

ADAMS BROADWELL JOSEPH & CARDOZO

A PROFESSIONAL CORPORATION

ATTORNEYS AT LAW

520 CAPITOL MALL, SUITE 350
SACRAMENTO, CA 95814-4721

TEL: (916) 444-6201
FAX: (916) 444-6209

tenslow@adamsbroadwell.com

SO. SAN FRANCISCO OFFICE

601 GATEWAY BLVD., SUITE 1000
SO. SAN FRANCISCO, CA 94080

TEL: (650) 589-1660
FAX: (650) 589-5062

DANIEL L. CARDOZO
THOMAS A. ENSLOW
TANYA A. GULESSERIAN
LAURA E. HORTON
MARC D. JOSEPH
RACHAEL E. KOSS
JAMIE L. MAULDIN
ADAM J. REGELE
ELLEN L. TRESCOTT

April 23, 2015

VIA EMAIL ONLY

Mazi Shirakh, PE, MBA
Senior Mechanical Engineer
Project Manager, Building Energy Efficiency Standards
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814
mshirakh@energy.ca.gov

California Energy Commission
Attn: Docket 15-BSTD-01
Dockets Office
1516 Ninth Street, MS-4
Sacramento, CA 95814
Docket@energy.ca.gov

**Re: Opposition to Proposed Lighting Control Exemptions: New
Proposed 2016 Code Amendments of Section 141.0(b)(2) and
Table 141.0-E**

Dear Mr Shirakh:

On behalf of the California chapters of the National Electrical Contractors Association ("NECA"), the California International Brotherhood of Electrical Workers locals ("IBEW"), and the California State Labor Management Cooperation Committee for the International Brotherhood of Electrical Workers and the National Electrical Contractors Association ("LMCC"), I am writing to oppose any amendments to the 2016 Building Energy Efficiency Standards that would weaken, rollback or water down the lighting control and acceptance test requirements for alterations and modifications of indoor or outdoor luminaires in existing buildings

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California Energy Commission

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from what is currently required by the 2013 Building Energy Efficiency Standards. NECA, IBEW and the NECA-IBEW LMCC represent well over 10,000 members who install lighting systems and lighting controls in California.

We have been informed by Commission staff that they are considering a number of proposals that would weaken current lighting control and verification requirements for existing buildings, including:

- (1) Increasing the percent of luminaire replacements that would trigger Section 130.1 (a), (b), (c) and (d) control requirements from 10% of existing luminaires to 20% of existing luminaires;
- (2) Exempting luminaire modifications from any multi-level, shut-off or daylighting control requirements;
- (3) Exempting luminaire alterations or modifications from existing lighting control or lighting power allowance requirements where the modified luminaires have at least 20% lower power consumption compared to the original luminaires; and
- (4) Exempting alterations from acceptance test requirements when 20 or fewer controls are added.

These proposals weaken rather than strengthen current energy efficiency requirements in the code by creating larger and more attractive loopholes for avoiding advanced lighting control and verification requirements.

I. PROPOSED ROLLBACK OF STANDARDS IS CONTRARY TO THE ADMINISTRATION'S ENERGY EFFICIENCY GOALS AND POLICIES FOR EXISTING BUILDINGS

The proposed rollback of these requirements is contrary to the Governor's mandate set forth in his inaugural address earlier this year to double the efficiency of existing buildings over the next 15 years. This mandate is not achievable if buildings are allowed to evade current lighting system efficiency requirements through these exemptions. The proposed rollback of these requirements is also contrary to the Commission's own statutory mandate to adopt building standards that "increase" energy efficiency in buildings.

Lighting controls are also critical to meeting California's greenhouse gas reduction goals. The CPUC's 2008 *Long Term Energy Efficiency Strategic Plan* noted that long-term strategic planning is needed to achieve California's energy efficiency and greenhouse gas reduction goals. The plan called for reducing energy consumption in existing residential buildings by 40% by 2020 and for 50% of California's existing commercial buildings to be zero net energy by 2030.

It is not sufficient to only require new buildings to implement the powerful energy saving technology of lighting controls. New buildings are just a small percentage of the total building stock and approximately 50% of existing buildings were built prior to the establishment of the Building Energy Efficiency Standards. California currently has over eight billion square feet of existing non-residential building space. Accordingly, substantial deep energy efficiency retrofits of existing building will be critical to meeting California's greenhouse gas reduction goals and the Governor's energy efficiency objectives.

II. PROPOSED AMENDMENTS WILL RESULT IN SUBSTANTIAL LOST ENERGY SAVINGS

Lighting controls are an essential component to meeting California's energy efficiency goals. Lighting accounts for almost 40% of a commercial building's electrical use. This is double the energy used for cooling. In addition, lighting control acceptance tests are necessary to ensure that advanced lighting controls are installed and operated correctly so they can achieve their desired energy saving potential instead of just providing illusory paper savings.

The proposal to expand the existing bigger loopholes allowing shallow retrofits of luminaires will result in lower energy savings than would be achieved by the deeper retrofits requiring advanced lighting controls that are currently required in the 2013 code. Lighting controls can double a retrofit's energy savings over just putting in more efficient LED luminaires. By creating broader exemptions to control installation requirements, the Commission will lose substantial energy savings that would be achieved under the current code.

The IBEW-NECA LMCC had one of their lighting experts prepare a rough estimate of the amount of energy savings that the proposed exemption expansions would lose. Attached as Exhibit A, is a copy of the analysis that was prepared. Due to time limitations, this analysis focused on the lost energy savings from the two most significant changes: (A) the elimination of requirements to add auto shut-off

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controls to retrofit projects that address more than 40 luminaires in a space;¹ and (B) the change from a 10% threshold to a 20% threshold to trigger code.

As shown by the below table, if these exemptions are approved, California **will lose 51% of the annual savings** that is being achieved by the current 2013 controls code for lighting alterations. Over a three year code cycle, that is almost 170 GWh of electricity. Also, California would lose nearly 3 MW in peak demand savings (32% of that created by the 2013 code).

Savings Lost due to 2016 Proposed Changes:	Controls			Reduction in LPD			Both Measures	
	(GWh/yr)	%	(MW)	(GWh/yr)	%	(MW)		
Change in compliance threshold from 10% to 20%:	7.7	7%	0.6	2.0	7%	0.21		
Elimination of Auto Shut-off controls requirements for all other retrofits	48.5	93%	2.3	0.0	0%			
Total Energy Savings Lost	56.2	51%		2.0			58.2	42%
Total Peak Demand Reduction Lost			2.9			0.21	2.9	30%
			32%					

Lost energy savings would also occur as a result from the elimination of daylighting and demand response provisions for certain types of alterations and from the exemption from any control or power allowance requirements for modifications that reduce power consumption by 20%. The amount of these lost savings must also be calculated before moving forward with these exemptions in order to disclose to the public and the Commissioners the impact these exemptions will have on energy efficiency savings.

Substantial lost savings would also occur as a result of the proposal to eliminate verification requirements for modifications of less than 20 luminaires. An evaluation of Title 24 acceptance testing effectiveness for advanced lighting controls found that the vast majority of lighting controls failed to operate properly due largely to installation or calibration issues.² For example, occupancy sensors failed in 2 out of 3 tests.³ Requiring installation of lighting controls without acceptance tests is not cost-efficient because such installations only provide illusory paper savings. The LMCC urges the Commission to maintain acceptance test

¹ Based on the 2011 CASE Report prepared to support the 2013 code changes, about 7% of all lighting retrofits address between 10% and 20% of luminaires. These are the projects that will be lost if the change from a 10% threshold to a 20% threshold to trigger code is approved.

² Tyler, Matthew, John Farley and Eliot Crowe. Evaluation of Title 24 Acceptance Testing Enforcement and Effectiveness. PEI, September 2011.
http://www.cacx.org/PIER/documents/T24_Acceptance_Testing_Final_Report.pdf.

³ *Id.*

requirements for all advanced lighting control installations to ensure that advanced lighting controls are installed and calibrated correctly so they can achieve their assumed energy saving potential. Without such verification, customers won't earn back their investment in these controls and inefficient lighting systems will be locked in for years to come.

Increasing the definition of alterations from 10% of altered luminaires to 20% of altered luminaires also greatly increases the risk that owners will stagger their lighting upgrades over a five year period in order to avoid having to meet lighting control and acceptance test requirements. A deliberate decision to stagger upgrades of an entire building over a five year period is much more likely than if upgrades would need to be staggered over a 10 year period to avoid deeper retrofit requirements. The Commission should avoid creating more attractive loopholes for avoiding code requirements.

Once shallow retrofits are installed under these new broader exemptions, deeper energy saving opportunities will be lost for years to come. Commercial property owners generally are willing to retrofit only once every 7 to 15 years. Smaller commercial properties such as liquor stores or other mom and pop commercial retail stores may only retrofit once every 20 or 30 years. Accordingly, there is only one bite at the apple available to meet the State's 2020 GHG reduction goals and existing building energy efficiency goals. The LMCC urges the Commission to avoid encouraging shallow retrofits and locking in lost energy saving opportunities.

III. EFFECT OF 2013 CODE ON COST AND RETROFIT WORK IS OVERSTATED AND BASED SOLELY ON ANECDOTAL EVIDENCE

The complaints about cost and complexity regarding compliance with the 2013 lighting control requirements for alterations and modifications are overstated. Moreover, the majority of comments in support of the exemptions appear to be coming largely from companies that only do lamp and ballast changeouts, and thus have a significant incentive to reduce the amount of retrofits that also require installation of controls. Moreover, no studies or reliable evidence has been presented in support of these claims. Rather these claims appear based largely on anecdotal evidence

In contrast, the feedback that NECA and IBEW are getting from their contractors and installers is that the 2013 code has increased the demand for deeper retrofit lighting control installations. Moreover, the 2013 codes have had the

ancillary effect of pushing demand for lighting controls to the point that lighting control costs have significantly decreased. In addition, advanced lighting control manufacturers that supply code compliant equipment, provide design support, and engineering assistance at little or no cost – further decreasing the cost of installation. There are also many more suppliers and many more systems available than there were in 2013, further increasing downward price trends.

As a result, the time it takes customers to recoup the cost of lighting controls with savings in electricity cost has gone down substantially since the adoption of the 2013 requirements. Even if deeper retrofit requirements may have initially delayed some retrofit jobs, the deeper long-term energy savings from retrofits that include controls more than makes up for this delay. In contrast, expanding shallow retrofits will just lock in shallow savings for years to come.

IV. THE PROPOSED CHANGES REQUIRE A 45 DAY PUBLIC COMMENT PERIOD

If the Commission is going to move forward with the proposed changes, an additional 45 day public comment period on these changes is necessary. Under Government Code section 11346.8(c), an additional 15 day period is not sufficient to provide public comment opportunity on changes to a rulemaking proposal if the proposed changes are substantial and are not sufficiently related to the original text that the public was adequately placed on notice that the change could result from the originally proposed regulatory action.

Here, the 45 day language did not propose to modify the percentage of alterations exempt from code in any way, did not propose to exempt certain modifications from code requirements if the modifications decreased power consumption by some certain amount, and did not contain any suggestion that the Commission was considering to exempt certain alterations from acceptance test requirements. Accordingly, nothing in the 45 day language put the public on notice that the originally proposed amendments could be modified as now being proposed. A 45 day public comment period is required.

V. THESE CHANGES MAY TRIGGER ADDITIONAL CEQA REVIEW

The proposed Initial Study/Negative Declaration prepared for the 2016 Title 24 rulemaking does not evaluate or take into account the reduction in energy efficiency in building alterations and modifications from the proposed rollback of control and verification requirements. It also does not take into account the

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inconsistency between this rollback and the AB 32 building efficiency goals. Accordingly, these changes may require additional review under the California Environmental Quality Act ("CEQA").

VI. CONCLUSION

The above comments are submitted on behalf of NECA, IBEW and the LMCC, and their many thousands of contractor and installer members. Many of these members will also submit comments in the coming weeks, but a proper public comment period is needed to ensure that they have an opportunity to be heard on this matter.

NECA, IBEW and the LMCC strongly support the energy efficiency goals of the Commission and the administrations. However, the proposals now being considered are contrary to these goals. Encouraging more shallow and unverified retrofits rather than making sure that the retrofits that are done are deep and effective will result in substantially less overall energy savings. Moreover, the 2013 code requirements have already resulted in substantial cost reductions in implementing these deeper retrofits, resulting in a faster payback of savings to building owners. We urge the Commission to reject the efforts to weaken current standards. California's energy efficiency requirements for existing buildings need to move forward, not backwards.

Sincerely,

A handwritten signature in blue ink, appearing to read "Thomas A. Enslow", with a long horizontal flourish extending to the right.

Thomas A. Enslow

TAE:lj1

cc: andrew.mcallister@energy.ca.gov, Joe.Loyer@energy.ca.gov,
Bill.Pennington@energy.ca.gov, Peter.Strait@energy.ca.gov,
Eurlyne.Geiszler@energy.ca.gov, joan.walter@energy.ca.gov,
Patrick.Saxton@energy.ca.gov

Attachment: Exhibit A – Energy Impact of Proposed Lighting Control Exemptions