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Lutron Comments on Title 24 2019 Nonresidential Demand Responsive Lighting Provisions

Additional submitted attachment is included below.

LUTRON ELECTRONICS CO., INC.

DR. S. PEKKA HAKKARAINEN, MA, PhD
Vice President

July 28, 2017

Submitted via email: docket@energy.ca.gov

Mr. Andrew McAllister
Commissioner
California Energy Commission
1516 Ninth Street
Sacramento, California 95814

Re: Docket No. 17-BSTD-01 2019

Lutron Electronics Co., Inc. Comments on the 2019 Building Energy Efficiency Standards Pre-Rulemaking Nonresidential Demand Responsive Lighting Measures

Dear Commissioner McAllister,

Thank you for the opportunity to review and provide comments on the pre-rulemaking nonresidential demand responsive lighting provisions for the 2019 Title 24 Part 6. These comments are submitted on behalf of Lutron Electronics Co., Inc.

As you may know, Lutron was founded in 1961 and is headquartered in Coopersburg, Pennsylvania. From dimmers for the home, to lighting management systems for entire buildings, the company offers more than 17,000 energy-saving products, sold in more than 100 countries around the world. In the U.S. alone, Lutron products save an estimated 10 billion kWh of electricity, or approximately $1 billion in utility costs per year. The company's early inventions—including the first solid-state dimmer invented by Lutron's founder, Joel Spira—are now at the Smithsonian's National Museum of American History in Washington, DC.

Please find our detailed comments below. We look forward to working with you further on this important project. Please contact Michael Jouaneh at 610-282-5350 or mjouaneh@lutron.com if you have questions or would like more information on these comments. Thanks again for your consideration.

Respectfully submitted,

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Nonresidential automated demand response (ADR) capability for lighting

To improve nonresidential lighting standards under Title 24 for 2019, Lutron supports the Commission's effort improve and expand the demand responsive lighting provision. The ADR controls should include at least 75% of the building's installed lighting power (regardless of lighting power allowance in the space), to allow for non-ADR controlled areas such as in closets, storerooms, and utility areas. We believe this important goal can be achieved in an economical and straightforward manner using equipment that is accessory to the lighting system.

1. **Consolidation of all the demand response language into one section in the Standard (i.e. ADR provisions for lighting and HVAC would be in section 110).**

   Lutron comments: We would like to see the proposed language but we support having a section of the Standard dedicated to ADR as it will likely provide clarity.

2. **Use of OpenADR 2.0a or 2.0b as the standard protocol for ADR.**

   Lutron comments: Support with these suggested changes.

   - Assuming OpenADR maintains its backwards compatibility, then the use of VENs that support "OpenADR 2.0a or newer" should be compliant instead of specifying version 2.0a or 2.0b. In other words, when OpenADR 3.0 comes out, VENs that support 3.0 should be acceptable for compliance.

   - Most lighting systems currently don't have OpenADR natively as part of the system. The language should explicitly state that a device must be installed on the premises that can receive an OpenADR signal and can communicate with the lighting system using any protocol. The lighting system itself should not be required to have OpenADR embedded into the system.

   - Most importantly, after receiving the ADR signal, the lighting power should be changed from the then current lighting power consumption. That is, if the lights are already at 85% of total installed power, they should be further reduced. The total percentage change would be negotiated between utilities and their customers. Lastly, to ensure energy savings, during a demand response event, lighting levels should not be able to be raised to a higher level than indicated for by the ADR signal. Lighting can go to a lower level but not a higher one during the DR event.

3. **Acceptance testing for demand responsive lighting.**

   Lutron comments: We want to see the revised acceptance testing requirements. IT infrastructure is not usually setup during commissioning, so a simulated local OpenADR signal should be acceptable from the acceptance tester such as from his laptop pulled directly to the OpenADR device (VEN). As noted on the July 13, 2017 call, acceptance testing should require that the tester verify that lighting power can be reduced by at least 15% from current lighting level upon receipt of a simulated OpenADR signal. Also, there should not be new requirements in the acceptance testing procedure that are not in

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the main Standard. Today, the acceptance testing steps has requirements that are not indicated in the main Standard (i.e. lighting levels cannot drop below 50%).

4. **Proposed language.**

Below is suggested language to use for the demand responsive lighting provision. It incorporates all the comments above.

> In buildings larger than 10,000 square feet, a minimum of 75% of the total interior lighting power shall be capable of automatically receiving and responding to an OpenADR 2.0a or newer demand response signal. After receiving the signal, the lighting power shall change by a fraction of current lighting power consumption. During the demand response event, lighting shall not be permitted to be raised to a level higher than indicated for by the demand response signal. Lighting shall be reduced in a manner consistent with uniform level of illumination requirements in TABLE 130.1-A.
>
> > EXCEPTION: Lighting not permitted by a health or life safety statute, ordinance, or regulation to be reduced shall not be counted toward the total lighting power.

Incorporating these recommendations in the 2019 version of Title 24 will correct an inadvertent oversight in the 2016 code, which requires ADR capability but does not require installation of ADR receiving equipment useful to utilities and grid operators.

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