

DOCKETED

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Organization:	Michael Scalzo
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Additional Comments to 02/02/18 NR Lighting controls; 130.1(d), NA7.5.17

Additional comments, Docket No. 17-BTSD-02 Non-Residential Lighting Measures for 2019 Standards NLCAA comments-2

Additional submitted attachment is included below.



California Energy Commission
Docket No. 17-BTSD-01
1516 Ninth Street
Sacramento, CA 95814-5512

RE: Docket No. 17-BTSD-01 – Non-Residential Lighting Measures for 2019 Standards-2

Thank you to the commission staff for your efforts and the opportunity to provide comments on this docket. These comments are based on feedback and experiences in the field from NLCAA's ATT's & ATE's and the Shareholder meeting on February 6th.

1. §130.1(d)3(A) - EXCEPTION 2 to §130.1(d)

EXCEPTION 2 to Section 130.1(d): Areas adjacent to vertical glazing below an overhang, where there is no vertical glazing above the overhang and where the ratio of the overhang projection to the overhang rise is greater than 1.5 for South, East and West orientations, or where the ratio of the overhang projection to the overhang rise is greater than 1 for North orientations.

(Submitted 02/02/2018)

How will this be documented and verified?

- We feel that this exception will resolve many issues when it comes to the testing of daylit zones that have this condition. The design of daylit zones seem simple enough during the
- design phase utilizing the code requirements. The issue will be during the testing procedures when verifying the overhang. It may not match the designed overhang and will need to be
- verified and documented by the ATT during the testing procedures. It will be critical how the code clarifies the requirements of this condition.
- I recommend providing requirements for the max elevation that the overhang can be from the top of the fenestration. If the overhang is on the tenth floor and the fenestration ends at the first floor, the overhang would not have any impact on the daylit zone.

Other conditions that should be considered for an exception:

- North facing fenestration that cannot receive enough daylight (reference illuminance) should pass the functional testing which is typically all North facing fenestrations. This could be added to NA7.
- Fenestration that is completely blocked; i.e. buildings directly up against other buildings, very close nearby buildings, stained glass windows.
- It needs to be clearly documented to the installers and ATT's, otherwise there may be confusion during the installation and functional testing.

Additional Comments

- The definitions in 2019 will now include Skylit, Primary and Secondary daylit definitions, overhang daylit zones should be added in to §100.0
- The Standards should also cover how the width of the overhang will be addressed.
- We are concerned that the width of an overhang is not addressed and that the angle of the natural light will impact the results of the functional testing.
 - If the incoming natural light is at an angle (i.e. 45°) from the fenestration and overhang, this will impact the area adjacent to the overhang area in the daylit zone. Under/Over



dimming in daylight areas adjacent to the overhang area will be impacted due to the angle of the incoming natural light.

- If a window (fenestration) has a width of 75 feet and the overhang has a width of 10 feet at the center of the fenestration, and meets this exception, will the entire fenestration be excluded from the daylight controls requirement?
 - This is a concern, in scenarios where you have a building that has fenestration around the entire building (one primary zone), would the exception apply to the entire daylight zone extending around the building?
 - Another good reason to have cardinal direction requirements for daylight zones.

2. NA7.5.17 Occupied Standby

NA7.5.17.1 Construction Inspection

Prior to Functional Testing, verify and document the following:

- (a) Verify that the occupancy sensor is placed so that it can detect occupants in the space without obstruction.
- (b) Confirm that the mechanical system is controlled by an independent signal if the occupancy sensor also controls the lighting.
- (c) Confirm that the space is designated as **eligible** to be in occupied standby mode as specified in Section §120.2(e)3.

*Used for this comment: Lighting ATT (LATT), Mechanical ATT (MATT), Occupancy sensor (O/S)

An O/S that is functionally tested by two different entities (LATT/MATT/Mech Contractor) could create conflicting results during functional testing.

- LATT's are experienced, trained and certified through an ATTCP in advanced lighting controls, specifically trained in O/S functionality and testing.
- During functional testing an LATT will verify that the O/S is placed, programmed and functions to the requirements of NA7.6.2.3.
- NA7.5.17.1 (a) and (b) should remain the responsibility of the LATT if the O/S is a **lighting control device**.
 - (a) If an adjustment is made to the O/S to satisfy the MATT inspection after an LATT has functionally tested the O/S then it could alter the LATT's testing results. This could lead to:
 - O/S not operating properly due to improper location, or replacement of the device.
 - O/S not programmed properly due to altering the programming while moving the O/S, especially true if the O/S is disconnected from the lighting control system and re-connected.
 - An ATTCP complaint could be filed against the LATT if the O/S is altered after the LATT testing (altered due to MATT testing) and doesn't function correctly.



- If the O/S is altered due to MATT testing after the LATT testing it would require re-testing by an LATT; this leads to cost impacts of re-testing.
- (b) Confirm that the mechanical system is controlled by an independent signal if the occupancy sensor also controls the lighting.
 - This form of verification is already required by an LATT as part of a lighting controls system. If controlled outlets are also controlled by the O/S then the LATT has to verify the lighting control system functions correctly and is §110.9 compliant.
- Will the sampling of NA7.6.2.3 apply to NA7.5.17?
- There are no requirements to meet 2016 Title 20 (2019 §110-9) in NA7.5.17.
- Installation requirements are verified by an LATT, NA7.5.17 lacks these requirements. For example, it is not uncommon to find a low bay sensor used for a high bay installation which could pass the functional testing but may not work correctly all the time.

To this date, many of the O/S testing projects still do not initially pass the functional testing, which requires the support of an LATT that is experienced in advanced lighting controls to resolve the issue. An LATT will at times need to verify the device is §110-9 or Title 20 compliant, specified correctly (i.e. high/low bay), installed correctly (per the mfg. instructions), functionally working (i.e. wired correctly) and passes the functional testing. There are many manufactures of controls and LATT's have had to become well versed on many mfg. brand's installation requirements which an MATT may not be. I understand that NA7.5.17 is only a construction inspection and the installer is responsible for the adjustments, but real-world scenarios are that the installer will make any adjustments needed to pass the ATT testing.

Suggested Language:

NA7.5.17.1 Construction Inspection

Prior to Functional Testing, verify and document the following:

- (a) ~~Verify that the occupancy sensor is placed so that it can detect occupants in the space without obstruction.~~ Review and verify that the area has passed NRCA-LTI-02-A testing, if applicable.
- (b) Confirm that the mechanical system is controlled by ~~an independent signal~~ if the occupancy sensor ~~if it~~ also controls the lighting.
- (c) Confirm that the space is designated as **eligible** to be in occupied standby mode as specified in Section §120.2(e)3.

Thank you for any and all considerations,

Michael Scalzo

Executive Director

National Lighting Contractors Association of America; Lighting ATTCP