

## Energy - Docket Optical System

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California Energy Commission

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Good morning.

In preparation for review of the nonresidential compliance manual and acceptance test forms, which are up for adoption in tomorrow's business meeting, I wanted to provide a summary of outstanding issues that I have found in the lighting sections. The following items can easily be fixed, but they will cause confusion if left uncorrected and the documents are published as-is. I am working from the last set of documents posted by CEC on 5/31/2013, and the non-residential appendices posted 4/30/2013.

### Non-residential compliance manual

There are three basic issues that I have identified with manual. The first is that there is no information or notice in Chapter 13 regarding the certification process and requirements for lighting controls acceptance test technicians. The language only states the field technician does not need to be licensed, and I believe the omission of certification requirements could be misleading. I suggest, at a minimum, that certification requirements be noted and the appropriate section of the Standards be referenced. The second issue is the omission of DR acceptance tests language from a variety of sections in Chapter 13. Specific sections are noted below. The third issue pertains to inaccurate section references throughout the compliance manual (also prevalent in the acceptance forms). I have noted several instances of this below. I suggest all section references in the manual be cross-checked to the latest version of the Joint Appendices.

- 13.1 Overview – no mention of lighting controls acceptance test technician certification (also 13.1.1.A)
- 13.1.2 (c) – omission of DR controls tests and forms
- 13.1.2 (c) – still includes language on manual daylighting controls acceptance testing which is no longer applicable
- Table 13-1 – omission of DR lighting controls form
- 13.8 – Test Procedures for Indoor and Outdoor Lighting Controls – incorrect section references for DR controls and outdoor lighting controls
- 13.8.1 - At a Glance for auto daylighting controls under purpose of the test – omission of mandatory requirements for secondary sidelit spaces
- 13.8.2 – section title references the incorrect section of NA7, should be NA 7.6.2.4 and 7.6.2.5
- 13.8.4 – section title reference the incorrect section of NA7, should be NA 7.6.3
- 13.8.5 (b) – discussion on part-night controls references an unknown section in NA7, should be NA 7.8
- 13.8.5 – a functional test for outdoor shut-off controls is listed, but this test is not included in the Standards or NA.
- 13.11 – Lighting Forms for Acceptance Requirements: omission of DR forms
- 13.12 – Outdoor Lighting Forms for Acceptance Requirements: references three forms, there is only one

### Acceptance Test Forms

In general, outstanding issues with acceptance test forms center on inaccurate titles and section references. I recommend all references be cross-checked. In addition, some forms provide a reference section of the NA, while others do not. It is beneficial to include references on all forms to ease in completion of the documents.

- NRCA-LTI-02-A: form header states “automatic daylighting control acceptance”, should be Shut-off controls, (pages 1-6)
- NRCA-LTI-03-A: no form header
- NRCA-LTI-03-A: 1. Construction Inspection references section NA 7.6.2.1, should be 7.6.1.1
- NRCA-LTI-03-A: II. Functional performance testing – continuous dimming systems: references section NA 7.6.2.2, should be 7.6.1.2.1
- NRCA-LTI-03-A: II. Functional performance testing – stepped switching / stepped dimming systems: references NA 7.6.2.2, should be 7.6.1.2.2
- NRCA-LTI-03-A: II. Functional performance testing – stepped switching / stepped dimming systems (continued): references NA 7.6.2.2, should be 7.6.1.2.2
- Same issues from previous two bullets are found in the functional performance tests using the power estimation methods (form page 5 and 6 of 9)
- NRCA-LTI-04-A: Demand responsive lighting control acceptance document: references section NA 7.6.7, should be 7.6.3 (multiple instances on page 1 of 5)
- NRCA-LTO-02-A: Outdoor Lighting Acceptance Tests: lists a function test on page 2 of 2, but this test is not listed in the Standards or NA.

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