance multiplier.

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

<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. Allowance per door. Luminaires qualifying for this allowance shall be within 20 feet of the door.</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. Allowance per primary entrance(s) only. Primary entrances should provide access for the general public and shall not be used exclusively for staff or service personnel. This allowance shall be in addition to the building entrance or exit allowance above. Luminaires qualifying for this allowance shall be within 100 feet of the primary entrance.</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. Allowance per customer service location. Luminaires qualifying for this allowance shall be within 2 mounting heights of the sill of the window.</td>
<td>Not applicable</td>
<td>16 watts</td>
<td>30 watts</td>
<td>50 watts</td>
<td>75 watts</td>
</tr>
<tr>
<td>Vehicle Service Station Uncovered Fuel Dispenser. Allowance per</td>
<td>Not applicable</td>
<td>66 watts</td>
<td>72 watts</td>
<td>61 watts</td>
<td>125 watts</td>
</tr>
</tbody>
</table>
Alterations
Mechanical Systems - HVAC

Acceptance Testing Triggers

• Any new or replacement systems or components

Exception

• Electric resistance space heaters for apartments
NRCCs for Lighting Controls and Mechanical Systems

### Mechanical Systems

- **Project Type**: Mechanical Systems
- **MTC/ASHRAE Standard**: 53
- **State of California**: Mechanical Systems
- **NRCC Reference**: 0769

#### NRCCs for Lighting Controls

NRCCs are not applicable to these systems.

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**Table of Contents**

1. **A. GENERAL INFORMATION**
   - Project Location
   - Project Area
   - Project Date
   - Project Contact

2. **B. PROJECT SCOPE**
   - Project Scope
   - Project Description

3. **C. COMPLIANCE**
   - Compliance Criteria
   - Compliance Table

---

**Table 1: Energy Savings Calculations**

<table>
<thead>
<tr>
<th>Project</th>
<th>Energy Savings</th>
<th>照明 Control Method</th>
<th>Compliance Noted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project 1</td>
<td>1000 kWh</td>
<td>Method A</td>
<td>Yes</td>
</tr>
<tr>
<td>Project 2</td>
<td>1500 kWh</td>
<td>Method B</td>
<td>No</td>
</tr>
</tbody>
</table>

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**Notes**

- NRCCs: Not Required
- Energy Savings Calculations: Not Applicable
- Compliance: Not Required
### Indoor Lighting - NRCC
#### Acceptance Test Requirement Table

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Action</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Must be submitted for a lighting control system, or for an energy management control system (EMCS), for recognition for compliance.</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Must be submitted for two independent systems among a conference room, a conference center, a conference venue, a multipurpose room, or a theater to be recognized for compliance.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must be submitted for any adjustment in a video conferencing room to be recognized for compliance.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Mechanical - NRCC
#### Acceptance Test Requirement Table

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Action</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
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<tr>
<td>Must be submitted for all newly installed HVAC units.</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>HVAC control system must be in compliance with ASHRAE/IES 90.1-2015.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HVAC control system must be in compliance with EN-15251-1:2012.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Must be submitted for all newly installed HVAC systems.</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</table>
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)

NEMIC
NATIONAL ENERGY MANAGEMENT INSTITUTE COMMITTEE

b. ICB/TABBB Logo (Lower Right-Hand Corner on NEMIC Acceptance Forms)

ICB/TABBB®
INTERNATIONAL CERTIFICATION BOARD
TESTING, ADJUSTING AND BALANCING BUREAU
'THE PROFESSIONAL'S CHOICE™'

Title 24 Acceptance Test Technician Certification Provider (ATTCP) Program

NEBB®
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!