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December 11, 2024

Lori Schiavo
Senior Director of Operations
Refrigeration Service Engineers Society (RSES)
1911 Rohlwing Road, Suite A
Rolling Meadows, IL 60008-1397

RE: 2025 ATTCP UPDATE REPORT GUIDANCE

Dear Lori Schiavo:

In accordance with Section 10-103.2(d)2 of the 2022 Energy Code, an acceptance test technician certification provider (ATTCP) must submit an update report to the California Energy Commission (CEC) for approval that includes proposed amendments to the ATTCP's program to address updates to the Energy Code adopted by the CEC for the 2025 Energy Code cycle. The update report must contain a signed certification that the ATTCP continues to meet all requirements of Section 10-103.2(c) and shall be approved through the amendment process described in Section 10-103.2(f). An ATTCP shall be given at least six months after an Energy Code update is adopted to prepare the update report and must submit the update report at least six months before the adopted update becomes effective.

The CEC adopted the 2025 Energy Code on September 11, 2024, and the updated code is anticipated to take effect on January 1, 2026. Therefore, the 2025 ATTCP update report must be submitted prior to July 1, 2025. However, CEC staff recommends that each ATTCP submit the 2025 update report no later than March 30, 2025, to allow sufficient time for CEC review and approval, and so the ATTCP may begin recertification training in advance of January 1, 2026.

To help facilitate the transition to the new and modified requirements of the 2025 Energy Code cycle, staff identified the most significant changes that will likely require updates to a mechanical ATTCP application.

Changes in the 2025 Energy Code that affect ATTCPs at the organizational level are located in Section 10-103.2(c)3F of the Energy Code. The purpose of the changes are to correct a typographical error, remove minor criteria for Acceptance Test Technician Certification Program (ATTCP) Provider building department surveys, and add an alternative to allow ATTCP shadow audits of Acceptance Test Technicians (ATTs) to occur at ATTCP training facilities.

In addition, changes to the 2025 Energy Code and Reference Appendices that affect acceptance test technicians and acceptance test employers training curricula are listed in Attachment 1 to this letter. The new requirements for recertification and full certification training must include changes to the mechanical acceptance documents.. For reference, those changes are summarized in Attachment 2 to this letter.

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Staff anticipates that the approved mechanical ATTCPs will need to make substantive changes, as defined in Section 10-103.2(f)1B, for the 2025 Energy Code updates described in the attachments to this letter. Therefore, staff expects that all update reports will be required to be approved at a CEC business meeting.

As a reminder, any confidential material (e.g., training materials, tests, or proprietary information) that needs updating will require the ATTCP to resubmit an Application for Confidential Designation available on the CEC website at <https://www.energy.ca.gov/media/3539>, to the CEC Dockets Unit or contact the CEC to amend the agreement on file.

I look forward to working with you and your staff. If you have any questions, please contact me at bhaskar.ale@energy.ca.gov.

Sincerely,

Bhaskar Ale

Bhaskar Ale
Mechanical Engineer

Attachment 1: 2025 Changes Affecting the Training Curricula

Section	Description of Change
Table 100.0-A	Demand Responsive Controls sections added to the table.
Section 100.1(b) – AHRI 210/240 definition	Updated the standards year to 2023.
Section 100.1(b) – AHRI 420 definition	The purpose of this change is to add the definition for AHRI 420 (2023 version), including specifics regarding the version of the document used for Energy Code requirements
Section 100.1(b) – AHRI 540 definition	The purpose of this change is to add the definition of AHRI 540 (2020 version), including specifics regarding the version of the document used for Energy Code Requirements.
Section 100.1(b) – AHRI 1240 definition	The purpose of this change is to add the definition of AHRI 1240(2023 version), including specifics regarding the version of the document used for Energy Code Requirements.
Section 100.1(b) - Air-To-Water Heat Pump (AWHP) definition	This change added the definition for air-to water heat pumps to clarify the type of equipment that is required in new Energy Code requirements.
Section 100.1(b) – ASHRAE Guideline 36 definition	The specific purpose of this addition is to include a definition for the ASHRAE Guideline 36 publication to state the title and topic and provide a precise understanding of the guideline's scope, objectives, and relevance in the context of building design with regard to energy efficiency. This inclusion will aid in promoting consistency, adherence, and effective utilization of the guideline's principles and strategies
Section 100.1(b) – ASHRAE Standard 62.1 definition	The specific purpose of this change is to update to the current version of ASHRAE 62.1 (2022 version) to be referenced by Title 24, Part 6.
Section 100.1(b) – ASHRAE Standard 62.2 definition	The specific purpose of this change is to update to the current version of ASHRAE 62.2 (2022 version) to be referenced by Title 24, Part 6.
Section 100.1(b) – Compartmentalization definition	Added definition for Compartmentalization.

Section	Description of Change
Section 100.1(b) – Energy Budget definition	The specific purpose of the change is to update the terminology of Time Dependent Valuation to Long-term System Cost. The Energy Budget definition is updated to include all terms for which an energy budget is set, Long-term System Cost and Source Energy. Definition of each of these terms is also added to Section 100.1(b). Time Dependent Valuation, which is no longer being used for setting an energy budget, is deleted.
Section 100.1(b) – Energy Design Rating (EDR) definitions	The specific purpose of the changes is to remove definitions relating to Energy Design Rating (EDR). The following EDR definitions have been removed: • Energy Design Rating (EDR) • Energy Design Rating, Energy Efficiency • Energy Design Rating, Solar Electric Generation and Demand Flexibility • Energy Design Rating, Total.
Section 100.1(b) – EER2 definitions	Updated definition of EER2.
Section 100.1(b) – Energy Storage System (ESS) definition	This definition is being merged with the definition for Battery Energy Storage System (BESS) and subsequently removed. All Standards references to battery storage system and energy storage system are also being updated to BESS to reflect this change.
Section 100.1(b) – Healthcare Facility definition	This change revised the definition of healthcare facility to clarify that only health facilities, as defined in the California Health and Safety Code Division 2, Chapter 2, Section 1250, and clinics, as defined in the California Health and Safety Code Division 2, Chapter 1, Section 1204, located within a health facility fall under the healthcare facility category.
Section 100.1(b) – Long-Term System Cost (LSC) definition	The specific purpose of this change is to add a definition for the term Long-term System Cost, which replaces the term Time Dependent Valuation as the primary compliance metric for the Energy Code performance approach. The definition provides a clear and specific definition for this technical term, which is 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 the added definition for new industry standards documents that are incorporated by reference into later portions of the Energy Code.
Multiple Zone System	Minor changes to definition.
Net Free Area (NFA)	New definition added regarding the total unobstructed area within the air gaps between louver and grille slats in a vent.

Section	Description of Change
Section 100.1(b) – Nonresidential Building definition	This change will add occupancy group L to the list of building occupancy groups covered under the nonresidential building definition.
Section 100.1(b) – Nonresidential Building Types – Events & Exhibits Building definition	The purpose of this change is to add a definition to a newly covered space under our photovoltaic and energy storage system requirements of Section 140.10.
Section 100.1(b) – Nonresidential Building Types – Religious Facility Building	The name was updated, and the definition was removed from the code.
Section 100.1(b) – Nonresidential Building Types – Religious Worship Building definition	The purpose of this change is to add a definition to a newly covered space under our photovoltaic and energy storage system requirements of Section 140.10.
100.1(b) – Nonresidential Building Types – Sports & Recreation Building definition	The purpose of this change is to add a definition to a newly covered space under our photovoltaic and energy storage system requirements of Section 140.10.
Section 100.1(b) – Nonresidential Building Types – Warehouse Building definition	New Definition added to the list of Nonresidential building.
Section 100.1(b) – Nonresidential Function Areas – Laboratory definition	Added definition for laboratory spaces. Occupancy group L includes laboratory spaces and spaces supporting laboratory spaces. A definition to specify laboratory spaces versus the occupancy group L in general was provided to clarify that only the lab spaces would have to meet laboratory requirements and be able to use appropriate exceptions.

Section	Description of Change
Section 100.1(b) – Nonresidential Function Areas – Laboratory Suite	Added definition for laboratory suite. The building code definition for Occupancy group L is based off the term laboratory suites. Laboratory suites include laboratory spaces, and offices, storage rooms and other spaces supporting laboratory spaces. A definition to specify laboratory spaces versus the occupancy group L, laboratory suites, in general was provided to clarify that only the lab spaces would have to meet laboratory requirements and be able to use appropriate exceptions.
Section 100.1(b) OpenADR 3.0, Baseline Profile definition	Added definition for OpenADR 3.0 Baseline Profile.
Section 100.1(b) – Programming Library definition	Added definition for Programming Library.
Section 100.1(b) – Proposed Design Building definition	Updated definition to add Section References.
Section 100.1(b) - Recovered Energy, On-Site definition	Added definition for Recovered Energy, on-site.
Section 100.1(b) – Simultaneous Mechanical Heat Recovery definition	Added definition for Simultaneous Mechanical Heat Recovery.
Section 100.1(b) - Single Zone Constant Volume Heat Pump definition	Added definition for Single Zone Constant Volume Heat Pump.
Section 100.1(b) – Ventilation System definitions	The specific purpose of the revision in the definitions is to add a specification requiring 'at least one' mechanical device comply with the ventilation strategies. The revised definitions are: VENTILATION SYSTEM, BALANCED VENTILATION SYSTEM, EXHAUST VENTILATION SYSTEM, SUPPLY

Section	Description of Change
Section 100.1(b) – Virtual End Node (VEN) definition	VEN is an interface that can be an Energy management system or a thermostat that accepts demand response signals through Open Automated Demand Response (OpenADR). The definition has been updated to add a new specification OpenADR 3.0 to existing OpenADR 2.0a or 2.0b.
Section 110.2(a)	Updated Table reference and inclusion of reference to federal minimum efficiency requirements.
Section 110.2(b)	The purpose of this change is to identify the requirement for supplementary heater controls for heat pumps in single family buildings described in Section 150.0(h)7. This change helps provide clarity and distinction in heat pump control requirements between single-family buildings and other building types, such as non-residential and multifamily buildings.
Section 110.2(e) Open and Closed-Circuit Cooling Towers	The revisions to this Section will remove the option for flow-based controls, specify water parameters for blowdown controls in a new table, and add testing requirements by reference to NA 7.5.18.
Table 110.2-A-1	This table was added to provide the minimum parameters for cooling tower blowdown.
Table 110.2-A through 110.2-N	Remove specific numerical federal minimum values and include a general reference federal minimum value. Tables 110.2-E, 110.2-I, 110.2-J, 110.2-L, and 110.2-M were removed because they were completely reliant on federal minimum values.
Table 110.2-A	Updated min efficiency values to Federal Min IEER and EER.
Table 110.2-B	Updated min efficiency values to Federal Min IEER, EER and COP.
Table 110.2-E	Removed Table from the Energy Code.
Table 110.2-E	Table 110.2-F was renamed to Table 110.2-E to reflect removal of tables.
Table 110.2-F	Table 110.2-G was renamed to Table 110.2-F to reflect removal of tables. Specific federal minimum values were removed because they were completely reliant on federal minimum values. Minimum efficiencies reliant on ASHRAE 90.1 were updated to reflect minimum efficiencies as of 01/01/2024.
Table 110.2-G	Table 110.2-H was renamed to Table 110.2-G to reflect removal of tables. Specific federal minimum values were removed because they were completely reliant on federal minimum values. Minimum efficiencies reliant on ASHRAE 90.1 were updated to reflect minimum efficiencies as of 01/01/2024.

Section	Description of Change
Table110.2-H	Update minimum efficiency requirement based on ASHRAE 90.1 efficiencies.
Table110.2-I	Removed Table from the Energy Code.
Table110.2-J	Removed Table from the Energy Code.
Table110.2-K	Table 110.2-K was renamed to Table 110.2-H to reflect removal of tables. Update minimum efficiency requirement based on ASHRAE 90.1 efficiencies.
Table110.2-L	Removed Table from the Energy Code.
Table110.2-M	Removed Table from the Energy Code.
Table110.2-I	Table 110.2-N was renamed to Table 110.2-I to reflect removal of tables. The new table breaks out efficiency requirements for cooling operations.
Table110.2-J	Table 110.2-J was added and named to reflect removal of tables. The new table breaks out efficiency requirements for heat pump requirements originally included in Table 110.2-N.
Table110.2-K	Table 110.2-K was added and named to reflect removal of tables. The new table breaks out efficiency requirements for simultaneous heating and cooling requirements originally included in Table 110.2-N.
Table 110.2-L	Table 110.2-L was added and named to reflect removal of tables. The new table breaks out efficiency requirements for heat recovery which would have been added to Table 110.2-N.
Section 110.3(c)7	The specific purpose of this change is to add mandatory ventilation and backup heat requirements to heat pump water heater installations to ensure best practice in heat pump water heater installations and energy efficiency.
Section 110.12(a)1 A, B	Added OpenADR 3.0 Virtual End Node.

Section	Description of Change
Section 110.12(a)2	The specific purpose of the change is to replace “pathway” with “protocol” in the term “wired or wireless bidirectional communication”, and the change is to clarify the demand responsive controls communications. The word “protocol”, according to Merriam-Webster Dictionary, means a set of conventions governing the treatment and especially the formatting of data in an electronic communication system, such as network protocols, whereas the word “pathway” could be understood to be a path or a particular way of achieving something. The revised term “wired or wireless bidirectional communication protocol” with the word “protocol” conveys a more accurate information about what constitutes as the qualified wired and wireless bidirectional communications.
Section 110.12(a)4	The specific purpose of the change is to replace “communication” with “the demand response signal” and the change is to clarify it is during the scenario that the demand response signal is disabled or unavailable that the requirement of Section 110.12(a)4 would apply.
Section 120.1(c)1 Exceptions	Added text for Evaporative coolers are not subject to the air filtration requirements of Section 120.1(c)1.
Section 120.1(c)2A and B	The specific purpose of these non-substantial changes is to align in natural ventilation requirements with ASHRAE 62.1 – 2022 version. These changes make clear the requirements of different building openings and correctly cites the new Sections in ASHRAE 62.1-2022 version which were unaligned in the previous code cycle.
Section 120.1(c)2, 120.1(c)2D, Exception 1 to Section 120.1(c)2D, Exception 2 to Section 120.1(c)2D	The specific purpose is to move the mechanical ventilation requirements from Section 120.1(c)2 to Section 120.1(c)2D to improve clarity of the requirements of mechanical ventilation even with a natural ventilation design approach.
Section 120.1(c)3	The specific purpose of these changes is to revert the language to align with 2019 Building Energy Code ventilation logic. The exception that was added in the 2022 Building Energy Code was intended to clarify this Section, but instead had removed this ‘greater than logic’ for ventilation.

Section	Description of Change
Section 120.1(d)4E	The specific purpose of these changes is to align with the changes made to the minimum ventilation requirements in Section 120.1(c)3 and Table 120.1-A. This increases clarity of the requirements for minimum ventilation which has been an issue for the last two code cycles.
Section 120.1(d)5	The specific purpose of these changes is to make clear the requirements of this Section without changing stringency and to follow similar formatting of previous subsections in 120.1.
Section 120.1(f)1	The specific purpose of this change is to modify the language for clarity without changing the intent.
Section 120.1(g)	Updated reference to the latest ASHRAE 62.1-2022 Subsections.
Table 120.1-A	The specific purpose of these changes is to align the table with the California Mechanical Code and the revisions to the minimum ventilation rates in 120.1(c)3.
Table 120.1-B and Table 120.1-C	The specific purpose is to align with the table updates provided in ASHRAE 62.1 – 2022 version. These changes make clearer of new space requirements for air classification and minimum exhaust which allows the Energy Code to align with new table references in ASHRAE 62.1-2022 version which were unaligned in the previous code cycle.
Section 120.2(b)4 – Exception 1 – Edited for clarity	The specific purpose of this change is to modify the language for clarity without changing the intent.
Section 120.2(l)	The specific purpose of this change is to add mandatory requirements to limit hot water supply temperature to no greater than 130 °F for HVAC space-conditioning systems. These changes intend to save energy by reducing pipe distribution energy loss. This new measure will be required in newly constructed buildings as well as additions and alterations.
Section 120.5(a)4 and Exception to Section 120.5(a)4	The purpose of these non-substantive changes is to include DOAS, HRV, and ERV systems to be tested under NA7.5.4 for air economizing. The exception to this testing include systems that do not meet the specification of sections 140.4(q)1 or 140.4(q)2..
Section 120.5(a)19	Added a new conductivity controls and overflow alarms acceptance tests for cooling towers.
Section 120.10(a)2	Added reference for third party verified fan energy index values in Appendix A.
Section 140.4(a)2	Removed reference to all other system types.

Section	Description of Change
Exception to Section 140.4(a)2	The purpose of deleting the exception to Section 140.4(a)2, which pertains to systems utilizing recovered heat for space heating, is to ensure that all applicable systems adhere to the new requirement for mechanical heat recovery in Section 140.4(r).
Section 140.4(a)3	The purpose of adding the Section titled " Multi-zone space-conditioning system types " to Title 24, Part 6 is to establish specific and tailored requirements for space-conditioning systems in office buildings and school buildings not otherwise covered by Section 140.4(a)2.
Section 140.4(a)3A	The inclusion of specific requirements for space-conditioning systems in office buildings serves the purpose of advancing energy efficiency and occupant comfort. The emphasis is on system features such as variable refrigerant flow, dedicated outdoor air systems, and heat recovery systems enhancing both energy efficiency and indoor air quality. Additionally, the inclusion of demand-controlled ventilation (DCV) and parallel fan powered terminal units in specific climate zones further contributes to the overall goal of reducing energy consumption and promoting sustainable practices in office buildings.
Section 140.4(a)3B	Removed from the Energy Code.
Section 140.4(a)3C	The purpose of stipulating a minimum heating Coefficient of Performance (COP) at specific outdoor temperatures is to mandate the use of AWHPs that demonstrate high efficiency in colder conditions, contributing to reduced energy consumption and operational costs. The requirement to maintain the water temperature above the hot water loop's design supply temperature will ensure effectiveness of the heating system while prioritizing occupant comfort. These regulations establish a comprehensive and efficient framework for AWHP space-heating hot water loops, promoting energy conservation, sustainability, and the reliable operation of heating systems.

Section	Description of Change
Section 140.4(a)3D	The purpose of this Section is to establish energy-efficient standards for fan systems in office and school buildings served by multi-zone space-conditioning systems. By imposing a maximum power consumption limit of 0.35 W/cfm at their design airflow rate, this aims to promote the use of technologically advanced, low energy-consuming fans. The requirement for a minimum of three different speeds, as well as the ability to turn off when there is no heating or cooling demand in the space is intended to enhance user flexibility and comfort, allowing for tailored ventilation solutions.
Section 140.4(a)3E	The purpose of this requirement is to clarify that space-conditioning systems subject to this Section must comply with Sections 140.4(p) and 140.4(q) emphasizing the importance of aligning Dedicated Outdoor Air Systems (DOAS) with comprehensive guidelines, consistency, and effectiveness in outdoor air management. The incorporation of heat recovery systems supports the overarching goal of energy conservation by capturing and repurposing energy that would otherwise be wasted.
Section 140.4(a)3F	Updated to Parallel fan powered boxes used to comply with Section 140.4(a)3Aiii shall use recirculated zone or plenum air in heating mode.
Section 140.4(a)3G	Removed from the Energy Code.
Section 140.4(b)3A, Ai, and Aii	The purpose of this change is to add an alternative source of outdoor design conditions from ASHRAE Handbook Equipment Volume, Applications Volume and Fundamental Volume. ASHRAE Handbook is already used for indoor design conditions under Section 140.4(b)2A. As part of this addition, the term 99.0 percent Heating Dry Bulb is introduced as an alternative to the Heating Winter Median of Extreme values. This change aligns with similar changes in Sections 150.0(h)2B and 160.3(b)2.
Exception to Section 140.4(c)1	The purpose of this exception is to clarify that the fan power referenced in Section 140.4(c) needs to meet the requirements of Section 140.4(a)3.

Section	Description of Change
Section 140.4(c)2Bi-ii	The changes made to this Section included breaking Section 140.4(c)2B into two subsections (i and ii) to further assist comprehension of the relevant standards. The specific purpose for the removal of the example and instead include a ASHRAE Guideline 36 compliance requirement for VAV systems. static pressure setpoint reset control in subsection ii, is to provide readers with a specific reference they can rely upon when configuring these systems.
Section 140.4(d)2Av	The specific purpose of the addition is to include a ASHRAE Guideline 36 compliance requirement for space-conditioning zones with Direct Digital Controls (DDC).
Exception 3 to Section 140.4(d)	The purpose of this change is to modify terminology and eliminate the use of the term "exempt" for clarity without changing the intent of the Energy Code. The Energy Code establishes unique requirements for Covered Process loads as defined in Section 100.1. Exception 3 addresses process loads that are not covered process loads; using the term non-covered process loads is the simplest and least ambiguous way to convey the intent of the exception. When particular requirements in the Energy Code are not applicable to particular construction situations or equipment for specific reasons, the Energy Code does provide exceptions that indicate compliance is not required in that instance.
Exception 2 to Section 140.4(e)1	Removed reference to TDV and added LSC.
Exception 8 to Section 140.4(e)1	Added additional systems complying with Section 140.4(a)3Ai, 140.4(a)3Aii
Section 140.4(e)2D	The specific purpose of this addition is to include the ASHRAE Guideline 36 compliance requirement for economizers when they are controlled by a direct digital control (DDC). Additionally, format changes and related references are made to adjust for this addition in the subsequent Sections, where previous Section D becomes E, and the previous Section E becomes F.
Section 140.4(f)3	The specific purpose of the addition is to include the ASHRAE Guideline 36 compliance requirement for supply air temperature reset controls in buildings with automated Direct Digital Controls (DDC).
Exception 7 to Section 140.4(g)	Added supplemental electric resistance heating complying with Section 140.4(a)3C.

Section	Description of Change
Section 140.4(h)5, Table 140.4H-2, and Exception 2 to Section 140.4(h)5	These proposed changes update the cooling tower efficiency prescriptive requirements and include a new table, Table 140.4 H-2, based on climate zone. It also removes exceptions for climate zone 1 and 16 previously provided in Exception 2.
Exception to Section 140.4(p)1	Added DOAS complying with Section 140.4(a)3E.
Section Exception 1 and 2 to Section 140.4(q)1	The purpose of this change is to modify terminology for clarity, locate exceptions as close as possible to the requirement that is the subject of the exception, and avoid the use of the term "exempt". Exception 1 and 2 are providing exceptions to one specific provision of Section 140.4(q), namely Section 140.4(q)1. Without the change these exceptions currently are designated as Exceptions 4 and 5 to the global Section 140.4(q). The exceptions need to be moved to follow the directly applicable provision (similar to Exception to Section 140.4(q)2). As a result, the current Exception 6 and Exception 7 to Section 140.4(q) are renumbered to be Exceptions 4 and 5 respectively, to Section 140.4(q). When particular requirements in the Energy Code are not applicable to particular construction situations or equipment for specific reasons, the Energy Code does provide exceptions that indicate compliance is not required in that instance. Exceptions 1 and 2 are rewritten to avoid the use of the term "exempt" and to simply and unambiguously state that provisions of Section 140.4(q)1 are not required for specific climate zones.
Section 140.4(r)	The specific purpose of this addition is to include requirements for HVAC systems with DDC that align with use of ASHRAE Guideline 36 programming libraries. HVAC systems with DDC shall use controller logic originating from a programming library based on sequences of operation from ASHRAE Guideline 36.
Exception 1 to Section 140.4(r)	The purpose of this exception is to allow for adaptation and customization of DDC program logic not provided by ASHRAE Guideline 36.
Exception 2 to Section 140.4(r)	Provides an exception to healthcare facilities which is not within the scope of ASHRAE Guideline 36.
Exception to Section 140.4(r)3	This exception was removed from the Energy Code.

Section	Description of Change
Section 140.4(s)	The specific purpose of this change is to add prescriptive requirements for Mechanical Heat Recovery that have simultaneous heating and cooling loads for new buildings to recover energy to be used elsewhere in the building and prevent wasteful energy. Exception 1 to Section 140.4(s)1 applies to laboratory exhaust systems already meeting covered process requirements for heat recovery and Exception 2 for 140.4(s)1 is for climate zone 15 where it was not found to be cost effective to incorporate these heat recovery standards. Global Exception 1 to Section 140.1(s) does not require compliance for computer rooms that already incorporate large amounts of heat recovery.
Section 140.4(s)2	The specific purpose of this change is to add prescriptive requirements for Mechanical Heat Recovery that have simultaneous heating and cooling loads to include heat recovery for service water heating. Another option is added here to use recouped energy to heat service hot water instead of space heating in the previous section.
Exceptions 4 through 6 to Section 141.0(a)	The purpose of these changes is to eliminate the use of the term "exempt" for clarity without changing the intent of the Energy Code. When particular requirements in the Energy Code are not applicable to particular construction situations or equipment for specific reasons, the Energy Code does provide exceptions that indicate compliance is not required in that instance.
Section 141.0(b)2C to 141.0(b)2Ci, 141.0(b)2Cii and 141.0(b)2Ciii	The purpose of the changes to this Section are to ensure that prescriptively installed equipment relies on heat pump technology where feasible and cost effective. Subsection 141.0(b)2C was partially moved to a new Subsection, 141.0(b)2Ci, and a new 141.0(b)2Cii was created to address the new requirements for new or replacement single zone packaged rooftop systems with direct expansion cooling. Subsection 141.0(b)2Ciii was deleted to delineate specific instances where the prescriptive inclusion of an economizer is applicable. This clarifies that single zone system types with a capacity of less than 65,000 Btu/hr are to have an economizer and that all single packaged unitary air systems from 54,000 Btu/hr and greater are to include an economizer.

Section	Description of Change
Exception 1 to 141.0(b)2C	This exception exempts existing buildings from the heat pump requirements of 140.4(c)2. The exception was deleted, and it was relocated to Exception 1 to Section 141.0(b)2C. The exception also added an exemption to 140.4(c)3 since they are only applicable to newly constructed buildings.
Exception to Section 141.0(b)2Cii	This exception serves to clarify that when an alteration surpasses the capacity of the existing main service panel or service transformer, the provisions outlined in Section 141.0(b)2Cii no longer apply.
Table 141.0-E-1	The purpose of this table is to outline specific requirements and specifications for different types of HVAC systems based on the type of building and its climate zone. The table provides information on the recommended configurations for air conditioning systems with various building types and climate zones. The table is organized by different building types (Retail and grocery, School, Office, financial institution, Library) and climate zones.
Exception 3 to Section 141.0(b)2C	The specific purpose of this addition is to provide an exception which makes clear that interlocks are not required on existing windows that did not previously have interlocks when replacing the space conditioning system.
Exception 3 to Section 141.0(b)2C (removed)	Removed the exception 3 relating to single package air-cooled commercial unitary air conditioner or heat pumps with a capacity less than 54,000 btu/h. Section 141.0(b)2Ciii clarifies that single zone system types with a capacity of less than 65,000 Btu/hr are to have an economizer and that all single packaged unitary air systems from 54,000 Btu/hr and greater are to include an economizer.
Exception 5 to Section 141.0(b)2C	The specific purpose of this addition is to include an exception to ensure that Sections 140.4(c)2Bii, 140.4(d)2Av, 140.4(e)2D, and 140.4(f)3, and 140.4(r) do not apply to alterations unless the space-conditioning systems are new or replacements.
Exception 6 to Section 141.0(b)2C	Added for systems that are not compatible with 140.4(e) that meet both requirements.
Section 141.0(b)2Dii	The purpose of this change is to delete field verification and diagnostic testing and replace it with acceptance testing.
Exception 1 to Section 141.0(b)2Dii	Updated reference from HERS Rater to MATT.

Section	Description of Change
Exception 2 to Section 141.0(b)2Dii	The purpose of this change is to use clearer and unambiguous language and avoid the use of the term "exempt". This exception is rewritten to avoid the use of the term "exempt" and to simply and unambiguously state the requirements that are not required to comply with this Section.
Section 141.0(b)2Diii	The purpose of this change is to use clearer and unambiguous language and avoid the use of the term "exempt". This exception is rewritten to avoid the use of the term "exempt" and to simply and unambiguously state the requirements that are not required to comply with Section 141.0(b)2Di or Section 141.0(b)2Dii.
Exception 3 to Section 141.0(b)2Eii	The purpose of this change is to use clearer and unambiguous language and avoid the use of the term "exempt" and replace with "not required to comply".
Exception to Section 160.2(b)1	The purpose of this change is to use clearer and unambiguous language and avoid the use of the term "exempt". This exception is rewritten to avoid the use of the term "exempt" and to simply and unambiguously state that evaporative coolers are not required to otherwise comply with Section 160.2(b)1.
Exception to Section 160.2(b)2	Section 4.2 and 6.1.3 added to and 6.5.2 was removed from the Energy Code.
Section 160.2(b)2Aivb	The specific purpose for the changes to this Section are to require both balanced ventilation and compartmentalization, with supply-only ventilation to be used in lieu of balanced ventilation, updating requirements such that dwelling units shall comply with both updated subsections 1 and 2.
Section 160.2(b)2Axia	The specific purpose of this change is to add the subsection "xia", which includes IAQ system filter and HRV/ERV accessibility requirements within occupiable spaces, basements, garages, balconies, mechanical closets, or accessible rooftops for regular service and not be located more than 10 feet above a walking surface inside a space specified above for compliance with this requirement.
Exception to Section 160.2(b)2Axia	The specific purpose for adding this exception is to incorporate accessibility requirements for systems requiring servicing from inside of an attic.
Section 160.2(b)2Axib	The specific purpose of this change is to add subsection "xib" to include IAQ system component accessibility which references California Mechanical Code (CMC) Section 304.0.

Section	Description of Change
Section 160.2(b)2Biv	The purpose of this change is to mention NA1.9 directly in the Energy Code (Title 24, Part 6).
Exception to Section 160.2(b)2C	The specific purpose of this change is to add an exception to Section 160.2(b)2C for multifamily buildings with three or fewer habitable stories in Climate Zone 6.
Exception 1 to Section 160.2(c)2 and Exception 2 to Section 160.2(c)2D	The specific purpose of these non-substantial changes is to move the Exception 1 to Section 160.2(c) to become Exception 2 to Section 160.2(c)2D. This does not change the intent of the code, but will better clarify the requirements.
Exception 2 to Section 160.2(c)2 and Exception 1 to Section 160.2(c)2D	The specific purpose of these non-substantial changes is to move the Exception 2 to Section 160.2(c) to become Exception 1 to Section 160.2(c)2D. This does not change the intent of the code, but will better clarify the requirements.
Section 160.2(c)2A and B	The specific purpose of these non-substantial changes is to align natural ventilation requirements with ASHRAE 62.1 – 2022 version. These changes make clearer the requirements of different building openings and correctly cites the new Sections in ASHRAE 62.1-2022 version which were unaligned in previous code cycle.
Section 160.2(c)2, 160.2(c)2D	The specific purpose of these non-substantial changes is to move the mechanical ventilation requirements previously located in the body text header of 160.2(c)2 into the listed requirements subsection D.
Section 160.2(c)3	The specific purpose of these changes is to revert the language to align with 2019 Building Energy Code ventilation logic where it is intended that code users comply with the larger of Equation A or B. The exception that was added in the 2022 Building Energy Code was intended to clarify this Section, but instead it had incorrectly been interpreted to remove this 'greater than logic' for ventilation.
Section 160.2(c)5Dv	The specific purpose for the changes reflected in the Section referenced above including referencing the equation is to align this Section with the new changes made to the minimum ventilation Section 160.2(c)3 and Table 160.2-B, where the process for determining ventilation rates have been changed back to a comparison greater than equation. This increases clarity and promotes consistency of the requirements for minimum ventilation which has been an issue for the last two code cycles.

Section	Description of Change
Section 160.2(c)5E	The specific purpose of these changes is to make clear the requirements of this Section without changing stringency and for format consistency.
Section 160.2(c)8	The specific purpose of these changes is to update the references to the ASHRAE 62.1 document.
Table 160.2-A	The specific purpose of these changes is to remove these tables entirely. They are not being used and were copied over in the previous cycle to the multifamily Section by mistake.
Table 160.2-B	The specific purpose of these changes is to mimic the nonresidential Table 120.1-A which align with the California Mechanical Code. The changes to the footnotes of this table align with the nonresidential table changes in reverting the ventilation equation back to the greater than comparison described in Section 120.1(c)3 of this document.
Table 160.2-C and Table 160.2-D	The specific purpose of these changes is to align the referenced tables above with the table updates provided in ASHRAE 62.1 – 2022 version. Changes to Table 160.2-C update the reference to the same table in ASHRAE 62.1. Changes to Table 160.2-D include new entries that provide air classification.
Table 160.2-E	Removed compliance criteria for Nonenclosed kitchen.
Exception to Section 160.3(b)1	Exceptions – Block loads added to the Energy Code.
Section 160.3(b)2B, C	The purpose of this change is to add alternative sources of outdoor design conditions from the ASHRAE Handbook, Equipment Volume, Applications Volume and Fundamental Volume, SMACNA Residential Comfort System Installation Standards Manual, and ACCA Manual J. These sources are already used for calculating cooling and heating loads under Section 150.0(h)1. As part of this addition, the term 99.0 percent Heating Dry Bulb is introduced as an alternative to Heating Winter Median of Extreme values. This change aligns with similar changes in Sections 140.4(b)3 and 150.0(h)2.
Exception 1 to Section 160.3(b)5Li	Single speed compressors removed.

Section	Description of Change
Section 160.3(b)7	The purpose of this change is to add requirements for heat pumps space-conditioning systems with defrost delay timers to have their delay timers set to no less than 90 minutes in order to reduce the frequency and energy use of the defrost operation. An exception is included for dwelling units in climate zones 1, 6, 7, 8, 9, 10, 15 and 16 because staff's analysis did not show cost effectiveness in those climate zones.
Section 160.3(b)8	The purpose of this change is to add a requirement for variable and multispeed space conditioning systems to be capable of responding to heating and cooling loads by modulating system compressor speed when the systems are controlled by third party thermostats. This change will also require the installer to test and certify the control configuration.
Section 160.3(c)1Aii	The specific purpose of this change is to add reference of "suction" to the refrigerant line insulation requirement. This matches the refrigerant suction line insulation requirement for space cooling systems and similar changes made to Section 120.3(a)2.
Section 160.3(c)2Hi	The purpose of this change is to delete the HERS field verification and diagnostic testing and replace it with acceptance testing.
Section 160.3(d)1D, and Exception to Section 160.3(d)1D	The purpose of this change is to modify terminology and avoid the use of the term "exempt" for clarity without changing the intent of the Energy Code. When particular requirements in the Energy Code are not applicable to particular construction situations or equipment for specific reasons, the Energy Code does provide exceptions that indicate compliance is not required in that instance. DOAS, HRV, and ERV systems were also added to the have to meet the requirements
Section 160.3(d)2A	The purpose of this change is to remove acceptance testing for high-rise multifamily dwelling unit ventilation systems. In addition to reformatting the subsequent subsections to properly reflect the removal of previous A and B Sections.
Section 160.3(d)2B	The purpose of this change is to remove acceptance testing for high-rise multifamily dwelling unit enclosure leakage test. In addition to reformatting the subsequent subsections to properly reflect the removal of previous A and B Sections.

Section	Description of Change
Section 170.1	The specific purpose of this change is to clarify that energy budgets for multifamily buildings are expressed in terms of Long-Term System Cost in Section 170.1(a). Obsolete language stating that energy budgets are expressed in Time Dependent Evaluation is deleted. Inaccurate Sections 170.1(b) and 170.1(c) indicating that energy budgets are separately established for the standard design building and the proposed building are eliminated. Explanation of how the energy budget is calculated for the standard design building using Commission-certified compliance software is stated clearly and succinctly in Section 170.1.
Section 170.1(b)2D	The Thermal Balance Valve requirement was placed in subsection D because subsection D was initially reserved as a placeholder for future requirements and this simplifies the code.
Section 170.1(b)2F, 170.1(b)2G, and 170.1(b)2J	The purpose of this change is to remove the performance credit options for multifamily buildings for whole house fans, central fan ventilation cooling systems, and precooling, as they are infrequently installed in multifamily buildings.
Section 170.2(c)2C	The purpose of this change is to add alternative sources of outdoor design conditions from the ASHRAE Handbook, Equipment Volume, Applications Volume and Fundamental Volume. These sources are already used for calculating cooling and heating loads under Section 150.0(h)1. As part of this addition, the term 99.0 percent Heating Dry Bulb is introduced as an alternative to Heating Winter Median of Extreme values. This change aligns with similar changes in Sections 140.4(b)3 and 150.0(h)2.
Section 170.2(c)3BiaIIIB	The purpose of this change is to remove the option that allowed for refrigerant charge verification through the installation of equipment that utilizes a fault indicator display (FID).
Section 170.2(c)3Biva and b	The specific purpose of this change is to update subsection iv including the requirements for balanced ventilation systems with heat/energy recovery ventilation systems to revise the prescriptive requirements in all newly constructed multifamily dwelling units in climate zones 1, 2, 4, 11 through 14, and 16 to use balanced ventilation with an HRV or ERV.
Section 170.2(c)3Bivc	The specific purpose of this change is to strike out climate zone 4 and add climate zone 15 to require a heat pump space-conditioning system installed to meet the requirements of Section 170.2(c)3Ai.

Section	Description of Change
Section 170.2(c)3Bv	The specific purpose of this change is to include all HRV/ERV systems serving an individual dwelling unit to have an FID that is ECC-rater field verified as specified in the Reference Joint Appendix JA17.4.
Exception 6 to 170.2(c)4Ci	The specific purpose of the change is to reorganize language from 170.2(c)4N to Exception 6 to 170.2(c)4Ci and to clarify language. A new exception for air handlers that have a design total mechanical cooling capacity less than 54,000 Btu/hr where ventilation is provided by a DOAS with exhaust air heat recovery in accordance with Section 140.4(p) and two additional requirements.
Section 170.2(c)4Fv and Exception 2 to Section 170.2(c)4Fv	The purpose of the updates to this Section are to update cooling tower efficiency prescriptive requirements based on climate zone and to remove exceptions for climate zone 1 and 16.
Table 170.2-I	Add table specifying the cooling tower efficiency requirements based on the climate zone.
Section 170.2(c)4N	The specific purpose of the change is to provide clarity on the requirements of Dedicated Outdoor Air System for the different configurations and to simplify code language by moving requirements related to economizing to the economizer section in Exception 6 to 170.2(c)4Ci. This change aligns with the Nonresidential Section in 140.4(e) and (p) and removes the greater than 1,000 CFM requirement.
Exception 4 and 5 to 170.2(c)4O	Removal of the word 'exempted' and added 'not required' to the Energy Code.
Exception to 180.1(a)2	The specific purpose of this change is to add an exception in the mechanical ventilation for indoor air quality section to specify dwelling unit air leakage test is not required for additions.
Exception to 180.1(a)2Aii	The specific purpose of this change is to add an exception to Section 180.1(a)2Aii that specifies new, or replacement ventilation systems shall be supply, balanced, or the existing ventilation type when additions are incorporated to an existing dwelling unit of which conditioned floor area is more than 1,000 square feet.
Section 180.2(b)2Aivb	Simplified listing of climate zones for Altered space-conditioning system mechanical cooling.

Section	Description of Change
Section 180.2(b)2AivbIIB	The purpose of this change is to remove the option that allowed for refrigerant charge verification through the installation of equipment that utilizes a fault indicator display (FID).
Exception 2 to Section 180.2(b)2Bi	The specific purpose of this change is rewriting this language to be clearer that interlocks are not required on operable wall and roof openings that did not previously have interlocks when replacing the space-conditioning system. As previously written, it did not explicitly address the applicability of these requirements to existing buildings. This change is not substantive.
Exception 3 to 180.2(b)2Bi	The specific purpose of this change is to make a correction and clarification to the 2022 Energy Code language. This change seeks to clarify that the exception to the economizer requirement is applicable only to systems that are a split packaged AC with a cooling capacity lower than 54,000 Btu/h.
Exception 1 to 180.2(b)2Biib	The purpose of this change is to delete HERS field verification and diagnostic testing and replace it with acceptance testing.
Section 180.2(b)2Biic and 180.2(b)2Biiib	The purpose of this change is to delete HERS field verification and diagnostic testing and replace it with acceptance testing.
Exception 1 to 3 to 180.2(b)2Biiib	Removal of the word 'exempted' and added 'not required' to the Energy Code.
Exception to 180.2(b)5	The specific purpose of this change is to add an exception in the mechanical ventilation for indoor air quality section to specify dwelling unit air leakage test is not required for alterations.
Exception to 180.2(b)5A	The specific purpose of this change is to add an exception to Section 180.2(b)5A that specifies new, or replacement ventilation systems shall be supply, balanced, or the existing ventilation type being replaced.
Section 180.2(b)5Bia	The specific purpose of this change is to add a requirement for whole-dwelling unit ventilation strategy that specifies the altered ventilation system shall be supply, balanced, or the existing ventilation type being altered.
Table NA1-1	The purpose of this change is to delete field verification and diagnostic testing and replace it with acceptance testing for the nonresidential and multifamily common area duct leakage test. NA2 is reserved for ECC field verification and diagnostic tests and NA7 is reserved for acceptance tests. This language was moved from NA2.1 to NA7.5.3.

Section	Description of Change
Section NA1.2.2	The purpose of this change is to conform with the new requirements restricting duct acceptance testing to certified Acceptance Test Technicians.
Section NA1.6.3	This purpose of this addition was to clarify existing procedures regarding the use of Certificates of Acceptance and ECC-Raters performing field verification and diagnostic testing.
Section NA1.9.1	The purpose of this change is to remove the condition that the enforcement agency must approve the alternative procedure for field verification by the ATT as specified in NA1.9.
Section NA2.1	The purpose of this change is to delete HERS field verification and diagnostic testing and replace it with acceptance testing for the nonresidential and multifamily common area duct leakage test. NA2 is henceforth reserved field verification and diagnostic tests and NA7 is reserved for acceptance tests. This language was moved entirely from NA2.1 to NA7.5.3.
Table NA2.2-1	The purpose of this change is to correct minor errors in referencing, spelling and grammar.
Section NA2.2.4.1.4 and NA2.2.4.1.5	Updates website links for Kitchen Exhaust certifications.
Section NA2.3.1	Added language for compliance with multifamily dwelling unit compartmentalization requirements.
Section NA2.3.3(3)	The specific purpose of this change is to add a multi-point airtightness test as specified in RESNET 380 Section 4.4.2.
Section NA2.3.4(1)	The specific purpose of this change is to add the word "if" determined by a one-point airtightness test as specified in RESNET 380 Section 4.4.1 and will be adjusted using RESNET 380 4.5.1 equation 5(a).
Section NA7.1	The specific purpose of this change is to clarify that the procedures of NA7.1 apply to all multifamily buildings, and not just high-rise residential buildings.
Section NA7.2	The purpose of this change is to delete field verification and diagnostic testing and replace it with acceptance testing for the nonresidential and multifamily duct leakage test.
Section NA7.5.1.1.1(f)	The specific purpose of this change is to allow a newly installed HVAC system to pre-purge 1 hour prior to occupation using the methods as provided in Section 120.1(d)2.
Section NA7.5.1.2.1(c)	The specific purpose of this change is to allow a newly installed HVAC system to pre-purge 1 hour prior to occupation using the methods as provided in Section 120.1(d)2.

Section	Description of Change
Section NA7.5.2.1(a)	The purpose of this change modifies language related to an unintended curtailment of compliance paths regarding thermostat locations and adds the appropriate Energy Code reference.
Section NA7.5.3	The purpose of this change is to delete HERS field verification and diagnostic testing and replace it with acceptance testing for the nonresidential and multifamily common area duct leakage test. This language was moved from NA2.1 to NA7.5.3.
Section NA7.5.4.1(a)	The purpose of this change is to correct minor errors in referencing, spelling, and grammar.
Section NA7.5.9.2(h)	The specific purpose of this change is to remove the word "either" to improve readability and clarify that there is only one option.
Section NA7.5.10.2	The changes to this section add step 3 for clarity of an action that already takes place in the field.
Section NA7.5.14.2	The changes in this Section add and modify language for clarity of an established acceptance test.
Section NA7.5.18, NA 7.5.18.1, NA 7.5.18.2	These changes add requirements for construction inspection of blowdown controls and functional testing of overflow alarms, as applied to all open- and closed-circuit cooling towers.
Table NA-7	These changes add a table to specify blowdown parameters for cooling towers.
Section NA7.18.3	The purpose of this change is to update the reference to the most up-to-date test procedure for total duct leakage.

Attachment 2: 2025 Changes to Mechanical Controls Acceptance Documents

One new NRCA form will be added to the existing 2022 NRCA-MCH Forms. The other changes to the NRCA-MCH forms are code references and minor verbiage.

Table Attachment 2-A

List of Mechanical Acceptance Tests Required by the 2025 Energy Code

Mechanical Acceptance Compliance Document	Summary of Modifications
NRCA-MCH-02	No other significant changes.
NRCA-MCH-03	No other significant changes.
NRCA-MCH-04	No other significant changes.
NRCA-MCH-05	No other significant changes.
NRCA-MCH-06	No other significant changes.
NRCA-MCH-07	No other significant changes.
NRCA-MCH-08	No other significant changes.
NRCA-MCH-09	No other significant changes.
NRCA-MCH-10	No other significant changes.
NRCA-MCH-11	No other significant changes.
NRCA-MCH-12	No other significant changes.
NRCA-MCH-13	No other significant changes.
NRCA-MCH-14	No other significant changes.
NRCA-MCH-15	No other significant changes.
NRCA-MCH-16	No other significant changes.
NRCA-MCH-17	No other significant changes.
NRCA-MCH-18	No other significant changes.
NRCA-MCH-19	No other significant changes.
NRCA-MCH-20a	No other significant changes.
NRCA-MCH-20b	No other significant changes.
NRCA-MCH-20c	No other significant changes.
NRCA-MCH-20d	No other significant changes.
NRCA-MCH-21	No other significant changes.
NRCA-MCH-22	No other significant changes.
NRCA-MCH-23	No other significant changes.
NRCA-MCH-24	New acceptance test consistent with 2025 Energy Code Requirements.