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NEMA Comments Regarding Title 24 45-Day Language

Additional submitted attachment is included below.



National Electrical Manufacturers Association

The association of electrical equipment
and medical imaging manufacturers
www.nema.org

May 13, 2024

Dr. Andrew McAllister, Commissioner
California Energy Commission
Docket Unit; Docket No. 24-BSTD-01
715 P Street, MS-4
Sacramento, CA 95814

Submitted Electronically To: Docket 24-BSTD-01 at
<https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=24-BSTD-01>

Re: NEMA Comments on 2025 Building Energy Efficiency Standards 45-Day Language

Dear Commissioner McAllister:

The National Electrical Manufacturers Association (NEMA) represents nearly 325 electrical equipment and medical imaging manufacturers that make safe, reliable, and efficient products and systems serving the building systems, building infrastructure, lighting systems, industrial products and systems, utility products and systems, transportation systems, and medical imaging markets. Our combined industries account for 370,000 American jobs in more than 6,100 facilities covering every state. These industries produce \$124 billion in shipments and \$42 billion in exports of electrical equipment and medical imaging technologies per year.

Members of NEMA's High Performance Buildings Codes & Standards Review Committee have carefully reviewed the proposed amendments to the 2025 Building Energy Efficiency Standards 45-day language and developed the attached commentary for your careful consideration.

Additionally, NEMA's Lighting Systems Division has noted that the proposed changes to Joint Appendix 8 (JA8) with regards to the use of the Elevated Temperature Life Test as published in the ENERGY STAR Lamps V2.1 product specification and the rated life test in the ENERGY STAR Luminaires V2.1 product specification are not reflected in **JA8.5 Marking**. Given the Environmental Protection Agency's plan to sunset the ENERGY STAR Lamps and Luminaires programs at the end of 2024, NEMA members request this presumed drafting error be corrected consistent with the changes proposed in **JA8.3.3 Start Time Test**.

* * *

We thank you for the attention given to our inputs and offer our continued assistance with the remainder of the rulemaking process. As always, you can reach me at alex.baker@nema.org.

Regards,

A handwritten signature in black ink, appearing to read 'Alex Baker', written in a cursive style.

Alex Baker
Director, Regulatory & Industry Affairs

Comment Title	Comment Type	Section/Subsection Type	Section/Subsection/Table/Figure Number	Comment (proposed text)	Substantiating Statement	Submitted By
Multilevel Lighting Control Definition	Substantive	General	Lighting Definitions	Revise Multilevel Lighting Control Definition to reference lighting output and not level. Suggestion: Multilevel Lighting Control enables the lighting <u>intensity level</u> to be adjusted upward and downward across multiple levels <u>in addition to OFF</u> .	Using the word "level" to indicate the lighting or illumination output is not clear as there are other lighting output characteristics such as CCT. Suggest revising to define it as enables the lighting output or illumination output to be adjusted upward and downward across multiple levels.	Alex Baker- NEMA
Occupied-Standby Zone Controls required when lighting requires occupancy sensors	Substantive	SubClause	120.1(d)5.a.iii	Occupant sensors are required by Section 130.1(c)5 or and 6;	Occupied-Standby Zone Controls should be required when occupant sensor controls are required by either 130.1(c)5 OR 130.1(c)6, not both.	Alex Baker- NEMA
Occupied-Standby Zone Controls spaces	Non-Substantive	SubClause	120.1(d)5.a.iii	We recommend to provide a full list of the spaces and not a partial list so this is not confusing for the user of the code.	It is confusing to include a partial list of spaces where ventilation may go to standby mode when the list is lengthy and already found and referenced within Table 120.1-A. It can lead casual readers of the standard these are the key spaces where the requirements are required.	Alex Baker- NEMA
Manual Control applicability clarity	Non-Substantive	SubClause	130.1(a)1&2	Consistently change language to "space" in other, but similarly referenced parts of the standard. Also remove the word "Indoor" as this subclause is under the indoor section of the standard.	Removing the word "area" and "enclosed" is a good change that aligns better with how different space types are constructed in buildings. It better aligns the word "space" with how it is used in related places in the standard. However, this change should not be limited to just Manual Controls language, but should be consistent with other lighting controls requirements.	Alex Baker- NEMA
Remote location of manual control	Non-Substantive	SubClause	130.1(a)2	Supportive of overall change. Request to remove the word " display ".	Removing exception 1 to this section and making provisions to place manual controls at the judgement of owners and building design professionals is a significant improvement for practical application of the standard.	Alex Baker- NEMA
Multilevel lighting controls. grammar fix	Non-Substantive	SubClause	130.1(b)	Revise with "...0.5 watts per square foot shall <u>be provided</u> with multilevel..."	Syntax need to be corrected	Alex Baker- NEMA
Multilevel lighting control exception out of date	Substantive	SubClause	130.1(b)Exception 5	Remove exception	This exception has been in the standard in similar forms since the 2016 version. At the time, use of LED lighting and its controllability was not widespread. This exception retained efficient florescent source without dimming due to the high cost and less efficient operation of florescent dimming technologies which were the norm at the time. Florescent dimming high cost barrier and lower efficiency is no longer the case as it was when an incumbent technology. Leaving this exception in reduces efficiency, reduces controllability of lighting by occupants and can cost more by requiring separate branch circuit feed wiring and two control devices to meet the control step requirement.	Alex Baker- NEMA
Full or partial-OFF occupant sensing controls clarity	Substantive	SubClause	130.1(c)6.A	Phrasing in this section needs to be clearer with all the ands and commas. Also, what is a "parking area"? Is this a parking lot and why would it be in the interior requirements.	All the "ands" and commas in the section make it confusing to parse the list of spaces which have these requirements. Also, not clear what a "parking area" space is referring to. Might consider it to be a parking lot, but this is not an indoor space.	Alex Baker- NEMA
BESS Definition - Include Switchboard	Substantive	General	BESS Definition	BESS READY INTERCONNECTION EQUIPMENT is equipment, including but not limited to a Battery Energy Storage System (BESS) ready panelboard <u>or switchboard</u> , that can accommodate the connection of a distributed energy resource or a BESS capable of either automatic or manual isolation from the utility power source.	Excluding switchboard is not appropriate. The definition should be inclusive of switchboards because electrical distribution equipment includes both panelboards and switchboards. The use of each depends on the application. The National Electrical Code (NEC) Article 408 differentiates the differences between panelboards and switchboards. Switchboards are free standing with amperage up to 6000 Amps having UL 891 as their safety standard, while panelboards are NOT free standing having UL 67 as their safety standard with amperage up to 1200 A.	Alex Baker- NEMA
BESS Definition - Include Switchboard	Substantive	General	BESS Definition	BESS READY PANELBOARD OR SWITCHBOARD is a panelboard <u>or switchboard</u> that can accommodate either automatic or manual switching between a utility power source to a distributed energy resource or a BESS, such as a split bus panelboard.	Excluding switchboard is not appropriate. The definition should be inclusive of switchboards because electrical distribution equipment includes both panelboards and switchboards. The use of each depends on the application. The National Electrical Code (NEC) Article 408 differentiates the differences between panelboards and switchboards. Switchboards are free standing with amperage up to 6000 Amps having UL 891 as their safety standard, while panelboards are NOT free standing having UL 67 as their safety standard with amperage up to 1200 A.	Alex Baker- NEMA
What is a parking area?	Substantive	SubClause	130.1(c)6.E and 130.1(d)1E	Unclear what a "parking area" space is, it is an exterior space yet this is an indoor section of the standard.	Unclear what a "parking area" space is, it is an exterior space yet this is an indoor section of the standard. Requires clarification.	Alex Baker- NEMA
Multiple daylight responsive control requirements	Substantive	SubClause	130.1(d)2.B & C	Should i, ii, iii all have "and" at the end of each to indicate all need to be complied with OR should indicate that "all of the following are required".	Should i, ii, iii all have "and" at the end of each to indicate all need to be complied with?	Alex Baker- NEMA

Multiple daylight responsive control interaction with manual controls	Substantive	SubClause	130.1(d)2.F	Remove the following: In spaces where manual controls are required, the manual controls shall be capable of turning off or decrease light levels below the light level set by the daylighting controls. Manual controls shall be permitted to temporarily increase electric lighting light levels above the light level set by the daylight responsive controls if the controls are configured to reset electric lighting controls back to the Section 130.1(d)3 defaults after electric lighting have been turned off or reduced by a manual control, occupancy sensor or timeclock.	This is counter to energy efficiency and not aligned with similar energy codes and standards.	Alex Baker- NEMA
Place daylight responsive control exceptions with main paragraph	Non-Substantive	SubClause	130.1(d) exceptions	Place exceptions 1-7 directly following 130.1(d) and not at the end of all the subclauses	Exceptions should be place immediately following the main section so readers easily may find and understand the exceptions that apply the whole section at large without having to navigate through all subsequent requirements and subclauses to only then know if the requirement is applicable at all.	Alex Baker- NEMA
Removal of Control Interactions	Non-Substantive	Clause	130.1(f)	Agree with removal of section (f) Control interactions	The Control interactions 130.1(f) was a confusing and rather meaningless section. We agree with thie removal of this section for greater clarity in the standard.	Alex Baker- NEMA
Clarify where Demand Response is required or referenced	Non-Substantive	Table	Table 100	Add 110.12 where it is applicable. And add Joint Appendices to the table.	Make it more clear where 110.12 is required and JA8 and 5 etc.	Alex Baker- NEMA
General Comments	Non-Substantive	General	All	<ol style="list-style-type: none"> 1. if a section is referenced in another section, make the section number a clickable link. 2. Italicize all terms that are in the definitions (make them clickeable to the definition too.) 3. Fix the bookmarks on the PDF so that the file is easier to navigate. 	Clarity and ease of use	Alex Baker- NEMA
Demand Responsive Thermostats	Non-Substantive	SubClause	120.2(h)	<p>Move 120.2(h) to 120.2(b)4 that is the only place where 110.12 is mentioned in Section 120.</p> <p>Thermostatic controls for all single zone, air conditioners and heat pumps shall comply with the requirements of Sections 110.2(c) and 110.12(a) and, if equipped with DDC to the Zone level, with the Automatic Demand Shed Controls of Section 110.12(b). See Section 110.12 for requirements for automatic demand shed controls.</p> <p>(h) Automatic demand shed controls. See Section 110.12 for requirements for automatic demand shed controls.</p>	Simplification of language	Alex Baker- NEMA
Expand multilevel lighting	Substantive	SubClause	130.1(b)	Strike 100 sf threshold and lower lighting power threshold to 0.4 W/sf per CEA proposal. Also, Strike "indoor" from exception 1.The multilevel lighting controls shall provide and enable continuous dimming from 100 percent to 10 percent or lower of full lighting output power.	Requiring multilevel control in more spaces saves energy. No other code or standard uses a square footage threshold. This is largely taken care of by Exception 1. Rest is clarity.	Alex Baker- NEMA

				<p>REMOVE BOLDFACE: Occupant sensing controls are required for specified offices, multipurpose rooms, classrooms, conference rooms and restrooms.</p> <p>REMOVE BOLDFACE: Full or partial-OFF occupant sensing controls are required for warehouse aisle ways, and warehouse open areas in warehouses, library book stack aisles, corridors and stairwells, and offices greater than 250 square feet, parking garages, parking areas, and loading and unloading areas.</p> <p>130.1(c)6Eiii: The occupant sensing controls shall be capable of automatically turning the lighting fully ON only in the separately controlled space zone, and shall be automatically activated from all designed paths of egress.</p>		
Shut-off controls clarity	Non-Substantive	SubClause	130.1(c)5 and 6		Unbold first sentence, which is consistent with other subclauses. Last zone they meant to say zone here not space 130.1(c)6E.	Alex Baker- NEMA
Daylight repsonive control exception	Substantive	SubClause	130.1(d), 160.5(b)4D	Exception 3 to Section 130.1(d): Where daylight responsive controls are not required for the primary sidelit daylit zones, and where the total wattage of general lighting luminaires in the secondary sidelit daylit zones is less than 8 75 watts, daylight responsive controls are not required for the secondary sidelit zone'	This must be an error. 85 should be 75 watts to be consistent with the new wattage threshold noted in the section.	Alex Baker- NEMA
Partially reduce	Non-Substantive	SubClause	130.2(c)2B, 130.2(c)3B	<p>B. Automatic scheduling controls shall be capable of partially reducing the outdoor lighting power by 50 to 90 percent, and separately capable of turning the lighting OFF, during scheduled unoccupied periods.</p> <p>B. Motion sensing controls shall be capable of partially reducing the outdoor lighting power of each controlled luminaire by 50 to 90 percent, and separately capable of turning the luminaire OFF, during unoccupied periods.</p> <p>C. Motion sensing controls shall be capable of reducing the lighting to its dim or OFF state no longer than 15 minutes after the area has been vacated, and of returning the lighting to its ON state when the area becomes occupied.</p>	They added the word partially. It adds confusion. How do you partially reduce?	Alex Baker- NEMA
Outdoor resi lighting	Substantive	SubClause	150.0(k)3	<p>A. Outdoor permanently installed lighting permanently mounted to a residential building or to other buildings on the same lot shall meet the following requirements</p> <p>C. An energy management control system (EMCS) or other controls that provides the specified lighting control functionality and complies with all requirements applicable to the specified controls may be used to meet these requirements. No controls shall bypass control functions of a dimmer, occupant sensor, or vacancy sensor where the dimmer or sensor has been installed to comply with Section 150.0(k)3.</p>	<p>Why only outdoors lighting that is mounted to a building that only lighting that is controlled? This leaves out lightng poles. The requirement should be for all permanently installed outdoor lighting. Permanently means hardwired, not solar lights or plugged in lights.</p> <p>2nd sentence that was added is for indoor lighting controls, doesn't make sense for outdoor controls. Dimmers for instance are not required for outdoor.</p>	Alex Baker- NEMA
Cut redundancy of the standard	Substantive	General	160, 170, 180	Remove these sections from the standard as they are all redundant and confusing to have in the standard.	These sections are not needed. Redundant and adds 190 pages to the standard. Also, it's likely to cause errors if one section is changed and the changes don't match in 160, 170, or 180. Plus not consistent with 90.1 or IECC.	Alex Baker- NEMA
Clarification of Manufacturer OpenADR Certification of CEC	Non-Substantive	SubClause	110.12(a)1B	Certified by the manufacturer, to the California Energy Commission , as being capable of responding to a demand response signal from a certified OpenADR 2.0b Virtual End Node by automatically implementing the control functions requested by the Virtual End Node for the equipment it controls.	Believe that this clarification is needed as current wording makes it unclear as to who the certification is to be provided to by the Manufacturer	Alex Baker- NEMA
Outdoor lighting - Motion sensing for Partial-Off requirements limitation	Non-Substantive	SubClause	130.2(c)3C	Motion sensing controls shall be capable of reducing the lighting to its dim partial-OFF or OFF state no longer than 15 minutes after the area has been vacated, and of returning the lighting to its ON state when the area becomes occupied.	Believe that a simple wording correction is needed. There is no dimming required to comply with this provision, so it should not be referred to as dim.	Alex Baker- NEMA