

DOCKETED

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**Illuminating Engineering Society - California Regulations
Committee comments**

Additional submitted attachment is included below.



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June 21st, 2021

Mr. Peter Strait
Supervisor, Standards Development, Building Standards Office
California Energy Commission
1516 9th Street, MS 37
Sacramento, CA 95814

Re: Docket #: 21-BSTD-01, Project Title: 2022 Energy Code Update Rulemaking

Submitted Electronically June 21, 2021

Dear Peter,

On behalf of more than 725 members of the IES residing in California, and more than 8,500 IES members in 65 countries worldwide, many of whom work on California projects, I am pleased to enter the following comments to docket 21-BSTD-01 for the Commission's careful consideration, on behalf of the IES California Regulations Committee.

Established in 1906, the IES is the recognized technical and educational authority on illumination. For over 100 years its objective has been to communicate information on all aspects of good lighting practice to its members, to the lighting community, and to consumers through a variety of programs, publications, and services. The strength of the IES is its diversified membership: engineers, architects, designers, educators, students, contractors, distributors, utility personnel, manufacturers, and scientists, all contributing to the mission of the Society: *to improve the lighted environment by bringing together those with lighting knowledge and by translating that knowledge into actions that benefit the public.*

As you are already aware, the IES is a 501(c)(3) non-profit professional society, and an accredited Standards Developing Organization (SDO) under American National Standards Institute (ANSI) approved procedures. The Society publishes recommended practices on a variety of applications, design guides, technical memoranda, and publications on energy management and lighting measurement, nearly all of which follow the ANSI standards

development process. The IES appreciates the Commission’s normative references to ANSI/IES standards in Title 24 and remains available to assist with their implementation.

We thank you for the opportunity to comment on the 2022 California Code of Regulations Title 24 Part 6 code development cycle. Many IES members view the current Part 6 revision process relating to lighting as flawed and in need of restructuring, to support the art and science of lighting practice in California for years and generations to come. The comments entered here on behalf of the IES California Regulations Committee are intended as an addition to broader commentary on the Title 24 rulemaking process included in my October 6, 2020 letter submitted to docket 19-BSTD-03 ([TN#235100](#)).

In response to Statewide Utility Codes and Standards Enhancement Team (“CASE” Team) Comments on Outdoor Lighting Controls for 45-Day Language dated June 1, 2021 (Docket #21-BSTD-01, [TN#238087](#)), we offer the following.

The changes in question are:

EXCEPTION 4 to Section 130.2(c)3: *For parking lots, luminaires with a maximum rated wattage of 78 watts each are not required to have motion sensing controls.*

And

EXCEPTION 4 to Section 160.5(c)2C: *For parking lots, luminaires with a maximum rated wattage of 78 watts each are not required to have motion sensing controls.*

Obviously identical, for the following these exceptions will be treated as one.

Our position was first discussed for this code cycle in January 2020 at a joint meeting of California-based members of IES and the International Association of Lighting Designers (IALD) at the PG&E Pacific Energy Center. A representative for the CEC was in attendance. When the functionality of passive infrared (PIR) motion sensors up to 24 feet was discussed, the 30+ attendees unanimously concurred that this Title 24 requirement required lighting control systems that did not work properly, and many had to revert to conventional controls such as photocells or time clocks for safety and security reasons.

This is not the first time that sensor problems have been raised relative to outdoor lighting. The topic was introduced on prior occasions and code development cycles from members of the lighting community for the reasons put forth here. We believe that the CASE team has ignored considerable evidence and prior comments that cost-effective PIR motion sensors do not work in a manner that ensures the proper activation of lighting systems in parking lots. For example, a parking lot luminaire at 20 feet is expected to illuminate a rectangular area of about

4 mounting heights by 4 mounting heights, or up to about 6,400 square feet all around (except when blocked by a tree or light pole). But the area of coverage for a common Legrand FSP-L3 sensor, a typically used PIR sensor designed to be used outdoors at 20 feet, is only about 1,600 square feet. The motion sensor cannot be made to cover a larger area without a change in technology from PIR to microwave, which results in a significant increase in first cost. Without better coverage, serious gaps and even outages of lighting will occur, risking accidents and posing a security threat to pedestrians.

From the design experience of IES committee members, typical exterior parking lot lighting designs today employ LED luminaires up to about 75 watts to achieve IES illuminance recommendations for parking lots using poles up to 24' (which according to ANSI/IES RP-8-18 Table 17-2 are the same regardless of lighting zone for LZ1 to LZ4). Higher wattage luminaires are used on taller poles which are not required to use sensors.

Because of the deficiency of PIR sensors, parking lot lights are not being activated when needed. This of course saves lots of energy, but the results are completely inconsistent with the safety and security provided by designs meeting IES recommendations. While we are aware that better sensor systems could be used, they will not prove cost effective. We therefore support the proposed changes and believe that they are especially important.

For the same reasons, we disagree with Jon McHugh's May 31, 2021 letter (Docket #21-BSTD-01, [TN#238054](#)) that appears to support the CASE Team comments on the same subject. McHugh adds his objection to the same language contained in Section 160.5(c)2C based on cost effectiveness. Of course the sensors are cost effective – they don't allow lights to turn on! McHugh also references Standard 90.1 and IECC and suggests 78 watts to add 3 watts of ballast loss to permit HID lamps, which is especially illogical and inappropriate for motion controls. We see no reason to include these in consideration of this issue.

The IES will, in the coming years, carefully document examples of how the current code is placing restrictions on proper lighting design, particularly through implementation of excessively stringent lighting power density requirements. We will also work to carefully document our concerns regarding the CEC's cost effectiveness analyses. We also hope to work with the CEC and the IOUs/POUs to create clarity around the entirety of the Title 24 Part 6 revision process.

As before, we know you and your staff to be genuinely interested in how code revisions affect the California lighting market, and lighting practitioners. We remain confident also in you and your team's interest in finding ways to fix these ongoing problems, and to lend clarity to a confusing yet important code revision process.

Respectfully,

A handwritten signature in black ink, appearing to read 'Alex Baker', with a long horizontal flourish extending to the right.

Alex Baker
Manager of Government Affairs & Public Policy
Illuminating Engineering Society

cc: IES California Regulations Committee