

DOCKETED

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2019 Nonresidential Lighting Alterations

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Pre-Rulemaking Workshop
Imbrecht Hearing Room
June 22, 2017



Acknowledgments

Two stakeholders submitted proposals, and we appreciate their participations

- Statewide Utility Codes and Standards Team (CASE Team)
- California Energy Alliance (CEA)



2016 Lighting Alteration Options

Sections 141.0(b)2I and J provide three options:

- Option 1: LPD is $> 85\%$ of allowance, full controls required (same as newly constructed).
- Option 2: LPD is $\leq 85\%$ of allowance, area and shutoff controls required, no DR, no daylighting, limited multi-level (bi-level only).
- Option 3: existing lighting power is reduced by 35/50%, area and shutoff controls required, no DR, no daylighting, no multi-level.



CEA Proposal for 141.0(b)2I, J

- Merges 141.0(b)2I and J
- Updates the Exceptions to Lighting Alteration requirements:
 - Limits Exception 2 to apply to spaces with one luminaire instead of two or fewer
 - Reduces the annual allowance for luminaire changes from 70 per floor to 50, and moves the allowance into an Exception
 - Moves language regarding lamp and ballast changeouts into an Exception



CEA Proposal (Cont.)

- Reduces LPD limit for Option 2 from 85% to 80% of allowance
- Narrows scope of Option 3:
 - Adds a size limit of $\leq 5,000$ sq ft.
 - Adds “one-for-one” language that prevents adding, subtracting, or relocating luminaires
- Sets a uniform lighting power reduction of 40% for all occupancies for Option 3



CEA Example Language

- I. **Altered Lighting Systems. ~~Entire Luminaire Alterations.~~ Entire Indoor Luminaire alterations that affect 10 percent or more of the luminaires in an enclosed space shall meet the following requirements:**
- i. For each enclosed space, alterations that consist of ~~either~~ (a) removing and reinstalling a total of 10 percent or more of the existing luminaires; or (b) modifying existing luminaires; or ~~(c)~~ replacing or adding entire luminaires; or ~~(e d)~~ adding, removing, or replacing walls or ceilings along with any redesign of the lighting system, shall meet
 - a. Result in an enclosed space with the a lighting power allowance in that complies with Section 140.6;
 - b. ~~and Meet the altered luminaires shall meet~~ the applicable requirements in Table 141.0-E for altered luminaires; ~~or~~
 - c. Not disable or prevent the use of other lighting controls installed in the enclosed space;

OR



CEA Example Language

- ii. For one-for-one luminaire replacements or one-for-one luminaire modifications completed in buildings or tenant spaces 5,000 square feet or smaller in size, for alterations where existing luminaires are replaced with new luminaires, and that do not include adding, removing, or replacing walls or ceilings along with redesign of the lighting system, the replacement new/modified luminaires in each office, retail, and hotel occupancy shall
- a. have at least 50 40 percent, and in all other occupancies at least 35 percent, lower rated power at full light output as compared to the existing luminaires being replaced;
 - b. and shall meet the applicable requirements in Table 141.0-E; of Sections 130.1(a)1, 2, and 3, 130.1(e)1A through C, 130.1(e)2, 130.1(e)3, 130.1(e)4, 130.1(e)5, 130.1(e)6A and for parking garages 130.1(e)7B.
 - c. Not prevent or disable the use of other lighting controls installed in the enclosed space;



CASE Proposal for 141.0(b)2I-K

- Shrinks Sections 141.0(b)2I and J by having both refer to shared tables
- Shrinks Section 141.0(b)2K by referring to separate, similar tables
- Reduces existing “two or fewer luminaires” Exceptions to one luminaire, and incorporates directly into language in the proposed new Tables



CASE Proposal (Cont.)

- Specifies that Option 3 includes all luminaires within each enclosed space
- For Option 3, requires partial OFF occupancy sensing controls for stairwells
- Sets a uniform lighting power reduction of 50% for all building types for Option 3



CASE Example Language

TABLE 141.0-D CRITERIA FOR SELECTING OPTION 1, 2 or 3 TO COMPLY WITH REQUIREMENTS FOR ENTIRE LUMINAIRE ALTERATION AND LUMINAIRE COMPONENT MODIFICATION

<p align="center"><u>Entire Luminaire Alterations</u> (Section 141.0(b)2I)</p>	<p align="center"><u>Luminaire Component Modifications</u> (Section 141.0(b)2J)</p>
<p><u>For each enclosed space:</u></p> <p><u>Use Option 1, 2, or 3 in Table 141.0-E to comply IF:</u></p> <p>A. <u>Replacing 2 or more luminaires as entire luminaires (also referred to as one-for-one luminaire replacement) without adding, removing, or replacing walls or ceilings.</u></p> <p><u>For each enclosed space:</u></p> <p><u>Use Option 1 or 2 in Table 141.0-E to comply IF:</u></p> <p>B. <u>Adding entire luminaire(s); OR</u> C. <u>Replacing 2 or more luminaires as entire luminaires while adding, removing, or replacing walls or ceilings; OR</u> D. <u>Removing ≥ 10 percent of existing luminaires and reinstalling the same luminaires while adding, removing, or replacing walls or ceilings.</u></p>	<p><u>Use Option 1, 2, or 3 in Table 141.0-E to comply IF:</u></p> <ul style="list-style-type: none"> • <u>Replacing ballasts or drivers and the associated lamps, permanently changing the light source, or the optical system; AND</u> • <u>≥ 70 existing luminaires are modified either on any single floor of a building or, where multiple tenants inhabit the same floor, in any single tenant space, in any single year.</u> <p><u>NOTE: Lamp replacements alone and ballast replacements alone shall not be considered a modification of the luminaire provided that the replacement lamps or ballasts are installed and powered without modifying the luminaire.</u></p>



Proposal Similarities

- Both seek to clarify and streamline the lighting alteration Sections
- Both propose reducing the “two luminaire” exceptions to one luminaire
- Both address a problem of “partial retrofits” under Option 3, though in different ways
- Both proposed updated, clearer tables



Proposal Differences

	CEA	CASE Team
Luminaire threshold	10% or 50 (20 less)	10% or 70 (no change)
LPD Limit for Option 2	80% (5% lower)	85% (no change)
Solution for Option 3 partial retrofit projects	Option 3 applies to one-for-one alterations only	Option 3 sums the power of all luminaires in the entire space
LPD Reduction for Option 3	Uniform 40% Reduction	Uniform 50% Reduction
Project Size Limit for Option 3	≤5,000 sqft	No size limit (no change)
Additional Control for Option 3	No additional controls	Partial OFF occupant sensing in stairwells ¹²



Questions for Stakeholders

1. Should we use the CEA “one-for-one” language or the CASE “all lighting in altered spaces” language?
2. Should we impose a 5,000 sq ft size limit on Option 3?
3. Should we lower the LPD threshold for Option 2 from 85% to 80%?
4. Should we look at lighting wiring alterations (Section 141.0(b)2K)?



Contact Information

- Submit written comments by July 14, 2017
 - E-file:
<https://efiling.energy.ca.gov/EComment/EComment.aspx> - Docket # 17-BSTD-01
 - E-mail: docket@energy.ca.gov – include the docket number in the subject line
- Proposals and analysis tool available at:
 - <http://energy.ca.gov/title24/2019standards/prerulemaking/documents/#06222017>
- I can be contacted at Thao.Chau@energy.ca.gov



Questions?