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**International Energy Conservation Code**

**Electric Power, Lighting, and Renewables (PLR) Subcommittee**

**Meeting Agenda**

May 23, 2022

11:00 AM EST to 2:00 PM EST (3 hours)

[Webex Link](https://iccsafe.webex.com/iccsafe/j.php?MTID=m1229fe0cc2c1cc33dcb67619c1e01087)

**Committee Chair:** Michael Jouaneh ([mjouaneh@lutron.com](mailto:mjouaneh@lutron.com)); **Committee Vice Chair:** Jack Bailey ([jbailey@oneluxstudio.com](mailto:jbailey@oneluxstudio.com)); **Note Taker:** Michael Myer ([Michael.myer@pnnl.gov](mailto:Michael.myer@pnnl.gov))

1. Call to order – Jouaneh **[start 11:02 am]**

2. Roll Call – Bailey (11 SC voting members needed for quorum)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **First Name** | **Last Name** | **Category** | **Company** |
| X | Ali | Alaswadi\* | Gov. Regulator | DC |
| **X** | **Jack** | **Bailey\*** | **User** | **One Lux Studio/Int'l Assoc. of Lighting Designers** |
|  | Bernard | Bauer | User | Integrated Lighting Concepts |
| X | Payam | Bozorgchami | Gov. Regulator | CA Energy Comm |
|  | Joe | Cain | Manufacturer | Solar Industries Assoc |
| X | Nick | Ferzacca | User | IMEG Corp. |
| X | Anthony | Floyd\* | Gov. Regulator | City of Scottsdale |
|  | Glenn | Heinmiller | User | Lam Partners/Int'l Assoc. of Lighting Designers |
| X | Bryan | Holland\* | Standards Promulgator | NEMA |
| X | Harold | Jepsen | Manufacturer | Legrand |
| **X** | **Michael** | **Jouaneh\*** | **Manufacturer** | **Lutron** |
| X | Joyce | Kelly | User | GLHN Architects & Engineers |
| X | Andrew | Klein\* | Consumer | BOMA |
|  | Mark | Lien | Standards Promulgator | IES |
| X | Jon | McHugh | Gov. Regulator | McHugh Energy |
| X | Hope | Medina\* | Gov. Regulator | Cherry Hills Village |
|  | Melissa | Moseley\* | User | HDR/American Society of Interior Designers |
| X | Susan | Musngi\* | Consumer | Camden |
|  | **Michael** | **Myer** | **Consultant** | **PNNL** |
| X | Steven | Rosenstock\* | Utility | Edison Electric Institute |
|  | Wayne | Stoppelmoor | Manufacturer | Schneider Electric |
| X | Mitchell | Tolbert | Gov. Regulator | City of Austin |
| X | Michael | Turns | Utility | MA Program Administrator |

\*denotes member of EC4 consensus committee

3. Introduction of any guests -- Bailey (name/representation type into chat)

There are 19 members present, so we have quorum

4. Review/approve agenda – Jouaneh

Hope moved and Payam 2nd the motion, so agenda was approved

5. Meeting conduct -- Jouaneh

* [Antitrust](https://www.iccsafe.org/wp-content/uploads/PPG-12-AntiTrust-Compliance-Guidelines.pdf) Reminder
* Identification of Representation / Conflict of Interest ([CP#7](https://www.iccsafe.org/wp-content/uploads/CP07-04.pdf) Section 5.1.10)
* [Code of Ethics](https://www.iccsafe.org/wp-content/uploads/CodeOfEthics.pdf)

6. Review key actions from last meeting and approve minutes – Jouaneh

One approved as submitted, and one approved as modified, and four were disapproved.

7. New business.

* Proposal grouping update – Bailey **[end by 11:10 am]**

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| **Number** | **Daylight responsive controls (2)** |
| **CEPI-162-21** | **Daylight responsive controls** |
| **CEPI-164-21** | **Daylighting controls** |
|  | **[end by 1:00 pm]** |

CEPI-164

* Bryan Holland (NEMA): Similar to occupancy sensors (turn off lighting when no one is in room), NEMA advocates that we should turn off or reduce the lighting when there is sufficient daylight available. Regardless of the amount of daylight and this is a transition to the wattage reduction. Also raised a concern about “gaming” based on design.
* Jack Bailey (One Lux): Against this proposal. A number of analyses have been shared internally, but not with the full SC related to cost effectiveness. In general, this requirement is not cost effective. Referenced other dimming requirements as well as other controls. This is going to probably be a network system (3 or 4) components to meet the code. Discussed the cost of energy being $23 or $24 if 75 W baseline. If our daylight controls saved 33%, then only $8 is saved per year. Assuming a 15-year analysis, this would mean the controls would have to be $106 total cost. As the wattage descends towards 1 W, the controls become even less cost effective because lower load is saved. Discussed redundancy in controls (e.g., manual-on controls, if there is ample daylight, then people choose to not turn on the light). Stated the most common spaces affected are small offices and conference rooms. Jack received 3 sets of cost data. The cost of adding lighting controls typically is over $300 which limits their cost effectiveness. There is a finite amount of money available for projects, this burdens the project while limiting the savings.
* Steve Rosenstock (EEI): In my mind, not too late to discuss cost effectiveness of share the data. Is it a cost increase? The proposal says “no cost increase.” Feels the cost data should be shared (while avoiding any anti-trust concerns). Was originally in favor of the change, but now is reconsidering the vote.
* Michael J: There are multiple economic analyses. Did not want to confuse the SC with multiple analyses. Ideally, we would have had a singular analysis that could be widely shared.
* Steve Rosenstock: A sensitivity analysis could have been shared.
* Joyce Kelly: Yes, Jack is correct with small offices, but this would be good in corridors which represents a lot real estate. Combination occupancy and daylight sensors make sense in corridors.
* Jon McHugh: The problem is that manufacturers are prohibited from sharing prices. We should focus on the range of prices. In general, the states with the highest labor costs are also the states with the highest energy costs. These costs are substantially higher than the U.S. average. If you use RS Means, the labor costs are 160% of the national average. In NYC, it is 180% of the national average. Affects spaces where the perimeter wall area is 15 – 40 feet. In general, small offices are going to be smaller than this value. There are many places (like hallways) where this makes sense. Supportive of the proposal as written and expects a public review comment. However, the cost numbers have been all over the place. The energy savings in the primary zone are significant. I spoke with a software developer, the first head height of the window, and he suggests the savings are 65% and the secondary is 35% with an average of 50%. In a corridor, this is only going to be the primary zone.
* Jack Bailey (One Lux): Agree with Steve and attempted to share data but was limited in what data could be shared (even public). As far as Jack can tell, Jack was the only one that shared cost data. In terms of room types, private offices, small offices, and most spaces under 300 ft2 required to have a manual-on occupancy sensor. Lobby and exercises would be required to have primary and secondary daylight zones. Provided prices for different spaces, corridors if less than 30’ is under 75 W and over 60’ is over 150 W. It makes sense in the 30’ – 60’ wide. In accordance with 90.1, 90.1 removed the daylight requirement.
* Harold Jepsen (Legrand): Where do we set the baseline? Most buildings are using system designs? The baseline should be a system baseline. As a SC, where do we consider the baseline? Will not discuss pricing in this meeting.
* Michael J: If private offices are an issue, should they be an exemption?
* Jack: The problem is the manual-on / auto-off occupancy sensors which is required in spaces under 300 ft2. If you exempt all 300 ft2, it exempts too much.
* Jon McHugh: Thought there was an exemption for small offices. Related to the discussion of alignment with 90.1, though there was an exception for small offices. Would support an exception.
* Bryan Holland: There is not wattage exception or limit for occupancy sensors. There is no metric for occupancy sensors. It makes more sense to turn off the lighting when the space is empty. This logic should apply to spaces where there is ample daylight. For occupancy sensors, there is no threshold. Mentions that C402 allows for more fenestration if there is more daylighting in C405. But reality can limit the use C405. Don’t just use cost effectiveness, there should be other metrics than just cost.
* Steve Rosenstock (EEI): Shared the link for [90.1 addendum O](https://www.ashrae.org/file%20library/technical%20resources/standards%20and%20guidelines/standards%20addenda/90_1_2019_o_20210730.pdf). 90.1 exceptions: “Exception to 9.4.1.1(e): The following areas are exempted from Section 9.4.1.1(e):1. Primary sidelighted areas where the top of any existing adjacent structure or naturalobject is at least twice as high above the windows as its horizontal distance awayfrom the windows.2. Sidelighted areas where the total glazing area is less than 20 ft2.3. Retail spaces.4. Primary sidelighted areas adjacent to vertical fenestration that have external pro-jections and no vertical fenestration above the external projection, where the exter-nal projection has a projection factor greater than 1.0 for north-oriented projectionsor where the external projection has a projection factor greater than 1.5 for all otherorientations (see Figure 3.2-6).

FYI, retail spaces exception was removed in the addendum

* Harold: Most systems in the room are “digital in the room”. Allows for greater flexibility and the future. This is common in many offices. Detection at the high point is better than for geometry. Manual-on requirement, we have no requirement of “Manual-On” or “Automatic-on”. Harold is not aware of this as a requirement.
* Jack Bailey: I have not just seen anyone do auto-on 50% in a wallbox occupancy. It may not even be cost effective in practice. When Jack started his analysis, he thought 100 W or 120 W may be better, but he has not found the cost-effective point. Burden of proof should be on the proponents to show cost effectiveness, not the burden on those that don’t want it to show the cost issues.
* Nick Ferzacca: Regarding schools, 50 – 60 rooms would fall into this category and 50% are no offices like bathrooms, corridors, small group rooms, etc. This would be applied to spaces where the lighting would be turned off most of the time from occupancy sensors.
* Michael J: Are these spaces under the 150 W range?
* Nick Ferzacca: Yes, they would be under the 150 W.
* Jon McHugh: Are these small classrooms with an occupancy sensor?
* Nick Ferzacca: I cannot imagine there would a lot of wattage that would be turned off or dimmed. These are 30 W linear fixtures.
* Michael J: Is there a number less than 150 W?
* Jack Bailey: I am not saying that there is not a number less than 150 W, but that number may not be there today.
* Jon McHugh: Straw poll for a proposed modification?
* Motion for disapproval of CEPI-162
  + 1st – Jack Bailey
  + 2nd – Steve Rosenstock
  + Discussion:
    - Steve, there are issues with the exception.
    - Bryan Holland, vote in opposition. Public comments are the place for exceptions. These have been available for 6+ months and no comments to date.
  + Vote: 10 yes | 7 no | 1 abstain
  + Reason statement: Proposed wattage limits are not demonstrated to be cost effective and concerns exist related to the current exceptions.
* Motion for disapproval of CEPI-164
  + 1st – Jack Bailey
  + 2nd – Hope Medina
  + Discussion: Jon McHugh, this motion moved ahead of a separate proposal by Jon to align with 90.1 and include an exception. Steve Rosenstock, I am voting against, to see if a modification by NEMA would be amenable to amendments. Bryan Holland, argues to vote against disapproval and to allow for a modification to align with 90.1.
  + Vote: 5 yes | 12 no | 2 abstain
* Proposal: Add “3. Enclosed office spaces less than 250 ft2.”
  + 1st – Jon
  + 2nd – Bernie Baurer
  + Discussion:
  + Harold: Should we use the same term that matches the LPD table
  + Jack: Opposed to this modification because the cost effectiveness is identical for any manual-on space that is also less than 300 ft2. If creating the exception, consider applying to all spaces. Costs are even worse with spaces with a timeswitch baseline. This will hurt energy efficiency in spaces that are already above 150 W (some small offices)
  + Jon: Not many offices would be greater than 150 W.
  + Jack: There are no prescriptive requirement in power for offices or spaces. This is the wrong way to address the issue.
  + Vote: 9 yes | 6 no | 3 abstain
* Proposal: Adopt modified CEPI-164
  + 1st – Jon McHugh
  + 2nd – Harold Jepsen
  + Discussion: None
  + Vote: 11 yes | 4 no | 4 abstain
  + Reason statement: The revised proposal more closely matches the daylighting requirements in ANSI/ASHRAE/IES Standard 90.1 and leads to more energy savings in IECC.

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| **Number** | **Standalone Proposals (2)** |
| **CEPI-133-21** | **Lighting general scope** |
|  | **[end by 1:50 pm]** |

CEPI-133

* Proposal: Approve as modified
  + 1st – Harold Jepsen
  + 2nd – Bryan Holland
  + Vote 17 yes | 0 no | 1 abstain
  + Reason statement: Provides clarity to scope of C405

8. Other business – Jouaneh **[end by 1:59 pm]**

* [Teams site](https://teams.microsoft.com/l/team/19%3aKMleRbAtrEAu1N0HzdWt_R8FCMc_WjlV58mrFRjV8fA1%40thread.tacv2/conversations?groupId=edefc94e-e6ed-4695-a40b-c7af90c71fd8&tenantId=173eec12-7e3d-46d0-b83f-5a74246b3037)
* Withdrawals: CEPI 005, 026, 143, 144, 151, 155, 157, 158, 159, 160, 165, 170, 190, 191, 201, 258, and 202
* Proposals for PNNL cost effective analysis: CEPI 162/164, 176
* Potential summer items

9. Future meeting: **11:00 am – 1:00 pm ET on Friday June 13, 2022 [back to 2-hours]**

10. Adjourn **[2:00 pm]**

FOR FURTHER INFORMATION BE SURE TO VISIT THE ICC WEBSITE:

[ICC Energy webpage](https://www.iccsafe.org/products-and-services/codes-standards/energy/)

[Code Change Monograph](https://www.iccsafe.org/wp-content/uploads/2021-Public-Input-Complete-Monograph.pdf)

FOR ADDITIONAL INFORMATION, PLEASE CONTACT:

Subcommittee Chair

