

DOCKETED	
Docket Number:	21-BSTD-01
Project Title:	2022 Energy Code Update Rulemaking
TN #:	240691
Document Title:	Final Statement of Reasons for the Proposed Revisions to 2022 Title 24, Part 1 and Part 6
Description:	N/A
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Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	11/22/2021 6:40:53 PM
Docketed Date:	11/22/2021

CALIFORNIA ENERGY COMMISSION

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CEC-057 (Revised 1/21)



FINAL STATEMENT OF REASONS
PROPOSED BUILDING STANDARDS
OF THE CALIFORNIA ENERGY COMMISSION
REGARDING THE 2022 BUILDING ENERGY EFFICIENCY STANDARDS,
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 1, CHAPTER 10
AND PART 6
(2022 CALIFORNIA ENERGY CODE)
(DOCKET NO. 21-BSTD-01)

UPDATES TO THE INITIAL STATEMENT OF REASONS:

In response to public comment the following modifications were made to the regulation text:

Section: 10-103.1(b), 10-103.1(c)**Specific Purpose:**

The purpose of the changes to these sections is to add references to relocated lighting acceptance test requirements applicable to multifamily buildings. These requirements were relocated to Section 160.5(e).

Necessity:

These changes are reasonably necessary to ensure that the language in Section 10-103.1 correctly identifies the applicable lighting acceptance testing requirements relevant to the Lighting Acceptance Test Training and Certification Program. These multifamily lighting acceptance testing requirements previously were grouped together with the nonresidential requirements in Section 130.4 of the California Energy Code (Energy Code) and were relocated to Section 160.5(e) of the Energy Code as part of the multifamily reorganization changes to the 2022 Energy Code.

Section: 10-103.2(b), 10-103.2(c)**Specific Purpose:**

The purpose of the changes to these sections is to add references to relocated mechanical acceptance test requirements applicable to multifamily buildings. These requirements were relocated to Section 160.3(d).

Necessity:

These changes are reasonably necessary to ensure that the language in Section 10-103.2 correctly identifies the applicable mechanical acceptance testing requirements relevant to the Mechanical Acceptance Test Training and Certification Program. These multifamily mechanical acceptance testing requirements previously were grouped together with the

nonresidential requirements in Section 120.5 of the Energy Code and were relocated to Section 160.3(d) of the Energy Code as part of the multifamily reorganization changes to the 2022 Energy Code.

Section: 100.0(e)2Bii

Specific Purpose:

The specific purpose of the change to this Section is to replace “140.9” with “140.10.” This corrects a typographical clerical error that could lead to confusion if not corrected since Section 140.10 was added as a prescriptive requirement.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 100.0-A

Specific Purpose:

The specific purpose of the changes to this table are to separate multifamily from the nonresidential and single-family building categories, and to add the new electric-ready sections to this table. Additionally, Table 100.0-A was reformatted for ADA compliance, and existing section references were updated to account for any change in section numbering resulting from additional proposed amendments to the Energy Code.

Necessity:

These changes are reasonably necessary to ensure that the language in Table 100.1-A of the Energy Code correctly refers to and parallels the newly separated sections for multifamily buildings and the new sections for electric-ready requirements.

Section: 100.1(b) – Minor Updates to Existing Definitions

Specific Purpose:

The specific purpose of the changes to numerous definitions in the Definitions section is to update the titles and reference years for certain industry standards and test procedures.

This includes updates to the following definitions:

- ANSI/ASSP Z9.5
- ANSI C82.6
- ANSI/CTA-2045-B
- ANSI Z21.40.4a
- ANSI Z83.8
- ASHRAE HANDBOOK, SYSTEMS AND EQUIPMENT VOLUME
- ASHRAE Standard 62.2
- ASME A17.1/CSA B44
- ASTM C55
- ASTM D1003
- ASTM D1653
- ASTM D4798
- ASTM D6694

- ISO 1725
- CONTROLLED ENVIRONMENT HORTICULTURE SPACEDEMISING PARTITION
- INTEGRATED HVACE SYSTEM
- ISO 13256-1
- ISO 13256-2
- POOLS, NSF/ANSI/CAN 50
- NSF/ANSI/CAN 50
- RESNET 380
- UL 1077
- UL 1574
- UL 1741
- UL 9540

In addition, the term “OPTIMUM STOP CONROLS” is corrected to “OPTIMUM STOP CONTROLS.

Necessity:

These changes are reasonably necessary to ensure that the referenced industry standards and test procedures are clear, accurate, and unambiguous, and that non-technical readers are able to find and understand the technical meaning of specific terms relating to building design and construction.

Section: 100.1 – CTI ATC 105-DS

Specific Purpose:

The specific purpose of the change is to add the reference document as issued by the Cooling Technology Institute.

Necessity:

These changes are necessary to ensure that the terms used within the regulations will have clear and unambiguous meaning to readers, including the public, and particularly to the persons and organizations affected by these regulations. Additionally, these new terms ensure consistency between the Energy Code and the other Parts of the Building Standards Code, as directed by California Government Code sections 11349 and 11349.1.

Section: 100.1(b) – Newly Added Definitions

Specific Purpose:

The specific purpose of the added definitions to the Definitions section is to provide clear and specific definitions for the technical terms used within other updates to Part 6, aligned with the use of the term where it is proposed to occur later in the Energy Code. This includes added definitions for new industry standards documents that are incorporated by reference into later portions of the Energy Code. The newly added definitions are:

- ASHRAE STANDARDS 90.1
- Combined Energy Efficiency Ratio (CEER)
- Energy Efficiency Ratio 2 (EER2)
- Heating Seasonal Energy Performance Factor 2 (HSPF2)
- Seasonal Energy Efficiency Ratio 2 (SEER2)

- Conditioned Greenhouses
- Codes, California Fire Code (CFC)
- CTI ATC-105DS
- Dehumidifier
- Dry Cooler
- Dual-fuel heat pump
- Heating Seasonal Performance Factor 2 (HSPF2)
- Luminaire Alteration
- Net Sensible Coefficient of Performance (COP)
- One-to-One Alteration

Necessity:

These changes are reasonably necessary to ensure that provisions in subsequent sections are clear and unambiguous, and that non-technical readers are able to find and understand the technical meaning of specific terms relating to building design and construction.

Section: 100.1 – Demising Partition

Specific Purpose:

The specific purpose of the change is to incorporate controlled environment horticulture spaces within the definition of Demising Partition.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 100.1 – Common Living Areas

Specific Purpose:

The specific purpose of the change is to remove the definition for common living areas.

Necessity:

The definition for common living areas was removed as this term is not used within the Energy Code. These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 100.1 – Common Service Areas

Specific Purpose:

The specific purpose of the change is to remove the definition for common service areas.

Necessity:

The definition for common service areas was removed as this term is not used within the Energy Code. These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 100.1 – Common Use Areas

Specific Purpose:

The specific purpose of the change is to remove the definition for common use areas.

Necessity:

The definition for common use areas was removed as this term is not used within the Energy Code. These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 100.1 – Fan System, Exhaust / Relief

Specific Purpose:

The specific purpose of the change is to merge Fan System, Exhaust and Fan System, Relief definitions.

Necessity:

These changes are reasonably necessary to ensure that the terms used within the regulations will have clear and unambiguous meaning to readers, including the public, and particularly to the persons and organizations affected by these regulations. Additionally, this new term ensures and improves the general clarity and internal consistency of the Energy Code as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 100.1 – Fan System, Multi-Zone Variable Air Volume

Specific Purpose:

The specific purpose of the change is to clarify ambiguous language in this definition that intended to capture the sum of the minimum zone airflows are less than 40% and not that each individual zone airflows sum is less than 40%.

Necessity:

These changes are reasonably necessary to ensure that the terms used within the regulations will have clear and unambiguous meaning to readers, including the public, and particularly to the persons and organizations affected by these regulations. Additionally, this amendment to the definition for “Fan System, Multi-Zone Variable Air Volume” ensures and improves the general clarity and internal consistency of the Energy Code as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 100.1 – Open Cooling Tower, Or Open-Circuit Cooling Tower

Specific Purpose:

The specific purpose of the change is to update the definition of open cooling tower to apply to the term open-circuit cooling tower to align with terminology used in the Energy Code.

Necessity:

These changes are reasonably necessary to ensure that the terms used within the regulations will have clear and unambiguous meaning to readers, including the public, and particularly to the persons and organizations affected by these regulations. Additionally, this amended term ensures and improves the general clarity and internal consistency of the

Energy Code as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 100.1 – Dry Cooler

Specific Purpose:

The specific purpose of the change is to add the definition for the term dry cooler, which is a term used in Section 110.2.

Necessity:

These changes are reasonably necessary to ensure that the terms used within the regulations will have clear and unambiguous meaning to readers, including the public, and particularly to the persons and organizations affected by these regulations. Additionally, this new term ensures and improves the general clarity and internal consistency of the Energy Code as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 100.1 – Controlled Environmental Horticulture (CEH) Space

Specific Purpose:

The specific purpose of the changes is to remove the “irrigation” and “Greenhouses and indoor growing are types of CEH spaces” from the definition.

Necessity:

These changes are reasonably necessary to ensure that changes only in irrigation systems do not trigger Energy Code requirements since the new provisions do not have new irrigation requirements added. The changes are also reasonably necessary to remove redundant terms and thereby ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16. These changes are understood not to have a substantive regulatory effect.

Section: 100.1 – Dehumidifier

Specific Purpose:

The specific purpose of the change is to remove “stand-alone” from dehumidifier definition.

Necessity:

This change is reasonably necessary to be consistent with definition for dehumidifiers from the Federal appliance regulations and to improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 10-103

Specific Purpose:

The specific purpose of the changes to this section and its subsections is to add the phrase “and their associated Compliance Registration Packages” where necessary to clarify the relationship between the certificate of compliance and the documentation supporting the final certification that the building has been found, via testing, to comply with all applicable Energy Code requirements. In addition, the phrase “in accordance with Title 20, Chapter 4, Article 8, Section 1670 et. seq” is appended to two mentions of the HERS data registry to more directly specify what the term “HERS data registry” refers to. To the extent that the

prior language could be read that Certificates of Compliance could be divorced from their supporting documentation, this change has the substantive effect of requiring that the supporting documentation be provided alongside the Certificate.

Necessity:

These changes are reasonably necessary to ensure the correct handling and transmitting of data documenting building project compliance with Energy Code requirements relating to acceptance testing.

Section: 10-103.1

Specific Purpose:

The specific purpose of the change to this section and its subsections is to add references to Section 160.5(e) alongside existing references to Section 130.4 consistent with the separation of multifamily building requirements, including acceptance testing requirements, into separate chapters in Sections 160, 170 and 180 (inclusive). This change does not have any substantive effect, as Section 1605(e) requires acceptance testing irrespective of its reference within this section.

In addition, unneeded ellipses in existing section references have been removed, as has an unnecessary reference to Section 130.2.

Necessity:

These changes are reasonably necessary to improve the consistency and general clarity of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 10-103.2

Specific Purpose:

The specific purpose of the change to this section and its subsections is to add references to Section 160.5(e) alongside existing references to Section 130.4 consistent with the separation of multifamily building requirements, including acceptance testing requirements, into separate chapters in Sections 160, 170 and 180 (inclusive). This change does not have any substantive effect, as Section 1605(e) requires acceptance testing irrespective of its reference within this section.

In addition, unneeded ellipses in existing section references have been removed, as has an unnecessary reference to Section 130.1.

Necessity:

These changes are reasonably necessary to improve the consistency and general clarity of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 10-109(i)

Specific Purpose:

The specific purpose of the change to this section is to add the phrase “and their associated Compliance Registration Packages” to clarify the relationship between the certificate of compliance and the documentation supporting the final certification that the building has been found, via testing, to comply with all applicable Energy Code requirements.

Necessity:

This change is reasonably necessary to ensure the correct handling and transmitting of data documenting building project compliance with Energy Code requirements relating to acceptance testing.

Section: 10-109(k)

Specific Purpose:

The specific purpose of the change to this section is to incorporate battery storage into the section: the cost effectiveness of battery storage systems is similarly sensitive to utility costs and customer compensation for exported solar generation. This change also updates section references consistent with this change and with general differences in section numbering resulting from the additional edits proposed in the revised Express Terms.

Necessity:

This change is reasonably necessary to ensure that battery storage systems are only required where they will be cost-effective, based on recognition that specific rate structures, fees, compensation, and costs have a similar outsized impact for both solar photovoltaic and battery storage systems.

Section: 10-115

Specific Purpose:

The specific purpose of the changes to this section and its subsections is to clarify and add specificity to the concepts of participation, documentation, and additionality. Section 10-115(a)4 is broken down into four subsections: Durability, Participation, Compliance Documentation, and Building Opt Out. The “Participation” subsection provides expanded requirements relating to the role of program administrator and maintaining continuity of participation when ownership of the participating building is transferred. The “Compliance Documentation” subsection specifies the records that the Administrator will maintain, and the persons to whom said records will be available. The “Building Opt Out” subsection expands upon and clarifies the original Express Terms language relating to opting out of community program participation in favor of self-owned, site-installed equipment.

Language has been rephrased to be more specific in Section 10-115(a)5C, allowance for excess generation to be directed to other loads is added in new Section 10-115(a)5D, and the requirement that builders provide an alternative to program participation at initial sale previously in Section 10-115(a)8 has been removed based on stakeholder feedback.

Additional clarifications and improvements in phrasing regarding approval and recordkeeping are made in Sections 10-115(b) and (c).

Necessity:

These changes are reasonably necessary to ensure that community solar programs meet expectations regarding the benefit provided to participating buildings, the durability of said benefits, and the adequacy of an opt-out option in permitting customers who are interested in purchasing their own equipment to do so

Section: 110.2(a)

Specific Purpose:

The specific purpose of the change is to update references to the Tables referenced in Section 110.2(a) to match the referenced Tables in Section 110.2 because Tables were added and removed in Section 110.2 requiring these references to be updated.

Necessity:

These changes are reasonably necessary to align Section 110.2(a) with the Tables included in Section 110.2. Additionally, these revisions ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 110.2(e)**Specific Purpose:**

The specific purpose of the change is to include the terms open and closed-circuit cooling towers in Section 110.2(e) and in the Exception to Section 110.2(e) for clarity.

Necessity:

These changes are reasonably necessary to clarify to readers which equipment that are regulated under Section 110.2 and the associated exception. Additionally, these revisions ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 110.2-A**Specific Purpose:**

The specific purpose of the change is to remove footnote a as it was determined that this note is no longer necessary. Remaining footnotes were revised accordingly. Additionally, Table 110.2-A was reformatted for ADA compliance.

Necessity:

These changes are reasonably necessary to remove unnecessary language from the Energy Code. These revisions were made to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 110.2-B**Specific Purpose:**

The specific purpose of the change is to remove footnote a as it was determined that this note is no longer necessary. Remaining footnotes were revised accordingly. Additionally, Table 110.2-B was reformatted for ADA compliance.

Necessity:

These changes are reasonably necessary to remove unnecessary language from the Energy Code. These revisions were made to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 110.2-C, Table 110.2-D, Table 110.2-E, Table 110.2-G, Table 110.2-H, Table 110.2-I, Table 110.2-J**Specific Purpose:**

The specific purpose of the change is to format these tables for ADA compliance.

Necessity:

These revisions were made to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 110.2-F

Specific Purpose:

The specific purpose of the change is to remove the Table identifying efficiency requirements for heat transfer equipment. Additionally, remaining table titles were adjusted due to the removal of Table 110.2-F.

Necessity:

These changes are reasonably necessary to simplify code language. The table was determined to be unnecessary since no equipment was identified for inclusion in this Table. The revisions were made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 110.2-F

Specific Purpose:

The specific purpose of the change is to make revisions to the test fluids identified in the table to match those identified in ASHRAE 90.1-2019. Additionally, format revisions were made for ADA compliance.

Necessity:

These changes are reasonably necessary to align with requirements identified in ASHRAE 90.1-2019. These revisions were made to maintain, where feasible, consistency between the Energy Code and the most current versions of national model codes and industry standards. Additionally, formatting changes were made to align with the format of other tables within the Energy Code. These revisions were made to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 110.2-F

Specific Purpose:

The specific purpose of the change is to add requirements propellor or axial fan dry coolers to align with requirements identified in ASHRAE 90.1-2019. Additionally, revisions were made to note c to address the addition of dry cooler equipment to the table.

Necessity:

These changes are reasonably necessary to align requirements in the Energy Code with ASHRAE 90.1-2019. These revisions were made to maintain, where feasible, consistency between the Energy Code and the most current versions of national model codes and industry standards. These revisions were made to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 110.2, Table 110.2-K, 110.2-L, 110.2-M, 110.2-N

Specific Purpose:

The specific purpose of the change is to incorporate ASHRAE 90.1-2019 efficiency requirements for DX-DOAS units, computer room air conditioners and heat pump and heat recovery chillers.

Necessity:

These changes are reasonably necessary to align the Energy Code with equipment efficiency requirements identified in ASHRAE 90.1-2019 to maintain, where feasible, consistency between the Energy Code and the most current versions of national model codes and industry standards. These revisions were made to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 110.3(c)3A

Specific Purpose:

The specific purpose is to change the external insulation R-value from R-12 to R-3.5.

Necessity:

This change updates the external insulation blanket R-value to account for the current DOE standard for internal tank insulation of R-12.5. This results in overall R-value of R-16, which is the same as the requirement in 110.3(c)3B and aligns with the intent of the historical requirement. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 110.3(c)3A

Specific Purpose:

The specific purpose of this change is to update the language to refer more generically to applicable appliance efficiency requirements, rather than referencing a specific standard (thermal efficiency) that was previously applicable to the equipment.

Necessity:

This change is reasonably necessary to ensure present and future code language does not inadvertently conflict with or deviate from the appliance standards that it is intending to reference.

Section: 110.4(a)1

Specific Purpose:

The specific purpose of this change is to include clarifying language that equipment subject to state or federal appliance efficiency standards are included in the Commission's directory of certified equipment and show compliance with applicable standards.

Necessity:

This change is necessary to clarify that the equipment must be listed in the Commission's directory of certified equipment and show that the equipment complies with state or federal appliance efficiency standards. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16. Although low-rise and high-rise multifamily were moved to their own section of the code, the intent was to maintain all applicable low-rise requirements.

Section: Table 110.6-A

Specific Purpose:

The specific purpose of the change is to move the footnote outside of Table 110.6-A and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 110.6-B

Specific Purpose:

The specific purpose of the change is to move the footnote outside of Table 110.6-B and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 110.8(a)

Specific Purpose:

The specific purpose of the change to Section 110.8(a) is to update the name of the agency responsible for certifying insulation in California. The Department of Consumer Affairs, Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation (BEARHFTI) has changed their name to the Bureau of Household Goods and Services (BHGS).

Necessity:

This change is reasonably necessary to ensure consistency between the Energy Code and the other Parts of the Building Standards Code, as directed by California Government Code Sections 11349 and 11349.1. Additionally, the clarifying change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 110.8(d)1

Specific Purpose:

The specific purpose of the change to Section 110.8(d)1 is to update the language so that it applies to all low-rise residential buildings, including multifamily buildings with three habitable stories or less, as it previously did in 2019. Additionally, a reference to the new multifamily mandatory requirements was added for clarity.

Necessity:

This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16. Although low-rise and high-rise multifamily were moved to their own section of the code, the intent was to maintain all applicable low-rise requirements.

Section: 110.8(d)2

Specific Purpose:

The specific purpose is to change the external insulation R-value from R-12 to R-3.5

Necessity:

This change updates the external insulation blanket R-value to account for the current DOE standard for internal tank insulation of R-12.5. This results in overall R-value of R-16, which is the same as the requirement in 110.3(c)3B and aligns with the intent of the historical requirement. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 110.8-C

Specific Purpose:

The specific purpose of the change is to move the footnote outside of Table 110.8-C and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 110.10

Specific Purpose:

The specific purpose of the changes to this section is to remove any remaining references to multifamily buildings where they occur throughout this section and its subsections, consistent with the relocation of multifamily requirements to separated chapters (Sections 160, 170 and 180 inclusive).

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 110.12(c)

Specific Purpose:

The specific purpose of the language revision is to clarify lighting systems considered for demand responsive lighting controls. Requirements for how demand responsive lighting controls were moved to the following subsections. This change does not substantively change the requirements of this section relative to the language in the original Express Terms.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 110.12(c)1

Specific Purpose:

The specific purpose of the changes to this section is to clarify the reduction in lighting power associated with the demand responsive lighting controls. These changes do not substantively change the requirements of this section relative to the language in the original Express Terms.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 110.12(c)2

Specific Purpose:

The specific purpose of the language revision is to clarify which lighting systems are required to be controlled and can be controlled optionally when demand responsive lighting controls are required. This change does not substantively change the requirements of this section relative to the language in the original Express Terms.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16

Section: 110.12(c)3

Specific Purpose:

The specific purpose of the language revision is to clarify how general lighting is to be reduced when demand responsive lighting controls are required. This change does not substantively change the requirements of this section relative to the language in the original Express Terms.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16

Section: 120.1(c)1D

Specific Purpose:

The specific purpose of the change is to clarify and reword the language for sealing of air filter racks and grills to prevent air from bypassing the filter.

Necessity:

These changes are reasonably necessary to clarify the intent of the requirement, that filter racks and grills shall use gaskets, sealing, or other means to close gaps around inserted filters and prevent air from bypassing. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 120.1(d)5

Specific Purpose:

The specific purpose is to replace the text “occupancy” with “occupant” in the terms - “occupant sensor” and “occupant sensing controls” - within Section 120.1(d)5.

Another specific purpose is to revise the term “air conditioning” to “space conditioning”.

In addition, the specific purpose is to revise and add the reference to subsections of Section 130.1(c)5, 6, and 7 which are specifically about and for occupant sensing controls in both the ventilation sections and the lighting sections.

Necessity:

These changes are reasonably necessary to ensure a consist usage of the terms - “occupant sensor ventilation control”, “occupant sensors”, and “space conditioning” – throughout the Energy Code.

The change to add the reference to subsections of Section 130.1(c)5, 6, and 7 is reasonably necessary to clarify the specific sections applicable to the occupant sensor ventilation control devices requirements.

These changes are reasonably necessary to ensure consistency between the Energy Code and the other Parts of the Building Standards Code, as directed by California Government Code Sections 11349 and 11349.1.

Section: 120.1(d)5A

Specific Purpose:

The specific purpose is to revise the text “within 20 minutes” to “in 20 minutes or less”.

Necessity:

These changes are reasonably necessary to clarify the period of time allowed for meeting the occupant sensor ventilation control devices requirements and to ensure consistency between the Energy Code and the other Parts of the Building Standards Code, as directed by California Government Code Sections 11349 and 11349.1.

Section: 120.1(d)5F and G

Specific Purpose:

The specific purpose is to revise the text “Within 5 minutes” to “In 5 minutes or less” and to add clarification about the system outside air rate required for the zone after entering occupied-standby mode - as provided by the ventilation system serving the zone.

Necessity:

These changes are reasonably necessary to clarify the period of time allowed for meeting the occupant sensor ventilation control devices requirements. Also, these changes are reasonably necessary to clarify the responses of the ventilation system serving the zone when mechanical ventilation is shut off to the zone and to ensure consistency between the Energy Code and the other Parts of the Building Standards Code, as directed by California Government Code Sections 11349 and 11349.1.

Section: 120.1, Table 120.1-A

Specific Purpose:

The specific purpose of the change is to remove the reference to note G for office buildings breakrooms and note H for retail sales in Table 120.1-A as these footnotes are not defined for this table. Additionally, formatting edits were made to properly align information in Table 120.1-A.

Necessity:

These changes are reasonably necessary to properly align information in Table 120.1-A and to reference correct notes for specific building spaces. These revisions were made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 120.1-B

Specific Purpose:

The specific purpose of the change is to move the header and footnote outside Table 120.1-B and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 120.1-C

Specific Purpose:

The specific purpose of the change is to move the header and footnote outside of Table 120.1-C and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 120.2

Specific Purpose:

The specific purpose of the changes to this section is to remove any remaining references to multifamily buildings where they occur throughout this section and its subsections, consistent with the relocation of multifamily requirements to separated chapters (Sections 160, 170 and 180 inclusive).

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 120.2(e)3**Specific Purpose:**

The specific purpose is to replace the text “occupancy” with “occupant” in the term “occupant sensing zone controls.”

Necessity:

These changes are reasonably necessary to ensure a consist usage of the term occupant sensing. These changes are reasonably necessary to ensure consistency between the Energy Code and the other Parts of the Building Standards Code, as directed by California Government Code Sections 11349 and 11349.1.

Section: Table 120.3-A**Specific Purpose:**

The specific purpose of the change is to move the footnote outside of Table 120.3-A and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 120.4(b)1D and 120.4(b)2D**Specific Purpose:**

The specific purpose is to remove the reference to ASHRAE 90.1 to avoid confusion for users. Seal Class A as defined in Section 100.1 mimics ASHRAE 90.1, but includes more specifications tailored to Title 24, Part 6.

Necessity:

This non-substantive change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 120.4(g)**Specific Purpose:**

The specific purpose of this change is to simplify code language and follow existing formatting. NA7.5.3 references NA 1 and NA2 and referencing NA7.5.3 will simplify the language.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California

Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 120.5(a)3

Specific Purpose:

The specific purpose of this change is to further specify the requirements of which duct systems are subject to duct testing by pointing to the specific subsections.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 120.6-A

Specific Purpose:

The specific purpose of the change is to move the footnote outside of Table 120.6-A and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 120.6(h)1A

Specific Purpose:

The specific purpose of the change is to accurately state the dehumidifier requirements. Previously stated requirements for stand-alone dehumidifiers are in the specified federal test procedures; this language is more specific in describing the referenced federal requirements.

Note that there is also a correction to delete the following language that inadvertently appeared after the period and repeats the text immediately before the period: “ng with 10 CFR 430.32(v)2.” This corrects a typographical clerical error.

Necessity:

This change is necessary to ensure that the revised language does not conflict with the Federal appliance regulations. These revisions were made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 120.6(h)4B

Specific Purpose:

The specific purpose of the change is to clearly state the types of non-opaque envelopes used in conditioned greenhouses.

Necessity:

This change is reasonably necessary to remove the ambiguity of how U-factors of fenestration are calculated. Greenhouse fenestration products listed in National

Fenestration Rating Council (NFRC) are not suited for commercial usage. These revisions were made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 120.6-B

Specific Purpose:

The specific purpose of the change is to reformat Table 120.6-B for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 120.6-D

Specific Purpose:

The specific purpose of the change is to move the footnote outside of Table 120.6-D and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Exception to 120.9(c)

Specific Purpose:

The specific purpose of this change is to correct a reference to “thermal efficiency” to instead refer to “combustion efficiency” for consistency with applicable federal appliance and equipment standards.

Necessity:

This change is necessary to identify the correct federally mandated efficiency metric applicable to this equipment, thereby avoiding an unintentional conflict with federal law.

Section: Exception to 1 to 120.10(a)

Specific Purpose:

The purpose of this change is to revise language to specify the federally pre-empted equipment that are exempt for this section.

Necessity:

This non-substantive change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Exception to 2 to 120.10(a)

Specific Purpose:

The purpose of the change is to include the word 'embedded' to clarify the type of fan arrays that are allowed under this exception.

Necessity:

This non-substantive change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 130.1(a)3

Specific Purpose:

The specific purpose of the changes is to state that scene controllers can be installed as specified for meeting the separate lighting control requirement of Section 130.1(a)3.

Necessity:

These changes are reasonably necessary to clarify that scene controllers are allowed for meeting the separate lighting control requirement of Section 130.1(a)3 as the scene controller lighting control technology provides the benefits of versatility and scalability – capabilities exceed the simple manual on-off toggle switch - for lighting applications with complex lighting scenarios and still meet the requirement of Section 130.1(a)3.

Section: 130.1(c)1D

Specific Purpose:

The specific purpose of the changes to delete this separate shut-OFF controls requirement for general lighting, display lighting, ornamental lighting, and display case lighting from the 15-day language.

Necessity:

The changes are reasonably necessary to avoid redundancy to the other existing separate controls requirement in section 130.1(a)3 - having another separate control requirement in section 130.1(c)1D is redundant. Further, the changes are reasonably necessary to clarify and to avoid the likely confusing scenario where the separate shut-OFF controls requirement for providing the specified lighting types as a minimum could pose a challenge for the application scenario where the lighting controls are desired to be controlling the lighting types in the same manner at the same time.

These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section 130.1(c)1, Exception 3 (Moving Exception 2)

Specific Purpose:

The specific purpose of the changes is to move 'Exception 2 to Section 130.1(c)' to 'Exception 3 to Section 130.1(c)1' as part of the Exception 3.

Necessity:

These changes are reasonably necessary to clarify that both provisions are applicable to lighting providing means of egress illumination. As both Exception 2 and the Exception 3 are about lighting providing means of egress illumination, the changes consolidate both exceptions in the same location of the code section with no material change to the regulation. These changes are reasonably necessary to ensure and improve general clarity

and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 130.1(c)1, Exception 6

Specific Purpose:

The specific purpose of the change is to delete the 45-day proposed exception to shutoff controls for lighting in stairway designated as means of egress.

Necessity:

This change is reasonably necessary to respond to a comment received stating that bi-level sensor-based controls are available for stairwell lighting application and have been demonstrated with a high reliability – this serves as support for the full or partial-off occupancy sensing controls requirement for stairwell lighting.

These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section 130.1(c)3B, Exception

Specific Purpose:

The specific purpose of the change is to add “laboratories” to the list of areas to be allowed to have an automatic time-switch control override of longer than two hours.

Necessity:

The changes are reasonably necessary to address a comment received stating that there are laboratory applications (laboratory experiments) where automated lighting controls which shut off lights could interfere with the laboratory experiments. The automatic time-switch shut-off control override exception allows these shutoff controls to be overridden.

For this reason, laboratories were added to the list of spaces that may have this override.

These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 130.1(c)5

Specific Purpose:

The specific purpose is to replace the text “sensor” with “sensing controls”.

Another specific purpose is to revise the text “within 20 minutes” to “in 20 minutes or less after” (after the control zone is unoccupied) for meeting the occupant sensing controls requirements.

The other specific purpose is to delete the proposed 45-day changes for general lighting to be controlled by occupant sensing controls including partial-on occupant sensing or vacancy sensing controls.

Necessity:

These changes are reasonably necessary to ensure consistent usage of the terms - “occupant sensing controls” and “vacancy sensing controls” – throughout the Energy Code. In addition, these changes are reasonably necessary to clarify the timing of when the controls must shut off lighting to meet the occupant sensing controls requirements.

The other changes are reasonably necessary to clarify that “lighting” in the applicable spaces are required to be controlled by occupancy sensing controls for meeting Section 130.1(c)5.

These changes are also reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 130.1(c)6

Specific Purpose:

The specific purpose of the change is to revise the section heading to add “Full” for the term “occupant sensing controls” and to revise “300 square feet” to “250 square feet” for the office lighting occupant sensing controls requirement (for offices greater than 250 square feet).

The other specific purpose of the change is to revert the term “general lighting” as “lighting” for meeting the requirements of Section 130.1(c)6.

Necessity:

These changes to the section heading are reasonably necessary to clarify either full occupant sensing controls or partial off occupant sensing controls are allowed for meeting Section 130.1(c)6, and to clarify that offices with area size greater than 250 square feet are required for meeting Section 130.1(c)6D.

The other changes are reasonably necessary to clarify that “lighting” in the applicable spaces are required to be controlled by occupancy sensing controls for meeting Section 130.1(c)6.

These changes are also reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 130.1(c)6Dii and iii

Specific Purpose:

The specific purpose of the change is to revise the text “within 20 minutes” to “in 20 minutes or less after” (after the control zone is unoccupied) for meeting the occupant sensing controls requirements.

Necessity:

The changes are reasonably necessary to clarify the period of time allowed for meeting the occupant sensing controls requirements. These changes are also necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 130.1(c)6Div

Specific Purpose:

The specific purpose of the change is to add the text “any level up to”– for the occupant sensing controls requirement for office lighting upon occupancy within the control zone – which addresses a comment received about Section 130.1(c)6Div.

Necessity:

The changes are reasonably necessary to provide flexibility in compliance for the lighting application.

These changes are also reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 130.1(c)7

Specific Purpose:

The specific purpose of the change is to revert the term “general lighting” to “lighting” for meeting the requirements of Section 130.1(c)7.

Necessity:

This change is reasonably necessary to maintain the requirement which is about lighting power reduction of the installed lighting as controlled by occupancy sensing controls regardless of the lighting types.

These changes are also necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 130.1(c)8i, ii, iii

Specific Purpose:

The specific purpose of the change is to revise and to list out the lighting control types of Section 130.1(c)8.

Necessity:

This change is reasonably necessary to clarify that any one of the listed control types can be used for meeting Section 130.1(c)8.

These changes are also necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 130.1(d)

Specific Purpose:

The specific purpose of the change is to revise the numbering of the Exception for parking garage areas, areas with glazing and opening, and retail merchandise sales and wholesale showroom areas.

Necessity:

These changes are reasonably necessary to ensure the numbering of the requirements is updated whenever there are revisions to the listing of the requirements. These changes are reasonably necessary to ensure and improve clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 130.1(d)4

Specific Purpose:

The word “photosensor” is corrected to be plural at the start of subsection 4. This corrects a nonsubstantive typographical error.

Necessity:

These changes are reasonably necessary to ensure and improve clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: Exception 3 to Section 130.1(d)

Specific Purpose:

The specific purpose of the change is to add “combined” to the phrase, ‘the combined total installed wattage of general lighting in the skylit and primary sidelit zones’, and to revise “in the daylight zones” as “for those zones” – in the first sentence.

Necessity:

These changes are necessary as “the combined total installed wattage of general lighting” best conveys the meaning of “combined” and “total” - “combined” as the combined daylight zone areas and “total” as the total square footage of the accounted daylight zone areas. Also, these changes are reasonably necessary to clarify that daylighting controls are not required for rooms where the accounted daylight zone area has less than 120 watts of installed wattage. These changes are reasonably necessary to ensure and improve clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: Exception 4 to Section 130.1(d)

Specific Purpose:

The specific purpose of the change is to delete Exception 4 to Section 130.1(d), concerning daylighting control requirements, that has been rendered redundant by the revised Exception 3 added in 15-day language.

Necessity:

The new Exception 3 to Section 130.1(d) added in 15-day language already exempts rooms where combined total installed wattage of general lighting is under 120 watts, and as such the existing Exception 4 is redundant. These changes are reasonably necessary to ensure and improve clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: Exception 5 to Section 130.1(d)

Specific Purpose:

The specific purpose of the change is to delete Exception 5 to Section 130.1(d), which has been rendered outdated by the revised Exception 3 added in 15-day language.

Necessity:

The new Exception 3 to Section 130.1(d) added in 15-day language exempts rooms in which the total installed wattage of general lighting in primary and secondary sidelit zones is less than 120 watts, tightening the requirement from the existing Exception 5, which only applies to zones less than 240 watts. It is therefore necessary to remove this outdated exception to ensure consistency with this new, tighter standard. These changes are reasonably necessary to ensure and improve clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: Section 130.1(f)9

Specific Purpose:

The specific purpose of the change is to add the specific lighting sections required for meeting the occupancy sensing controls requirement related to Section 130.1(f)9.

Necessity:

These changes are reasonably necessary to clarify the applicable subsections for the control interaction requirements for lighting occupancy sensing controls are Section 130.1(c)5, 6, and 7.

These changes are reasonably necessary to ensure and improve clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: Table 130.1-A

Specific Purpose:

The specific purpose of the change is to move the footnote outside of Table 130.1-A and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section 130.2(c)3Ai

Specific Purpose:

The specific purpose of the change is to add the text "those providing" after "Outdoor luminaires other than" for lighting applications required for meeting the outdoor motion sensing controls requirements.

Necessity:

These changes are reasonably necessary to improve the readability of the code language. These changes are reasonably necessary to ensure clarity of the Energy Code and to effectively communicate the requirements and standards in a precise and clear manner.

Section 130.2(c)3Aii

Specific Purpose:

The specific purpose of the change is to add "wall packs" as the luminaire example for outdoor wall mounted luminaires and to delete the following text: "have a bilaterally symmetric distribution such as Type II, III, and IV light distributions, as described in the IES Lighting Library™ and".

Necessity:

These changes are reasonably necessary to include a real-world example of what could be considered as bilaterally symmetric outdoor wall mounted luminaires and to aid code users to readily understand the code requirements. These changes also are reasonably necessary for the changes to ensure clarity of the Energy Code and to effectively communicate the requirements and standards in a precise and clear manner.

Section 130.2(c)3, EXCEPTION 4**Specific Purpose:**

The specific purpose of the change to this section is to delete proposed Exception 4 in the 45-Day Express Terms (for luminaires with a maximum rated wattage of 78 watts to not install motion sensing controls).

Necessity:

These changes are reasonably necessary to respond to the comments expressed in opposition to the proposed Exception 4 in the 45-Day Express Terms as there are market assessments indicating a substantial number of outdoor lighting occupancy sensors available and also a notable site demonstration with successful implementation and installation of motion sensing technology.

These changes are reasonably necessary to ensure clarity of the Energy Code and to effectively communicate the requirements and standards in a precise and clear manner.

Section: 140.0**Specific Purpose:**

The specific purpose of the change to the Note to this Section is to replace "140.9" with "140.10." This corrects a typographical clerical error that could lead to confusion if not corrected since Section 140.10 was added as a prescriptive requirement.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 140.1(a), (b)**Specific Purpose:**

The specific purpose of these changes is to correct a clerical error concerning language discussing the Energy Code's performance metric. The 2022 Energy Code has transitioned from a TDV-only performance metric to a two-factor performance metric that includes both source energy and TDV. This transition is reflected in all other relevant instances of the performance metric in the 2022 Energy Code and is consistent with the rulemaking record, including analyses, discussions, and presentations. However, a clerical error was made that inadvertently left the language reflecting this transition ("source energy and") out of 140.1(a), 140.1(b), and the exception to 140.1(b). These fixes ensure that this section is consistent with the remainder of the code and help to avoid confusion.

Necessity:

These changes are reasonably necessary to ensure internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16, and are made pursuant to the Commission's resolution adopting the 2022 Energy Code, which delegates authority and directs California Energy Commission (CEC) staff to take all actions reasonably necessary to have the 2022 Energy Code go into effect, including but not limited to correcting grammatical, typographical, and other nonsubstantial errors in the regulations

Section: 140.1(b), EXCEPTION

Specific Purpose:

The specific purpose of the change is to add battery storage systems as an allowable offset to comply with the Standards by a community shared solar electric generation system, or other renewable electric generation system, and/or community shared battery storage system.

Necessity:

These changes are reasonably necessary to align with the intent of the performance approach in Section 140.1, and the photovoltaic and battery storage system performance baseline set forth in section 140.10. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 140.2**Specific Purpose:**

The specific purpose of the change to this Section is to replace “140.9” with “140.10.” This corrects a typographical clerical error that could lead to confusion if not corrected since Section 140.10 was added as a prescriptive requirement.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 140.3(a)1Aii**Specific Purpose:**

The proposed change is to delete the terminology for high-rise residential buildings from the nonresidential chapter.

Necessity:

These changes are reasonably necessary as requirements related to multifamily buildings are established in Subchapters 10, 11 and 12 (Sections 160’s, 170’s and 180’s) for the 2022 Code.

These changes are reasonably necessary to improve the code’s compliance with the general clarity and consistency criteria of California Government Code Section 11340 et seq. and Chapter 1, Article 2 of the California Code of Regulations.

Section: Exception 1 to 140.3(a)5B**Specific Purpose:**

The proposed change is to delete an exception proposed in the original Express Terms that would have held small school buildings in two climate zones to a modified thermal performance standard for windows. Numbering of two subsequent exceptions is also updated to accommodate the removal.

Necessity:

These changes are reasonably necessary to be responsive to stakeholder comments and concerns regarding availability and cost of window products meeting the modified value.

Section: Exception to Section 140.3(a)9Bi

Specific Purpose:

The specific purpose of this change is to correct the table reference to indicate the relevant table of compliant materials, consistent with updates to table numbering in Section 140.3. This is not a substantive change.

Necessity:

This non-substantive correction is reasonably necessary to improve the general clarity and consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and the California Code of Regulations, Title 1, Section 16.

Section: 140.3(a)9C**Specific Purpose:**

The specific purpose of this change is to more directly state that building air barrier performance verification may be performed but is not required. This is not a substantive change as air barrier verification was not proposed to be required – the original section began, “*If* verification is conducted...”, emphasis added.

Necessity:

This change is reasonably necessary to improve the general clarity and consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and the California Code of Regulations, Title 1, Section 16.

Section: 140.3(a)9Ci**Specific Purpose:**

The specific purpose of this change is to replace the word “conducted” with the word “performed” for consistency with phrasing of other sections of the Energy Code, to correct the numbering and indentation of its subsections, and to update references to NA 2.4 to refer to NA 5 consistent with the relocation of the referenced sections.

Necessity:

This change is reasonably necessary to improve the general clarity and consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and the California Code of Regulations, Title 1, Section 16.

Section: 140.3(a)9Cii**Specific Purpose:**

The specific purpose of this change is to update internal references consistent with the renumbering of subsections to Section 140.3(a)Ci, and to update references to NA 2.4 to refer to NA 5 consistent with the relocation of the referenced sections.

Necessity:

This change is reasonably necessary to improve the general clarity and consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and the California Code of Regulations, Title 1, Section 16.

Section: 140.3(a)9Civ**Specific Purpose:**

The specific purpose of this change is to remove an unneeded additional reference to the NA language applicable to air barrier verification. This is not a substantive change as the

requirements of NA 5, inclusive of independence requirements, are already adequately specified in the preceding sections.

Necessity:

This change is reasonably necessary to improve the general clarity and consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and the California Code of Regulations, Title 1, Section 16.

Section: Table 140.3

Specific Purpose:

The specific purpose of the change is to move “nonresidential” out of Table 140.3 and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 140.3-A

Specific Purpose:

The specific purpose of the change is to reformat Table 140.3-A for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 140.3-B

Specific Purpose:

The specific purpose of the changes to Table 140.3-B is to clarify the thermal emittance and air barrier requirements for Climate Zone 7. The original thermal emittance value of 0.75 was struck out, but the new thermal emittance value of 0.80 was inadvertently left out of the 45-Day language. Additionally, the air barrier requirements were not updated. This language was updated and presented in the 15-Day Express Terms.

Necessity:

These changes are reasonably necessary to increase energy efficiency via cost-effective building design standards, as mandated by California Public Resources Code, Sections 25213 and 25402. The documents relied upon for this rulemaking show the proposed efficiency standards to be technically feasible for buildings in California, cost effective where they are proposed to be required, and likely to save significant energy on an annual statewide basis.

Section: Table 140.3-D

Specific Purpose:

The specific purpose of the change is to reformat Table 140.3-D for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Equation 140.3-C

Specific Purpose:

The specific purpose of the change is to move the title outside of the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 140.4(a)2F

Specific Purpose: The specific purpose of the change to this section is to remove a duplicated sentence fragment. The prior Express Terms specified “an air conditioner with furnace, a dual-fuel heat pump” and should have only specified an air conditioner with furnace (replacing the comma with a period). While this corrects an error, to the extent that someone could have understood the original Express Terms language as applying two separate baselines this change has the substantive effect of specifying the baseline supported by the Documents Relied Upon for the building size, type and location noted for this section.

Necessity:

This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 140.4(c)1B

Specific Purpose:

The specific purpose is to change the midlife filter pressure drop to two times the clean filter pressure drop for calculation of fan input power.

Necessity:

These changes are reasonably necessary to avoid a loophole in calculating a mid-life pressure drop for filters to ensure energy savings. These changes are reasonably necessary to increase energy efficiency via cost-effective building design standards, as mandated by California Public Resources Code, Sections 25213 and 25402. The documents relied upon for this rulemaking show the proposed efficiency standards to be technically feasible for buildings in California, cost effective where they are proposed to be required, and likely to save significant energy on an annual statewide basis.

Section: Table 140.4-A and Table 140.4-B

Specific Purpose:

The specific purpose of the change is to include turndown credit for single zone variable air volume fan systems, change the midlife filter pressure drop to two times the clean filter

pressure drop, revise sensible only cooling power allowance back to the 2019 version as “coil runaround loop,” move the Economizer Return Damper allowance from Table 140.4-B to Table 140.4-A, clarify “Return and/ or exhaust airflow control devices,” and to reorder the headings and subsequent values from least to greatest.

Note that footnote 1 in the top row, furthest right column (“All Other Fan Systems >10,000 cfm”) is deleted as not relating to that specific column or header. This corrects a typographical clerical error.

Necessity:

These changes are reasonably necessary to give credit to fan components that save energy, adjust the filter pressure drop to avoid a loophole in calculating a mid-life pressure drop, to not exclude sensible only heat recovery ventilation (HRV) systems from being too restrictive under the fan power budget, correct a mistake where Economizer Return Damper was placed in the wrong table, and to reorder the headings to be easily read.

Section: Table 140.4-D

Specific Purpose:

The specific purpose of the change is to move the footnote outside of Table 140.4-D and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 140.4(e)1, Exception 6

Specific Purpose:

The specific purpose of the change is to reorganize language from 140.4(p) to Exception 6 to 140.4(e) and to clarify language.

Necessity:

These non-substantive changes are reasonably necessary to improve clarity on the requirements for the exception to economizing. These revisions were made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 140.4-G

Specific Purpose:

The specific purpose of the change is to update the title of the table from Table 140.4-E to Table 140.4-G to reflect the reordering of the tables in Section 140.4.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Exception 1 to 140.4(h)1

Specific Purpose:

The specific purpose of the change is to revise the reference to Table 110.2N.

Necessity:

This change is reasonably necessary to reference the appropriate table as tables in Section 110.2 were revised based on addition and removal of tables. These revisions were made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Sections: Exception 2 to 140.4(h)3, 140.4(h)5

Specific Purpose:

The specific purpose of the change is to revise references to Table 110.2-F.

Necessity:

These changes are reasonably necessary to reference the appropriate tables as tables in Section 110.2 were revised based on additions and removal of tables. These revisions were made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 140.4(p)

Specific Purpose:

The specific purpose of the change is to provide clarity on the requirements of DOAS for the different configurations and to simplify code language by moving requirements related to economizing to the economizer section in Exception 6 to 140.4(e).

Necessity:

These changes are reasonably necessary to improve clarity and simplify code language. These revisions were made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Sections: 140.4(q), 140.4(q)2

Specific Purpose:

The specific purpose of the change is to revise references to Table 140.4-J, Table 140.4-K, and Table 140.4-G.

Necessity:

These changes are reasonably necessary to reference the appropriate tables. These revisions were made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Sections: 140.4(q)1, 140.4(q)3

Specific Purpose:

The specific purpose of the change is to include an incorporation by reference, which was mistakenly left out in the 45-day language, and to delete 140.4(q)3.

Necessity:

These changes are reasonably necessary to reference a test procedure to determine the energy recovery rating and to remove an old reference to accommodate the clarity changes in 140.4(p).

Section: Exception to 140.4(q)2

Specific Purpose:

The specific purpose of the change is to remove the terms “independent,” “specified by,” and “is economizing.”

Necessity:

These changes are reasonably necessary to clarify that the system is a space condition system regardless of its configuration and to remove redundant language. These revisions were made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, section 16.

Section: Table 140.4 - J; Table 140.4 - K

Specific Purpose:

The specific purpose of the change is to clarify the footnotes by removing independent to be inclusive of all DOAS configuration types.

Necessity:

These changes are reasonably necessary to ensure the table is correctly used for compliance. These revisions were made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, section 16.

Section: 140.6(a)3F

Specific Purpose:

The proposed change is to delete the text “In office buildings with medical and clinical areas and healthcare facilities” from Section 140.6(a)3F.

Necessity:

These changes are reasonably necessary to clarify that examination and surgical lights, low-ambient night-lights, and lighting integral to medical equipment, wherever they exist, should be exempt from the lighting power limitations of the Energy Code. These spaces are not limited to office buildings with medical and clinical areas and healthcare facilities. This change ensures that examination and surgical lights, low-ambient nightlights, and lighting integral to medical equipment are treated consistently regardless of where they are located. This lighting power should not count towards the lighting power limitations of the Energy Code. These changes are reasonably necessary to improve the code’s compliance with the general clarity and consistency criteria of California Government Code Section 11340 et seq. and Chapter 1, Article 2 of the California Code of Regulations.

Section: 140.6(a)3M

Specific Purpose:

The proposed change is to delete the requirement for high-rise residential buildings from the nonresidential chapter.

Necessity:

These changes are reasonably necessary as requirements related to multifamily buildings are established in Subchapters 10, 11 and 12 (Sections 160's, 170's and 180's) for the 2022 Code.

These changes are reasonably necessary to improve the code's compliance with the general clarity and consistency criteria of California Government Code Section 11340 et seq. and Chapter 1, Article 2 of the California Code of Regulations.

Section: 140.6, Table 140.6-C

Specific Purpose:

The specific purpose of the change is to revise the following lighting power values in Table 140.6-C in order to align them with the value in the 21-BSTD-01 docket documents TN#238296 and TN#238197.

- Revised the general lighting power of "Barber, Beauty Salon, Spa Area" to 0.70 W/ft² and the detailed task lighting power to 0.30 W/ft².
- Added the decorative/display lighting power of "Cafeteria/Fast food" (under Dining Area) to be 0.25 W/ft².
- Revised the decorative/display lighting power of "Lobby, Main Entry" to 0.25 W/ft².

The specific purpose is also to separate out "Concourse and Atria Area" and "Convention, Conference, Multipurpose and Meeting Area" into two separate rows – there is no change to their values from the proposed 45-day language.

Additionally, Table 140.6-C was reformatted for ADA compliance.

Necessity:

The changes are reasonably necessary to ensure the lighting power values in Table 140.6-C are aligned with the values documented in the 21-BSTD-01 docket documents TN#238296 and TN#238197.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 140.6-G

Specific Purpose:

The specific purpose of the change is to move the header and footnote outside of Table 140.6-G and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 140.7-A

Specific Purpose:

The specific purpose of the change is to reformat Table 140.7-A for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California

Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 140.7, Authority & Reference

Specific Purpose:

The specific purpose of this change is to move the Authority & Reference paragraph to the end of the section.

Necessity:

These changes are reasonably necessary to provide the public with information about the authority under which the CEC is adopting regulations in this section, and references to the statutory provisions that the CEC is interpreting or making clear through these regulations. This section inadvertently appears to have been deleted but was intended to be included in the adopted language. This is a non-substantive informational change that will improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 140.9(a)

Specific Purpose:

The specific purpose of the change is to revise language to broaden the systems covered under Section 140.9(a) beyond space conditioning systems serving computer rooms. This is due to new requirements for uninterruptible power supply equipment in the Energy Code.

Necessity:

These changes are reasonably necessary to clarify to readers that Section 140.9(a) now covers uninterruptible power supply in addition to space conditioning systems serving computer rooms. This revision was made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Sections: 140.9(a)1A, 140.9(a)1B

Specific Purpose:

The specific purpose of the change is to provide clarification for the capabilities of an integrated economizer and include this language for both integrated air economizers and integrated water economizers.

Necessity:

These changes are reasonably necessary to ensure that the terms used within the regulations will have clear and unambiguous meaning to readers, including the public, and particularly to the persons and organizations affected by these regulations. These revisions ensure and improve the general clarity and internal consistency of Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Exception 2 to 140.9(a)1

Specific Purpose:

The specific purpose of the change is to improve the specificity of the exception language to address stakeholder concerns regarding dry- and wet-bulb temperatures. This prevents inappropriate values from being applied at design.

Necessity:

These changes are reasonably necessary to clarify the exception language and make the exception easier to enforce. These revisions were made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Exception 3 to 140.9(a)1

Specific Purpose:

The specific purpose of the change is to remove Exception 3 to 140.9(a)1 which was determined to be unnecessary. Air economizers operate independently of cooling towers, so separate allowances for air economizers when cooling towers are not allowed are unnecessary. Water economizers require the presence of cooling towers for evaporation of water, so would not be usable if cooling towers are not allowed. And refrigerant economizer options are not allowed prescriptively, so separate allowances for refrigerant economizers when cooling towers are not allowed are unnecessary.

Necessity:

These changes are reasonably necessary to clarify that local water authority's decision not to allow cooling towers would not affect the economizer requirements for computer rooms. These revisions were made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 140.9-A, Table 140.9-B

Specific Purpose:

The specific purpose of the change is to revise the title of Table 140.9-A and Table 140.9-B based on the removal of tables in Section 140.9(a). Note that there is also a correction to Replace "<" with "≤" in five instances located in the left-most column of Table 140.9-B. This is a typographical clerical error that could lead to confusion if not corrected.

Necessity:

These changes are reasonably necessary to ensure appropriate titling within Section 140.9(a). These revisions were made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 140.10(b), Exceptions 1 through 4

Specific Purpose:

The specific purpose of the change to Exceptions 1 through 4 to Section 140.10(b) is to relocate them after Equations 140.10-B and 140.10-C.

Necessity:

This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 141.0(a)1

Specific Purpose:

The specific purpose of the change to this Section is to replace “140.9” with “140.10.” This corrects a typographical clerical error that could lead to confusion if not corrected since Section 140.10 was added as a prescriptive requirement.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 141.0(a), Exception 7

Specific Purpose:

The specific purpose of the change is to add an exception to the prescriptive space conditioning system type requirements of Section 140.4(a)2.

Necessity:

This change is reasonably necessary to clarify that the prescriptive space conditioning system type requirements do not apply to additions to nonresidential buildings. The space conditioning system type requirements of 140.4(a)2 apply only to newly constructed nonresidential buildings. Without this added exception, Section 141.0(a) unintentionally references those space conditioning system type requirements for additions. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 141.0(b)2Bii, exception 4 to section 141.0(b)2Bii

Specific Purpose:

The specific purpose of the change to Section 141.0(b)2Bii is to relocate the language regarding recoats being exempt from the low-sloped roof insulation requirement to Exception 4 to Section 141.0(b)2Bii.

Necessity:

This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Exceptions to Section 141.0(b)2Bii

Specific Purpose:

The specific purpose of the changes to Exceptions 1, 2, and 3 to Section 141.0(b)2Bii is to remove the unnecessary and repetitious language, and to provide consistency with the roof alterations language in Section 180.2(b)1Aiii.

Necessity:

These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 141.0-D

Specific Purpose:

The specific purpose of the changes is to revert back to 2019 code cycle allowances for additions and alterations by including credit for curb adaptors for the fan power budget.

Necessity:

These changes are reasonably necessary to provide ample flexibility for additions and alterations where replacement units would otherwise may be unable to comply.

Section: Section 141.0(b)2Di and Section 141.0(b)2Dii

Specific Purpose:

The specific purpose of the changes is to clarify and simplify language. Changing the reference to NA7.5.3 simplifies language because this section references NA 1 and NA 2.

Necessity:

These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 141.0-E

Specific Purpose:

The specific purpose of the change is to reformat Table 141.0-E for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 141.0-F

Specific Purpose:

The specific purpose of the change is to reformat Table 141.0-F for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Section 141.0(b)2N

Specific Purpose:

The specific purpose of the changes is to simplify language by referring to more specific subsections of Section 140.5.

Necessity:

These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 141.1(b)

Specific Purpose:

The specific purpose of the change is to update the references to point to the appropriate sections.

Necessity:

These changes are reasonably necessary to ensure that the references included in this section point to the appropriate places in Section 120.6 and Section 140.9(a). These revisions ensure and improve the general clarity and internal consistency of Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 141.1(b)1**Specific Purpose:**

The specific purpose of the change is to correct language to reference “rooms”.

Necessity:

These changes are reasonably necessary to correct a typographical error in the code language. These revisions ensure and improve the general clarity and internal consistency of Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 141.1(b)1A and 141.1(b)1B**Specific Purpose:**

The specific purpose of the change is to provide clarification for the capabilities of an integrated economizer and include this language for both integrated air economizers and integrated water economizers.

Necessity:

These changes are reasonably necessary to ensure that the terms used within the regulations will have clear and unambiguous meaning to readers, including the public, and particularly to the persons and organizations affected by these regulations. These revisions ensure and improve the general clarity and internal consistency of Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Exception 4 to Section 141.1(b)1**Specific Purpose:**

The specific purpose of the change is to remove Exception 4 to Section 141.1(b)1 as it was determined to be redundant due to Exception 2 to Section 141.1(b)1 and Exception 3 to Section 141.1(b)1.

Necessity:

These changes are reasonably necessary to reduce redundant language and increase clarity for the reader. These revisions were made to ensure and improve the general clarity and internal consistency of Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 141.1(b)2**Specific Purpose:**

The specific purpose of the change is to relocate a statement that “The area of the roof recoat is not required to be insulated” into an Exception to the Section (Exception 4), and to remove unneeded titles in Exceptions one through three.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.0(a)

Specific Purpose:

The specific purpose of the change to Section 150.0(a) is to help differentiate roof decks from ceilings and rafter roofs. The requirement for roof deck insulation is only meant to apply to roof decks separating attic spaces from ambient air.

Necessity:

This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Exception to 150.0(a)1

Specific Purpose:

The specific purpose of the changes to Section 150.0(a)1 is to provide exceptions for (1) space conditioning systems with their air handler and ducts located entirely in conditioned space, as well as (2) space conditioning systems where the air handler is located in unconditioned space and has 12 linear feet or less of supply duct, including the length of the air handler and plenum, located in unconditioned space, with all other portions of the supply ducts located in conditioned space.

Necessity:

These Exceptions are reasonably necessary to ensure that this requirement does not apply to situations where the ducts are located outside of the attic space, consistent with the high performance attic requirement in Section 150.1(c)1A. The intent behind roof deck insulation and high performance attics is to reduce the attic temperature and thereby reduce the HVAC distribution losses for ducts located in the attic space. When ducts are located outside of the attic and in conditioned space, the roof deck insulation is no longer as crucial or cost-effective at this time. These changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.0(c)4, 5; Exception to Section 150.0(d)

Specific Purpose:

The specific purpose of the change is to remove the references to the old multifamily prescriptive table, Table 150.1-B. As part of the 2022 Energy Code update, multifamily was made its own section and Table 150.1-B was deleted.

Necessity:

These changes are necessary to ensure and improve the general clarity and internal consistency of the Energy Code by removing the redundant section references to Table 150.1-B, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.0(j)1

Specific Purpose:

The specific purpose of the change is to remove the unfired storage tank requirement in Section 150.0(j)1 and exception to Section 150.0(j)1. Subsequence sections renumbered.

Necessity:

This requirement is redundant because the same requirement is already specified in section 110.3(c)3. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Section 150.0(k)1B. Screw based luminaires

Specific Purpose:

The specific purpose of the changes is to revert to existing requirements for screw-based luminaires.

Necessity:

Due to comments from stakeholders, decline to adopt the revisions to qualified colored lamps, dim-to-warm lamps, tunable-white lamps, color-tunable lamps, and Title 20-compliant LED lamps in the 45-day language of Section 150.0(k)1B that would exempt them from complying with JA8. These changes are reasonably necessary to revert to the existing code requirements and in doing so ensure that the Energy Code is as technology agnostic as is found to be feasible. The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Section 150.0(k)1C

Specific Purpose:

The specific purpose of the changes is to delete the phrase “In addition to complying with 150.0(k)1A”.

Necessity:

This change is reasonably necessary to delete the phrase which is a restatement of the requirements of Section 150.0(k)1A. The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Section 150.0(k)1Civ

Specific Purpose:

The specific purpose of the changes is to add the phrase “for recessed luminaires” as specificity for the requirement of Section 150.0(k)1Civ.

Necessity:

These changes are reasonably necessary to clarify the reference code section of California Electrical Code is for recessed luminaires. The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.0(k)2Ei

Specific Purpose:

The specific purpose of the changes is to delete the requirement to initially configure the occupancy sensors and vacancy sensors to manual-on operation using the manual control.

Necessity:

These changes are reasonably necessary to permit occupancy sensor controls to be initially configured as either occupancy sensors or vacancy sensors for compliance and to avoid a redundancy of referring to Section 160.5(a)2A which is applicable to all indoor lighting controls. These changes are reasonably necessary to clarify the specified section and to improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.0(k)2F, EXCEPTION 3

Specific Purpose:

The specific purpose of the proposed change is to add “with automatic controls” to the end of the sentence.

Necessity:

These changes are reasonably necessary to clarify that lighting - internal to drawers and cabinetry with opaque fronts or doors - with automatic off controls are exempted from the dimming controls requirements.

These changes are reasonably necessary to ensure energy efficiency of the Energy Code with cost-effective building design standards, as mandated by California Public Resources Code Sections 25213 and 25402 et seq.

Section: 150.0(k)3Aiii

Specific Purpose:

The specific purpose of the changes is to delete automatic time switch control from the proposed 45-day language for Section 150.0(k)3Aiii and to revert to existing requirements.

Necessity:

These changes are reasonably necessary to revert the proposed requirement of Section 150.0(k)3Aiii to the existing code requirement to ensure outdoor lighting would be off during daylight hours.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.0(m)12Bv

Specific Purpose:

The specific purpose of the change is to clarify and reword the language for sealing of air filter racks and grills to prevent air from bypassing the filter.

Necessity:

These changes are reasonably necessary to clarify the intent of the requirement, that filter racks and grills shall use gaskets, sealing, or other means to close gaps around inserted filters and prevent air from bypassing. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.0(m)1B

Specific Purpose:

The specific purpose of the change is to revise the duct insulation requirement when ducts are located in conditioned spaces. The revision removes the R-4.2 requirement and allows no insulation on ducts that are located in conditioned spaces when those ducts meet the listed criteria.

Necessity:

These changes are reasonably necessary to increase energy efficiency via cost-effective building design standards, as mandated by California Public Resources Code Sections 25213 and 25402. The revision encourages builders to relocate ducts from an unconditioned space, typically a vented attic, into the building's thermal envelope.

Section: Exception to 150.0(o)1Giva

Specific Purpose:

The specific purpose of the change is to remove an exception relating to multifamily residential buildings, consistent with the relocation of multifamily building requirements to Sections 160, 170 and 180 (and their subsections).

Necessity:

These changes are reasonably necessary to ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Exception to 150.0(o)1Gvi

Specific Purpose:

The specific purpose of the change to the Exception to this section is to specify that the testing is to be at "no less than" the specified airflow (100 cfm) for consistency with the requirements of the section for which it is an exception (which also specified that testing be conducted at "no less than" a specified airflow).

Necessity:

These changes are reasonably necessary to ensure consistency between the exception and its parent section, and in so doing ensure the internal consistency of the Energy Code as directed by California Government Code Sections 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 150.0(o)1Kii

Specific Purpose:

The specific purpose of the change is to delete this requirement that prohibits atmospherically vented or solid fuel burning appliances from being installed in dwelling units less than 1,000 square feet.

Necessity:

These changes are reasonably necessary to delete an unnecessary requirement. It is not necessary to prohibit all atmospherically vented gas appliances from being installed since use of compensating outdoor air in accordance with ASHRAE 62.2-2019 Section 6.4 would be sufficient to provide the protection from backdraft that was necessary to address the new greater airflow rates specified for kitchen range hoods.

Section: 150.0(o)1I

Specific Purpose:

The specific purpose of the change is to remove reference to sections 150.0(o)1E, consistent with the relocation of multifamily provisions to Sections 160, 170 and 180. Because section 150.0(o)1I is similarly proposed to no longer include multifamily buildings in its scope, and section 150.0(o)1E is proposed to only state “RESERVED”, this change does not have any regulatory effect relative to the original Express Terms.

Necessity:

These changes are reasonably necessary to ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.0(o)2A

Specific Purpose:

The specific purpose of the change is to remove reference to sections 150.0(o)1E and 150.0(o)1F, consistent with the relocation of multifamily provisions to Sections 160, 170 and 180. Because section 150.0(o)2A is similarly proposed to no longer include multifamily buildings in its scope, and sections 150.0(o)1E and 150.0(o)1F are proposed to only state “RESERVED”, this change does not have any regulatory effect relative to the original Express Terms.

Necessity:

These changes are reasonably necessary to ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.0(p)1A and D

Specific Purpose:

The specific purpose of the change is to make direct reference to applicable state and federal appliance efficiency standards in place of more general reference to “installed” pumps and pump motors “with a capacity of 1 hp or more”.

Necessity:

These changes are reasonably necessary to prevent unintended readings of the section’s requirements that would be inconsistent with the preemptive effect of federal appliance efficiency standards, and in so doing ensure the general clarity and consistency of the Energy Code as directed by California Government Code Sections 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 150.0(t)

Specific Purpose:

The specific purpose of the change is to improve the specificity of the wiring requirements by adding the term “wiring” in one location and “conductor” in another. This does not represent a substantive change in requirements.

Necessity:

These changes are reasonably necessary to improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.0(u)

Specific Purpose:

The specific purpose of the change is to improve the specificity of the wiring requirements by adding the term “wiring” in one location and “conductor” in another. This does not represent a substantive change in requirements.

Necessity:

These changes are reasonably necessary to improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.0(v), 150.0(v)(1)

Specific Purpose:

The specific purpose of the change to this section and its subsections is to change the phrasing of the sections from referring to “[clothes dryer] *systems* using gas or propane” to instead refer to “clothes dryer *locations* with gas or propane plumbing” (italics added), while also improving the specificity of the wiring requirements consistent with the changes to sections 150.0(t) and (u).

Necessity:

These changes are reasonably necessary to clarify the intent of the electric ready requirement. Clothes dryers are not typically installed at the time of inspection; in contrast, gas piping needed to serve gas clothes dryers will be installed by the time of final inspection. The changes are also reasonably necessary to improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.0, Table 150.0-A

Specific Purpose:

The specific purpose of the changes is to delete “accent, display, utility, undercabinet or special effect” from item 2, to revise “and” as “containing” in item 2, to delete item 3 (about dim-to-warm and tunable -white LED light sources), to delete item 4 (about color-tunable LED light sources), and to delete item 5 (LED lamps compliant with Title 20 as general service lamps) of the proposed 45-day changes to Table 150.0-A.

Another purpose is to revise item 6 for ceiling fan light kits “subject to federal appliance regulations”.

Still the other purpose is to delete “other than those specified in items 3,4,5” from item 7 (was item #10 of the 45-day Express Terms) (about ceiling recessed downlight luminaires). In addition, the other purpose of the change is to renumber the items in the Table to follow a numerical order.

Necessity:

Due to comments from stakeholders, decline to adopt the revisions to accent, display, utility, undercabinet and special effect lighting, colored light sources, dim-to-warm LED light

sources, tunable-white LED light sources, color-tunable LED light sources, and Title 20-compliant LED lamps in the 45-day language of Table 150.0-A.

These changes are reasonably necessary to ensure accent, display, utility, undercabinet and special effect lighting, colored light sources, dim-to-warm LED light sources, tunable-white LED light sources, color-tunable LED light sources, and Title 20-compliant LED lamps meet the same requirements as those light sources that comply with Reference Joint Appendix JA8 - that is, that lighting products are held to uniform standards in a technology agnostic way, consistent with the application of requirements under the 2019 Energy Code. The other editorial changes of renumbering are to ensure the items follow a numerical order and to ensure readability of the code language.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.0, Table 150.0-B

Specific Purpose:

The specific purpose of the change is to move the footnote outside of Table 150.0-B and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.1(b)1, Exception to 150.1(b)1

Specific Purpose:

The specific purpose of the change is to update the definition of Energy Design Rating (EDR). EDR is split into EDR1 and EDR2, where EDR1, or Source Energy Design Rating, is based on source energy, and EDR2 is based on Time Dependent Valuation (TDV). The Proposed Building shall separately comply with EDR1 and EDR2. Express mention of demand flexibility is added both to this section and its exception for consistency with source energy and TDV calculations.

Necessity:

These changes are reasonably necessary to account for the GHG impact of the proposed building, as source energy has strong correlation with GHG. By simultaneously meeting EDR1 and EDR2, the changes ensure the proposed building meets both the energy efficiency and GHG baselines set by the standard design. This change is also reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.1(b)1a

Specific Purpose:

The specific purpose of the change to this section is to remove reference to Table 150.0-B consistent with the relocation of multifamily requirements to separated chapters (Sections 160, 170 and 180 inclusive).

Necessity:

This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.1(b)3Bi**Specific Purpose:**

The specific purpose of the change is to add new federal metrics Energy Efficiency Ratio 2 (EER2), Seasonal Energy Efficiency Ratio 2 (SEER2), and Heating Seasonal Performance Factor 2 (HSPF2) as applicable metrics when performance compliance requires field verification of the energy efficiency rating of the installed space conditioning equipment. In addition, reference to Table 150.0-B was removed consistent with the relocation of multifamily requirements to separated chapters (Sections 160, 170 and 180 inclusive).

Necessity:

These changes are reasonably necessary to include the new federal metrics from the U.S. Department of Energy that become effective January 1, 2023. This aligns the Energy Code language with federal labeling and provides clarification for compliance. This change is also reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.1(c)**Specific Purpose:**

The specific purpose of the changes to this section is to remove references to multifamily buildings and to Table 150.1-B where they occur throughout this section and its subsections, consistent with the relocation of multifamily requirements to separated chapters (Sections 160, 170 and 180 inclusive).

Necessity:

This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.1(c)6 and 7**Specific Purpose:**

The specific purpose of the changes to this section is to relocate a proposed provision from Section 150.1(c)7 to a more appropriate location at the end of Section 150.1(c)6, and to remove Climate Zone 10 from the list of climate zones – heat pumps are shown to be feasible and cost effective for Climate Zone 10 based on the materials in the rulemaking record. (Space cooling is already accomplished via heat pumps – common air conditioners are single-direction heat pumps. Space heating is where use of a heat pump requires specification given the alternative ability to use a gas furnace).

Necessity:

This change is reasonably necessary to prevent applying the proposed requirement where it is not shown to be appropriate by the documents relied upon within the rulemaking proceeding, as well as to ensure and improve the general clarity and internal consistency of

the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.1(c)8, EXCEPTION 1

Specific Purpose:

The specific purpose of the change is to remove climate zone 10 from Exception 1 for gas or propane instantaneous water heaters.

Necessity:

These changes are reasonably necessary to move the heat pump baseline in climate zone 10 from heat pump space heater to heat pump water heater. In response to public comment, additional staff analysis concluded that heat pump water heaters perform better in climate zone 10 in terms of energy efficiency and GHG emission, as well as being cost effective and feasible.

Section: 150.1(c)8, EXCEPTION 2

Specific Purpose:

The specific purpose of the change is to modify the qualifier for Exception 2 from junior accessory dwelling unit to new dwelling units with conditioned floor area of 500 square feet or less.

Necessity:

These changes are reasonably necessary to improve clarity. The definition of junior accessory dwelling unit applies to dwelling unit that is no more than 500 square feet in size and contained entirely within an existing single-family building. This excludes dwelling units that are separate from an existing building and therefore not appropriate for this exception. The changes better achieve the intent of the exception. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.1(c)12, EXCEPTION

Specific Purpose:

The specific purpose of the change is to modify the qualifier for Exception 2 from junior accessory dwelling unit to new dwelling units with conditioned floor area of 500 square feet or less.

Necessity:

These changes are reasonably necessary to improve clarity. The definition of junior accessory dwelling unit applies to dwelling unit that is no more than 500 square feet in size and contained entirely within an existing single-family building. This excludes dwelling units that are separate from an existing building and therefore not appropriate for this exception. The changes better achieve the intent of the exception. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.1(c)14

Specific Purpose:

The specific purpose of the change is to specify that only newly installed photovoltaic system or modules shall be used.

Necessity:

These changes are reasonably necessary to improve clarity and reflect the intent of the requirement. Existing photovoltaic systems would have shorter life expectancy and performance degradation and therefore not appropriate to be used to meet newly constructed requirements. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.1(c)14, EXCEPTION 2

Specific Purpose:

The specific purpose of the change is to correct a typographical error to change reference of 150.0(c)14 to 150.1(c)14. There is no section 150.0(c)14, and section 150.0(c) concerns an unrelated topic.

Necessity:

These changes are reasonably necessary to ensure internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16, and are made pursuant to the Commission's resolution adopting the 2022 Energy Code, which delegates authority and directs CEC staff to take all actions reasonably necessary to have the 2022 Energy Code go into effect, including but not limited to correcting grammatical, typographical, and other nonsubstantial errors in the regulations.

Section: 150.1(c)14, EXCEPTION 4

Specific Purpose:

The specific purpose of the change is to separate Exception 5 into subsection a and b to distinguish the roof area that shall be considered for Solar Access Roof Area (SARA) and conditions that shall not be considered for SARA.

Necessity:

These changes are reasonably necessary to improve clarity and readability. These revisions ensure and improve the general clarity and internal consistency of Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.1(c)14, EXCEPTION 5

Specific Purpose:

The specific purpose of the change is to modify the battery capacity reference to usable capacity.

Necessity:

These changes are reasonably necessary to improve clarity. This change aligns with the language in JA12, where usable capacity is used to specify minimum performance criteria. This change is reasonably necessary to ensure and improve the general clarity and internal

consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 150.1-A

Specific Purpose:

The specific purpose of the change to Table 150.1-A is to correct a typographical error regarding the low-sloped roof thermal emittance requirement for climate zone 15, which should continue to reflect a thermal emittance of 0.75 (rather than the incorrect value of 0.72), and has not changed from the existing requirement of 0.75 under the 2019 standards.

Necessity:

This change is reasonably necessary to ensure internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16, and is made pursuant to the Commission's resolution adopting the 2022 Energy Code, which delegates authority and directs CEC staff to take all actions reasonably necessary to have the 2022 Energy Code go into effect, including but not limited to correcting grammatical, typographical, and other nonsubstantial errors in the regulations.

Section: Table 150.1-A

Specific Purpose:

The specific purpose of the change is to add new federal metrics Energy Efficiency Ratio 2 (EER2), Seasonal Energy Efficiency Ratio 2 (SEER2), and Heating Seasonal Performance Factor 2 (HSPF2) as applicable metrics for the energy efficiency rating of space conditioning equipment.

Necessity:

These changes are reasonably necessary to include the new federal metrics from the Department of Energy that becomes effective January 1, 2023. This aligns the Energy Code language with federal labeling and provides clarification for compliance. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 150.1-A

Specific Purpose:

The specific purpose of the change is to revise footnote 8 to be consistent with Section 150.1(c)12A.

Necessity:

This change is reasonably necessary to revise the reference directory on how to determine airflow rate of whole house fans. Airflow rates must be determined by using the HVI directory, where the existing language references the Appliance Efficiency Database. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Exception 7 to 150.2(a)

Specific Purpose:

The specific purpose of the change is to add an exception to make the heat pump baseline not applicable to single family additions.

Necessity:

These changes are reasonably necessary to clarify that the heat pump baseline does not apply to single family additions as that was never the intent. Without the added exception, this section unintentionally references the heat pump baseline requirement. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.2(a)1D**Specific Purpose:**

The specific purpose of the change is to remove the reference to the newly constructed water heating requirement in 150.1(c)8, and explicitly list the prescriptive water heating addition requirements.

Necessity:

These changes are reasonably necessary to align with the scope of the 2022 heat pump baseline, which is intended for newly constructed buildings only. Options i, ii, and iii are the same as the 2019 water heating requirements for additions and alterations. Option iv is a new option for additions 500 square feet or less analogous to the new Exception 4 in Section 150.1(c)8. These changes are reasonably necessary to increase energy efficiency via cost-effective building design standards, as mandated by California Public Resources Code Sections 25213 and 25402.

Section: 150.2(b)1A**Specific Purpose:**

The specific purpose of the change is to remove Table 150.1-B as these prescriptive requirements only apply to low-rise multifamily. This change is consistent with the relocation of multifamily requirements to separated chapters (Sections 160, 170 and 180 inclusive).

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.2(b)1C**Specific Purpose:**

The specific purpose of the change is to delete the reference to the heat pump baseline in Section 150.1(c)6 for single family alterations.

Necessity:

These changes are reasonably necessary to clarify that the heat pump baseline does not apply to single family alterations as that was never the intent. Without the deletion, this section unintentionally references the heat pump baseline requirement. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of

the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.2(b)1G

Specific Purpose:

The specific purpose of the change is to ensure that altered or replacement space-heating systems do not use electric resistance heating as the primary heat source. This replaces the existing requirement, which limited permissible systems to gas, liquefied petroleum gas, or existing fuel types. This provides consumers with greater flexibility, does not prohibit the use of heat pump technology, while still preventing the use of inefficient electric resistance systems.

Necessity:

These changes are reasonably necessary to clarify that the heat pump baseline does not apply in this section as the intent of this section is to prohibit electric resistance heating. Without the deletion and language revision, this section unintentionally references the heat pump baseline requirement. The language revision also clarifies that electric resistance is only prohibited for primary heat sources. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.2(b)1G Exception 2

Specific Purpose:

The specific purpose of the change is to revise language to properly capture intent of the requirement for the existing condition which the exception applies.

Necessity:

These changes are reasonably necessary to clarify that Exception 2 only applies if the existing space heating system is electric resistance and a ducted cooling system is not being replaced or installed. The previous language intended to describe this where the new language is direct. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.2(b)1H

Specific Purpose:

The specific purpose of the changes to this section are to correct two typographical errors, one to correct a reference to pipe insulation requirements in an earlier section of the Energy Code and one to correct a reference to an external communications port standard.

Necessity:

These changes are reasonably necessary to ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 150.2-D

Specific Purpose: The specific purpose of the change to Table 150.2-D is to improve accessibility by splitting two merged cells. The rows that previously had merged cells now have two separate cells with identical content in place of the merged cell (the new copy of the cell's text is shown as an addition). This is not a substantive change in requirements.

Necessity:

This change is reasonably necessary to ensure accessibility and legibility for those using screen readers and other assistive technologies, and in so doing improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Exceptions to Section 150.2(b)1Iib

Specific Purpose:

The specific purpose of the changes to the Exceptions to Section 150.2(b)1Iib is to break apart the all-encompassing exception into individual exceptions (1-5) for clarity and consistency with the other sections of the Energy Code.

Necessity:

These changes are reasonably necessary to ensure and improve the readability, general clarity, and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Exception to 150.2(b)1Ji, Exception to 150.2(b)1Jiii

Specific Purpose:

The specific purpose of the changes to the Exceptions to Section 150.2(b)1Ji and iii is to remove the requirement for third-party verification of existing conditions.

Necessity:

These changes are reasonably necessary to delete a requirement that staff found was ultimately not needed, nor appropriate, after discussion with stakeholders. Staff determined that it was not appropriate to require third-party verification when complying with an exception as this would put an undue cost on the building owner that result in no additional energy savings. Additionally, these changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 150.2(b)1L

Specific Purpose:

The specific purpose of the change is to improve grammar and ensure consistent phrasing in the second and third sentences of the section. This change does not substantively change the effect of the section language relative to the original Express Terms.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.0

Specific Purpose:

The specific purpose of the changes to this Section is to correct a typographical error in the references to the last Section of the Chapter (160.9).

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.2(b)1Bv

Specific Purpose:

The specific purpose of the change is to clarify and reword the language for sealing of air filter racks and grills to prevent air from bypassing the filter.

Necessity:

These changes are reasonably necessary to clarify the intent of the requirement, that filter racks and grills shall use gaskets, sealing, or other means to close gaps around inserted filters and prevent air from bypassing. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.2(b)2Aivb

Specific Purpose:

The specific purpose of the change is to clarify that this section applies to whole-dwelling unit ventilation systems.

Necessity:

These changes are reasonably necessary to clarify the intent of the requirement, that all dwelling units in a multifamily building shall use the same whole-dwelling unit ventilation system type. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16. This change is also reasonably necessary to increase energy efficiency via cost-effective building design standards, as mandated by California Public Resources Code Sections 25213 and 25402.

Section: 160.2(b)2Ax

Specific Purpose:

The specific purpose of the change is to delete this requirement that prohibits atmospherically vented or solid fuel burning appliances from being installed in dwelling units less than 1,000 square feet.

Necessity:

These changes are reasonably necessary to delete a requirement that staff found was ultimately not needed after discussion with stakeholders. Staff determined that it was not necessary to prohibit all atmospherically vented gas appliances from being installed since use of compensating outdoor air in accordance with ASHRAE 62.2-2019 Section 6.4 would

be sufficient to provide the protection from backdraft that was necessary to address the new greater airflow rates specified for kitchen range hoods. These changes are reasonably necessary to increase energy efficiency via cost-effective building design standards, as mandated by California Public Resources Code Sections 25213 and 25402.

Section: 160.2(c)

Specific Purpose:

The proposed change is to revise “Common Services Areas” to “Common Use Areas” in this section.

Necessity:

These changes are necessary to clarify the purpose and the scope of 160.2(c). The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.2(c)5E

Specific Purpose:

The specific purpose is to replace the text “occupancy” with “occupant” in the terms - “occupant sensor” and “occupant sensing controls” - within Section 160.2(c)5E.

Another specific purpose is to revise the term “air conditioning” to “space conditioning”.

In addition, the specific purpose is to revise and add the reference subsections of Section 160.5(b)4Cv, vi and vii which are specifically about and for occupant sensing controls in both the ventilation sections and the lighting sections. Further, the purpose of the change to item v, vi, and vii is to provide specifics of occupied standby mode for ventilation and for space conditioning.

Necessity:

These changes are reasonably necessary to ensure a consist usage of the terms - “occupant sensor ventilation control”, “occupant sensors”, and “space conditioning” – throughout the Energy Code.

The change to add the reference subsections of Section 160.5(b)4Cv, vi and vii is reasonably necessary to clarify the specific sections applicable to the occupant sensor ventilation control devices requirements.

The change to item v, vi, and vii is reasonably necessary to clarify the expected events of ventilation and space conditioning - for occupied standby mode.

These changes are reasonably necessary to ensure consistency between the Energy Code and the other Parts of the Building Standards Code, as directed by California Government Code Sections 11349 and 11349.1. These changes are also reasonably necessary to increase energy efficiency via cost-effective building design standards, as mandated by California Public Resources Code Sections 25213 and 25402.

Section: Table 160.2-B

Specific Purpose:

The specific purpose of the change is to move the header and footnote outside of Table 160.2-B and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 160.2-C

Specific Purpose:

The specific purpose of the change is to move the header and footnote outside of Table 160.2-C and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 160.2-D

Specific Purpose:

The specific purpose of the change is to move the header outside of Table 160.2-D and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.3(a)1

Specific Purpose:

The specific purpose of the changes is to delete the text “and common living area” from Section 160.3(a)1. The change is to ensure that the thermostat requirements apply to dwelling areas but not to common living areas.

Necessity:

The change is reasonably necessary specify the scope of Section 160.3(a)1 to dwelling areas. These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.3(a)2, Exception to 160.3(a)2

Specific Purpose:

The proposed change is to revise “Common Services Areas” to “Common Use Areas” in Section 160.3(a)2. An exception is added to allow for lighting complying with residential requirements to be installed in common use areas serving the purpose of a dwelling area to

better capture the intent of the original distinction between “common service area” and “common living area”.

Necessity:

These changes are necessary to clarify the purpose and the scope of 160.3(a)2, and better embody the intent of allowing residential-style lighting design in areas serving the purpose of a shared dwelling area. The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.3(a)Diii

Specific Purpose:

The specific purpose is to revise and add the ventilation as required by Section 160.2(c)3 and the occupant sensor ventilation control as required by Section 160.2(c)5E.

Also, the specific purpose is to revise the text “within 20 minutes” to “in 20 minutes or less” about the occupied-standby mode requirements of occupant sensing zone controls.

Necessity:

These changes are reasonably necessary to clarify the period of time as allowed for meeting the occupant sensing zone controls requirements, and they are reasonably necessary to clarify with the specifics of ventilation and occupant sensor ventilation control for the system providing space conditioning.

These changes are reasonably necessary to ensure consistency between the Energy Code and the other Parts of the Building Standards Code, as directed by California Government Code Sections 11349 and 11349.1.

Section: 160.3(b)5Aii

Specific Purpose:

The specific purpose of the changes is to clarify language regarding compliance with subsection a or b, to restructure the exceptions, and to revise the duct insulation requirement when ducts are located in conditioned spaces in subsection b. The revision to subsection b removes the R-4.2 requirement and allows no insulation on ducts that are located in conditioned spaces when those ducts meet the listed criteria.

Necessity:

These changes are reasonably necessary to increase energy efficiency via cost-effective building design standards, as mandated by California Public Resources Code Sections 25213 and 25402 et seq. The revision encourages builders to relocate ducts from an unconditioned space, typically a vented attic, into the building’s thermal envelope.

Section: 160.3(b)5Aii, EXCEPTIONS 1 and 2

Specific Purpose:

The specific purpose of the change is to delete Exception 1 and 2. These exceptions no longer apply with the revision of the duct insulation requirement for ducts located in conditioned spaces as specified in Section 160.3(b)5Aii.

Necessity:

These changes are reasonably necessary to increase energy efficiency via cost-effective building design standards, as mandated by California Public Resources Code Sections 25213 and 25402 et seq. The revision encourages builders to relocate ducts from an

unconditioned space, typically a vented attic, into the building's thermal envelope. The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.3(b)5Aiiia, EXCEPTION

Specific Purpose:

The specific purpose of the change is to revise the duct insulation requirement when ducts are located in conditioned spaces. The revision removes the R-4.2 requirement and allows no insulation on ducts that are located in conditioned spaces when those ducts meet the listed criteria.

Necessity:

These changes are reasonably necessary to increase energy efficiency via cost-effective building design standards, as mandated by California Public Resources Code Sections 25213 and 25402 et seq. The revision encourages builders to relocate ducts from an unconditioned space, typically a vented attic, into the building's thermal envelope.

Section: 160.3(c)

Specific Purpose:

The proposed change is to revise "Common Services Area" to "Common Area" in this section.

Necessity:

These changes are necessary to clarify the purpose and the scope of 160.3(c). The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.3(c)2

Specific Purpose:

The specific purpose of the changes to revise "Multifamily common services areas" as "Multifamily common areas" in Section 160.3(c)2.

Necessity:

The changes are reasonably necessary to clarify the purpose and the scope of 160.3(c)2. These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.3(d)

Specific Purpose:

The specific purpose of the changes to this section is to restructure and separate the mechanical acceptance tests applicable to common area from those applicable to dwelling units in multifamily buildings. This change creates a separate subsection (d) to Section 160.3, removing the acceptance testing requirements from their previous location (under 160.3(c)3) which was specific only to common areas. Additional updates are made to the section numbering to reflect the restructuring.

Necessity:

These changes are necessary to more clearly articulate which requirements and tests fall under common areas, and which fall under dwelling unit areas. With the introduction of mechanical acceptance testing requirements for specific systems serving multifamily dwelling units as part of the 2022 Energy Code, these edits categorize these tests and the spaces they are applicable to more clearly.

Section: Table 160.3-D

Specific Purpose:

The specific purpose of the change to Table 160.3-D is to move the footnote outside of the table and to reformat the table and to restate some column headers in order to aid in ADA accessibility.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 160.4-A

Specific Purpose:

The specific purpose of the change to Table 160.4-A is to move the footnote outside of the table and to reformat the table to aid in ADA accessibility.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.4(d)

Specific Purpose:

The specific purpose of the change to this section is to correct a reference to another section.

Necessity:

This change is reasonably necessary to correct an unintended typographical error, and ensure the reference is to a section that is applicable to the noted category of equipment.

Section: Exception to 160.4(e)3

Specific Purpose:

The specific purpose of this change is to correct a reference to “thermal efficiency” to instead refer to “combustion efficiency” for consistency with applicable federal appliance and equipment standards.

Necessity:

This change is necessary to identify the correct federally mandated efficiency metric applicable to this equipment, thereby avoiding an unintentional conflict with federal law.

Section: 160.4(f)1

Specific Purpose:

The specific purpose of the change is to remove the unfired storage tank requirement in Section 160.4(f)1 and exception to Section 160.4(f)1. Subsequence sections are renumbered.

Necessity:

This requirement is redundant because the same requirement is already specified in section 110.3(c)3. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.5(a)**Specific Purpose:**

The specific purpose of the changes is to revise “Dwelling Unit and Common Living Area Lighting” as “Dwelling Unit Lighting”.

Necessity:

These changes are reasonably necessary to clarify that only multifamily dwelling units are required to meet the lighting requirements. These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5(a)1B**Specific Purpose:**

The specific purpose of the changes is to delete the proposed 45-day language regarding qualified colored lamps, dim-to-warm lamps, tunable-white lamps, color-tunable lamps, and Title 20-compliant LED lamps.

Necessity:

These changes are reasonably necessary to clarify and to ensure qualified colored lamps, dim-to-warm lamps, tunable-white lamps, color-tunable lamps, and Title 20-compliant LED lamps meet the same requirements as those lamps that comply with Reference Joint Appendix JA8. The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.5(a)1Civ**Specific Purpose:**

The specific purpose of the changes is to add “for recessed luminaires” as clarification.

Necessity:

This change is reasonably necessary to clarify the reference requirements of the California Electrical Code section that are applicable to recessed luminaires. These changes are reasonably necessary to clarify the specified section and to improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.5(a)2D

Specific Purpose:

The specific purpose of the changes is to revise the specified section as “Section 160.5(a)2A” by adding “A”.

Necessity:

These changes are reasonably necessary to clarify the specified section and to improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.5(a)2Ei

Specific Purpose:

The specific purpose of the changes is to delete the requirement to configure the controls as manual-on operation.

Necessity:

These changes are reasonably necessary to permit occupancy sensor controls to be initially configured as either occupancy sensors or vacancy sensors for compliance and to avoid what appeared to be a redundancy of referring to Section 160.5(a)2A which is applicable to all indoor lighting controls. These changes are reasonably necessary to clarify the specified section and to improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.5(a)2F, EXCEPTION 3

Specific Purpose:

The specific purpose of the proposed change is to add “or with automatic controls” to the end of the sentence.

Necessity:

These changes are reasonably necessary to clarify that lighting - internal to drawers and cabinetry with opaque fronts or doors - with automatic off controls are exempted from the dimming controls requirements.

These changes are reasonably necessary to ensure energy efficiency of the Energy Code with cost-effective building design standards, as mandated by California Public Resources Code Sections 25213 and 25402 et seq.

Section: 160.5(a)3A and 3Aii and 3Aiii

Specific Purpose:

The specific purpose of the changes is to add “and either a motion sensor or an automatic time switch control’ to item ii of Section 160.5(b)3A and to delete the automatic time switch control requirements from item iii of Section 160.5(b)3A of the proposed 45-day terms.

Necessity:

These changes are reasonably necessary to align the proposed outdoor lighting controls requirement of multifamily buildings for dwelling units to the existing outdoor lighting controls requirements for residential single-family buildings. The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by

California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.5(b), Exception

Specific Purpose:

The specific purpose of the changes is to add an Exception to Section 160.5(b) for lighting systems installed in common use areas providing shared provisions for living, eating, cooking or sanitation to dwelling units. Lighting systems in the specified common use areas may instead comply with lighting requirements for dwelling units.

Necessity:

These changes are reasonably necessary to permit lighting systems in the specified common use areas may instead comply with lighting requirements for dwelling units – as lighting systems in the specified common use areas are similar in their lighting applications as those lighting systems in dwelling units.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.5(b)4B

Specific Purpose:

The specific purpose of the changes is to add "and" to item i and to add "specified in Table 160.5-B" to item ii.

Necessity:

These changes are reasonably necessary to correct the reference table for the uniformity requirements of Section 160.5(b)4B. The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Exception to 160.5(b)4C, Exception 3 to Section 160.5(b)4Ci

Specific Purpose:

The specific purpose of the changes is to move “Exception to Section 160.5(b)4C” to “EXCEPTION 3 to Section 160.5(b)4Ci” as part of the Exception 3.

Necessity:

These changes are reasonably necessary to clarify that both provisions are applicable to lighting providing means of egress illumination. As both the Exception and the Exception 3 are about lighting providing means of egress illumination, the changes consolidate both exceptions in the same location of the code section with no material change to the regulation. These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5(b)4Cid

Specific Purpose:

The specific purpose of the changes to delete this separate shut-OFF controls requirement for general lighting, display lighting, ornamental lighting, and display case lighting from the 15-day language.

Necessity:

The changes are reasonably necessary to avoid redundancy to the other existing separate controls requirement in code section 160.5(b)4A - having another separate control requirement in section 160.5(b)4Cid is redundant.

Further the changes are reasonably necessary to clarify and to avoid likely confusing scenario where the separate shut-OFF controls requirement for providing the specified lighting types as a minimal could pose challenge for the application scenario where the lighting controls are desired to be controlling the lighting types in the same manner at the same time. These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5(b)4Cie**Specific Purpose:**

The specific purpose of the changes to delete the requirement about automatic time switch controls.

Necessity:

The changes are reasonably necessary to avoid redundancy to the other existing separate controls requirement in code section 160.5(b)4Aiii - having another separate control requirement in section 160.5(b)4Cie is redundant.

These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: Exception 6 to 160.5(b)4Ci**Specific Purpose:**

The specific purpose of the change is to delete the 45-day proposed exception to shutoff controls for lighting in stairway designated as means of egress.

Necessity:

This change is reasonably necessary to keep the shutoff controls requirements as-is for lighting in stairway.

There is support for the full or partial-off occupancy sensing controls requirement for stairwell lighting – as bi-level sensor-based controls are available for stairwell lighting application and have been demonstrated with a high reliability.

Section: 160.5(b)4Ci, Exception 3**Specific Purpose:**

The specific purpose of the changes is to move “Exception to Section 160.5(b)4C” to “EXCEPTION 3 to Section 160.5(b)4Ci” as part of the Exception 3.

Necessity:

These changes are reasonably necessary to clarify that both provisions are applicable to lighting providing means of egress illumination. As both the Exception and the Exception 3 are about lighting providing means of egress illumination, the changes consolidate both exceptions in the same location of the code section with no material change to the regulation. These changes are reasonably necessary to ensure and improve general clarity

and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5(b)4Cv.

Specific Purpose:

The specific purpose is to revise the text “within 20 minutes” to “in 20 minutes or less after” (after the control zone is unoccupied) for meeting the occupant sensing controls requirements.

Necessity:

These changes are reasonably necessary to clarify the duration of time for the controls allowed for meeting the occupant sensing controls requirements. These changes are also necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5(b)4Cvi

Specific Purpose:

The specific purpose of the change is to revise “300 square feet” as “250 square feet” for office lighting occupant sensing controls requirement (for offices greater than 250 square feet), and to revise the reference section to Section 160.5(b)4Ci. Further, the purpose of the change is to revise the text “within 20 minutes” to “in 20 minutes or less after” (after the control zone is unoccupied) for meeting the occupant sensing controls requirements.

The other specific purpose of the change is to revise the term “general lighting” as “lighting” for meeting the requirements of Section 160.5(b)4Cvi.

Necessity:

These changes to the section heading are reasonably necessary to clarify that offices with area size greater than 250 square feet are required to meet Section 160.5(b)4Ci. Further, the changes are reasonably necessary to clarify the duration of time for the controls as allowed for meeting the occupant sensing controls requirements.

The other changes are reasonably necessary to clarify that lighting in the applicable spaces are required to be controlled by occupancy sensing controls for meeting Section 160.5(b)4Cvi.

These changes are also necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5(b)4Cvi, Exception

Specific Purpose:

The specific purpose of the change is correct the reference to “EXCEPTION to Section 160.5(b)4Cvi”.

Necessity:

This change is reasonably necessary to clarify with the appropriate code section referenced. This change is also necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5(b)4Cvi.b

Specific Purpose:

Another purpose of the change is to correct the section stated in the Exception to refer to the immediately preceding section that it is an exception to (“EXCEPTION to Section 160.5(b)4Cvi). This corrects a typographical error and does not represent a substantive change in requirements.

Necessity:

These changes are also necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5(b)4Cvii

Specific Purpose:

The specific purpose of the change is to revise the term “general lighting” as “lighting” for meeting the requirements of Section *160.5(b)4Cvii*.

Necessity:

The other changes are reasonably necessary to clarify that lighting in the applicable spaces are required to be controlled by occupancy sensing controls to meet Section *160.5(b)4Cvii*. These changes are also necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5(b)4D, EXCEPTION 3

Specific Purpose:

The specific purpose of the change is to combine the proposed 45-day Exception 3 and 4 as the proposed 15-day Exception 3 to Section 130.1(d). Also, the specific purpose of the change is to add “combined” to the phrase, ‘total install wattage of general lighting’, and to revise “in the daylit zones” as “for those zones” – in the first sentence.

Further, the specific purpose of the change is to renumber some of the Exceptions – Exception 6 as 4, Exception 7 as 5, Exception 8 as 6, and Exception 9 as 7β.

Necessity:

These changes are necessary as “combined total install wattage of general lighting” is best to convey the meaning of “combined” and “total” - “combined” as the combined daylit zone areas and “total” as the total square footage of the accounted daylit zone areas. Also, these changes are reasonably necessary to clarify the daylighting controls are not required for those/that zone directly associated with the accounted daylit zones with less than the 120 watts requirement.

These changes are reasonably necessary to ensure and improve clarify and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5(b)4D, EXCEPTIONS 4-7 (was EXCEPTIONS 4-9)

Specific Purpose:

The specific purpose of the change is to delete the proposed 45-Day Exception 4-5 to 160.5(d)4D and to renumber the remaining exception to 160.5(d)4D – Exception 6 as 4, Exception 7 as 5, Exception 8 as 6, Exception 9 as 7.

Necessity:

These changes are necessary as the proposed 15-Day Exception 3 to 160.5(d)4D already cover the exception provision necessary for daylit zones including skylit daylit zones, primary sidelit daylit zones and secondary sidelit zones – it is not necessary for the proposed 15-Day Exception 3-5 to 160.5(d)4D.

In addition, the changes to the numbering of the sections are reasonably necessary to ensure the numbering of the requirements is updated whenever there are revisions to the listing of the requirements. These changes are reasonably necessary to ensure and improve clarify and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: Table 160.5-B

Specific Purpose:

The specific purpose of the change is to move the footnote outside of Table 160.5-B and to reformat the table for ADA compliance. Several redundant rows and cells have been merged, though their values have not been altered; this change is not anticipated by staff to have any substantive effect.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.5(c)2.B.ii

Specific Purpose:

The specific purpose of the changes to revise the outdoor lighting power reduction level to at least “50” percent.

Necessity:

The changes are reasonably necessary to correct and align the outdoor lighting power reduction level of the multifamily requirements with the corresponding outdoor lighting power reduction level in the nonresidential section. These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5(c)2.C.i.

Specific Purpose:

The specific purpose of the change is to revise the text “other than” to “other than those providing” and to revise the text “or less above grade” to “above grade or lower” in item A.

The other specific purpose of the change is to revise the text “or less above grade” to “above grade or lower” in item B.

Necessity:

These changes are reasonably necessary to improve the readability of the code language. These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5(c)2Cii

Specific Purpose:

The specific purpose of the changes to revise the outdoor lighting power reduction level to at least “50” percent.

Necessity:

The changes are reasonably necessary to correct and align the outdoor lighting power reduction level of the multifamily requirements with the corresponding outdoor lighting power reduction level in the nonresidential section. These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5(c)2C, Exception 4

Specific Purpose:

The specific purpose of the change to this section is to delete the proposed Exception 4 (for luminaires with a maximum rated wattage of 78 watts to not install motion sensing controls).

Necessity:

These changes are reasonably necessary to respond to the comments expressed in opposing the proposed Exception 4 as there are market assessments indicating a substantial number of outdoor lighting occupancy sensors available and also a notable site demonstration with successful implementation and installation of motion sensing technology.

These changes are necessary for the changes to ensure clarify of the Energy Code and to effectively communicate the requirements and standards in a precise and clear manner.

Section: 160.5(e)

Specific Purpose:

The specific purpose of the changes to revise “Multifamily common services areas” as “Multifamily common areas”.

Necessity:

The changes are reasonably necessary to clarify that only multifamily common areas are required to meet the lighting control acceptance and installation certificate requirement. These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5(e)1H

Specific Purpose:

The specific purpose of the change to this section is to include demand responsive receptacle controls in the list of controls subject to acceptance testing. Identical language was added to parent section 130.4 in the original Express Terms; its absence in this mirroring section language was inadvertent.

Necessity:

This change is reasonably necessary to maintain consistency between this section's requirements and its parent nonresidential requirements.

Section: 160.5(e)2

Specific Purpose:

The specific purpose of the change is to delete the text "track lighting integral current limiter, track lighting supplementary overcurrent protection panel". This change is to remove the installation certificate requirement for track lighting integral current limiter and track lighting supplementary overcurrent protection panel.

Necessity:

This change is reasonably necessary to state it is not mandatory for installation certificate for track lighting integral current limiters and track lighting supplementary overcurrent protection panels.

These changes are also necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5(e)2C

Specific Purpose:

The specific purpose of the change is to correct the reference section as 170.2(e)2A.

Necessity:

These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5(e)2D

Specific Purpose:

The specific purpose of the change is to correct the reference section as 170.2(e)2B.

Necessity:

These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5(e)2E

Specific Purpose:

The specific purpose of the changes is to delete item E about the certification for the additional lighting wattage for videoconference studio.

Necessity:

The changes to delete item E are reasonably necessary as videoconferencing studios are uncommon in multifamily buildings.

Further, these changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.5, Table 160.5-A

Specific Purpose:

The specific purpose of the changes is to add “other than those installed in ceiling recessed downlight luminaires” to the heading at the top left of Table 160.5-A.

The other specific purpose of the changes is to delete “accent, display, utility, undercabinet or special effect” from item 2, to revise “and” to “containing” in item 2, to delete item 3 (about dim-to-warm and tunable -white LED light sources), to delete item 4 (about color-tunable LED light sources), and to delete item 5 (LED lamps compliant with Title 20 as general service lamps) of the proposed 45-day changes to Table 160.5-A.

Another purpose is to revise item 6 for ceiling fan light kits “subject to federal appliance regulations”.

Further, the other purpose is to delete “other than those specified in items 3, 4, or 5” from item 7 (was item #10 of the 45-day Express Terms) (about ceiling recessed downlight luminaires). In addition, the other purpose of the change is to renumber the remaining items in the Table to follow a numerical order.

Necessity:

Due to comments from stakeholders, decline to adopt accent, display, utility, undercabinet and special effect lighting, colored light sources, dim-to-warm LED light sources, tunable-white LED light sources, color-tunable LED light sources, and Title 20-compliant LED lamps in the 45-day language of Table 160.5-A. These changes are reasonably necessary to ensure accent, display, utility, undercabinet and special effect lighting, colored light sources, dim-to-warm LED light sources, tunable-white LED light sources, color-tunable LED light sources, and Title 20-compliant LED lamps meet the same requirements as those light sources that comply with Reference Joint Appendix JA8. The other editorial changes of renumbering are to ensure the items follow a numerical order and to ensure readability of the code language.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.6(b), Exception 2

Specific Purpose:

The specific purpose of the changes is to delete the text “or common living areas” from the Exception and the Exception would apply to dwelling units but not common living areas.

The change is to state the requirements of separation of electrical circuits for electrical energy monitoring apply to common living areas

Necessity:

The change is reasonably necessary as common living areas have electrical load types described in Table 160.6-B and it is important to ensure the capability to monitor their electrical energy usage. These changes are reasonably necessary to ensure and improve

general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.6(d)

Specific Purpose:

The specific purpose of the changes is to revise “common services areas” as “common areas” in Section 160.6(d).

Necessity:

The changes are reasonably necessary to clarify the purpose and the scope of 160.6(d). These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.6(d), Exception 2

Specific Purpose:

The specific purpose of the changes is to add Exception 2 to Section 160.6(d) – for receptacles in common use areas providing shared provisions for dwelling units. This change permits receptacles in the specified common use areas to instead comply with receptacles requirements for dwelling units.

Necessity:

These changes are reasonably necessary as receptacles in the specified common use areas are similar in their applications to those receptacles in dwelling units. These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 160.9(a)1

Specific Purpose:

The specific purpose of the change is to improve the specificity of the wiring requirements by adding the term “wiring” in one location and “conductor” in another. This does not represent a substantive change in requirements.

Necessity:

These changes are reasonably necessary to improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.9(b)1

Specific Purpose:

The specific purpose of the change is to improve the specificity of the wiring requirements by adding the term “wiring” in one location and “conductor” in another. This does not represent a substantive change in requirements.

Necessity:

These changes are reasonably necessary to improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 160.9(c)

Specific Purpose:

The specific purpose of the change is to change the phrasing of the sections from referring to “[clothes dryer] *systems* using gas or propane” to instead refer to “clothes dryer *locations* with gas or propane plumbing” (italics added), while also improving the specificity of the wiring requirements consistent with the change to Sections 160.9(a)1 and (b)1 and adding the term “use” to “common use area” for consistency in phrasing across various sections.

Necessity:

These changes are reasonably necessary to clarify the intent of the electric ready requirement. Clothes dryers are not typically installed at the time of inspection; in contrast, gas piping needed to serve gas clothes dryers will be installed by the time of final inspection. The changes are also reasonably necessary to improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.1(a)

Specific Purpose:

The specific purpose of the change is to add source energy to the standard design energy budget.

Necessity:

These changes are reasonably necessary to account for the GHG impact of the standard design building, as source energy has strong correlation with GHG. By simultaneously meeting the source energy and TDV energy budget, the changes ensure the proposed building meet both the energy efficiency and GHG baselines set by the standard design. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.1(b)

Specific Purpose:

The specific purpose of the change is to add source energy to the proposed design energy budget. The Proposed Building shall separately comply with source energy budget and TDV energy budget. An additional change corrects a clerical error, changing “are” to “and” in the second sentence.

Necessity:

These changes are reasonably necessary to account for the GHG impact of the proposed building, as source energy has strong correlation with GHG. By simultaneously meeting the source energy and TDV energy budget, the changes ensure the proposed building meet both the energy efficiency and GHG baselines set by the standard design. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

The clerical correction is made pursuant to the Commission’s resolution adopting the 2022 Energy Code, which delegates authority and directs CEC staff to take all actions reasonably necessary to have the 2022 Energy Code go into effect, including but not

limited to correcting grammatical, typographical, and other nonsubstantial errors in the regulations.

Section: 170.1(b), Exception

Specific Purpose:

The specific purpose of the change is to add battery storage systems as allowable offsets to comply with the Standards by a community shared solar electric generation system, or other renewable electric generation system, and/or a community shared battery storage system.

Necessity:

These changes are reasonably necessary to align with the intent of the performance approach in Section 140.1, and the photovoltaic and battery storage system performance baseline set forth in section 140.10. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.1(d)1

Specific Purpose:

The specific purpose of the changes to this section are to replace EDR with the broader terms “source energy budget and TDV”.

Necessity:

This change is reasonably necessary to avoid confusion regarding the statistical modeling of multifamily buildings, and in particular mixed-use buildings that may include nonresidential floor area that does not receive an EDR score per se (given that an EDR score is baselined against a purely residential building) but is evaluated according to the same underlying energy metrics used to determine EDR.

Section: 170.1(d)2

Specific Purpose:

The specific purpose of the changes to this Section and its subsections are to comprehensively list potentially applicable federal appliance metrics (Energy Efficiency Ratio (EER) 1 and 2, Seasonal Energy Efficiency Ratio (SEER) 1 and 2, Heating Seasonal Performance Factor (HSPF) 1 and 2, etc.) once in Subsection A and otherwise refer generally to “minimum rating”, eliminating the need for duplicative language in subsections B and D while also ensuring all current federally specified appliance metrics are acknowledged.

Necessity:

These changes are reasonably necessary to include the new federal metrics from the Department of Energy that becomes effective January 1, 2023 and, in so doing, align the Energy Code language with otherwise preemptive federal requirements for space conditioning appliances and equipment. This change is also reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.1(d)2D

Specific Purpose: The specific purpose of the change is to delete this section because this requirement was merged with Section 170.1(d)2A. Section 170.1(d)A was revised to include all the metrics for energy efficiency ratings.

Necessity:

This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(c)2C, Exception

Specific Purpose:

The specific purpose of the change is to appropriately reference Section 170.2(c)2C in the exception.

Necessity:

The revision was made to ensure that the exception references the correct section and does not confuse users by providing exceptions to incorrect requirements. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(c)3A

Specific Purpose:

The specific purpose of the changes to this section is to more accurately identify the space conditioning systems in multifamily buildings that are prescriptively required to be heat pumps. This change identifies all space conditioning systems serving dwelling units of multifamily buildings as those subject to the heat pump requirements, within the applicable climate zones. This change also relocates the balanced ventilation system requirements to Section 170.2(c)3iv.

Necessity:

The changes related to space conditioning systems are reasonably necessary to ensure that systems serving multifamily dwelling units which are subject to the heat pump space conditioning requirements are clearly identified. Staff reviewed and modified the applicability of the heat pump space conditioning requirements from only specific types of systems serving dwelling units, to all systems serving dwelling units. This requirement still allows for any type of space conditioning system to be installed to serve dwelling units when complying via the performance approach.

The relocation of the balanced ventilation efficiency requirements to Section 170.2(c)3ivc is reasonably necessary to locate all prescriptive balanced ventilation requirements within one subsection. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(c)3Ai

Specific Purpose:

The specific purpose of the change is to move the balanced ventilation requirement for fan efficacy within this section into a new Section 170.2(c)3Bivc.

Necessity:

These changes are reasonably necessary to improve the clarity by of the regulations, in this case, by ensuring that ventilation requirements are properly listed in the ventilation subsection. This ventilation requirement was initially placed under the space conditioning subsection along with the heat pump baseline. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(c)3B

Specific Purpose:

The specific purpose of the change is to revise the subsection heading from “space heating and space cooling” to “space Conditioning and Ventilation Systems” because this subsection now includes ventilation requirements for dwelling units.

Necessity:

These changes are reasonably necessary to clarify that this section also includes ventilation requirements. These changes are necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(c)3Bi, iii

Specific Purpose:

The specific purpose of the changes to these sections is to clarify that the refrigerant charge verification and central fan integrated ventilation system requirements are applicable only to systems serving individual dwelling units.

Necessity:

These changes are reasonably necessary to ensure that this language clearly states that these requirements apply only to systems serving individual dwelling units. These changes are necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(c)3Biia

Specific Purpose:

The specific purpose of this non substantive change is to renumber to reference the correct table.

Necessity

These changes are reasonably necessary to ensure that this language clearly states that these requirements apply only to systems serving individual dwelling units. These changes are necessary to ensure and improve the general clarity and internal consistency of the

Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(c)3Biv

Specific Purpose:

The specific purpose of the change is to move all balanced ventilation requirements for dwelling units in multifamily buildings to this section.

Necessity:

These changes are reasonably necessary to move balanced ventilation requirements where it belongs under the balanced ventilation subsection. Some requirements were initially inadvertently placed under the space conditioning subsection along with the heat pump baseline. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(c)3Biva

Specific Purpose:

The specific purpose of the change is to clarify and reword the language for the fan efficacy specification.

Necessity:

These changes are reasonably necessary to clarify the intent of the fan efficacy requirement where it must be less than or equal to the specified efficacy. With no change, it reads “minimum” which can be misinterpreted. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(c)3Bivb

Specific Purpose:

The specific purpose of the change is to clarify and reword the language for the fan efficacy specification.

Necessity:

These changes are reasonably necessary to clarify the fan efficacy requirement for balanced ventilation systems serving multiple dwelling units. These changes reorganize wording and are non-substantial. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(c)4Ai

Specific Purpose:

The specific purpose of the change is to clarify the language for fan power budget requirements to more readily identify that fan system electrical input power determined by Section 170.2(c)4Aib is subject to the requirements of 170.2(c)4Aia.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(c)4Aib

Specific Purpose:

The specific purpose is to change the midlife filter pressure drop to two times clean filter pressure drop.

Necessity:

These changes are reasonably necessary to avoid a loophole in calculating a mid-life pressure drop for filters to ensure energy savings.

Section: Table 170.2-B and Table 170.2-C

Specific Purpose:

The specific purpose of the change is to include turndown credit for single zone VAV, change the midlife filter pressure drop to two times clean filter pressure drop, revise sensible only cooling power allowance back to the 2019 version as “coil runaround loop,” move Economizer Return Damper allowance from Table 170.2-C to Table 170.2-B, and to reorder the headings and subsequent values from least to greatest. Additionally, Tables 170.2-B and 170.2-C were reformatted for ADA compliance.

Necessity:

These changes are reasonably necessary to give credit to fan components that are saving energy, adjust the filter pressure drop to avoid a loophole in calculating a mid-life pressure drop for filters, and to not exclude sensible only HRV systems from being too restrictive under the fan power budget.

Section: Table 170.2-D

Specific Purpose:

The specific purpose of the changes to this table are to correct the use of greater than symbols, consistent with their use in parent table 140.4-C.

Necessity:

This change is necessary to ensure that Table 170.2 accurately duplicates the values in Table 140.4-C, consistent with the effort to create separate nonresidential and multifamily chapters of the Energy Code.

Section: Table 170.2-E

Specific Purpose:

The specific purpose of the change is to move the footnote outside of Table 170.2-E and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 170.2-F

Specific Purpose:

The specific purpose of the change is to move the footnote outside of Table 170.2-F and to reformat the table for ADA compliance.

Necessity:

These revisions were made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 170.2-G**Specific Purpose:**

The specific purpose of the change is to move the footnote outside of Table 170.2-G and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(c)4F**Specific Purpose:**

The specific purpose of the change is to revise references to the correct tables in Section 110.2.

Necessity:

These changes are reasonably necessary to reference the appropriate tables as tables in Section 110.2 were revised based on additions and removal of tables. These revisions were made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(e)**Specific Purpose:**

The specific purpose of the changes is to revise “Dwelling unit and common living area lighting” as “Dwelling unit lighting” and to revise “Common service area lighting” to “Common use area lighting”. This change is to state dwelling unit lighting shall meet the applicable mandatory requirements of Section 160.5(a) and common service area lighting shall meet requirements of Section 170.2(e).

Necessity:

The changes are reasonably necessary to delineate the scope for common use area lighting and dwelling unit lighting. These changes are reasonably necessary to ensure and improve general clarity and internal consistency of the Energy Code, as directed by California Government Code Section 11349 and 11349.1 and California Code of Regulations, Title 1, Section 16.

Section: 170.2(e)1**Specific Purpose:**

The specific purpose of the changes is to revise the heading from “Interior Common Service Area Lighting” as “Interior Common Use Area Lighting”.

Necessity:

These changes are necessary to clarify that the section is applicable to interior common use area lighting. The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(e)1A

Specific Purpose:

The specific purpose of the changes is to revise the reference sections as Section 170.2(e)2 and 170.2(e)4 for the calculation of indoor lighting power.

Necessity:

These changes are necessary to clarify with more a precise reference to Section 170.2(e)2 for the calculation of adjusted indoor lighting power of all proposed building areas combined, and Section 170.2(e)4 for the calculation of allowed indoor lighting power with specified methodologies.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(e)1B

Specific Purpose:

The proposed change is to clarify to revise the reference sections as Section 170.2(e)3 for the calculation of allowed indoor lighting power.

Necessity:

These changes are necessary to clarify with more a precise reference to Section 170.2(e)3 for the calculation of allowed indoor lighting power under general rules.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(e)4A.v.g

Specific Purpose:

The proposed change is to delete the additional lighting requirements for videoconference studio from the multifamily building prescriptive section.

Necessity:

These changes are necessary to clarify and to avoid confusion as videoconference studios are not applicable to multifamily buildings.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 170.2-L

Specific Purpose:

The specific purpose of the change is to move the header outside of Table 170.2-L and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 170.2-Q

Specific Purpose:

The specific purpose of the change is to move the header and footnote outside of Table 170.2-Q and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 170.2-R

Specific Purpose:

The specific purpose of the change is to move the footnote outside of Table 170.2-R and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(f), (g)

Specific Purpose:

The specific purpose of the change is to reproduce the solar photovoltaic system requirements applicable to multifamily buildings in these sections.

Necessity:

These changes are reasonably necessary to include all multifamily requirements within the newly created multifamily subchapters of the 2022 Energy Code. For the 2022 Energy Code, the low-rise and high-rise multifamily requirements are being relocated to a new multifamily specific section of the code: Sections 160, 170, and 180. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2(h)

Specific Purpose:

The specific purpose of the change is to reproduce the battery storage requirements applicable to multifamily buildings in this section.

Necessity:

This change is reasonably necessary to include all multifamily requirements within the newly created multifamily subchapters of the 2022 Energy Code. For the 2022 Energy Code, the low-rise and high-rise multifamily requirements are being relocated to a new multifamily specific section of the code: Sections 160, 170, and 180. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 170.2-K

Specific Purpose:

The specific purpose of the change is to add new federal metrics Energy Efficiency Ratio 2 (EER2), Seasonal Energy Efficiency Ratio 2 (SEER2), and Heating Seasonal Performance Factor 2 (HSPF2) as applicable metrics for the energy efficiency rating of space conditioning equipment. Also, the table was restructured, isolating requirements specific to balanced ventilation systems from other space conditioning system requirements.

Necessity:

The space conditioning efficiency nomenclature changes are reasonably necessary to include the new federal metrics from the Department of Energy that becomes effective January 1, 2023. This aligns the Energy Code language with federal labeling and provides clarification for compliance. The restructuring of the table, as well as the efficiency nomenclature changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 170.2, Table 170.2-M

Specific Purpose:

The specific purpose of the change is to revise the decorative/display lighting power of “Cafeteria/Fast food” (under Dining Area) to be 0.25 W/ft² in Table 170.2-M. Additionally, the table was reformatted for ADA compliance.

Necessity:

These changes are reasonably necessary to align the lighting power values in Table 170.2-M to the values proposed in the document - docketed TN#234915 in Docket 19-BSTD-03. The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 170.2-T

Specific Purpose:

The specific purpose of the addition of this table is to support the expanded section language relating to solar access roof area (SARA), and specifically proposed Equation 170.2-C. The table provides adjustment factors to represent the effect of varying climate regions on expected annual insolation.

Necessity:

This addition is reasonably necessary to ensure that Energy Code estimations of available solar energy account for differences in climate, and to do so in a manner that is consistent with the use of Climate Zones in other sections.

Section: Table 170.2-U

Specific Purpose: The specific purpose of the addition of this table is to support the expanded section language relating to determining total minimum solar photovoltaic capacity standards and specifically proposed Equation 170.2-D. The table provides adjustment factors to represent the effect of varying building types on estimated building energy use per square foot, and these values in turn are used to determine minimum PV system size requirements.

Necessity:

This addition is reasonably necessary to ensure that Energy Code estimations of electricity demand account for differences in building end use, and do so in a manner that is consistent with other portions of the Energy Code

Section: 180.0

Specific Purpose:

The specific purpose of the change is to delete the high-level reference to Section 160.2 for mandatory ventilation requirements.

Necessity:

These changes are reasonably necessary to not reference the mandatory ventilation requirements for multifamily in entirety. Ventilation requirements for multifamily additions and alterations are within the Sections 180.1 and 180.2. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.1

Specific Purpose:

The specific purpose of the change is to delete Exception 1.

Necessity:

These changes are reasonably necessary to prevent conflict with Section 180.1(a) and Section 180.1(b). Exception 1 was inadvertently brought over as part of the multifamily restructure. Section 180.1(a) and Section 180.1(b) addresses the ventilation requirements for additions that would fall under Exception 1, which is in conflict. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.1, Exception 7

Specific Purpose:

The specific purpose of the change is to add an exception to make the heat pump baseline not applicable to multifamily additions.

Necessity:

These changes are reasonably necessary to clarify that the heat pump baseline does not apply to multifamily additions as it was never the intent. Without the added exception, this

section unintentionally references the heat pump baseline requirement. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.1, Exception 6

Specific Purpose:

The specific purpose of the change is to appropriately reference Section 180.1 in the exception.

Necessity:

The revision was made to ensure that the exception references the correct section and does not confuse users by providing exceptions to incorrect requirements. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.1(a)1, Exception 2

Specific Purpose:

The specific purpose of this change is to correct an error in the scope of Exception 2, which exempts additions that increase the roof area by 2,000 square feet or less. The incorrect scope only applied Exception 2 to 180.1(a)1B, which makes little logical sense, since 180.1(a)1B only concerns additions that increase the roof by less than 700 square feet. This change ensures that Exception 2 properly applies to all of 180.1(a)1, which contains a broader set of conditions.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.1(a)3

Specific Purpose:

The specific purpose of the change is to specify that the requirement applies specifically to water heating units installed to serve dwelling units, consistent with the requirements in referenced section 170.2(d) applying specifically to systems serving dwelling units.

Necessity:

These changes are reasonably necessary to prevent an unintended reading that would seem to apply the requirements of Section 170.2(d) to water heaters outside of its stated scope.

Section: 180.1(b)3

Specific Purpose:

The specific purpose of the change is to correct the referenced section for ventilation requirements.

Necessity:

These changes are reasonably necessary to revise the incorrect reference of Section 160.1(b)2, to the correct reference of Section 160.2 for applicable ventilation requirements.

This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)1A

Specific Purpose:

The specific purpose of the change to Section 180.2(b)1A is to update the language to clarify that the requirement applies to all roof alterations, and not just the roofing products themselves.

Necessity:

This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)1Ai

Specific Purpose:

The specific purpose of the change to Section 180.2(b)1Ai is to revise/correct the equivalent Solar Reflective Index (SRI) value. This number was inadvertently changed during the 2022 development process and should reflect an SRI of 75, consistent with the existing nonresidential and single family requirements.

Necessity:

This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16. The SRI value for all other low-sloped roofs, including nonresidential and single family, with an aged solar reflectance of 0.63 and thermal emittance of 0.75, is an SRI value of 75.

Section: Exception 1 to Section 180.2(b)1Ai

Specific Purpose:

The specific purpose of the change to this exception is to simplify the code language, and to reflect Table 180.2-A's R-value requirement and its lack of a U-factor equivalent.

Necessity:

This change is reasonably necessary in order to make sure the exception's language accurately reflects what is described in the table it is referencing, and to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Exception to Section 180.2(b)1Aii

Specific Purpose:

The specific purpose of the change to this exception is to correct the section references so that they point to the multifamily sections of the Energy Code; Section 180.2(b)1Aii and Section 170.2(a)1C.

Necessity:

This change is reasonably necessary to ensure that the exception references the correct section of the code, and to improve the general clarity and internal consistency of the

Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Exceptions to Section 180.2(b)1A and Ai

Specific Purpose:

The specific purpose of the changes to the Exceptions to Section 180.2(b)1A and Ai is to relocate them below Section 180.2(b)1Aii and make them applicable to both Section 180.2(b)1Ai and ii, consistent with the nonresidential and single family requirements.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)1Aiii (relocated language)

Specific Purpose:

The specific purpose of the change to Section 180.2(b)1Aiii is to relocate this language from Section 180.2(b)1Bii. This was done to combine the low-sloped insulation requirement with the cool roof language since they are triggered together by a roof alteration. Additionally, the U-factor requirement was updated to align with the R-value proposed and presented.

Necessity:

This change is reasonably necessary to ensure that the low-sloped insulation requirement is triggered alongside the cool roof requirement that applies to roof alterations, and to improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Exceptions to Section 180.2(b)1Bi

Specific Purpose:

The specific purpose of the changes to the Exceptions to Section 180.2(b)1Bi is to remove the requirement for third-party verification of existing conditions to qualify for the exception, consistent with the single family language.

Necessity:

These changes are reasonably necessary to delete a requirement that staff found was ultimately not needed, nor appropriate, after discussion with stakeholders. Staff determined that it was not appropriate to require third-party verification when complying with an exception as this would put an undue cost on the building owner that result in no additional energy savings. Additionally, these changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Exception 5 to Section 180.2(b)1Bi

Specific Purpose:

The specific purpose of the change to Exception 5 to Section 180.2(b)1Bi is to correct the section reference so that it points to the multifamily prescriptive alterations section; Section 180.2(b)1Bi.

Necessity:

This change is reasonably necessary to ensure that the exception references the correct section of the code, and to improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)1Bic, Exception

Specific Purpose:

The specific purpose of the changes to the Exceptions to Section 180.2(b)1Bic is to remove the requirement for third-party verification of existing conditions to qualify for the exception, consistent with the single family language.

Necessity:

These changes are reasonably necessary to delete a requirement that staff found was ultimately not needed, nor appropriate, after discussion with stakeholders. Staff determined that it was not appropriate to require third-party verification when complying with an exception as this would put an undue cost on the building owner that result in no additional energy savings. Additionally, these changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)1Bid

Specific Purpose:

The specific purpose of this change is to spell out the abbreviation for the California Building Code (CBC) to avoid confusion for users, as well as aid in ADA accessibility.

Necessity:

This change is reasonably necessary to ensure consistency between the Energy Code and the other Parts of the Building Standards Code, as directed by California Government Code Sections 11349 and 11349.1. Additionally, the clarifying change is necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 180.2-B

Specific Purpose:

The specific purpose of the change to Table 180.2-B is to correct the table header to reflect that the requirement is based on RSHGC, and not SHGC. Additionally, Table 180.2-B was reformatted for ADA compliance.

Necessity:

This change is reasonably necessary to ensure that we accurately communicate that the requirement is based on an RSHGC, and to improve the general clarity and internal

consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)2Ai

Specific Purpose:

The specific purpose of the change is to delete the reference to the heat pump baseline for multifamily alterations.

Necessity:

These changes are reasonably necessary to clarify that the heat pump baseline does not apply to multifamily alterations as it was never the intent. Without the deletion, this section unintentionally references the heat pump baseline requirement. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)2Aii

Specific Purpose:

The specific purpose of the change to Section 180.2(b)2Aii is to require entirely new or complete replacement duct systems to comply with the attic insulation requirements of 180.2(b)1Bi, provided the air handler and ducts are located within a ventilated attic.

Necessity:

This change is reasonably necessary to increase energy efficiency via cost-effective building design standards, as directed by California Public Resources Code, Sections 25213 and 25402. When a new duct system is installed in an existing attic the work is disruptive to the existing attic insulation. At a minimum existing insulation must be moved to access certain areas and later replaced. Worst case, the attic insulation is disrupted and not fixed, resulting in uneven insulation levels across the attic. If new registers are added as part of the scope of work, new penetrations in the ceiling plane may need to be properly air sealed.

Section: 180.2(b)2AiiA and B

Specific Purpose:

The specific purpose of the change is to delete the term “nominal system” that describes the air handler airflow.

Necessity:

These changes are reasonably necessary to clarify that the air handler airflow specific to this requirement is determined by RA3.1.4.2 which is already referenced within this section. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)2AiiIA and B

Specific Purpose:

The specific purpose of the change is to delete the term “system” that describes the air handler airflow.

Necessity:

These changes are reasonably necessary to clarify that the air handler airflow specific to this requirement is determined by RA3.1.4.2 which is already referenced within this section. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)2Aiii and b

Specific Purpose:

The specific purpose of the change is to delete the term “system” that describes the air handler airflow.

Necessity:

These changes are reasonably necessary to clarify that the air handler airflow specific to this requirement is determined by RA3.1.4.2 which is already referenced within this section. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)2Av

Specific Purpose:

The specific purpose of the change is to delete the reference to the heat pump baseline and to revise language to properly capture intent of the requirement.

Necessity:

These changes are reasonably necessary to clarify that the heat pump baseline does not apply in this section as the intent of this section is to prohibit electric resistance heating. Without the deletion and language revision, this section unintentionally references the heat pump baseline requirement. The language revision also clarifies that electric resistance is only prohibited for primary heat sources. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 180.2-D

Specific Purpose:

The specific purpose of the change is to add in a table that was mistakenly left out. The purpose of this table provides 2019 building code cycle credits for additions and alterations for the fan power budget.

Necessity:

These changes are reasonably necessary to prevent replacement, added, or altered systems from being non-compliant for existing buildings.

Section: Exception 4 to Section 180.2(b)2Bi (in 15-day language typo is written as 141.0(b)2C)

Specific Purpose:

The specific purpose of the change is to include this exception mistakenly left out which mimics section 141.0(b)2C.

Necessity:

These changes are reasonably necessary to clarify which systems are allowed under this exception.

Section: 180.2(b)4B

Specific Purpose:

The specific purpose of the change is to specify “common use area” both for consistency of internal phrasing and consistency with the term as defined in the Building Code (Title 24, Part 2).

Necessity:

These changes are reasonably necessary to clarify that the areas being referred to as “common areas” or using similar terms are uniformly understood to be areas as defined in the Building Code.

Section: 180.2(b)4Bi

Specific Purpose:

The specific purpose of the change is to revise “requirements” to “applicable requirements” so that applicable requirements of the listed code sections shall be met for lighting systems installed for the first time. The other change is to revise the reference section “and 170.2(e)2” to “thru 170.2(e)6”.

Necessity:

The change is reasonably necessary to clarify that applicable requirements of the code section shall be met instead of all the listed code sections to be met - for lighting systems installed for the first time. The other change is reasonably necessary to ensure the appropriate code sections are referenced.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)4Biii

Specific Purpose:

The specific purpose of the change is to correct the reference section to “170.2(e)7.

Necessity:

These changes are reasonably necessary to clarify with the appropriate code section referenced.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)4Biv

Specific Purpose:

The specific purpose of the change is to revise “the requirements below” to “the requirements of a, b, or c below” for alterations to indoor lighting systems that include 10 percent of more of the luminaires serving an enclosed space. The other specific purpose of the change is to revise “ornamental lighting” to “decorative lighting” for requirements of alterations to indoor lighting systems.

Necessity:

The change is reasonably necessary to clarify that the altered indoor lighting systems shall meet one of the listed items – item a, b, or c – instead of meeting requirements of all the listed items. The other change is reasonably necessary to update the lighting term of “decorative lighting”. The other change is reasonably necessary to use the term “decorative lighting” which is for indoor lighting and “ornamental lighting” is intended for outdoor lighting and was misplaced here. The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)4Bva

Specific Purpose:

The specific purpose of the change is to correct the reference section to 170.2(e)6” for alterations to existing outdoor lighting systems with an increase of connected lighting load.

Necessity:

The change is reasonably necessary to clarify with the appropriate code section referenced.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)4BvbII

Specific Purpose:

The proposed change is to replace “all other lighting application and” with “parking lots and outdoor sales lot”, and to add “and for all other lighting applications” for the requirements of alterations to existing outdoor lighting systems.

Necessity:

The other proposed changes are necessary to clarify the requirements for alterations to existing outdoor lighting systems.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)4Bvb, Exception

Specific Purpose:

The proposed change is to move “the greater of 5 luminaires” from item b to be a new exception (EXCEPTION to Section 180.2(b)4Bvb) and to delete “the greater of 5 luminaires or” from item b of Section 180.2(b)4Bvb.

Necessity:

The change is necessary to provide a clarify for “the greater of 5 luminaires” in the format of an exception - the exception is a clear item of language that could be easier to read and understand than the existing language which is packed with criteria.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)4Bvc, EXCEPTION 1

Specific Purpose:

The proposed change is to correct the reference to “Section 170.2(e)6” in EXCEPTION 1 to Section 180.2(b)4Bvc.

Necessity:

These changes are necessary to clarify with a more precise reference for EXCEPTION 1 to Section 180.2(b)4Bvc.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)4Bvc, EXCEPTION 2

Specific Purpose:

The proposed change is to move “the greater of 5 luminaires” from item c to a new exception (EXCEPTION 2 to Section 180.2(b)4Bvc) and to delete “the greater of 5 luminaires or” from item c of Section 180.2(b)4Bvc.

Necessity:

The change is necessary to provide a clarify for “the greater of 5 luminaires” in the format of an exception - the exception is a clear item of language that could be easier to read and understand than the existing language which is packed with criteria. The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)4Bvc, EXCEPTION 3

Specific Purpose:

The specific purpose of the change is to number the Exception to “Exception 3” for acceptance testing requirements that may be required for alterations to existing outdoor lighting systems.

Necessity:

These changes are reasonably necessary to identify the Exception with a number so that it could become easier to be identified. The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)4Bvi

Specific Purpose:

The proposed change is to correct the reference section to “Section 170.2(e)7” for the requirements of alterations to existing internally and externally illuminated signs.

Another proposed change is to revise the reference section as “Section 180.2(b)4Bvi” for EXCEPTION to Section 180.2(b)4Bvi.

Necessity:

These changes are necessary to clarify with more precise references for the requirements of alterations to existing internally and externally illuminated signs.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)4Bvi, EXCEPTION

Specific Purpose:

The specific purpose of the change is to correct the reference section to “180.2(b)4Bvi” for the exception to requirements of alterations to existing internally and externally illuminated signs.

Necessity:

These changes are reasonably necessary to clarify with more precise references for the exception to requirements of alterations to existing internally and externally illuminated signs. The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Table 180.2-E

Specific Purpose:

The specific purpose of the change is to reformat Table 180.2-E for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: 180.2(b)5

Specific Purpose:

The specific purpose of the change is to specify that these sections are applicable to dwelling unit ventilation and not to other ventilation that may be needed in a multifamily or mixed-use building.

Necessity:

These changes are reasonably necessary to ensure that the ventilation measures specified by this section are not inappropriately applied to spaces outside of dwellings, including but not limited to purely nonresidential spaces.

Section: 180.2(b)5A

Specific Purpose:

The specific purpose of the change is to correct grammar and add the phrase “or complete replacement” in one location for consistency with the section’s title and scope.

Necessity:

These changes are reasonably necessary to prevent an unintended reading that some of the section’s provisions do not apply to complete replacement duct systems.

Section: 180.2, Table 180.2-E

Specific Purpose:

The proposed change is to revise “Common Services Areas” to “Common Use Areas” in the table heading so that it read as “Control Requirements for Indoor Lighting System Alterations for Common Use Areas”. Another proposed change is to revise a word from “and” to “or” - in the 3rd column header of Table 180.2-E.

Necessity:

These changes are necessary to clarify the purpose and the scope of Table 180.2-E for control requirements for indoor lighting system alterations.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Appendix, Table P4-A

Specific Purpose:

The specific purpose of the change is to move the footnote outside of Table P4-A and to reformat the table for ADA compliance.

Necessity:

These non-substantive changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: Appendix 1-A

Specific Purpose:

The specific purpose of the change is to update organization and document titles to their most current titles, and to correct and update the document reference numbers that are incorporated by reference to the extent they are referenced in the Energy Codes. For example, the Department of Consumer Affairs, Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation (BEARHFTI) has changed their name to the Bureau of Household Goods and Services (BHGS).

Necessity:

These changes are reasonably necessary to ensure consistency between the Energy Code and the other Parts of the Building Standards Code, as directed by California Government Code Sections 11349 and 11349.1, as well as between incorporations by reference occurring earlier in the Energy Code and the complete titles of referenced documents needed to be able to obtain and review copies of incorporated materials. Additionally, the clarifying change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: JA4.1.7

Specific Purpose:

The specific purpose of the change is to update the name of the agency responsible for certifying insulation in California. The Department of Consumer Affairs, Bureau of

Electronic and Appliance Repair, Home Furnishings and Thermal Insulation (BEARHFTI) has changed their name to the Bureau of Household Goods and Services (BHGS).

Necessity:

This change is reasonably necessary to ensure consistency between the Energy Code and the other Parts of the Building Standards Code, as directed by California Government Code Sections 11349 and 11349.1. Additionally, the clarifying change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: JA8

Specific Purpose:

The specific purpose of the change is to remove a previously required lumen maintenance test and associated minimum requirements for rated lifespan and survival rate.

Necessity:

These changes are reasonably necessary to minimize the cost of compliance with applicable lighting standards without adjusting the scope of application of JA8 or reducing the stringency of standards relating to product efficacy. Maturation of LED lighting technology has eliminated prior concerns regarding early failure and overall product lifespan – product lifespans routinely exceed the adopted minimum standard by well over an order of magnitude, and the technical limitations responsible for the previously observed rates of early failure have been overcome. The benefit provided by the lifespan test is therefore diminished compared to its time of adoption, and the minimal value is not now understood as being worth the outsized amount of time and expense needed to perform the test.

Section: Table JA-10

Specific Purpose: This corrects an erroneous table header, changing “Table JA-10-1” to “Table JA-10”.

Necessity:

These changes are reasonably necessary to ensure internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16, and are made pursuant to the Commission’s resolution adopting the 2022 Energy Code, which delegates authority and directs CEC staff to take all actions reasonably necessary to have the 2022 Energy Code go into effect, including but not limited to correcting grammatical, typographical, and other nonsubstantial errors in the regulations.

Section: Table NA2.1-1

Specific Purpose:

The specific purpose of the change is to update the summary table to reflect the titles and descriptions of the procedures.

Necessity:

This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA2.2.4.1.3**Specific Purpose:**

The specific purpose of the change is to add language that includes ventilation airflow of systems with multiple operating modes.

Necessity:

These changes are reasonably necessary to address systems with multiple operating modes, which need to be tested in all modes designed to comply with required airflows. Without this addition, the procedures would not specify how these types of systems should comply with the code, which could lead to confusion. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA2.2.4.1.5**Specific Purpose:**

The specific purpose of the change is to add additional language on how to determine compliance with fan efficacy and sensible recovery efficiency requirements. Note that there is also a nonsubstantive change to replace the second instance of “Power Consumed” with “Fan Efficacy (W/cfm).” This is a typographical clerical error that renders the sentence and section nonsensical and therefore could lead to confusion if not corrected.

Necessity:

These changes are reasonably necessary to clarify procedures by adding step-by-step direction on how to use the HVI directly or other CEC-approved directories to determine compliance. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA2.3.5**Specific Purpose:**

The specific purpose of the change is to delete the field verification and diagnostic testing of whole building air leakage from NA2. This language was moved to NA5.

Necessity:

These changes are reasonably necessary to delete language that was moved into another section. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA2.4**Specific Purpose:**

The specific purpose of the change is to relocate all of the language proposed to be added to NA 2.4 to instead be located in NA 5, to prevent confusion about the building types that air barrier verification specifications potentially apply to.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA7.18.1.1.1

Specific Purpose:

The specific purpose of the change is to delete the language that specifies a “fixed minimum” outside airflow must be verified and documented prior to performing the test, which is incorrect, and could lead to confusion.

Necessity:

These changes are reasonably necessary to avoid confusion concerning this verification and documentation requirement. The systems at issue here are not subject to a “fixed minimum” but rather existing ventilation requirements. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA7.4.2.4

Specific Purpose:

The specific purpose of the change is to correct a formatting error relating to the minimum warranty standard applicable to window films. This is not a substantive change in requirements.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA7.6.1.2

Specific Purpose:

The proposed change is to revise the protocols as NA7.6.1.4 and NA7.6.1.5 in Section NA7.6.1.2.

Necessity:

These changes are reasonably necessary to clarify the protocols to be used for the functional testing of Section NA7.6.1.2.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA7.6.1.3

Specific Purpose:

The proposed change is to add “Reserved” for the section to indicate that the section is intentionally being kept for future.

Necessity:

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA7.6.1.4(b)

Specific Purpose:

The proposed change is to delete the text “(identified in NA7.6.1.2.1(a))” from item 1. The other proposed change is to delete “For lighting system with institutional tuning of NA7.6.4, include documentation for luminaires claiming the power adjustment factors (PAF) for institutional tuning.” from item 2.

Necessity:

These changes are reasonably necessary to reduce unnecessary redundancy in the code language.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA7.6.1.4(c)

Specific Purpose:

The proposed change is to delete the text from “from NA7.6.1.2.2(b)”. The other proposed change is to replace “complaint” with “compliant” and to revise “daylight dimming” as “daylight continuous dimming” in item 4.

Necessity:

These changes are reasonably necessary to reduce unnecessary redundancy in the code language. The other proposed change is reasonably necessary to clarify the requirements required for Section NA7.6.1.4(c).

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA7.6.1.4(d)

Specific Purpose:

The proposed change is to remove unneeded reference to the section number of the immediately preceding section.

Necessity:

These changes are reasonably necessary to reduce unnecessary redundancy in the code language. The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA7.6.1.6

Specific Purpose:

The proposed change is to delete unneeded parenthetical text where it occurs in this section’s subsections, remove reference to continuous dimming for consistency with the section’s title and contents (stepped dimming), remove unnecessary direction relating to documenting daylight dimming plus off behavior (documenting the system light output during the full daylight test already means that if the light output is zero then a zero light output will be documented), and remove unneeded reference to documenting of

institutional tuning (documentation requirements relating to institutional tuning are already specified in the section on institutional tuning).

Necessity:

These changes are reasonably necessary to reduce unnecessary redundancy in the code language.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA7.6.1.6(c)

Specific Purpose:

The proposed change is to delete the text “NA7.6.1.2.1(b)” from Section *NA7.6.1.6(c)*

Another proposed change is to replace “(Light output is stable with no visible flicker.)” with “RESERVED” in item 2.

The other proposed change is to delete item 4.

Necessity:

These changes are reasonably necessary to reduce unnecessary redundancy in the code language.

Another proposed change is necessary to clarify that the visible flicker test procedure is not required for the full daylight test of Section *NA7.6.1.6(c)*.

The other proposed change is reasonably necessary to clarify that the requirements of Power Adjustment Factor (PAF) for institutional tuning are not required for Section *NA7.6.1.6(c)*.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA7.6.2.3

Specific Purpose:

The proposed change is to revise “within a maximum of 20 minutes” as “in 20 minutes or less” in item (a)1.

Necessity:

These changes are reasonably necessary to clarify the duration allowed for meeting the requirements of item (a)1 of *NA7.6.2.3*.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: *NA7.6.2.4*

Specific Purpose:

The proposed change is to revise “within a maximum of 20 minutes” as “in 20 minutes or less” in item (b)1 and item d. The other proposed change is to revise “Step(a)1” as “Step(a)” in item (c).

Necessity:

These changes are reasonably necessary to clarify the duration allowed for meeting the requirements of item (b)1 and item d of NA7.6.2.4. The other proposed change is necessary to clarify the step for performing the acceptance test procedure. The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA7.6.3

Specific Purpose:

The specific purpose of the change is to revise language to more closely match Section 110.12. The language was determined to provide additional clarity for readers.

Necessity:

These changes are reasonably necessary to clarify communication protocols that qualify for demand response controls. Following Section 110.12 language more closely will reduce misinterpretation of qualifying requirements. This revision was made to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA7.7.2

Specific Purpose:

The proposed change is to revise the reference section as “Section 130.0(e) for NA7.7.2.

Necessity:

These changes are reasonably necessary to clarify with more a precise reference for NA7.7.2.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA7.7.2.1

Specific Purpose:

The proposed changes are to revise and add applicable sections of Section “110.9, 130.2 and 160.5” to item b, to add Section “170.2(e)2 thru 4” to item c, and to add Section “170.2(e)6” to item d – of Section NA7.7.2.1.

Necessity:

These changes are reasonably necessary to clarify with more precise references for NA7.7.2.1.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: NA7.7.4 and NA7.7.4.1

Specific Purpose:

The proposed changes are to add “Section 170.2(e)2A” to Section *NA7.7.4 and NA7.7.4.1*. Another proposed change is to revise and replace “in” with “items are” in item d of Section *NA7.7.4.1*.

Necessity:

These changes are reasonably necessary to clarify that there are also applicable multifamily requirements as required for meeting *NA7.7.4*. Another change is necessary to correct the phrase of item d so that it read correctly. The changes also improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: *NA7.7.5 and NA7.7.5.1*

Specific Purpose:

The proposed changes are to add “Section 170.2(e)2B” to Section *NA7.7.5* and to add “170.2(e)2B, and Table 170.2” to Section *NA7.7.5.1*. Also, the proposed changes are to revise “daylight dimming” as “daylight continuous dimming”, to add “170.2(e)2Bviii”, and to revise “Section *NA7.6.1.2.1*” as “Section *NA7.6.1.3*: in item h of Section *NA7.7.5.1*”.

Necessity:

These changes are reasonably necessary to clarify that there are also applicable multifamily requirements as required for meeting *NA7.7.5* and *NA7.7.5.1*. Also the proposed changes are reasonably necessary to correct the term “daylight continuous dimming” and the reference section “*NA7.6.1.3*” in item h of Section *NA7.7.5.1*. The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: *NA7.7.6*

Specific Purpose:

The proposed changes are to add “Section 140.6(c)2Gvii” to Section *NA7.7.6*.

Necessity:

These changes are reasonably necessary to clarify with more a precise reference for Section *NA7.7.6*.

The changes improve and ensure the general clarity and internal consistency of the Energy Code, as directed by California Government Code Sections 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: RA2 Table RA2-1

Specific Purpose:

The specific purpose of the change is to add new federal metrics Energy Efficiency Ratio 2 (EER2), Seasonal Energy Efficiency Ratio 2 (SEER2), and Heating Seasonal Performance Factor 2 (HSPF2) as applicable metrics for the energy efficiency rating of space conditioning equipment.

Necessity:

These changes are reasonably necessary to include the new federal metrics from the Department of Energy that becomes effective January 1, 2023. This aligns the Energy Code language with federal labeling and provides clarification for compliance. This change

is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: RA2.3.1.2

Specific Purpose:

The specific purpose of these changes is to add “Compliance Registration Package” and replace the language “compliance documentation” with “Registered Compliance Document and Compliance Registration Package.”

Necessity:

These changes are reasonably necessary to ensure that the compliance registration package, as well as the registered compliance document, are submitted to and retained by the HERS Provider data registry consistent with the requirements of Joint Appendices, JA7. These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: RA2.3.2(d)

Specific Purpose:

The specific purpose of this change is to ensure that building owners can obtain copies of the registered Certificates of Verification from the HERS Provider data registry consistent with the requirements of Section 10-103(b).

Necessity:

This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: RA3.2.2.4.1

Specific Purpose:

The specific purpose of the change is to spell out “degrees Fahrenheit”.

Necessity:

These changes are reasonably necessary to clarify that the unit “°F” means degrees Fahrenheit. This ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: RA3.4

Specific Purpose:

The specific purpose of the change is to add new federal metrics Energy Efficiency Ratio 2 (EER2), Seasonal Energy Efficiency Ratio 2 (SEER2), and Heating Seasonal Performance Factor 2 (HSPF2) as applicable metrics for the energy efficiency rating of space conditioning equipment.

Necessity:

These changes are reasonably necessary to include the new federal metrics from the Department of Energy that becomes effective January 1, 2023. This aligns the Energy Code language with federal labeling and provides clarification for compliance. This change

is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: RA3.5.3, 3.5.4, 3.5.5

Specific Purpose:

The specific purpose of the changes to RA3.5.3, 3.5.4, and 3.5.5 is to add references to the multifamily quality insulation installation (QII) prescriptive requirement; Section 170.2(a)6. Despite multifamily becoming its own section of the code, QII remains a prescriptive requirement for low-rise multifamily, consistent with the 2019 Energy Code.

Necessity:

These changes are reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: RA3.5.6.1.1 & 3.5.6.1.2

Specific Purpose:

The specific purpose of the change is to update the name of the agency responsible for certifying insulation in California. The Department of Consumer Affairs, Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation (BEARHFTI) has changed their name to the Bureau of Household Goods and Services (BHGS).

Necessity:

This change is reasonably necessary to ensure consistency between the Energy Code and the other Parts of the Building Standards Code, as directed by California Government Code Sections 11349 and 11349.1. Additionally, the clarifying change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: RA3.7.4.2

Specific Purpose:

The specific purpose of the change is to add language that includes ventilation airflow of systems with multiple operating modes.

Necessity:

These changes are reasonably necessary to address systems with multiple operating modes which need to be tested in all modes designed to comply with required airflows. Without this addition, the procedures would not specify how these types of systems should comply with the code, which could lead to confusion. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: RA3.7.4.4

Specific Purpose:

The specific purpose of the change is to add additional language on how to determine compliance with fan efficacy and sensible recovery efficiency requirements. Note that there

is also a nonsubstantive change to replace the second instance of “Power Consumed” with “Fan Efficacy (W/cfm).” This is a typographical clerical error that renders the sentence and section nonsensical and therefore could lead to confusion if not corrected.

Necessity:

These changes are reasonably necessary to clarify procedures by adding step-by-step direction on how to use the HVI directly or other CEC-approved directories to determine compliance. This change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: RA4.2.1.1(d)

Specific Purpose:

The specific purpose of the change is to update the name of the agency responsible for certifying insulation in California. The Department of Consumer Affairs, Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation (BEARHFTI) has changed their name to the Bureau of Household Goods and Services (BHGS).

Necessity:

This change is reasonably necessary to ensure consistency between the Energy Code and the other Parts of the Building Standards Code, as directed by California Government Code Sections 11349 and 11349.1. Additionally, the clarifying change is reasonably necessary to ensure and improve the general clarity and internal consistency of the Energy Code, as directed by California Government Code, Section 11349 and 11349.1, and California Code of Regulations, Title 1, Section 16.

Section: ACM Approval Manual Section 1.1.5

Specific Purpose:

The specific purpose of the change to this section is to correct an error: the prior Express Terms language incorrectly stated that the compliance manager needed to adhere to CEC published material, but the compliance manager is contained in CBECC and it's actually third party software that needs to adhere to the CEC published schema, rulesets, and compliant data.

Necessity:

This change is reasonably necessary to ensure that the code language accurately describes the relationships between regulated software components.

MANDATE ON LOCAL AGENCIES OR SCHOOL DISTRICTS

The CEC has determined that this action will not result in a local mandate on local agencies or school districts.

OBJECTIONS OR RECOMMENDATIONS MADE REGARDING THE PROPOSED REGULATION(S).

All responses to public comments, including acceptance of recommendations and justification when recommendations were not accepted, are hereby incorporated by reference and included in the final rulemaking file.

DETERMINATION OF ALTERNATIVES CONSIDERED AND EFFECT ON PRIVATE PERSONS

The CEC determined pursuant to Government Code Section 11346.9(a)(4) that no alternative before it would be more effective in carrying out the purpose for which this action is proposed and no alternative would be as effective as and less burdensome to affected persons than the adoption of the proposed regulation; or would be more cost effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

Except as discussed in the summary and response to comments, no alternatives were recommended.

REJECTED PROPOSED ALTERNATIVE THAT WOULD LESSEN THE ADVERSE ECONOMIC IMPACT ON SMALL BUSINESSES:

The CEC determined pursuant to Government Code Section 11346.9(a)(5) that no alternative before it would be more effective in carrying out the purpose for which this action is proposed no alternative would be as effective as and less burdensome to affected persons than the adoption of the proposed regulation; or would be more cost effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

The adopted regulations will not have a significant adverse economic impact on small business and no alternatives were proposed that would lessen any adverse economic impact on small business except as discussed in the summary and response to comments.