



**National Lighting Contractors
Association of America**

2019 Energy Code Changes

| Section | Description of Change |
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| §10-103.1(c)2A | This change moves the ATE recertification requirements from §10-103.1(c)3B(vi) to §10-103.1(c)2A. |
| §10-103.1(c)3Biii | This change adds a note that ATTCPs may specify additional qualifications for participation in their programs such as not being currently listed as "decertified" by another ATTCP. |
| §10-103.1(c)3Bvi | These changes explicitly state that ATT recertification training curricula should be consistent with the training requirements in §10-103.1(c)3A-B and that proposed recertification training curricula should be submitted to the Energy Commission in the update report specified by §10-103.1(d)2. |
| §10-103.1(c)3E | This change states that an ATTCP application must describe the procedures for decertified ATTs or ATEs seeking to regain their certification status, including recertification eligibility requirements (if any). |
| §10-103.1(c)3G | These changes state that an ATTCP application must describe the procedures for recording, tracking, and communicating certification statuses of ATTs and ATEs. The changes also state that an ATTCP's record of ATT and ATE certification statuses must be public and include any decertified ATTs or ATEs. |
| §10-103.1(d)1 | These changes expand the annual report requirements to include a summary of the quality assurance and accountability activities conducted (including desk and onsite audits), a summary of the number and type of acceptance tests performed in each local jurisdiction, and a signed certification that the ATTCP continues to meet the §10-103.1 requirements. |
| §10-103.1(d)2 | These changes clarify that the update reports should include all proposed application amendments to address changes to the Energy Standards and a signed certification that the ATTCP continues to meet the §10-103.1 requirements. |
| §10-103.1(f)1A | These changes expand the required materials for application amendments making nonsubstantive changes to include a copy of the affected application sections with the changes in underline/strikeout format and a clean copy with the changes incorporated. |
| §10-103(a) | These changes specify that healthcare facilities must comply with the applicable provisions in Chapter 7 instead of the compliance documentation requirements in §10-103(a). |
| §100.0 | The addition of Group I, medical facilities to the T24 requirements (Only Group I-2). |
| §100.1(b), definition of "DEMAND RESPONSE SIGNAL" | This change clarifies that any signal designed to convey the specified demand response information meets the definition. |

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| §100.1(b), definition of "DEMAND RESPONSIVE CONTROL" | This change clarifies and simplifies the definition. |
| §100.1(b), definition of "ENERGY MANAGEMENT CONTROL SYSTEM (EMCS)" | This change clarifies that the system must be designed for, and actually be capable of performing, the specified operations. It also removes an unnecessary lists of examples in the definition and constraints that are no longer consistent with the use of this term. |
| §100.1(b), definition of "CLERESTORY" | This addition defines a key term related to the new clerestory power adjustment factor measure in §140.6. |
| §100.1(b), definition of "HORIZONTAL SLATS" | This addition defines a key term in the new horizontal slats power adjustment factor measure in §140.6. |
| §100.1(b), definition of "LIGHT SHELF" | This addition defines a key term in the new horizontal slats power adjustment factor measure in §140.6. |
| §100.1(b), definition of "Compact Fluorescent Lamp" | This change aligns the definition in Part 6 with the definition in the Title 20 Appliance Efficiency Regulations. |
| §100.1(b), definition of "Lamp" | This change clarifies that a lamp is not a luminaire or an LED retrofit kit. |
| §100.1(b), definition of "LED Retrofit Kit" | This addition defines "LED retrofit kit" in order to provide clarification for a class of products that exist between removable lamps and fully integrated luminaires. |
| §100.1(b), definition of "Non-integrated LED lamp" | This change updates the verbiage consistent with a general update to the latest version on ANSI/IES RP-16. |
| §100.1(b), definition of "Integrated LED lamp" | This change updates the verbiage consistent with a general update to the latest version on ANSI/IES RP-16. |
| §100.1(b), definition of "Narrow Band Spectrum" | This addition defines "narrow band spectrum" to recognize a specific class of lighting products with distinct features. |
| §100.1(b), definition of "Ornamental Lighting" | This change updates a wattage value consistent with other section revisions changing wattage values to be consistent with typical LED performance. |
| §100.1(b), definition of "Solid State Lighting (SSL)" | This change clarifies that solid state lighting includes both LEDs and OLEDs. |
| §100.1(b), definition of "Driver" | This change specifies the functions of semiconductors that define it as a driver for solid state lighting and separate it from other functions that semiconductors may perform. |

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| §100.1(b), definition of "Astronomical Time- Switch Control" | This change eliminates an unnecessary nesting of lighting control definitions. |
| §100.1(b), definition of "Automatic Scheduling Control" | This change clarifies phrasing and recognizes partial-on and partial-off behavior. |
| §100.1(b), definition of "Dimmer" | This change clarifies phrasing and accounts for digital control strategies. |
| §100.1(b), definitions of "Motion Sensor," "Occupant Sensor," "Partial-ON Occupant or Motion Sensor," and "Partial-OFF Occupant or Motion Sensor" | These changes improve phrasing and harmonize definitions for occupant and motion sensors with those for partial-on and partial-off behavior. |
| §100.1(b), definition of "OpenADR 2.0a" | This addition defines a key term related to the new demand responsive measures in §110.12. |
| §100.1(b), definition of "OpenADR 2.0b" | This addition defines a key term related to the new demand responsive measures in §110.12. |
| §100.1(b), definition of "VIRTUAL END NODE (VEN)" | This change adds a definition for a term used in the OpenADR 2.0a and 2.0b documents that are incorporated by reference into requirements for demand responsive equipment. |
| §110.9 | Code section name change, covers devices and systems in lieu of Title 20. Added devices. |
| §110.9(a) | These changes remove the terms "Self-Contained Lighting Controls" and "Lighting Control Systems." |
| §110.12 | New code section: These changes consolidate all demand responsive controls and demand management requirements throughout Part 6 into a single new section. The changes also exclude healthcare facilities from the scope of Part 6's demand response and demand management requirements. |
| §110.12(a)1 | These changes require that all demand responsive controls have the ability to either contain or communicate with an OpenADR 2.0a or 2.0b VEN. |
| §110.12(c) | These changes clarify that the requirement for lowering lighting by 15% is a minimum necessary to demonstrate correct installation and ability to function, and does not otherwise restrict the types of demand responsive functions or behaviors that the device can provide. The changes also reorganize existing verbiage as an exception to clarify that spaces with a lighting power density of 0.5 watts per square foot or less do not count toward the 10,000 square foot threshold and do not need to install demand responsive controls. |
| §130.1(a) | These changes improve the language readability and clarity, add healthcare facilities to an existing exception relating to the location of controls, and add a separate exception related to restrooms and bathing rooms in healthcare facilities. |
| §130.1(a) | The Manual Area control must be in the same enclosed area unless an exception applies. |

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| EXCEPTION 1 to §130.1(a)2 | This change includes psychiatric and secure areas in healthcare facilities where the controls may be located outside of the controlled area in the exception to §130.1(a)2. |
| EXCEPTION 2 to §130.1(a)2 | This addition exempts single-occupant restrooms and bathing rooms in healthcare facilities from control location requirements. |
| §130.1(b) | These changes improve the language readability and clarity, add a new exception for restrooms, and add a new exception for healthcare facilities. The provisions in 2 exceptions have been moved to TABLE 130.1-A, and the provisions relating to the interactions of multilevel controls with other controls have been moved to §130.1(f). |
| §130.1(b) | Restrooms and healthcare are excluded from multilevel lighting requirements. |
| §130.1(b) | Classroom minimum control steps are relocated to Table 130.1-A. |
| §130.1(b) | Added minimum control step regardless of luminaire type for library stack aisles, aisle ways and open areas in warehouses, parking garages, parking areas, loading and unloading areas, stairwells, and corridors found in 130.1-A Table. |
| §130.1(c) | Restrooms shall have occupancy sensors. |
| EXCEPTION to §130.1(c) | This addition exempts healthcare facilities from the shut-off controls requirements in §130.1(c). |
| §130.1(c)1E | This addition expressly permits automatic time-switch controls to operate in manual-on mode. |
| §130.1(c)2 | This change incorporates the 2 exceptions previously listed under this section directly into the section. The change also no longer permits countdown timer switches in single-stall bathrooms less than 70 square feet to comply with automatic shut-off control requirements in §130.1(c)1. |
| §130.1(c)3 | This change clarifies that an override to an automatic time-switch control must be manual. |
| §130.1(c)5 | This change adds restrooms to the areas required to have occupancy sensing controls. |
| §130.1(c)8 | This change updates the timeout limit for hotel/motel guestrooms lighting power to be switched off after 20 minutes of vacancy. |
| EXCEPTION 2 to §130.(c) | This addition harmonizes the automatic shut-off requirements of §130.1© with the minimum egress illumination requirements of the California Building Code §1008. |

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| §130.1(d) | These changes amend the requirement that all photosensors be located in non-readily accessible locations and add exceptions to address circumstances where daylighting would be ineffectual or problematic. The definitions for skylit, primary sidelit, and secondary sidelit daylight zones were moved to §100.1. |
| §130.1(d) | New exceptions for daylight zones; areas under skylights that existing adjacent structures or natural objects block direct sunlight. Areas adjacent to vertical glazing below an overhang that covers the entire width of the vertical glazing. |
| §130.1(d) | Retail merchandise sales and wholesale showroom areas now have an exception for sidelit zones. |
| §130.1(d)4 (new) | This change specifies that at least 1 photosensor shall be located so that they are not readily accessible to authorized personnel. |
| EXCEPTION 1 and EXCEPTION 2 to §130.1(d) (new) | These additions address circumstances where sunlight is blocked by an outside object such a daylight area will receive a significantly reduced amount of daylight. |
| EXCEPTION 5 to §130.1(d) (previously EXCEPTION 1 to §130.1(d)3) | This change replaces the word "transition" with "adaption" to better align with industry terms. |
| EXCEPTION 6 to §130.1(d) (new) | This addition addresses the need for uniform lighting in merchandise sales and wholesale showroom areas. |
| §130.1(e) | The demand response requirements previously in §130.1(e) were moved to §110.12 to consolidate all demand response requirements in a single section. |
| §130.1(f) | New code section: Controls Interactions. Details how controls interact with each other. |
| §130.1(f) | These changes add a new section to consolidate and clarify the expected interactions between the controls required to be installed by §130.1. The majority of the specifications are either relocated from or previously implied by the requirements of preceding sections. |
| §130.2(a) | This change removes a requirement applicable to incandescent luminaires that is redundant with the requirements applicable to all lighting, irrespective of technology, stated in §130.2(c). |
| EXCEPTION 7 to §130.2(b) | This addition directly restates the existing language in §130.0(b)2 to clarify that outdoor lighting attached to a high-rise residential or hotel/motel building falls under the residential lighting requirement. |
| §130.2(c) | ≤ 24' motion sensor requirement exception change to 40 watts for all luminaires. Motion sensor reduction change to 50-90% and separately capable of turning luminaire off. |
| §130.2(c) | Automatic scheduling controls (Time clock) shall allow scheduling of a minimum of two nighttime periods with independent lighting levels |

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| §130.2(c) | Time out for motion sensors is 15 minutes. |
| §130.2(c) | These changes reduce stated wattage thresholds to account for low-wattage LED lighting, and remove specific reference to outdoor sales frontage, building façade, ornamental hardscape, and outdoor lighting. The term "automatic scheduling control" is used in place of "part-night control" and its required behavior is specified in the section instead of a separate definition. |
| §130.2(c)2 (new) | These changes state that the automatic scheduling controls may be installed in combination with other lighting controls, that the ability to turn the light down and turn it off are separate and distinct requirements, and that an override function is optional. |
| §130.2(c)3 (new) | These changes expressly state that the motion sensing controls may be installed in combination with other lighting controls. |
| EXCEPTION 1 to §130.2(c)3 (new) | This change directly states that luminaires with a maximum rated wattage of 40 watts each are not required to have motion sensing controls. |
| EXCEPTION 2 to §130.2(c)3 | This change directly states that applications listed as exceptions to §140.7(a) are not required to have motion sensing controls. |
| EXCEPTION 3 to §130.2(c)3 | This addition creates an exception consistent with EXCEPTION 3 to §130.2(b) and similar exception for demand responsive controls. |
| §130.4 | No Acceptance Testing. Healthcare Facilities must comply with OSHPD. |
| §130.4 | This change directly states that healthcare facilities must comply with the applicable acceptance and installation documentation requirements of OSHPD instead of the applicable requirements in §130.4(a) through §130.4(c). |
| §140.6 | 2019 LPDs drastically reduced by 40%. |
| §140.6 | Three new Lighting Power Adjustments; Clearstory, Horizontal Slats, Light Shelves (No AT). |
| §140.6(a)2L ¹ | This addition states that to qualify for the clerestory fenestration, horizontal slats, or light shelves PAF in TABLE 140.6-A, the daylighting design must or secondary sidelit daylight zone where continuous dimming daylighting controls meeting the §130.1(d) requirements are installed. |
| EXCEPTION to §141.0 | This addition exempts alterations to licensed healthcare facilities from compliance with §141.0 requirements. |
| §141.0(b)2I, J, K | These changes merge the content previously in §141.0(b)2I-K into §141.0(b)2I and eliminate distinctions between different types of alterations to a building's indoor lighting system. The changes also standardize requirements for lighting system alterations, limit an existing exception for spaces with no more than 2 luminaires, and impose limits on when calculations of area square footage can be avoided in favor of calculating existing installed lighting wattage. |

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| §141.0 | Three new simplified methods for determining Alteration requirements. |
| TABLE 141.0-F (previously TABLE 141.0-E) | This reorganizes the control requirements for indoor lighting system alterations consistent with the revisions in §141.0(b)2I. |
| NA7.6.2.5(a)3 | This addition specifies a functional testing procedure for an automatic time switch control with a time override located in the controlled area. |
| NA7.6.2.5(a)4 | This addition specifies a functional testing procedure for an automatic time switch control with an automatic holiday shut-OFF feature. |
| NA7.6.2.5(a)5 | This addition specifies a functional testing procedure for an automatic time switch control with manual-ON mode configured. |
| NA7.8.5(b) | This change expands the existing construction inspection procedure for verifying the programmed ON and OFF schedule for an astronomical time switch control. A default schedule for acceptance testing purposes is specified in the case that construction documents do not specify a schedule. |
| NA7.8.6(c) | This change expands the functional testing procedure for an astronomical time switch control during nighttime simulation. |
| NA7.8.7 through NA7.8.10 | These changes remove the part-night outdoor lighting controls sections and renumber the automatic scheduling controls sections accordingly. |
| NA7.8.7 (new) | These change expand the existing construction inspection procedure for verifying the programmed ON and OFF schedule for an automatic scheduling control. A default schedule for acceptance testing purposes is specified in the case that construction documents do not specify a schedule. Procedures previously included in the part-night outdoor lighting control section have been retained in the automatic scheduling control section to be applicable if a motion sensor is used in conjunction with an automatic scheduling control. |
| NA7.8.8 (new) | These changes expand the functional testing procedure for an automatic scheduling control during nighttime simulation. The changes also add procedures to be applicable if a motion sensor is used in conjunction with an automatic scheduling control. |

¹ The three new daylighting design power adjustment factors (PAFs) in TABLE 140.6-A are not theresponsibility of lighting controls ATTs and are therefore not required to be covered in the training curricula. However, it would be good for the ATTs to be generally aware of the PAFs in case they encounter projects claiming those PAFs.

2019 Changes to Lighting Controls Acceptance Documents

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| New NRCCs | They will better support the compliance requirements and the Sequence of Operation. |
| Changes to reflect the 2019 Energy Standards and Reference Appendices: | <p>Added steps in the NRCA-LTI-02-A form to match the additional steps added in NA7.6.2.5 for the automatic time switch functional testing.</p> <p>Updated the construction inspection in the NRCA-LTI-04-A form to reflect the expanded requirements in §110.12.</p> <p>Updated the automatic scheduling controls section in the NRCA-LTO-02-A form to reflect the changes in NA7.8 and removed the part-night outdoor lighting controls section.</p> <p>Combined the different sections based on power estimation method in the Changes to better align with the NA7 procedures:</p> <p>Removed extra sections in the NRCA-LTI-02-A form not specified by §130.4(a) or NA7.6.2.</p> <p>Removed items in the construction inspection and functional testing sections of the NRCA-LTI-03-A form.</p> <p>Removed the lines asking the ATTs to check for devices to be certified to the Energy Commission.</p> <p>Sampling is only an option based on what is specified in NA7.</p> <p>Changed the NRCA-LTI-02-A form title to "Shut-Off Lighting Control Acceptance Document."</p> |
| Formatting changes: | <p>Added automated compliance results (COMPLIES or DOES NOT COMPLY).</p> <p>Added standardized intent blocks.</p> <p>Added checkboxes to indicate applicable sections.</p> <p>Standardized radio options (Complies or Does Not Comply) at the end of the construction inspection and functional testing section blocks.</p> <p>Added hyperlinked section references throughout document.</p> |