DOCKETED	
Docket Number:	15-MISC-02
Project Title:	2013 Building Energy Efficiency Standards
TN #:	204893-3
<b>Document Title:</b>	Pages from 2016 T24 responding to Item 9
Description:	N/A
Filer:	Patty Paul
Organization:	California Energy Commission
Submitter Role:	Commission Staff
<b>Submission Date:</b>	6/3/2015 3:21:13 PM
Docketed Date:	6/3/2015

EXCEPTION 2 to Section 141.0(b)2J. One for one replacement of luminaire components where the modified luminaires have at least 15 percent the same or lower power consumption compared to the original luminaires.

EXCEPTION 3 to Section 141.0(b)2J. Modifications that would directly cause the disturbance of asbestos, unless the modifications are made in conjunction with asbestos abatement.

- K. For each enclosed space, the following wiring alterations serving permanently installed lighting shall not cause the lighting power allowance in Section 140.6 to be exceeded and shall meet the applicable requirements in Section 130.1(a) and (e):
  - i. Adding a circuit feeding luminaires:
  - ii. Modifying or relocating wiring to provide power to new or relocated luminaires:
  - iii. Replacing, modifying, or relocating wiring between a switch or panelboard and luminaires; or
  - <u>iiiv. Replacing lighting control panels, panelboards, or branch circuit wiring.</u>

EXCEPTION 1 to Section 141.0(b)2J. Modifications strictly limited to the addition of lighting controls.

EXCEPTION 2 to Section 141.0(b)2KJ. Alterations that would directly cause the disturbance of asbestos, unless the alterations are made in conjunction with asbestos abatement.

- JKL. Alterations to existing outdoor lighting systems shall meet the following requirements:
  - Alterations that increase the connected lighting load in a lighting application listed in TABLE 140.7-A or 140.7-B shall meet the applicable requirements of Sections 130.0, 130.2, 130.4, and 140.7: and
  - ii. In alterations that replace 10 percent or more of the luminaires in a lighting application listed in TABLE 140.7-A or 140.7-B, the altered luminaires shall meet the applicable requirements of Sections 130.0, 130.2 and 130.4; and
  - iii. In alterations that replace more than 50 percent of the luminaires in a lighting application listed in TABLE 140.7-A or 140.7-B, the lighting in that application shall meet the applicable requirements of Sections 130.0, 130.2, 130.4 and 140.7.
- I. Entire Luminaire Alterations. Entire luminaire alterations 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) replacing or adding entire luminaires; or (c) adding, removing, or replacing walls or ceilings along with any redesign of the lighting system, shall meet the lighting power allowance in Section 140.6, and the altered luminaires shall meet the applicable requirements in TABLE 141.0-E; or
  - ii. 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, all the replacement luminaires shall collectively have at least 30 percent lower rated power at full light output as compared to the existing luminaires being replaced; and in spaces other than corridors and stairwells, or spaces operating 24 hours per day, 365 days per year, shall be equipped with automatic shut-off controls complying with Sections 130.1(c)1A through C, 130.1(c)2, 130.1(c)3, 130.1(c)4, 130.1(c)5, 130.1(c)6A, and for parking garages 130.1(c)7B.

**EXCEPTION 1 to Section 141.0(b)2I.** Alteration of portable luminaires, luminaires affixed to moveable partitions, or lighting excluded as specified in Section 140.6(a)3.

**EXCEPTION 2 to Section 141.0(b)2I.** In an enclosed space where two or fewer luminaires are replaced or reinstalled.

EXCEPTION 3 to Section 141.0(b)2I. Alterations that would directly cause the disturbance of asbestos, unless the alterations are made in conjunction with asbestos abatement.

- **EXCEPTION 4 to Section 141.0(b)2I.** Acceptance testing requirements of Section 130.4 are not required for alterations where lighting controls are added to control 20 or fewer luminaires.
- J. Luminaire Component Modifications. Luminaire component modifications in place that include replacing the ballasts or drivers and the associated lamps in the luminaire, or permanently changing the light source of the luminaire, or changing the optical system of the luminaire, where 70 or more existing luminaires are modified on any single floor of a building, shall meet the applicable requirements of Sections 130.1(a)1, 2, and 3, 130.1(c)1A through C, 130.1(c)2, 130.1(c)3, 130.1(c)4, 130.1(c)5, 130.1(c)6A, and for parking garages 130.1(c)7B, shall not prevent or disable the operation of any multi-level, shut-off, or daylighting controls, and shall either:
  - i. Meet the lighting power allowance in Section 140.6; or
  - <u>ii.</u> Collectively have at least 30 percent lower rated power at full light output as compared to the original luminaires prior to being modified.

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.

EXCEPTION 1 to Section 141.0(b)2J. Modification of portable luminaires, luminaires affixed to moveable partitions, or lighting excluded by Section 140.6(a)3.

**EXCEPTION 2 to Section 141.0(b)2J.** In an enclosed space where two or fewer luminaires are modified.

**EXCEPTION 3 to Section 141.0(b)2J.** Modifications that would directly cause the disturbance of asbestos, unless the modifications are made in conjunction with asbestos abatement.

EXCEPTION 4 to Section 141.0(b)2J. Acceptance testing requirements of Section 130.4 are not required for modifications where lighting controls are added to control 20 or fewer luminaires.

- K. Lighting Wiring Alterations. For each enclosed space, wiring alterations that add a circuit feeding luminaires; that replace, modify, or relocate wiring between a switch or panelboard and luminaires; or that replace lighting control panels, panelboards, or branch circuit wiring; shall:
  - i. meet the lighting power allowance in Section 140.6;
  - ii. meet the requirements in Sections 130.1(a)1, 2, and 3, 130.1(c)1A through C, 130.1(c)3, and 130.1(c)4;
  - <u>iii.</u> for each enclosed space, be wired to create a minimum of one step between 30-70 percent of lighting power; and
  - iv. for each enclosed space where wiring alterations include 25 or more luminaires that are located within the primary sidelit daylit zone and the skylit daylit zone, meet the requirements of 130.1(d).

NOTE: As specified in Section 141.0(b)2I, alterations that include adding, removing, or replacing walls or ceilings resulting in redesign of the lighting system shall meet the requirements of Table 141.0-E.

**EXCEPTION 1 to Section 141.0(b)2K.** Alterations strictly limited to addition of lighting controls.

**EXCEPTION 2 to Section 141.0(b)2K.** In an enclosed space where wiring alterations involve two or fewer luminaires.

**EXCEPTION 3 to Section 141.0(b)2K.** Alterations that would directly cause the disturbance of asbestos, unless the alterations are made in conjunction with asbestos abatement.

EXCEPTION 4 to Section 141.0(b)2K. Acceptance testing requirements of Section 130.4 are not required for wiring alterations where lighting controls are added to control 20 or fewer luminaires.

L. Alterations to existing outdoor lighting systems in a lighting application listed in TABLE 140.7-A or 140.7-B shall meet the applicable requirements of Sections 130.0, 130.2(a), 130.2(b), and 130.4, and:

- i. In alterations that increase the connected lighting load, the added or altered luminaires shall meet the applicable requirements of Section 130.2(c) and the requirements of Section 140.7 for general hardscape lighting or for the specific lighting applications containing the alterations; and
- ii. In alterations that do not increase the connected lighting load, where the greater of 5 luminaires or 10 percent of the existing luminaires are replaced in a general hardscape or a specific lighting application, the alterations shall meet the following requirements:
  - a. In parking lots and outdoor sales lots where the bottom of the luminaire is mounted 24 feet or less above the ground, the replacement luminaires shall comply with Section 130.2(c)1 AND Section 130.2(c)3;
  - For all other lighting applications and where the bottom of the luminaire is mounted greater than 24 feet above the ground, the replacement luminaires shall comply with Section 130.2(c)1 AND EITHER comply with Section 130.2(c)2 or be controlled by lighting control systems, including motion sensors, that automatically reduces lighting power by at least 40 percent in response to the area being vacated of occupants; and
- iii. In alterations that do not increase the connected lighting load, where the greater of 5 luminaires or 50 percent of the existing luminaires are replaced in general hardscape or a specific application, the replacement luminaires shall meet the requirements of subsection ii above and the requirements of Section 140.7 for general hardscape lighting or specific lighting applications containing the alterations.

EXCEPTION to Section 141.0(b)2Liii. Alterations where the replacement luminaires have at least 40 percent lower power consumption compared to the original luminaires are not required to comply with the lighting power allowances of Section 140.7.

**EXCEPTION to Section 141.0(b)2L.** Acceptance testing requirements of Section 130.4 are not required for alterations where controls are added to 20 or fewer luminaires.

- <u>KM</u>. Alterations to existing internally and externally illuminated signs that increase the connected lighting load, replace and rewire more than 50 percent of the ballasts, or relocate the sign to a different location on the same site or on a different site shall meet the requirements of Section 140.8
- L. <u>EXCEPTION to Section 141.0(b)2ML.</u> Replacement of parts of an existing sign, including replacing lamps, the sign face or ballasts, that do not require rewiring or that are done at a time other than when the sign is relocated, is not an alteration subject to the requirements of Section 141.0(b)2KLM.
- <u>MN</u>. Service water-heating systems shall meet the requirements of Section 140.5, except for the solar water heating requirements.
- NO. A building shell for which interior walls or ceilings are installed for the first time shall meet the requirements of Section 140.3(c).
- P. Electrical Power Distribution Systems. Alterations to electrical power distribution systems shall meet the applicable requirements of Section 130.5 as follows:
  - i. Service Electrical Metering.
    New or replacement electrical service equipment shall meet the requirements of Section 130.5(a) applicable to the electrical power distribution system altered.
  - <u>ii.</u> Separation Of Electrical Circuits For Electrical Energy Monitoring.
    <u>For entirely new or complete replacement of electrical power distribution systems, the entire system shall meet the applicable requirements of Section 130.5(b).</u>
  - iii. Voltage Drop. Alterations of feeders and branch circuits where the alteration includes addition, modification, or replacement of both feeders and branch circuits, the altered circuits shall meet the requirements of Section 130.5(c).

**EXCEPTION to Section 141.0(b)2Piii:** Voltage drop permitted by California Electrical Code Sections 647.4, 695.6 and 695.7.