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California Energy Commission
Docket No. 17-BTSD-01
Docket Unit: MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

RE: Docket No. 17-BTSD-01 – Non-Residential Lighting Measures for 2019 Standards

As a manufacturer in California, Legrand, with its lighting control brand Wattstopper, appreciates the opportunity to submit comments to the Title 24 Standard's process. We acknowledge the significant work put forward by all proposal teams, commission staff, commission consultants and other contributors, to improve the energy efficiency and applicability of the Title 24 lighting and lighting control related sections.

With our many years of experience in the lighting controls industry, Legrand submits the following comments for the Energy Commission's consideration.

SECTION 130.1(a)1. Area Controls and 130.1(f) Controls Coordination Proposal

We believe the Area Controls provision of the standard has traditionally allowed a good balance between energy savings and user activated lighting control in a space. Area Controls, which provide manual ON and OFF lighting control, affords users the ability to change the lighting level when previous manual or automatic controls may have left or placed lighting at an undesirable level. Continuing to give users direct manual control of their lighting averts frustration and, in some cases, full disabling of controls altogether. Manual control has been particularly useful in spaces where automatic daylighting controls (Section 130.1(d)) are installed, by giving users manual control ownership. Although the language proposed by the CASE measure 2019-NR-LIGHT4-D, Section 130.1(f) Controls Coordination, intends to increase lighting efficiency, based on our many years of field application and user experience, we believe this restriction on automatic daylighting controls will be a user hindrance to operation, leading to misunderstanding, frustration and possible disabling of controls. This scenario becomes even more significant if the proposed automatic daylighting plus off provision (Section 130.1(d)2Cv) is adopted. The potential energy savings benefits the standard intends to support could then be lost. We recommend the Energy Commission continue to allow area manual control of lighting, particularly in areas using automatic daylighting controls, by not restricting its functionality in Section 130.1(f).

EXCEPTION 1 to Section 130.1(a)2

We recommend that Exception 1 to Section 130.1(a)2 not be restricted to only space types listed in the current Title 24 Standard, but be applied more broadly to spaces appropriately determined by the building architect and designers. There are other space types where remotely mounted and annunciated lighting controls are best applied. Additional application spaces are libraries, exercise gyms, lobbies, child care facilities, locker rooms, dressing rooms, labs, corridors, etc.,. We recommend that the Energy Commission revise this language and allow the appropriate area control device location as a professional

design decision related to the safety and security of the space use. In all cases where area controls are located away from where the controlled lighting can be visually seen, it should always be annunciated.

EXCEPTION to Section 130.1(a)1 and EXCEPTION 3 to Section 130.1(c)1

It is not clear why the egress illumination under Exception to Section 130.1(a)1 Area Controls, allows up to 0.2 watts per square foot of lighting, when a similar Exception 3 to Section 130.1(c)1 Shut-OFF Controls, allows up to 0.1 watts per square foot of lighting. Unless there is some other significant reason, we recommend both the lighting power density and language between these two exceptions align to reduce confusion and simplify compliance.

SECTION 130.1(c)1C and EXCEPTION to Section 130.1(c)1C

The revision to the code language in CASE measure 2019-NR-LIGHT4-D, Section 130.1(C)1C, and its exception, proposes to change the definition of the shut-off control area from a square footage determination to a wattage requirement. Although the merits to closely tie the shut-off control area to a lighting power number might seem a good approach, it will be difficult to manage and inspect in practice. This places an undue burden for designers, building officials, and others who must determine if the wattage in a specific shut-off area is in compliance with the 3000 or 15,000 allowable watts. To determine compliance, they would need to know the wattage of each fixture type from factory cut-sheets or lighting schedules, determine how many are allowed in a shut-off area, then count to match that the blueprints and the actual controlled area meet the compliance requirements. This is far more arduous than just measuring square footage on the plans and checking against the actual area of lighting controlled. If the intent is better management of the controlled area using lighting power numbers, we suggest correlating the lighting power number to a revised square footage area to maintain the square footage area definition currently in the standard. This methodology will keep compliance and inspection simpler.

EXCEPTION 1 to Section 130.1(c)2

We strongly recommend that countdown timers be allowed as an acceptable shut-off control method for closets and small storage spaces to allow builders and owners a cost efficient choice for shut-off control in these areas. Countdown timers were permissible under the Title 24 2013 Standard for closets under 70 square feet before. This gave a simple and suitable method for automatic shut-off in these small, infrequently accessed spaces.

SECTION 130.1(c)5

Besides spaces that are required to comply with Section 130.1(c)5, for occupant sensing shut-off controls, any space, whether required to use occupant sensing or multi-level lighting controls or not, would benefit from the energy efficiency gained by also following the Partial-ON (paragraph A) or Manual-ON (paragraph B) provisions of the standard. We recommend that the applicability of Partial-ON and Manual-ON requirements be extended to all spaces types, including spaces under 100 square feet, areas with a connected lighting loads less than 0.5W per square feet, warehouses, libraries, break rooms, copy/print rooms, storage rooms and others.

SECTION 130.1(c)6, 7 – Full and Partial OFF Occupancy Sensing Controls

We recommend the Energy Commission consider limiting the Full and Partial-OFF Occupancy Sensing Controls provisions of Section 130.1(c)6 and 7, to “general” lighting in the spaces, instead of seemingly including all display, ornamental, case and other similar lighting, under the Partial-OFF requirements. We do not believe Partial-OFF control is applicable to aesthetic or specialty type lighting as it would be to the general lighting. As an example, the language for Partial-OFF of “general” lighting is used appropriately in Section 130.1(c)7C for parking garage lighting and should be applied more universally to stairwells, corridors, and warehouses.

SECTION 130.1(d)2Cv – Automatic Daylighting plus OFF Proposal

Our industry practical and user experience with driving automatic daylighting controls to full off can be problematic from a building user perception. Regularly our customers complain that automatic daylighting that turns lighting completely off is a distraction and annoyance, particularly in areas of fine level activity like reading and focused concentration. Additionally, users who see lighting off and attempt to turn it on,

even on to the lowest levels, can be frustrated that the lighting is not responding to the area control manual on/off device due to the automatic daylighting control “locking out” the manual control from turning it on. Our concern is that the controls may eventually be disabled and no longer serve their energy savings purpose due to customer complaints and frustration. When configured to do so, most automatic daylighting control systems have the capability of turning the lighting all the way off with the adequate contribution of daylight. By allowing the capability and choice of daylighting to off, and not mandating, it would reduce user confusion and frustration, yet allow the ability to adjust daylighting control settings based on space use and energy efficiency preference.

Section 130.1(e) – Demand Responsive Controls

Legrand was the chief author and is in full support of the letter provided to the California Energy Commission from the California Energy Alliance regarding demand responsive controls. We strongly believe clear direction and defined application of demand responsive controls will be a significant asset to stable and resilient power in California. We do not believe past code language has been specific and flexible enough to reliably provide the intent of what California aims to achieve in demand response capability. We strongly urge the commission to consider and adopt the tenants of the CEA recommendations provided to the California Energy Commission under separate letter.

Proposed SECTION 130.1(f) – Controls Coordination

In reviewing the new code language in CASE measure 2019-NR-LIGHT4-D, Section 130.1(f), the initial premise to coordinate controls so to limit any increase in the energy consumption of the controlled lighting system, is understood. However, the exceptions are either redundant with prior sections or are difficult to understand while not substantively changing the function of the lighting controls as they operate now under the current and previous versions of the Title 24 Standard. The only place this new section seems to add to the standard, is in the requirement of not allowing an automatic daylighting to off function to be overridden. Legrand has already commented under Section 130.1(d)2Cv, that it is not in support of mandating automatic daylighting plus off, because of customer complaints and feedback. Therefore, we do not support the addition of the proposed Section 130.1(f) for controls coordination as it appears redundant and confusing in what it attempts to better define.

SECTION 130.2 – Outdoor Lighting Controls and Equipment Proposal

The revision to the code language in CASE measure 2019-NR-LIGHT3-D, Section 130.2(C)1C2 represents significant changes to the way exterior pole mounted luminaires generally operate. Controls have advanced significantly and are capable of the proposed layered control scenarios to gain energy efficient control in an area not experienced before. The functionality of combining occupancy detection, daylight level, time scheduling coupled with communication between fixtures, advances this energy efficient capability. The overall concern Legrand would comment with, is given the progressive control approach, there needs to be time and experience for the building owners and operators to become more familiar with the complexities of this type of control on a widespread basis. There are a good number of similar lighting control systems deployed in cities, specific applications and managed facilities who have experience with this type outdoor lighting controls for years. However, use of these systems for more mainstream new commercial buildings, would be challenging learning curve for the broader industry. Our recommendation would be to simply or move some of the more advanced features of these systems into a power adjustment or credit factor to gain more familiarity and comfort with controls this technical and advanced.

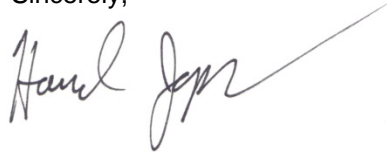
SECTION 141.0 - Lighting Alterations Proposals

Legrand commends the proposal work submitted by both the CASE Initiative and the CEA Building Energy Efficiency Measure for the Title 24 Standard Section 141.0, Lighting Alterations. Both proposals represent a significant step forward to clarify and improve a challenging and confusing section from the current Title 24-2016 Standard. We highly recommend and support the CEA’s report as it presents the lighting alteration compliance options in a simpler format using the proposed Table 141.0-E and the overall concise language of the CEA proposed alterations section.

There are many other significant and positive changes for which we did not see a need to make added comment or support. We applaud the great work by all involved in removing legacy language, cleaning up gaps and progressing the standard toward greater energy efficiency and clarity.

Please, feel free to contact us with any further questions or clarification.

Sincerely,

A handwritten signature in black ink, appearing to read 'Harold Jepsen', with a long, sweeping horizontal line extending to the right.

Harold Jepsen, P.E.
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